Tamarind 1990 - 2004

Author A. K. A. Dandjouma, C. Tchiegang, C. Kapseu and R. Ndjouenkeu

Title Ricinodendron heudelotii (Bail.) Pierre ex Pax seeds treatments influence on the q

Year 2004

Source title Rivista Italiana delle Sostanze Grasse

Reference 81(5): 299-303

Abstract

The effects of heating Ricinodendron heudelotii seeds on the quality of the oil extracted was studied. The seeds were preheated by dry and wet methods at three temperatures (50, 70 and 90 degrees C) for 10, 20, 30 and 60 minutes. The oil was extracted using the Soxhlet method with hexane. The results showed a significant change in oil acid value when heated at 90 degrees C for 60 minutes, with values of 2.76+or-0.18 for the dry method and 2.90+or-0.14 for the wet method. Heating at the same conditions yielded peroxide values of 10.70+or-0.03 for the dry method and 11.95+or-0.08 for the wet method.

Author A. L. Khandare, U. Kumar P, R. G. Shanker, K. Venkaiah and N. Lakshmaiah

Title Additional beneficial effect of tamarind ingestion over defluoridated water supply

Year 2004

Source title Nutrition

Reference 20(5): 433-436

Abstract

Objective: We evaluated the effect of tamarind (Tamarindus indicus) on ingestion and whether it provides additional beneficial effects on mobilization of fluoride from the bone after children are provided defluoridated water. Methods: A randomized, diet control study was conducted in 30 subjects from a fluoride endemic area after significantly decreasing urinary fluoride excretion by supplying defluoridated water for 2 wk. Subjects were then assigned to one of two groups, with 15 in each group. One group was supplemented with tamarind (experimental group) for 3 wk and the other (control) group was given only defluoridated water for the same period. Results: The mean changes in urinary components after tamarind ingestion (volume, pH, fluoride calcium, copper, and magnesium) in the control and experimental groups were compared. There was a significant increase ($P<0.01$) in fluoride excretion and urinary pH and a significant decrease in urinary calcium ($P<0.01$) and copper ($P<0.05$) excretion in the experimental group as compared with the control group. There was no change in urinary volume between groups. Conclusions: Tamarind intake appears to have an additional beneficial effect on the mobilization of deposited fluoride from bone, by enhancing urinary excretion of fluoride.

Author B. Arpita, S. Arijit, R. K. Kar and M. Sudhendu

Title Micromorphological studies of four fuel wood yielding tropical leguminous plants

Year 2004

Source title Pakistan Journal of Biological Sciences

Reference 7(1): 100-104

Abstract

This study investigated leaf epidermal micromorphology of four-fuelwood yielding tree legumes, viz., Albizia lebbeck, Cassia fistula, Acacia nilotica and Tamarindus indica collected from West Bengal, India. The epidermal cells in each case were irregular in shape, being larger in slow growing species, i.e. Acacia nilotica and T. indica. The stomata were hypostomatic, anomocytic and/or paracytic types with frequency, size and stomatal index higher in fast growing species, i.e. C. fistula and Albizia lebbeck. The trichomes present only in fast growing species, were glandular or non-glandular, unicellular, straight or curved. These leaf epidermal characters can also be utilized as markers for fast growing fuel wood plants apart from taxonomical consideration of the taxa.

Author B. Jayasri, R. K. Das, P. K. Saha and A. Bhattacharjee

Title Enhancement of potential status of mung bean and gram seeds by herbal method.

Year 2004

Source title Environment and Ecology

Reference 22(3): 696-700

Abstract

The potential status of mung bean and gram (Cicer arietinum) seeds was analysed under accelerated aging condition (99.5% RH) after pretreatment with leaf extract of kalmegh (Andrographis paniculata) and fruit pulp extract of tamarind. Accelerated aging treatment for 15 days resulted in significant reduction of seed germination with concomitant impairment in the time to 50% germination. However, seed pretreatment with kalmegh extract ameliorated to some extent the aging-induced adverse effect on the germination behaviour of both species. On the other hand, the effect of tamarind extract was found to be inhibitory in this context. Percentage seed viability as recorded by 2,3,5-triphenyl tetrazolium chloride (TTC) test remained unchanged irrespective of the treatment, but TTC staining pattern was better with kalmegh extract-pretreated seed samples. Aging-induced loss of dehydrogenase [oxidoreductase] activity was significantly controlled in kalmegh extract treatment only. Kalmegh treatment also alleviated the aging-induced increase of leaching of sugars and amino acids. Correspondingly, the levels of protein and chlorophyll in leaves of seedlings developed from kalmegh-extract pretreated seeds were significantly higher than the control samples. In all the analyses, tamarind treatment was found to render adverse effects.

Author C. Tchiegang, M. N. Oum, A. A. Dandjouma and C. Kapseu

Title Quality and stability of oil extract after pressing of almonds of Ricinodendron heu

Year 2004

Source title Journal of Food Engineering

Reference 62(1): 69-77

Abstract

In order to contribute to the valorisation of non lignous products of R. heudelotii, the quality and stability of oils extracted from its almonds by pressing was studied. Almonds originated from Edea and Obala, Cameroon, and extraction was carried out using a press after pre-treatment (softening in water and roasting in oven at a temperature of 90 degrees C for 60 min). The influence of the pre-treatment on the quality and stability of the extracted crude oil was studied and the physicochemical properties of the oils stored in vinyl polychloride bottles at environmental temperature was also followed for 4 months. The physicochemical properties of the oils varied little with pre-treatment. There was however a significant difference at 5% level between the peroxide indices of oils of samples from Edea which had a value of 9.50+or-0.06 meq O2/kg for those pretreated by roasting and 11.05+or-0.0 meq O2/kg for samples pretreated by softening in water. For samples from Obala, 'iodine' values obtained were 148.64+or-0.37, 150.22+or-0.08 and 149.90+or-0.06 respectively for oils of samples non treated, softened and roasted. A significant difference at 5% level was also noted for the saponification indices of samples from Obala. There were 193.76+or-0.96 and 194.99+or-0.02, 195.02+or-0.86 respectively for oils extracted with hexane and those extracted by press. A study of stability of the oil showed that the length of storage had an effect on the acid, saponification and peroxide indices. At the end of storage the acid index is about 4 which is a maximum preconized value. The peroxide index however remains lower (25 meq O2/kg) than the norm. The length of storage did not influence either the iodine index, the refractive index or the density. The extraction techniques used and the different treatments applied resulted in good quality, stable oil.

Author D. Bandita

Title Heavy metal accumulation by plant species from a coal mining area in Orissa.

Year 2004

Source title Journal of Environmental Biology

Reference 25(2): 163-166

Abstract

An ecological survey was undertaken on metal contamination (Cu, Fe, Al, Cr) of vegetation (tree, shrub and herb) collected from the overburden soil of South Bolanda, Talcher, Orissa, India. The species includes Trema orientalis, Haldina cordifolia, Diospyros melanoxylon, Ixora arborea, Tamarindus indica, Chromolaena odorata, Calotropis gigantea, Woodfordia fruticosa, casearia elliptica, Phyllanthus reticulatus, Croton bonplandianus, Catharanthus roseus, Hyptis suaveolens, Solanum xanthocarpum and Tridax procumbens. Stem and leaf parts of the trees and shrubs, and whole plant of the herbs were analysed. Concentrations of metals were the maximum in leafy part of trees and shrub samples. Among the various heavy metals studied, Fe concentration in plant parts was the highest and Cu concentration was the lowest.

Author G. N. Gayathri, P. Kalpana, P. Jamuna and K. Srinivasan

Title Influence of antioxidant spices on the retention of beta -carotene in vegetables dur

Year 2004

Source title Food Chemistry

Reference 84(1): 35-43

Abstract

Considerable amounts of beta -carotene were lost during the two domestic methods of cooking commonly used, namely, pressure cooking and open pan boiling, the loss ranging from 27 to 71% during pressure cooking and 16-67% during boiling for the four vegetables examined in this study. Pressure cooking of green leafy vegetables resulted in a greater retention of this provitamin. In the presence of red gram dhal, which is a common ingredient in the diet, there was an underestimation of beta -carotene due to poor extractability. Inclusion of acidulants - tamarind and citric acid-along with these vegetables brought about some changes in the level of retention of beta -carotene. The antioxidant spice turmeric generally improved the retention of beta -carotene in all four vegetables studied. Onion also had a similar effect. The combinations of acidulants and antioxidant spices also improved the retention of beta -carotene during cooking. This effect seemed to be additive in the case of processing of amaranth by boiling.

Author J. A. Pino, R. Marbot and C. Vazquez

Title Volatile components of tamarind (Tamarindus indica L.) grown in Cuba.

Year 2004

Source title Journal of Essential Oil Research

Reference 16(4): 318-320

Abstract

Volatile components of tamarind fruits grown in Cuba were isolated by simultaneous steam distillation/solvent extraction. The fruit pulp had approximately 3 mg/kg of total volatile compounds. Eighty-one constituents were identified, from which 2-phenylacetaldehyde, 2-furfural and hexadecanoic acid [palmitic acid] were the major compounds.

Author J. John, M. Joy and E. K. Abhilash

Title Inhibitory effects of tamarind (Tamarindus indica L.) on polypathogenic fungi.

Year 2004

Source title Allelopathy Journal

Reference 14(1): 43-49

Abstract

The effects of tamarind leaf extract (5, 10, 15, 25 and 50%, w/v) on the growth of polypathogenic fungi (Phytophthora palmivora, Colletotrichum gloeosporioides, Alternaria solani, Fusarium solani, Rhizoctonia bataticola [Macrophomina phaseolina], Sclerotium rolfsii [Corticium rolfsii], Pellicularia filamentosa [Thanatephorus cucumeris] and M. phaseolina) were studied. The tamarind leaf extract, which suppressed the growth of all fungi at 3 days after inoculation, caused maximum suppression in Phytophthora palmivora (up to 81%) and R. bataticola (up to 87%), the major pathogens of many crops in homesteads. The tamarind leaf extract offers great opportunity for use as an antifungal botanical for the control of seed-, soil- and airborne phytopathogenic fungi.

Author K. El-Siddig, J. Gebauer, G. Ebert, A. M. Ali and S. Inanaga

Title Influence of salinity on emergence and early seedling growth of Tamarindus indic

Year 2004

Source title European Journal of Horticultural Science

Reference 69(2): 79-81

Abstract

The influence of 0, 30, 60 and 120 mM NaCl on seedling emergence and early growth of Tamarindus indica was investigated under greenhouse conditions. The first seeds in the non-saline treatment emerged (E1st) 7.5 days after sowing (DAS), 50% of seeds had emerged (E50) 8.4 DAS, and a maximum of 88.1% of seeds had emerged 11.8 DAS. Addition of 30, 60 or 120 mM NaCl delayed E1st by 1.5, 4.2 and 7.2 days, respectively, compared to the control. E50 at 30 and 60 mM NaCl was achieved 10.7 and 15.7 DAS, respectively, whereas seeds at 120 mM failed to reach E50. Seedling growth was not markedly affected by 30 mM NaCl, but progressively stronger inhibitory effects were observed within the 60 and 120 mM NaCl treatments.

Author K. El-Siddig, S. Inanaga, A. M. Ali, P. An, J. Gebauer and G. Ebert

Title Response of Tamarindus indica L. to iso-osmotic solutions of NaCl and PEG duri

Year 2004

Source title Journal of Applied Botany and Food Quality

Reference 78(1): 1-4

Abstract

The effects of reduced external water potential (0, -0.3, -0.6, -0.90 or -1.30 MPa) generated by either NaCl or polyethylene glycol-6000 (PEG) on water uptake and germination characteristics of Tamarindus indica seeds were investigated under laboratory conditions. Water uptake and final germination percentage (GF) decreased, while the number of days to 50% germination (D50) and mean germination time (MGT) increased significantly with reducing osmotic potential of NaCl and PEG. At each iso-osmotic solution, PEG appeared to be more inhibitory to water uptake than NaCl, especially at the lowest water potential (-1.2 MPa). At this water potential, no germination was observed in both NaCl and PEG solutions. For the other treatments, NaCl resulted in lower GF, and higher D50 and MGT values than iso-osmotic solutions of PEG. These results suggest that the main effect of PEG occurred via an inhibition of water uptake, while the detrimental effects of NaCl may be attributed mainly to accumulated toxic ions.

Author K. Li, C. Zhang, Y. Cui, Y. Zhao and Y. Shi

Title A study on the fitting afforestation tree species during converting the land for fore

Year 2004

Source title Forest Research, Beijing

Reference 17(5): 555-563

Abstract

This study revealed that the trees for afforestation in hot and arid valley of Jinsha River (Yunnan, China) were: Broussonetia papyrifera, Cajanus cajan, Dodonaea viscose, Phyllanthus emblica, Melia toosedan for areas with elevation of 1600 m; Albizia kalkora, Acacia mearnsii, Cupressus lusitanica, Cupressus duclouxiana at elevation between 1400 and 1700 m; and Tamarindus indica, Tephrosia candida, Acacia glauca [Leucaena leucocephala], Leucaena leucocephala cv. Salvador, Schleichera oleosa and Caesalpinia spinosa for areas with 1400 m elevation. Direct sowing were adopted to plant Cajanus cajan, D. viscose and T. candida. For Albizia kalkora, Acacia mearnsii, M. toosendan, A. glauca, L. leucocephala cv. Salvador, S. oleosa and C. spinosa, 100-day-old container grown seedlings were used for afforestation, while for T. indica, C. lusitanica, C. duclouxiana and C. spinosa, 1-year-old container grown seedlings had better effect in afforestation. The silvicultural treatments employed included site preparation in blocks (40 mx40 mx40 m), application of organic manure with N and P fertilizer as basal fertilizer and planting the trees at the beginning of rainy season. It is suggested that strong, big and well lignified seedlings should be used in afforestation and also, it was important to remove weeds during afforestation and rainy season.

Author K. Miura

Title Co-existence of pasture and forestry in the eastern part of Indonesia: a case study

Year 2004

Source title Tropical Forestry

Reference 59(51-59

Abstract

An account is given of a silvopastoral project at Nonbes in East Nusa Tenggara, Indonesia, which was set up using various multipurpose tree species, and the pasture species king grass (Pennisetum purpureum x P. typhoides [P. glaucum]) and elephant grass (P. purpureum). Problems were experienced with infestation of Leucaena leucocephala by Heteropsylla cubana, and with the weed species Lantana camara and [Chromolaena]odorata. Apart from L. leucocephala, the tree species used included Eucalyptus alba, Acacia leucophloea, Bauhinia, Borassus flabellifer, Corypha utan, Gliricidia sepium, Schleichera oleosa, Ziziphus, Sesbania grandiflora, Tamarindus indica, Hibiscus tiliaceus.

Author K. S. Rajput

Title Occurrence of radial sieve elements in the secondary phloem rays of some tropical

Year 2004

Source title Israel Journal of Plant Sciences

Reference 52(2): 109-114

Abstract

Solitary or groups of two to three sieve elements were found in the rays of the secondary phloem of Tamarindus indica L., Melia azedarach L., Gmelina arborea Roxb., Bombax ceiba L., Pongamia pinnata (L.) Pierre, Sterculia urens Roxb., and Thespesia populnea (L.) Correa trees. These elements were similar in length while slightly larger in diameter than ray parenchyma cells, and possessed a simple plate on their transverse to slightly oblique end walls. Like axial sieve elements, the ray sieve elements were associated with single companion cells at their corners. When functional, they also exhibited slime plugs and cytoplasmic strands, like axial sieve elements. Non-functional ray sieve elements exhibited massive accumulation of callose on sieve plates, followed by collapse and obliteration. The distribution pattern of the elements differed among the species studied. Usually they developed from the marginal ray parenchyma cells, but they were also found in the central part of the rays. Structural details and their possible significance are discussed.

Author M. F. U. Ahmed and S. M. L. Rahman

Title Profile and use of multi-species tree crops in the homesteads of Gazipur District,

Year 2004

Source title Journal of Sustainable Agriculture

Reference 24(1): 81-93

Abstract

Agroforestry combines agriculture and forestry technologies to create more integrated, diverse, productive, profitable, healthy and sustainable land-use systems. This study was conducted in Gazipur district (former greater Dhaka district) of Bangladesh and focused on the species composition of homegardens, species richness, species density, relative prevalence, species diversity index, purpose of growing trees and number of trees in homestead. The study covered 90 households from three upazillas (administrative entities, subdistricts), 30 from each upazilla. Farm categories were sampled with reference to landless, marginal, small, medium and large size. The information was collected by using a structured questionnaire, formal and informal interviews and field observations. Some information was also gathered by group discussion with the farmers. The information was analysed by using descriptive statistics and mathematical analysis. The average size of the homestead in the study area was 0.083 ha which increased with the increase of farm size. The homestead area occupied by trees and shrubs in landless and marginal farm categories were smaller than that in the larger farm category. A total of 43 plant species (28 were horticultural plants and 15 were timber and fuelwood plants) were identified and recorded from the 90 households surveyed. Among the horticultural plants, the most prevalent species was jackfruit (Artocarpus heterophyllus, relative prevalence, RP=26.3), followed by mango (Mangifera indica, RP=22.5), mahagoni (Swietenia mahagoni, RP=10.3), coconut (Cocos nucifera, RP=9.9), teak (Tectona grandis, RP=9.7), guava (Psidium guajava, RP=8.2) and litchi (Litchi chinensis, RP=5.7), while low prevalence species were minjiri (Cassia siamea [Senna siamea], RP=0.03), gora neem (Melia azedarach, RP=0.18), tamarind (Tamarindus indica, RP=0.19) and shimul (Bombax ceiba, RP=0.21). Among the different farm categories, the highest number/type of species (17) regardless of forest or horticultural species was found in the large farm category whereas the lowest number/type of species (7) was found in the landless farm category. The number of trees per 100 m2 homesteads decreased gradually from landless farms (3.5 trees/100 m2) to large farms (1.85 trees/100 m2). Least number of trees was found in the group of above 25 years of age. However, the larger farm categories had more old trees (>25 years) than the smaller farm categories. Most of the farmers prefer fruit trees over fuel/timber species and species diversity was higher for fruit trees (7.3) than for timber trees (4.8). Jackfruit was identified as an important cash generating crop in the study area. In the future, the homegarden will be a viable alternative to mono-cropped field agriculture. It also is a highly valuable source of genetic diversity.

Author M. M. Sundria and K. Akhil

Title Biology of groundnut bruchid, Caryedon serratus (OL), on different test hosts.

Year 2004

Source title Annals of Plant Protection Sciences

Reference 12(1): 9-12

Abstract

Ten plants were evaluated as hosts (Prunus amygdalus [Prunus dulcis], Elettaria cardamomum, Anacardium occidentale, Arachis hypogaea pods or kernels, Cocos nucifera, Phoenix dactylifera, Vitis vinifera, Tamarindus indica and Myristica fragrans) for Caryedon serratus. T. indica was the most suitable host for Caryedon serratus development. In a free choice test, M. fragrans was preferred by bruchid for egg laying, while E. cardamomum was the least preferred. The oviposition preference had no relation with the development of the bruchid. Adult emergence was highest on T. indica and lowest on M. fragrans. No adult emerged on Cocos nucifera, V. vinifera and Phoenix dactylifera. These crops were completely unfit for the development of the bruchid.

Author P. Soloviev, T. D. Niang, A. Gaye and A. Totte

Title Variability of fruit physicochemical characters for three harvested woody species

Year 2004

Source title Fruits (Paris)

Reference 59(2): 109-119

Abstract

A. digitata, B. aegyptiaca and T. indica appear among the harvested fruit species most appreciated by the Sahelian Sudano populations. Their nutritional and income role is important. Nevertheless, the degradation of the ecosystem constitutes a threat to this harvested fruit resource and to the species' genetic diversity. The first stage of a domestication programme begun in Senegal consisted of characterizing the species' natural variability, using a participative step aiming at the selection of accessions notable for the fruit quality. Thus, our study compared fruit of various accessions, for each of the 3 species. The analyses related to fruit biometric characterization, supplemented with basic chemical analyses (water, total soluble sugars and total free acidity). For all the studied criteria, the data analyses showed significant differences between the accessions within each fruit tree species. For the biometric characters, a decreasing gradient variability appeared according to the sequence: Adansonia sp. followed by Tamarindus sp. and Balanites sp. The "pulp real value" criterion allowed the identification of the most notable accessions. The chemical characters had less variability than the biometric ones. The various studied accessions have an exploitable variability, which can be used for distributing competitive fruit tree species' cultivars to the local populations, thus answering their needs and their means.

Author R. Maiti, D. Jana, U. K. Das and D. Ghosh

Title Antidiabetic effect of aqueous extract of seed of Tamarindus indica in streptozoto

Year 2004

Source title Journal of Ethnopharmacology

Reference 92(1): 85-91

Abstract

In Indian traditional system of medicine, herbal remedies are prescribed for the treatment of diseases including diabetes mellitus. In recent years, plants are being effectively tried in a variety of pathophysiological states. Tamarindus indica Linn. is one of them. In the present study, aqueous extract of seed of Tamarindus indica Linn. was found to have potent antidiabetogenic activity that reduces blood sugar level in streptozotocin (STZ)-induced diabetic male rat. Supplementation of this aqueous extract by gavage at the dose of 80 mg/0.5 ml distilled water/100 g body weight per day in STZ-induced diabetic rat resulted a significant diminution of fasting blood sugar level after 7 days. Continuous supplementation of this extract for 14 days resulted no significant difference in this parameter from control level. Moreover, this supplementation produced a significant elevation in liver and skeletal muscle glycogen content, activity of liver glucose-6-phosphate dehydrogenase in respect to diabetic group. Activities of liver glucose-6-phosphatase, liver and kidney glutamate oxaloacetate transaminase (GOT) and glutamate pyruvate transaminase (GPT) activities were decreased significantly in the aqueous extract supplemented group in respect to diabetic group. All these parameters were not resettled to the controlled level after 7 days of this extract supplementation but after 14 days of this supplementation, all the above mentioned parameters were restored to the control level.

Author R. P. H. McBurney, C. Griffin, A. A. Paul and D. C. Greenberg

Title The nutritional composition of African wild food plants: from compilation to utili

Year 2004

Source title Journal of Food Composition and Analysis

Reference 17(3/4): 277-289

Abstract

The nutritional value of wild food plants is of interest to ethnobotanists, clinicians, chemists, nutritionists and anthropologists. There is no definitive resource available containing this information for African wild food plants. The aim of the study was to develop a methodology for compiling quantitative information from the literature. Taxonomy and nomenclature for 20 species of interest were checked using the recent Flora treatments and the International Plant Names Index (IPNI). Boolean strings incorporating accepted scientific name, scientific synonyms and available English vernacular names were used to search citation indices. Titles, keywords and abstracts were scanned by eye and articles relevant to nutrition selected. Citations with sufficient information for inclusion into a nutrient database were prepared for data entry. There were over 120 scientific names for the 20 species selected. Of 17 700 citations downloaded only 540 of these pertained to nutrition. Ninety-four references were prepared for inclusion into the database. Inaccurate data compilation (recycling) was found for the species Moringa oleifera Lam. Twenty-one different bases for expressing nutritional values were found in papers for final inspection. It is recommended that the literature be reviewed fully prior to any investigation into the nutritional value of an African wild food plant. Data recycling, if incorrect, can have major implications on research and operations. The multidisciplinary nature of investigating wild food plants should be taken into consideration when undertaking this type of work and all nutritional information should be in a standardized format.

Author R. Qadri and T. Zehra

Title A qualitative study of nodulated tree legumes growing around the Karachi Univer

Year 2004

Source title International Journal of Biology and Biotechnology

Reference 1(3): 301-304

Abstract

Nodulation status of 15 leguminous species within 14 genera was examined. Of the 15 species only 4 were found non-nodulators. Cassia fistula of Caesalpinioideae and Adenanthera pavonina of Mimosoideae have been reported as nodulators for the first time from Pakistan whereas Bauhinia purpurea, Delonix regia, Peltophorum pterocarpum and Tamarindus indica are being reported as non-nodulator. The rhizobia from Cassia fistula and A. pavonina were found alkali producing. Nodule colour, shape and frequency, and cross nodulating properties of rhizobial isolates from Cassia fistula and A. pavonina in Vigna radiata are also described.

Author S. Pooja and C. S. S. Devi

Title Evaluation of co-stimulatory effects of Tamarindus indica L. on MNU-induced co

Year 2004

Source title Food and Chemical Toxicology

Reference 42(8): 1237-1244

Abstract

Colonic cell proliferation is the prerequisite for the genesis of cancer. Experimental and epidemiologic evidence indicate dietary factors to be one of the commonest predisposing factors in the development of several types of cancers including large intestine. Here we have investigated the role of the fruit pulp of Tamarindus indica L. (TI), a tropical plant-derived food material, on the proliferating colonic mucosa using Swiss albino mice. Crypt cell proliferation rate (CCPR), on histological basis and [3H]-thymidine incorporation assay were chosen to evaluate the modulating potential of TI per se and in response to a subacute dose of N-nitroso N'-methyl urea (MNU). Descending colonic segment showed greater rate of cell proliferation than the ascending colon and cecum tissues isolated from the group 2 (TI-per se) when compared with group 1 (negative controls). It also revealed a positive correlation with the incorporation studies. Significant increase in the CCPR and radiolabeled precursor incorporation ($p<0.001$) was observed in MNU-induced+TI fed group of animals (group 4) in all the three segments when compared with control diet fed normal (group 1) as well as MNU-induced (group 3) animals. This study therefore indicates a co-stimulatory effect of TI on MNU-induced colonic cell kinetics.

Author S. S. Parvez, M. M. Parvez, Y. Fujii and H. Gemma

Title Differential allelopathic expression of bark and seed of Tamarindus indica L.

Year 2004

Source title Plant Growth Regulation

Reference 42(3): 245-252

Abstract

Allelopathic performance of the bark and seed of Tamarindus indica L. tree was evaluated through bioassay-guided studies using seven common agronomic crops (asparagus, cucumber, lettuce, radish, sesame, tomato and welsh onion) and seven weed species (barnyard grass, Chinese milk vetch, perennial ryegrass, phacelia, timothy grass, white clover and wild ginger) under laboratory conditions. As demonstrated by a sandwich method, the bark of the tamarind tree caused strong growth inhibition (compared to the corresponding controls) in both radicles and hypocotyls of the species tested, and the inhibitory effect was highest in barnyard grass (52-65%) and lowest in welsh onion (19-13%). The crude-water soluble extracts of bark at different concentrations (1, 5 and 10%) (w/v) exhibited a strong growth inhibition in all the plant species tested, and a proportional increase in the percentage of growth inhibition was observed with an increase in the concentrations of the extracts. The magnitude of inhibition in weed species was higher (5-60%) than those of agronomic crop species (3-40%). The growth of all the weed species tested was strongly inhibited (17-56%), while the agronomic crop species showed both inhibited (5-21%) and stimulated (5-27%) growth due to the effect of crude-water soluble exudates of tamarind seed. Among the agronomic crop species tested, lettuce (22-27%) followed by radish (20-25%) and sesame (5-8%) showed stimulatory growth with the crude-water soluble exudates of seed. In the pot culture experiments using four agronomic crops (lettuce, radish, tomato and cucumber) and two weed species (barnyard grass and white clover), spraying of crude-water soluble extracts of tamarind seed-coat at three different concentrations (1, 5 and 10%) (w/v) showed that the growth of lettuce (35-62%) and radish (32-56%) was stimulated, while all other species tested showed growth inhibition (29-61%). When the spraying of crude extracts of seed-coat was turned off, the growth of both lettuce and radish continued to be stimulated (4-7%) and all other previously inhibited species recovered well, the recovery percentage ranging between 78 and 82%. However, when spraying of crude extracts of seed-coat was continued, growth increased (10-14%) in lettuce and radish, and reduced (37-76%) in four other species tested. The inhibitory or stimulatory effects of the crude extracts on agronomic crop and weed species were higher in the radicle than the hypocotyl and reached a peak with 10% (w/v) concentrations. These results clearly demonstrated the differential allelopathic effects (inhibitory and excitatory) of bark and seed of tamarind tree in the species tested. Thus, it is evident that these two organs contain certain biologically active true growth regulator(s) and are either additively or synergistically involved in the plant-specific expression, particularly by the seed-coat.

Author T. Komutarin, S. Azadi, L. Butterworth, D. Keil, B. Chitsomboon, M. Suttajit and

Title Extract of the seed coat of Tamarindus indica inhibits nitric oxide production by

Year 2004

Source title Food and Chemical Toxicology

Reference 42(4): 649-658

Abstract

The seed coat extract of Tamarindus indica, a polyphenolic flavonoid, has been shown to have antioxidant properties. The present studies investigated the inhibitory effect of the seed coat extract of T. indica on nitric oxide production in vitro using a murine macrophage-like cell line, RAW 264.7, and in vitro and in vivo using freshly isolated B6C3F1 mouse peritoneal macrophages. In vitro exposure of RAW 264.7 cells or peritoneal macrophages to 0.2-200 micro g/mL of T. indica extract significantly attenuated (as much as 68%) nitric oxide production induced by lipopolysaccharide (LPS) and interferon gamma (IFN- gamma) in a concentration-dependent manner. In vivo administration of T. indica extract (100-500 mg/kg) to B6C3F1 mice dose-dependently suppressed TPA, LPS and/or IFN- gamma induced production of nitric oxide in isolated mouse peritoneal macrophages in the absence of any effect on body weight. Exposure to T. indica extract had no effect on cell viability as assessed by the MTT assay. In B6C3F1 mice, preliminary safety studies demonstrated a decrease in body weight at only the highest dose tested (1000 mg/kg) without alterations in hematology, serum chemistry or selected organ weights or effects on NK cell activity. A significant decrease in body weight was observed in BALB/c mice exposed to concentrations of extract of 250 mg/kg or higher. Oral exposure of BALB/c mice to T. indica extract did not modulate the development of T cell-mediated sensitization to DNFB or HCA as measured by the local lymph node assay, or dermal irritation to nonanoic acid or DNFB. These studies suggest that in mice, T. indica extract at concentrations up to 500 mg/kg may modulate nitric oxide production in the absence of overt acute toxicity.

Author U. J. Mehta, S. M. Barreto and H. Sulekha

Title Effect of thidiazuron in germinating tamarind seedlings.

Year 2004

Source title In Vitro Cellular & Developmental Biology - Plant

Reference 40(3): 279-283

Abstract

Tamarind, a multipurpose tropical tree species, is economically important for sustainable development of wasteland due to its hardy nature and adaptability to various agroclimatic conditions. Reports on in vitro morphogenesis in this species are limited, due to its recalcitrant and callogenic nature. To overcome these limitations, an attempt was made to induce meristematic activity in seedling explants. Seedlings were germinated in medium with or without thidiazuron (4.54, 9.08, 13.12, 18.16 micro M). This growth regulator restricted the differentiation of the apical meristem to form shoots. It triggered proliferation of the meristematic tissue at the cotyledonary node and a large number of meristematic buds appeared in a radial pattern around the node. The meristematic activity extended to the junction of the epicotyl and hypocotyl, giving rise to buds in the form of protuberances in all sides of the junction. These buds differentiated to form shoot primordia and subsequently to shoots in medium devoid of growth regulators. Plants developed by micrografting of these shoots on seedling-derived rootstocks survived in soil.

Author Y. Fujii, T. Shibuya, K. Nakatani, T. Itani, S. Hiradate and M. M. Parvez

Title Assessment method for allelopathic effect from leaf litter leachates.

Year 2004

Source title Weed Biology and Management

Reference 4(1): 19-23

Abstract

In order to elucidate the allelopathic effect of leaf litter leachates under laboratory conditions, a modified 'sandwich method', which places leaves between two layers of agar, was used. Fifty mg of leaves was used per 10 cm2 cell. Agar concentrations at 0.5-1.0% were the best for gel support in determining radicle and hypocotyl elongation of lettuce. The optimum incubation time for bioassay was three days after imbibition onset. Among 20 typical tree species in Asia, Cymbopogon citratus and Derris scandens showed the strongest inhibitory activity determined by the sandwich method, followed by Piper betle, Tamarindus indica, and Gliricidia sepium. This bioassay seems to be a reliable method for screening allelopathic activity from leaf litter leachates.

Author Y. Soong and P. J. Barlow

Title Antioxidant activity and phenolic content of selected fruit seeds.

Year 2004

Source title Food Chemistry

Reference 88(3): 411-417

Abstract

The total antioxidant capacity and phenolic content of edible portions and seeds of avocado, jackfruit, longan, mango and tamarind were studied. In addition, the relationship between antioxidant activity, phenolic content and the different degrees of heating of mango seed kernel was investigated. The seeds showed a much higher antioxidant activity and phenolic content than the edible portions. The contribution of all the fruit seed fractions to the total antioxidant activity and phenolic content was always >70%. ABTS cation radical-scavenging and FRAP assays were employed for the determination of antioxidant activity; FCR assay was used to measure the total phenolic content. The AEAC and FRAP of ethanolic extracts of MSKP products increased to a maximum after heating to 160 degrees C. The total phenolic content in extracts of MSKP products increased from 50.3 to 160 mg/g GAE with an increase in heating temperature to 160 degrees C.

Author A. Delobel, M. Sembene, G. Fediere and D. Roguet

Title Identity of the groundnut and tamarind seed-beetles (Coleoptera: Bruchidae: Pach

Year 2003

Source title Annales de la Societe Entomologique de France

Reference 39(3): 197-206

Abstract

A study of seed beetles feeding on groundnuts (Arachis hypogaea), tamarind (Tamarindus indica) and other Caesalpinioideae from various areas of the Old World enabled the authors to characterize two different species of Caryedon that are usually confused. Caryedon serratus, usually known as the "groundnut seed beetle", feeds on seeds of tamarind and various wild Caesalpinioideae in the genera Piliostigma, Cassia and Bauhinia. It is present in West and Central Africa. Detailed morphological studies associated with the analysis of part of the cytochrome B gene show that another species, Caryedon gonagra [Caryedon serratus], infests tamarind and other Caesalpinioideae in Egypt, South Asia, Australia and New Caledonia; this species also feeds on seeds of a few Mimosoideae in the genera Acacia, Albizia and Dichrostachys. Caryedon gonagra and Caryedon serratus appear as sister species deriving from an ancestor that may have fed on both Mimosoideae and Caesalpinioideae. Contrary to what happens in C. serratus, it seems that C. gonagra does not infest groundnuts under natural conditions. Larval development in groundnuts under laboratory conditions is, however, possible, as in several other Caryedon species.

Author A. K. Ghosh

Title Herbal veterinary medicine from the tribal areas of Midnapur & Bankura Districts

Year 2003

Source title Journal of Economic and Taxonomic Botany

Reference 27(3): 573-575

Abstract

A total of 13 plant species, Alocasia indica, Albizia lebbeck, Curcuma longa, Tamarindus indica, Amaranthus spinosus, Caesalpinia crista, Piper nigrum, Anthocephalus cadamba [Anthocephalus chinensis], Spondias pinnata, Ipomoea aquatica, Achras zapota [Manilkara zapota], Papaver somniferum and Adina cordifolia, that are used by the tribals of the Midnapur and Bankura districts in West Bengal, India are presented. Details of the local name, parts used, and methods of preparation and application against various veterinary ailments of the plants are provided.

Author A. R. Karale, A. P. Wagh and T. A. More

Title Floral biology of sweet pulp type tamarind (Tamarindus indica L.).

Year 2003

Source title Scientific Horticulture

Reference 8(65-70

Abstract

The flowering seasons, habit, flower bud development, anthesis, anther dehiscence, pollen biology and receptivity of stigma of 20-year-old tamarind trees from Rahuri, Maharashtra, India are reported.

Author A. Ramos, A. Visozo, J. Piloto, A. Garcia, C. A. Rodriguez and R. Rivero

Title Screening of antimutagenicity via antioxidant activity in Cuban medicinal plants.

Year 2003

Source title Journal of Ethnopharmacology

Reference 87(2/3): 241-246

Abstract

The reducing activity on the 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical, .OH radical scavenging potential, in vitro inhibition of lipid peroxidation and modulation of mutagenicity induced by ter-butyl hydroperoxide (TBH) in Escherichia coli were sequentially screened in 45 species of plants used with medicinal purposes in Cuba, in a search for antioxidant agents which protect DNA against oxidative stress. Five species, e.g. Tamarindus indica L., Lippia alba L., Pimenta dioica (L.) Merr, Rheedia aristata Griseb. and Curcuma longa L. displayed IC50 <30 micro g/ml in the DPPH radical reduction assay and IC50 <32 micro g/ml in lipid peroxidation inhibition testing. Pimenta dioica and Curcuma longa L. showed also a 20% inhibition of the in vitro induced .OH attack to deoxyglucose. Further antimutagenesis assay in Escherichia coli IC 188 evidenced that only Pimenta dioica prevents DNA damage by TBH to the test bacteria. A role of antioxidant enzymes is presumed in this case, as judged by a different response in the isogenic Escherichia coli IC 203 deficient in catalase and alkyl hydroperoxide reductase and the discrete inhibition of oxidative mutagenesis also observed when pre-treatment of the extract was assayed. Eugenol, the main constituent of the essential oil of Pimenta dioica, also inhibited oxidative mutagenesis by TBH in Escherichia coli, at concentrations ranging from 150 to 400 micro g/plate.

Author A. S. Mertl-Millhollen, E. S. Moret, D. Felantsoa, H. Rasamimanana, K. C. Blum

Title Ring-tailed lemur home ranges correlate with food abundance and nutritional cont

Year 2003

Source title International Journal of Primatology

Reference 24(5): 969-985

Abstract

In order to determine whether ring-tailed lemurs (Lemur catta) adapt their ranging and select an optimal diet at a time of food shortage, we observed two adjacent troops in Berenty Reserve, Madagascar for over 250 h. The troops, created by a recent fission, ranged through closed canopy gallery forest next to a river and open forest away from the river. We conducted the study in September-October, 2000, normally a time of seasonally low resource availability, which was intensified by damage from a previous windstorm and recent drought. To examine the impact of environmental stress, we mapped their ranging patterns, intertroop encounters, feeding patches, siesta trees, and sleeping trees. We then correlated their ranging and feeding behaviour with nutritional analyses of leaves and fruit from tamarind trees located in different parts of their ranges. One of the troops, D1A, ranged farther into open forest than previously. However, the range for troop D1B and the closed canopy portion of D1A's range were located in traditional positions for historical troops D and E. Both troops ate significantly more mature leaves from the tamarind trees in the closed canopy forest, where the leaves had significantly higher nutritional content (water and protein) than that of open forest samples. They fed on tamarind fruit significantly more often in the open forest away from the river, where it was more abundant. The lemurs selected a diet that maximized leaf water and protein and ranged where fruit was most abundant but at high energetic costs for troop D1A.

Author B. Padmanaban and M. Daniel

Title Biology and bionomics of palm white grub, Leucopholis burmeisteri.

Year 2003

Source title Indian Journal of Entomology

Reference 65(4): 444-452

Abstract

Arecanut palm white grub, Leucopholis burmeisteri is the major pest of arecanut palms in Karnataka and Kerala, India causing significant yield loss. Grub feeding on roots results in yellowing of leaves and stem tapering. Studies on the biology and bionomics of this pest were conducted in Kerala in 1991-94 and in Karnataka in 1991-95. Stem tapering in relation to yield has been correlated. From initial infestation, the spread of root grub infestation takes 4-6 years. Therefore it is easy to manage the white grub infestation by means adult beetle collection during emergence. Several natural enemies have also been found infecting on the white grubs: Myrothecium sp,, Bacillus sp., Pseudomonocystis sp., Campsomeriella collaris [Campsomeris collaris], Ligyra oenomaus, Leptogenys sp., Pheidologeton diversus and entomophilic nematodes. In host preference studies, the pest preferred fig (Ficus glomerata [F. racemosa]) and cashew over all the other plants tested (rose, Rosa indica [Rosa chinensis]; guava, tamarind, mango, neem, cocoa, plantain and moringa, Moringa oleifera).

Author D. I. Gohil and S. P. Singh

Title Studies on some multipurpose tree species as a source of rural energy

Year 2003

Source title Human impact on desert environment

Reference P. Narain, S. Kathju, A. Kar, M. P. Singh and K. Praveen. Jodhpur, India, Arid Zo

Abstract

A study was conducted during January 1994 to December 1995 in Gujarat, India using 8 species, viz., casuarina (Casuarina equisetifolia), neem (Azadirachta indica), siris (Albizia lebbeck), tamarind (Tamarindus indica), Manila tamarind (Pithecellobium dulce), cordia (Cordia myxa), Persian lilac (Melia azedarach) and amaltas (Cassia fistula). Maximum dry stem biomass was recorded in siris (26.10 tonnes/ha) while the lowest biomass was recorded in tamarind (5.43 tonnes/ha). Maximum mean dry weight of branch was observed in neem while the minimum dry branch biomass was observed in tamarind. Persian lilac was noted with the highest dry weight of twigs while amaltas was the one with the lowest dry weight of twigs. Manila tamarind recorded the lowest stem bark weight. The highest dry extractable root biomass was produced by siris while cordia produced the lowest dry extractable root biomass. The maximum total mean dry biomass was recorded in siris (73.71 tonnes/ha). On the other hand, the poorest performance was observed in tamarind with respect to total dry biomass production. Results also showed that charcoal production was higher in Persian lilac, siris, and neem. Charcoal production was average in casuarina while amaltas, Manila tamarind and cordia produced a low amount of charcoal. Tamarind had the lowest charcoal per tree. Economic analysis showed that Persian lilac produced a maximum net income of Rs. 135 584.40/ha while tamarind produced the lowest net income (Rs. 24 206.40/ha).

Author G. Prabakaran, N. Chezhiyan and G. J. Rani

Title Influence of season and genotype on in vitro culture of tamarind (Tamarindus indi

Year 2003

Source title South Indian Horticulture

Reference 51(1/6): 76-82

Abstract

An experiment was conducted to study the effects of explant collection date (season) on in vitro multiple shoot induction in tamarind (cv. PKM 1). In a related experiment, the performance of in vitro-cultured tamarind genotypes (PKM 1, Urigam, Pollachi-2, Asanoor-H-1 and Salem-144) was also studied. The axillary bud explants of PKM 1, collected at 15-day intervals during all the 12 months of the year, were cultured on MS medium supplemented with 60 g sucrose + 3.0 mg benzyladenine + 0.5 mg GA3/litre. The axillary bud explants of Asanoor-H-1, Pollachi-11, Salem-144, Urigam and PKM 1 were cultured on shoot multiplication medium (MS medium supplemented with 60 g sucrose + 3.0 g benzyladenine + 0.5 mg GA3/litre). The in vitro-cultured explants collected in June showed the lowest contamination percentage (7.32%) and the highest survival percentage (92.68%), bud break percentage (84.14), mean number of multiple shoots per bud (1.34) and mean length of multiple shoots (3.47 cm). The earliest days taken for bud break (31.14) was also observed in June-collected explants. Among the genotypes, Urigam gave the highest survival percentage (90.50%), bud break percentage (93.63), mean length of multiple shoots (1.40 cm) and mean number of shoots per bud (3.34). Urigam also gave the earliest days taken for bud break (2 9 . 9 4) .

Author J. Bayala, Z. Boureima, R. v. d. Hoek, H. Lamsellek, G. S. Nouatin, M. Randriana

Title Trees in agricultural areas of the Vineta plateau (Madagascar)

Year 2003

Source title Cahiers Agricultures

Reference 12(1): 15-21

Abstract

Trees can play an important role in the maintenance or in the improvement of farming conditions, as revealed by the traditional 'parklands' of West Africa, where species such as Vitellaria paradoxa (shea-butter tree) or Parkia biglobosa (Locust bean) are closely associated with crops, fruit, wood or fodder production, and protect soils. In Madagascar, few trees have been spared when land was cleared for agriculture, and the country faces enormous problems of soil degradation and erosion. This study addresses two important questions: (i) why are trees so poorly integrated with farming activities in the marginal zones of Madagascar?; and (ii) what could be the roles of trees in the farming systems of such areas? A farming system diagnosis, and a series of interdisciplinary inquiries on the originally forested Vineta plateau, confirmed that trees are poorly integrated with farming activities, leading to a strong degradation of natural resources. All farmers (as well as 85% of the population of the town of Tolliara) use only wood (or charcoal) as a source of energy, and 75% of them remove or burn all woody vegetation when clearing the land for cropping. Shortening fallow periods has led to a savanna-type vegetation, with patches of bare soil and scattered trees such as Tamarindus indica or Poupartia caffra. The main factors which explain the present agricultural situation are the fragility of the soils, human migrations, the preference given to highly speculative cash crops, and farming strategies which favour short-term income. Besides, no local tree species with good added value potential (such as local fruit trees) could support the development of a system like that developed in the parklands of West Africa. Farmers who protect trees when clearing their land, claim to do so for the following reasons: shade (33%), fruit (21%), wood (11%), holy trees, 'rain', big trees, law enforcement (25% altogether), and medicines, fodder or alcohol production (10% altogether). Protected species are, in order of importance: Tamarindus indica, Poupartia caffra, Ziziphus mauritiana, Cedrelopsis grevei, Adansonia za, and Ficus cocculifolia; none of these species has been tried in plantations in the study area. Less than 10 exotic tree species are planted on the plateau, in order of decreasing importance: Mangifera indica, Eucalyptus camaldulensis, Azadirachta indica, Citrus spp., and Psidium guajava. Less than 20% of farmers reported to have ever planted trees, this being mainly due to the lack of water. Native farmers tend to plant more trees than immigrants, for fruit and then wood. The only woody species planted for agricultural use (hedge and fodder) is the Opuntia vulgaris cactus. When asked about possible reasons to plant trees, farmers quoted wood as a first priority for local species and fruit for exotic species. Starting from the few species which are either protected or planted, as well as from the other species mentioned by farmers as being useful, we have established a list of 13 priority trees, which can form the basis of a 'trees-on-farm' research and development programme for the area. For such a program to be successful, it is crucial that the plantation technology of local species with good added value potential be considered.

Author J. Gebauer and G. Ebert

Title The tamarind (Tamarindus indica L.): botany, cultivation and use of an interesting

Year 2003

Source title Erwerbsobstbau

Reference 45(6): 181-185

Abstract

The tamarind (Tamarindus indica) grows widely in tropical and subtropical regions of the world. The tamarind tree can produce an annual fruit yield ranging from 150 to 500 kg/tree. The species is easy to cultivate and free of any serious pests and diseases. The tamarind fruits are mainly produced in India and Thailand where it is grown on a commercial scale and exported both in fresh and processed form. In Africa, fruits are usually collected from wild trees. Fresh or processed fruits are offered on the local rural markets. The sticky pulp can be eaten fresh but is mainly processed into sweets, jam, syrup and juice. The pulp is also used in traditional medicine.

Author J. T. C. Codjia, A. E. Assogbadjo and M. R. M. Ekue

Title Diversity and local valorisation of vegetal edible products in Benin

Year 2003

Source title Cahiers Agricultures

Reference 12(5): 321-331

Abstract

The vegetation types currently found in Benin (Africa) constitute a potential stock of edible products. Very few studies have been undertaken on this kind of resources commonly considered as minor products. Some studies have been conducted but they are quite localized and do not assess species with economic potential integrated into traditional agroforestry systems. The present study undertaken throughout Benin aims at providing such information. The methodology consisted in periodical surveys within different localities sampled using the vegetation map of Benin. In each of the locality selected socio-economical interviews were carried out with local populations and explorations were undertaken within vegetation types of the area in order to identify the plant species used by populations. The local uses of plant resources were also recorded. A total number of 162 plant species are used as food by local populations in Benin. These species belong to many families and orders of Angiosperms. The parts commonly consumed are the fruits (60%); followed by wild vegetables (20%), seeds (9%), roots and tubers (6%), sap (3%), and flowers (2%). Fifty nine percent (59%) of the species are found in the forest whilst 41% are identified in open vegetation types such as farms, fallows, and savannah. Some of these resources are processed and/or sold on different markets, playing then a cultural and socio-economic role for the population. The important species in the Northern part of the country (between 8 degrees and 12 degrees N) are Adansonia digitata, Vitex doniana, Bombax costatum, Blighia sapida, Borassus aethiopum, Vitellaria paradoxa, Parkia africana and Tamarindus indica. In the Southern part (between 6 degrees 30 N and 8 degrees N), the most important species are Vitex doniana, Dialium guineense, Chrysophyllum albidum, Uvaria chamae, Annona senegalensis, Irvingia gabonensis and Cyperus esculentus. These species are frequently sold on the market and provide outstanding incomes for local populations. The potential agroforestry species are Adansonia digitata, Vitex doniana, Bombax costatum, Blighia sapida, Borassus aethiopum, Vitellaria paradoxa, Parkia africana, Tamarindus indica and Diospyros mespiliformis.

Author K. R. Sasidharan, B. Nagarajan, V. Mohan, A. Nicodemus, N. P. Mahadevan, A.

Title Insect pollination versus enhanced fruit production in Tamarindus indica and Tect

Year 2003

Source title Journal of Palynology

Reference 35/36(93-97

Abstract

Experiments were conducted to investigate the floral biology, flower visitors and fruiting aspects of Tamarindus indica and Tectona grandis from Coimbatore, Tamil Nadu, India. The functional aspects of flowers in relation to the foraging activity and probing behaviour of flower-visitors were observed. Tamarind trees blooms during mid-May to mid-July while teak flowers during June to September. In both species, the natural fruit set is very low. The fruit set rate recorded in Tamarindus indica is 3-5%, whereas in Tectona grandis, it is 0.4-5.1%. The fruit set obtained in controlled experiments is 70-90% in Tamarindus indica and 10-70% in Tectona grandis. The tamarind flowers were foraged by different insects belonging to Hymenoptera, Lepidoptera, Hemiptera, Diptera and Thysanoptera, while teak flowers were foraged during day time by insects belonging to orders Diptera, Hymenoptera, Lepidoptera, Coleoptera and Hemiptera. Bees are the major pollinators of both tree species. Flies are equally important for Tectona grandis. With wild bees and domesticated honeybees, the maximization of pollen transfer and enhanced fruit and seed set is possible.

Author K. Rajendran, R. Balakrishnan and S. Chandrasekaran

Title Common medicinal plants and their utilization by villagers in east coast districts o

Year 2003

Source title Journal of Economic and Taxonomic Botany

Reference 27(3): 727-731

Abstract

This paper presents a list of 50 species belonging to 40 genera and 26 families of important medicinal plants collected from remote villages in Avudairkovil taluk in east coast districts of Pudukkottai and Ramanathapuram, Tamil Nadu, India. The botanical and family name of each species followed by local name, and their uses are given. Among all the species, Azadirachta indica, Phyllanthus niruri, Cardiospermum halicacabum, Gloriosa superba, Jatropha curcas, Vitex negundo, Tamarindus indica, Tridax procumbens, Moringa oleifera, Erythrina indica [E. variegata] and Sesbania grandifolia are some of the most useful medicinal plants for the villagers.

Author K. Vanangamudi and M. Vanangamudi

Title Response of tamarind (Tamarindus indica) to presowing seed treatment with grow

Year 2003

Source title Journal of Tropical Forest Science

Reference 15(1): 6-11

Abstract

An investigation was carried out to study the effect of presowing seed treatment with seven growth stimulants on the germination and seedling growth of tamarind (Tamarindus indica). The growth stimulants evaluated were 100 ppm IBA, 100 ppm IAA, 2% ZnSO4, 1% succinic acid, 1% KCl, 3% KH2PO4 and cow's urine 50/50 v/v. The unsoaked seeds served as the control. Three growth stimulants (IAA, succinic acid and KH2PO4) proved superior to the others in enhancing the germination and seedling vigour. Soaking in 100 ppm IBA improved the shoot and root lengths and dry weight better than the other treatments. Leaf area was highest in the treatment with cow's urine. The chlorophyll and soluble protein contents were more for seeds soaked in 3% KCl.

Author L. Raimondi, M. Lodovici, F. Guglielmi, G. Banchelli, M. Ciuffi, E. Boldrini and

Title The polysaccharide from Tamarindus indica (TS-polysaccharide) protects culture

Year 2003

Source title Journal of Pharmacy and Pharmacology

Reference 55(3): 333-338

Abstract

The aim of this work was to investigate the possible protective effect of a new viscosising agent, TS-polysaccharide, on corneal-derived cells (SIRC) exposed to ultraviolet-B rays. To verify this, SIRC cells were first exposed, in the absence or in the presence of TS-polysaccharide (1% w/v), for 9 s at the UV-B source and then post-incubated for 45 min at 37 degrees C. After this period the hydrogen peroxide (H2O2) accumulated in the medium and the concentration of 8-hydroxy-2'-deoxy-guanosine (8-OHdG) in cell DNA was measured. In addition, the amount of 3H-methyl-thymidine incorporated in cellular DNA was evaluated after 18 h from irradiation. Our results show that cells exposed to UV-B rays accumulate H2O2, and have higher levels of 8OHdG and a lower amount of 3H-methyl-thymidine incorporated in DNA than control cells. In the presence of TS-polysaccharide, the H2O2 and 8-OHdG accumulation, and the 3H-methyl-thymidine incorporation were significantly reduced with respect to the values measured in cells exposed in the absence of the polysaccharide. We propose a protective role of the polysaccharide in reducing UV-B derived DNA damage to eye cells. This finding could be of some clinical importance when the polysaccharide is used as a delivery system for ophthalmic preparations.

Author M. Garba, I. A. Yakasai, M. T. Bakare and H. Y. Munir

Title Effect of Tamarindus indica L on the bioavailability of ibuprofen in healthy huma

Year 2003

Source title European Journal of Drug Metabolism and Pharmacokinetics

Reference 28(3): 179-184

Abstract

The influence of Tamarindus indica L fruit extract incorporated in a traditional meal on the bioavailability of Ibuprofen tablets 400 mg dose when given concurrently was studied in 6 healthy human volunteers. There was a statistically significant increase in the plasma levels of Ibuprofen and its metabolites hydroxy-ibuprofen and carboxy-ibuprofen respectively, when the meal containing Tamarindus indica fruit extract was administered with the ibuprofen tablets than when taken under fasting state or with the meal without the fruit extract. The Cmax, AUC0-6 hr and Ka for ibuprofen increased from 38+or-0.70 micro g/ml to 42+or-0.98 micro g/ml ($p>0.05$); and 28.03+or-2.40 micro g/ml.hr to 56.51+or-0.16 micro g/ml.hr ($p<0.05$) and 1.048+or-0.02 hr-1 to 2.781+or-0.11 hr-1 ($p<0.05$) respectively. There was no change in the tmax (120.00+or-0.43 m) but there was a decrease in the kel from 0.63+or-0.20 hr-1 to 0.46+or-0.11 hr-1 ($p<0.05$). Similarly the Cmax, AUC0-6 h and Ka for hydroxy-ibuprofen rose from 43+or-0.76 micro g/ml to 45+or-0.16 micro g/ml ($p<0.05$); 39.04+or-2.30 micro g/ml.hr to 59.49+or-2.39 micro g/ml.hr in ($p<0.05$) and 1.498+or-0.79 hr-1 to 3.442+or-0.23 hr-1 ($p<0.05$) respectively; while the Cmax, AUC0-6 h and Ka for carboxy-ibuprofen rose from 48+or-0.7 micro g/ml to 51+or-0.16 micro g/ml ($p<0.05$); 41.972+or-0.68 micro g/ml.hr to 63.948+or-0.12 micro g/ml.hr ($p<0.05$) and 1.649+or-0.08 hr-1 to 4.187+or-0.42 hr-1 ($p<0.05$) respectively. The study has indicated that Tamarindus indica L. fruit extract significantly increased the bioavailability of Ibuprofen.

Author M. Kristensen and A. M. Lykke

Title Informant-based valuation of use and conservation preferences of savanna trees in

Year 2003

Source title Economic Botany

Reference 57(2): 203-217

Abstract

The use and conservation preferences for woody savanna species among the Gourounsi people in south-central Burkina Faso were investigated using a new informant-based valuation system. Two hundred informants from 10 villages evaluated the importance of 20 pre-selected woody species for nine different uses: edible fruits, vegetable sauce, construction, firewood, medicine, commerce, field trees, and conservation. The study identified eight key species: Parkia biglobosa, Vitellaria paradoxa, Tamarindus indica, Adansonia digitata, Vitex doniana, Detarium microcarpum, Bombax costatum, and Strychnos spinosa. They all had high commercial and nutritional value. The local knowledge about the selected woody species was similar between men and women, and between young and old, but it differed between villages. The results indicate that knowledge erosion does not take place among the Gourounsi, but considerable local differences exist. Conservation management should focus on the key species, and for these, assisted regeneration, tree planting, and further ecological research is recommended.

Author M. Marry, D. M. Cavalier, J. K. Schnurr, J. Netland, Z. Y. Yang, V. Pezeshk, W.

Title Structural characterization of chemically and enzymatically derived standard oligo

Year 2003

Source title Carbohydrate Polymers

Reference 51(3): 347-356

Abstract

Several oligosaccharide fragments, ranging from 2 to 9 contiguous residues, have been isolated from purified tamarind xyloglucan using enzymatic digestion and partial acid hydrolysis. Structures were determined using matrix assisted laser adsorption ionization-time of flight (MALDI-TOF) mass spectrometry, gas chromatography (GC), gas chromatography-mass spectrometry (GC-MS), and Dionex high pH anion exchange-high performance liquid chromatography (HPAE-HPLC). These fragments will be used to identify reaction products from xyloglucan xylosyltransferase and glucosyltransferase enzyme assays and as possible acceptor molecules for these enzymes.

Author M. P. Ramanujam and K. P. K. Cyril

Title Woody species diversity of four sacred groves in the Pondicherry region of South

Year 2003

Source title Biodiversity and Conservation

Reference 12(2): 289-299

Abstract

Plant wealth and diversity of four sacred groves - two anthropogenic stands and two natural forest patches - along the southeast coast of India adjoining Pondicherry was studied. A total of 111 species, belonging to 103 genera in 53 families, were recorded from the four sites, which together measure 15.6 ha. The number of woody species (girth at breast height (gbh)<less or =>20 cm) was 20 each in Keezbuvanagiri (KBG) and Kilialamman (KLM) grove, followed by 13 in Periyakattupalayam (PKP) and 15 in Periyamudaliar chavadi (PMC). Based on the important value index (IVI), PMC grove is an association of Aglaia elaeagnoidea, Borassus flabellifer and Pterospermum suberifolium. A two-layered forest structure resembling tropical dry evergreen forest (TDEF) was found there. Stratification was obscured in the KBG grove, as the scrub species were abundant, indicating a scrub woodland formation. PKP and KLM were characterised by the abundance of a few species. The presence of a stout liana of Secamone emetica (gbh 35 cm), the robustness of Crateva magna (gbh 220 cm), Syzigium cumini (gbh 207.45 cm), P. suberifolium (gbh 128.7 cm) and Tamarindus indica (gbh 250 cm), and survival of evergreen species like A. elaeagnoidea and Pamburus missionis is botanically significant; Polyalthia suberosa is a rare taxon found only within the groves. The persistence of the groves until the present time is a testimony to the sacred grove status enjoyed by them.

Author O. P. Awasthi and N. Shukla

Title Effect of time on success of soft wood grafting in tamarind (Tamarindus indica L.

Year 2003

Source title Range Management and Agroforestry

Reference 24(1): 31-34

Abstract

Scion shoot from the elite type were grafted on 9-month-old rootstock seedling of a local type of tamarind (Tamarindus indica) at monthly intervals during two consecutive years of 1999 and 2000 in Madhya Pradesh, India, to investigate the optimum time of grafting in tamarind under sub-humid conditions of Bastar. Results revealed that the time of grafting significantly influenced percent sprouting, days to sprout, percent graft success, and linear and radial growth. Softwood grafting in April resulted in highest graft success (82.5%), maximum linear growth (56.3 cm), and maximum saleable plants (74.1%) followed by March.

Author P. M. Kotecha and S. S. Kadam

Title Preparation of ready-to-serve beverage, syrup and concentrate from tamarind.

Year 2003

Source title Journal of Food Science and Technology (Mysore)

Reference 40(1): 76-79

Abstract

Fully matured tamarind fruits were obtained from the local market in Rahuri, Maharashtra, India. The juice and pulp extracted from the fruits were used to produce ready-to-serve (RTS) beverage, syrup and tamarind juice concentrate. The products were stored at ambient (33.8+or-7.4 degrees C, RH 74.2+or-23.8%) and low (7+or-2 degrees C, RH 90-95%) temperatures for 180 days. The changes in chemical composition and overall acceptability scores of the products during storage were analysed. Results showed that TSS, titratable acidity and total sugar content of RTS beverages stored at both temperatures increased, whereas ascorbic acid content decreased. A gradual increase in TSS, titratable acidity and total sugars, as well as a slight decrease in ascorbic acid content were observed for syrups stored at both temperatures. The rate of increase or decrease, however, was higher in syrup stored at ambient conditions. A gradual increase in TSS was observed in the juice concentrates stored at both temperatures. Titratable acidity and total sugar content also increased, while ascorbic acid content decreased. The overall acceptability scores for the 3 types of products decreased during storage. The RTS beverage and juice concentrate stored at ambient conditions obtained lower scores compared to those stored at low temperature. Syrups stored at both ambient and low temperatures remained acceptable for 180 days.

Author P. M. Kotecha and S. S. Kadam

Title Studies on browning in tamarind pulp during storage.

Year 2003

Source title Journal of Food Science and Technology (Mysore)

Reference 40(4): 398-399

Abstract

During the storage of tamarind pulp, the polyphenol oxidase [catechol oxidase] and catalase activities increased up to 120 days and decreased slightly thereafter at 180 days of storage while, peroxidase activity and non-enzymatic browning increased progressively throughout the storage period of 180 days.

Author Picout, D. R., S. B. Ross-Murphy, N. Errington and S. E. Harding

Title Pressure cell assisted solubilization of xyloglucans: Tamarind seed polysaccharide

Year 2003

Source title Biomacromolecules

Reference 4(3): 799-807

Abstract

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Author R. K. Srivastava

Title Mortality rate and regeneration status in different age groups of Santalum album u

Year 2003

Source title Indian Forester

Reference 129(8): 999-1008

Abstract

A study was conducted during 1999-2000 in Topper Plateau in Eastern Ghats, India, to investigate the mortality rate and regeneration status in different age groups (1-3 months, 3-6 months, 6 months-1 year, 1-2 years, 2-3 years, 3-4 years, and 4-5 years) of Santalum album under different host trees: Albizia amara, Tamarindus indica and Azadirachta indica. The maximum mortality of 86.68% was recorded in 1-3 months age group, while minimum of 7.70% in 3-4 years. The mortality rate gradually decreased with the increase in age of plants and zero percent mortality was observed in 4-5 years of seedlings. Total nitrogen, available phosphorus and potassium in the soil of the study area ranged between 0.101 to 0.291%, 0.55 to 0.60% and 0.07 to 0.145%, respectively.

Author S. Muhammad and N. A. Amusa

Title Effects of sulphuric acid and hot water treatments on seed germination of tamarin

Year 2003

Source title African Journal of Biotechnology

Reference 2(9): 276-279

Abstract

A study was carried out to investigate the effects of sulphuric acid and hot water treatments on the germination of Tamarind (Tamarindus indica L). Seeds were placed on moistened filter papers in 28 cm diameter Petri dishes under laboratory condition for germination. 330 seeds of T. indica (10 seeds per Petri dish) with three replicates each were used. The highest germination was recorded in seeds treated with 50 per cent sulphuric acid concentration with 60 min soaking period. Germination was observed to be enhanced by increase in the sulphuric acid concentration, water temperature, and soaking period in all the trials, except with absolute sulphuric acid where poor response was observed. Results of this study may serve as useful information in the production and improvement of the tree species, as knowledge on seed germination requirements is a critical factor in seedlings production.

Author S. R. Ganihar

Title Nutrient mineralization and leaf litter preference by the earthworm Pontoscolex c

Year 2003

Source title Restoration Ecology

Reference 11(4): 475-482

Abstract

The effects of the earthworm Pontoscolex corethrurus (Muller) on the rate of mineralization of cattle dung-amended iron (Fe2+) ore mine wastes and its preference for partially decomposed leaf litter with contrasting chemical composition were studied in pot trials. The growth and survival rates of earthworms showed significant positive correlations with percent of organic matter. During 96 days of exposure, the earthworms significantly increased exchangeable Ca2+, Mg2+, PO43- and NH4-N. Iron ore mine wastes amended with 5-10% organic matter supported earthworm fauna better than mine wastes amended with 0-3% organic matter. The leaf litter preference shown by the earthworm was, in descending order, Phyllanthus reticulatus, Tamarindus indica, Anacardium occidentale, Casuarina equisetifolia, Acacia auriculiformis, and Eucalyptus camaldulensis. A significant positive correlation was observed between the survival and growth rates of earthworms and the nutrient contents of partially decomposed leaf litter. The first three plant species were significantly richer in nutrients, mainly organic carbon, calcium, phosphorus, and nitrogen, than the other two plant species. Acacia auriculiformis and E. camaldulensis litter were preferred less because of their high lignin and polyphenolic compounds, despite being rich in other macronutrients like nitrogen and phosphorus. It is concluded that the introduction of P. corethrurus to cattle dung-amended (5-10%) iron ore mine wastes or revegetation of the sites with P. reticulatus, T. indica, and A. occidentale plant species should be attempted before earthworm introduction. The litter from these species acts as a source of food for earthworms, thereby hastening the process of restoration of abandoned iron ore mines of Goa, India.

Author S. S. Parvez, M. M. Parvez, E. Nishihara, H. Gemma and Y. Fujii

Title Tamarindus indica L. leaf is a source of allelopathic substance.

Year 2003

Source title Plant Growth Regulation

Reference 40(2): 107-115

Abstract

The allelopathic potential of the Tamarindus indica L. leaf was investigated through bioassay guided studies using several weed and edible crop species. Both radicle and hypocotyl growth of all the plant species tested was strongly inhibited by the tamarind leaf using a sandwich method. The growth of weed species was reduced more than that of edible crop species. Among the weed species, barnyard grass followed by white clover, and in the edible crop species, lettuce followed by radish ranked top in terms of growth inhibition. Different concentrations of tamarind leaf crude water-soluble extract exhibited a strong inhibition in all the plant species tested and, by contrast, the magnitude of inhibition in the weed species was higher than in edible crop species and ranged from 30-75%. The 10% concentration of the tamarind leaf crude water-soluble extract was most potent against growth of seedlings. The concentrations of the nutrient components were linearly correlated with an increase in the concentration of tamarind leaf crude water-soluble extract. No significant changes in either pH or EC were found in the variations of different concentrations of tamarind leaf crude water-soluble extracts. As compared to control, growth of both radicle and hypocotyl in weed (barnyard grass and white clover) and in edible crop (lettuce and radish) species were significantly reduced when blended tamarind leaves at different concentrations were incorporated into the growth medium. The inhibitory magnitude increased with an increase in the concentration of the tamarind leaf. In terms of growth inhibition, among these tested plants, weed species particularly barnyard grass were most sensitive to the allelochemicals exuded from blended tamarind leaves. When the blended tamarind leaves were removed from the growth medium, all the seedlings grew quickly and the percentage of recovery was between 76-97% of the corresponding controls. Reduction in the fresh and dry weight of these 4 plant species was observed under the experimental conditions, and ranged between 33-42% and 40-53% in the radicle and hypocotyl, respectively. The fresh and dry weight, and total chlorophyll content declined significantly in the incorporated tamarind leaf treatments. Compared to the control, the highest drop in the chlorophyll content of 60% in barnyard grass was observed with the 10% concentration of the leaf treatment. These results clearly indicate that the tamarind leaf contains one or more strong biologically active allelochemical(s) that function as true growth regulator(s) and is involved in plant growth regulation, particularly in weed species.

Author S. S. Parvez, M. M. Parvez, Y. Fujii and H. Gemma

Title Allelopathic competence of Tamarindus indica L. root involved in plant growth re

Year 2003

Source title Plant Growth Regulation

Reference 41(2): 139-148

Abstract

The allelopathic competence of tamarind root was evaluated using several weed and edible crop species under both laboratory and greenhouse conditions. Bio-assay guided studies using agar and soil medium revealed that the growth of both radicle and hypocotyl were strongly inhibited under both conditions. Accelerated root exudation observed with an increase in the age of tamarind seedlings caused a high magnitude of growth inhibition of the plant species tested by the plant-box method. Tamarind seedlings at 21-DAG (days after germination) exerted the strongest inhibitory effect (85.0-95.1%) on the growth of the plant species tested. Root dry weight of tamarind seedlings in the plant-box method experiment was highly correlated (R2 values more than 0.92) with the percentage of growth inhibition. The growth of species grown in the soil under the tamarind tree was inhibited by 85.3-97.1% in the greenhouse. The percentage of growth inhibition declined by 18.4-22.0% (as compared to the natural soil condition) when autoclaved soil of the same trees was used for bio-assay of plant species by the soil-agar sandwich method. This indicates that ca. a 20% increase in response was associated with the allelopathic activity of tamarind root exuded into the natural soil and was due to the effects of soil microbes and soil texture. In terms of growth inhibition of the plant species tested, the root zone soil of the tamarind tree showed stronger inhibitory effects (80.1-94.2%) than the rhizosphere soil, as determined by the soil-agar sandwich method. In all cases, growth inhibition especially in the radicle was higher in the weed species than the edible crop species. Our observations clearly indicate that tamarind root exudate has allelochemical competence and this contributes to a weed free environment around the tamarind tree.

Author S. S. Parvez, M. M. Parvez, Y. Fujii and H. Gemma

Title Analysis of chemical components and oxygen radical absorbance capacity of Tam

Year 2003

Source title Japanese Journal of Tropical Agriculture

Reference 47(4): 243-249

Abstract

A comparative study was carried out to evaluate the characteristics of ripened tamarind fruits collected from 5 different countries (Bangladesh, India, Pakistan, Philippines and Thailand) in South-East Asia. Physiological development of tamarind fruit, proximate chemical composition, total sugar content, mineral components, antioxidant activity and phenolics of ripened fruit pulp were analysed. Moisture content of the ripened fruits was ca 20%. Proximate composition, energy value, sugar content and mineral components were expressed as 100 g DW-1 (dry weight) of the tamarind fruit pulp. The amounts of crude protein, crude lipids, crude fibers, ash and total crude carbohydrates were 8.5 to 9.1, 2.7 to 3.1, 2.8 to 3.4, 2.9 to 3.3 and 82.1 to 82.6 g, respectively. The energy values ranged from 1539 to 1581 KJ and the total sugar content varied between 46.5 and 58.7 g. Among the analysed mineral components, the amounts of Mg (25.6 to 30.2 mg) and Na (23.8 to 28.9 mg) were found to be highest, while the lowest amounts were recorded for Cu (0.8 to 1.2 mg) and Zn (0.8 to 0.9 mg). The values for the antioxidant activity expressed by the oxygen radical absorbance capacity (ORAC) and the total phenolic content (TPC) in the tamarind fruit pulp tested ranged from 59.1 to 66.3 micro mol of Trolox equivalent (TE) g DW-1 and 626.6 to 664.0 mg of gallic acid equivalent (GAE) 100 g DW-1, respectively. Strong positive correlations (>0.99 at the 1% level of probability) between ORAC and TPC were observed, suggesting that the increased antioxidant activity (hereafter referred as "antioxidant capacity") due to high phenolics in tamarind fruit could provide protection against certain human degenerative conditions associated with oxygen free radical damage. Our study is the first attempt to measure ORAC and TPC, and to examine their relationship in ripened tamarind fruits collected from 5 different countries in South-East Asia. Finally, it appeared that tamarind fruit contains a biologically important source of mineral elements, shows a high antioxidant capacity and high levels of phenolics. Tamarind fruit or food-products from tamarind fruit pulp may act as functional foods, the consumption of which is associated with specific beneficial effects on human health.

Author S. Thiyageshwari, S. U. Kanna and M. G. Dasthagir

Title Effect of integrated nutrient management on growth and nutrient content of Tamar

Year 2003

Source title Journal of Ecobiology

Reference 15(3): 175-180

Abstract

A nursery experiment was conducted in a non-calcareous red soil (Typic Ustropept) for six months to assess the effect of fertilizers on the biometrics and foliar concentrations of nutrients (total nitrogen, total phosphorus and total potassium) of Tamarindus indica seedlings. The root length, shoot length and dry weight of the seedlings were recorded at 2-month intervals. Nitrogen, phosphorus and potassium were applied as urea, Single superphosphate (SSP) and muriate of potash (MOP), respectively. Among the treatments, 0.6 g urea, 2 g single superphosphate and 0.6 g of muriate of potash with 5 g of compost and 0.5 g of phosphobacteria recorded a significant increase in shoot length (48.47 cm), root length (39.23 cm) and dry weight (11.24 g). The plant samples also recorded maximum content of N (1.21%), P (0.54%) and K (1.70%) for the same treatment which was significantly higher over the control. The results revealed the need for fertilization during the nursery stage to produce healthy stock for better afforestation programme.

Author T. Neetu and A. Bohra

Title In vitro study of antifungal activity of Tamarindus indica against Aspergillus flavu

Year 2003

Source title Advances in arid legumes research

Reference A. Henry, D. Kumar and N. B. Singh. Jodhpur, India, Scientific Publishers (India)

Abstract

The crude ethanolic and aqueous extracts (at 7, 8 and 9 ml/plate) of leaves, stems, fruit pulp, seeds and bark of T. indica were found toxic against A. flavus and F. oxysporum in vitro. F. oxysporum was completely inhibited by the ethanolic extracts of pulp and leaves at 8 ml/plate, whereas A. flavus by the ethanolic extract of leaves at 9 ml/plate. The stem and bark extracts were less effective. Chemical analysis revealed the presence of alkaloids and triterpenoids in each plant parts, and the absence of flavonoids in pulp and bark and phenols in bark.

Author V. Sathishkumar and A. N. Mokashi

Title Evaluation of tamarind provenances for their growth and development and graft s

Year 2003

Source title South Indian Horticulture

Reference 51(1/6): 254-258

Abstract

An experiment was conducted in Dharwad, Karnataka, India, to evaluate the different tamarind provenances as rootstock source for their growth and development, and graft success. The provenances were Bailhongal-Hosur (P1), Bailhongal-Murgod (P2), Mudhol (P3), Dharwad (P4), Murgod-Yergatti (P5), Garag-Dharwad (P6), Bailhongal-Bagevadi (P7) and Tadas (P8). Data were recorded for percent germination, time taken for 50% germination and vigour of the provenances and their graft success. The highest germination percentage was recorded in P8 (93.50) while the highest 50% germination was observed in P3 (20 days). P7 gave the highest girth at 30, 60, 90, 120, 150 and 180 days after grafting. Comparative data on the effect of different provenances as rootstocks on the percentage of graft success are tabulated.

Author Y. Fujii, S. S. Parvez, M. M. Parvez, Y. Ohmae and O. Iida

Title Screening of 239 medicinal plant species for allelopathic activity using the sandwi

Year 2003

Source title Weed Biology and Management

Reference 3(4): 233-241

Abstract

Some 239 medicinal plants were evaluated for allelopathic activity on lettuce cv. Great Lakes using the sandwich method. Dried leaves (10 or 50 mg) were placed in a multidish plate. Two layers of agar (5 ml each) were poured over the dried leaves. Lettuce seeds were vertically placed on the multidish plate, which was then incubated in the dark for 3 days at 25 degrees C. Based on the effect of leaf leachate, 223 species were inhibitory whereas 17 species were promotive of radicle growth in lettuce. Radicle growth inhibition of >80, 60-79, 40-59, 20-39, and 0.30-19.0% was attributed to 19, 16, 43, 72 and 73 species, respectively. Artabotrys odoratissimus [A. hexapetalus] was the most inhibitory of lettuce growth. Strong inhibitory activity was also recorded for Annona cherimola, Dialium guianense, Tamarindus indica, Emblica pectinata, Hevea brasiliensis, Garcinia oblongifolia, Elaeocarpus serratus, Schleichera oleosa, Paeonia lactiflora and Sandoricum koetjape.

Author A. L. Khandare, G. S. Rao and N. Lakshmaiah

Title Effect of tamarind ingestion on fluoride excretion in humans.

Year 2002

Source title European Journal of Clinical Nutrition

Reference 56(1): 82-85

Abstract

Objective: To evaluate the effect of tamarind (Tamarindus indicus) ingestion on excretion of fluoride in school children. Design: Randomized, diet-control study. Subject: Twenty healthy boys were included and 18 of them completed the study. Interventions: Each subject consumed 10 g tamarind daily with lunch for 18 days at the social welfare boys' hostel in Andhra Pradesh, India. The nutrient composition of the daily diet was constant throughout the experimental period. Results: Tamarind intake led to significant increase ($P<0.001$) in the excretion of fluoride in 24 h urine (4.8+or-0.22 mg/day) as compared to excretion on control diet (3.5+or-0.22 mg/day). However, excretion of magnesium and zinc decreased significantly (7.11+or-1.48 mg of Mg and 252.88+or-12.84 micro g of Zn per day on tamarind diet as compared to 23.39+or-3.68 mg of Mg and 331.78+or-35.31 micro g Zn per day on control diet). Excretion of calcium and phosphorous were not significantly different while creatinine excretion decreased with tamarind intake (225.66+or-81 mg creatinine/day with tamarind and 294.5+or-78.76 mg creatinine/day without tamarind). Conclusion: Tamarind intake is likely to help in delaying progression of fluorosis by enhancing urinary excretion of fluoride.

Author B. Bibitha, V. K. Jisha, C. V. Salitha, S. Mohan and A. K. Valsa

Title Antibacterial activity of different plant extracts.

Year 2002

Source title Indian Journal of Microbiology

Reference 42(4): 361-363

Abstract

The antibacterial activity of extracts from 58 plants was tested against Salmonella typhi, Salmonella paratyphi, Staphylococcus aureus, Escherichia coli, Klebsiella pneumoniae, Proteus mirabilis, Pseudomonas sp. and Bacillus sp. Fifteen plants were found to possess antibacterial activity, of which 9 showed a broad-spectrum activity in the disc diffusion method. Both crude and acetone extracts of Punica granatum, Tamarindus indica, Garcinia gummygutta [G. gummi-gutta], Averrhoa carambola and Spondias pinnata were active against all test organisms. The crude extract was found to be more active than the acetone extract.

Author B. L. Punjani and V. Kumar

Title Folk medicinal plants used for skin disorders in the tribal pockets of Sabarkantha

Year 2002

Source title Journal of Natural Remedies

Reference 2(1): 84-87

Abstract

To determine the medicinal plants used in the treatment of skin diseases in Sabarkantha district, Gujarat, India, a survey was conducted during 1997-2000. Data were collected by interviewing more than 200 informants, preferably tribal practitioners who have knowledge on therapeutic value of wild plants in the treatment of different diseases. Twenty-nine species of 27 genera and 23 families of angiosperms are reported, along with plant parts used. Included in the list were Acacia chundra, Azadirachta indica, Aristolochia indica, Ficus hispida, F. racemosa, Tamarindus indica, Trichosanthes bracteata and Vitex negundo.

Author D. N. Halle, J. S. Awaknavar and Somashekhar

Title Biology of tamarind beetle Caryedon serratus (Olivier) on groundnut and other ho

Year 2002

Source title Insect Environment

Reference 8(2): 67-69

Abstract

The comparative biology of tamarind beetle Caryedon serratus was studied on groundnut, tamarind, Acacia farnesiana, Acacia nilotica, Albizia lebbeck, Pongamia pinnata, Prosopis juliflora, Bauhinia rufescens and Cassia tora in the laboratory. The shortest incubation period of 9.12 days was recorded on tamarind by Acacia farnesiana (9.23), groundnut (9.58 days), B. rufescens (9.67 days), Prosopis juliflora (9.78 days), Acacia nilotica (9.88 days), and Pongamia pinnata (110.61 days). The longest incubation period was recorded on Albizia lebbeck (110.83 days). The highest number of eggs per 5 pairs (98) was recorded on tamarind pods, followed by Acacia nilotica (87.6), while eggs were not recorded on Cassia tora seeds. Groundnut, Acacia farnesiana, Prosopis juliflora, B. rufescens, Albizia lebbeck and Pongamia pinnata recorded 87.6, 72.3, 59.6, 37.6, 35.3 and 24.0 eggs, respectively. Grub development was fastest (37.72 days) on tamarind followed by groundnut (42.62 days), Acacia farnesiana (43.49 days), Acacia nilotica (43.67 days) and Prosopis juliflora (46.92 days). However, the development was prolonged (47.69 days) on B. rufescens. Larval development was not observed on Albizia lebbeck and Pongamia pinnata. The pupal period was rapid (23.67 days) on tamarind, followed by groundnut (27.16 days), Acacia farnesiana (28.84 days), Acacia nilotica (30.39 days), Prosopis juliflora (132.63 days). It was prolonged and was longest (34.27 days) on B. rufescens. The total development period was shortest in tamarind with 0.51 days and longest on B. rufescens with 91.63 days. The total developmental period took 81.56 days on Acacia farnesiana, 83.94 days on Acacia nilotica and 89.33 days on Prosopis juliflora.

Author H. T. Channal, M. B. Kurdikeri, C. S. Hunshal, P. A. Sarangamath and S. A. Patil

Title Allelopathic influence of tree leaf extracts on greengram and pigeonpea.

Year 2002

Source title Karnataka Journal of Agricultural Sciences

Reference 15(2): 375-378

Abstract

Fresh leaves of seven tree species Syzygium cumini, Acacia arabica [Acacia nilotica], Tamarindus indica, Eucalyptus tereticornis, Tectona grandis, Samanea saman and Azadirachta indica were collected and 5 and 10% concentrations of aqueous solutions were prepared. Extracts were tested for their effects on green gram and pigeon pea. Irrespective of the concentrations in green gram, the percent germination was reduced due to T. grandis (87.25%) and E. tereticornis (90.12%) over the control (91.75%), while it increased with treatment from other tree extracts and was highest (96.75%) with A. indica, followed by A. arabica (95.86%) and T. indica (94.87%). Seedling length decreased compared to the control when treated with extracts of all tree species except S. cumini, S. saman and A. indica. The same trend was observed in terms of vigour index. Seedling dry matter was not reduced by any leaf extract. Leaf extract concentration had no significant effect on germination, seedling length and dry matter except vigour index. At 10 compared to 5%, irrespective of leaf extract and concentration, a significant effect on percent germination and vigour index was observed. Germination and vigour index were higher with 5% than 10% extract concentrations. In pigeon pea, none of the leaf extracts showed beneficial effects on germination, but seedling length, vigour index and seedling dry matter were increased by A. arabica, T. indica, E. tereticornis, S. saman and A. indica. The leaf extract concentration showed significant effects only on germination and vigour index. Leaf extract at 10% inhibited germination and vigour index. Generally, lower concentration (5%) of all tree leaf extracts enhanced germination, seedling length (except S. cumini, A. arabica and T. indica), vigour index (except S. cumini, T. indica, S. saman and A. indica) and seedling dry matter (except S. saman).

Author H. T. Channal, M. B. Kurdikeri, C. S. Hunshal, P. A. Sarangamath, S. A. Patil and

Title Allelopathic effect of some tree species on sunflower and soybean.

Year 2002

Source title Karnataka Journal of Agricultural Sciences

Reference 15(2): 279-283

Abstract

Studies on the allelopathic effect of seven tree leaf extracts, viz. Syzygium cumini, Acacia arabica [Acacia nilotica], Tectona grandis, Eucalyptus tereticornis, Tamarindus indica, Samanea saman and Azadirachta indica each at 5 and 10% concentration on sunflower and soyabean indicated that germination of sunflower was increased by Tectona grandis, Tamarindus indica and Samanea saman each at 5 and 10% concentration, while it was suppressed by E. tereticornis and Acacia arabica. Soyabean germination was increased by Acacia arabica, Tectona grandis, Samanea saman and Azadirachta indica at both concentrations, while it was decreased by Tamarindus indica. Similarly, seedling length, vigour index and seedling dry matter were also influenced by tree leaf extracts at different concentrations. The seedling length of sunflower was significantly increased by Syzygium cumini, Azadirachta indica, Acacia arabica and Samanea saman, while that of soyabean was increased by all tree leaf extracts, though the effect was not that significant compared to sunflower. Almost all the leaf extracts enhanced vigour index in sunflower, while only Tectona grandis, Acacia arabica and Azadirachta indica increased the vigour index in soyabean. The seedling dry matter was markedly decreased by Acacia arabica, E. tereticornis, Tamarindus indica and Azadirachta indica in sunflower, while all leaf extracts except E. tereticornis decreased the seedling dry matter of soyabean.

Author I. Cannayane and G. Rajendran

Title Allelochemic action of certain plant extracts on eggs and juveniles of Meloidogyn

Year 2002

Source title Current Nematology

Reference 13(1/2): 83-89

Abstract

Ten plant species, i.e. Abrus precatorius (seed), Annona squamosa (leaf), Bauhinia scandens (leaf), Carica papaya (leaf), Eucalyptus globulus (leaf), Phyllanthus niruri (leaf), Tagetes erecta (root), Tamarindus indica (seed), Thuja orientalis (leaf) and Vitex negundo (leaf), were evaluated for their nematotoxic effect on egg hatching and second stage juveniles of Meloidogyne incognita (race 3) under laboratory conditions. The extracts were prepared in 80% ethanol and tested at 4 different concentrations (20, 40, 60 and 80%) at 3 time intervals (3, 6 and 9 days for the inhibition of egg hatching and 12, 24 and 36 h for juvenile mortality). The extracts of Annona squamosa, Tagetes erecta and B. scandens exhibited a higher degree of nematicidal effect by inhibiting egg hatching and juvenile mortality of M. incognita. The study markedly revealed a linear relationship between the concentration of the plant extract and the number of eggs hatched. Mortality of juveniles was directly proportional to the concentration of plant extracts and period of exposure. Additionally, significant differences were also observed between the different interactions, i.e. treatment x concentration, treatment x days and concentration x days.

Author I. MacDonald, A. C. Omonhinmin and I. A. Ogboghodo

Title Germination ecology of two savanna tree species, Tamarindus indica and Prosopis

Year 2002

Source title Seed Technology

Reference 24(1): 103-107

Abstract

Various methods of seed scarification including concentrated sulfuric acid, alcohol; methanol, ethanol, isopropanol, butanol and hot water (100 degrees C), were applied on seeds of Tamarindus indica and Prosopis africana, to improve germination and assess seed vigour. The highest germination and germination energy (GE) for T. indica occurred following pretreatment in methanol for 10 minutes (70% germination; 42, GE), while better response was obtained for P. africana following pretreatment in ethanol for 10 minutes (58% germination; 38, GE), and Conc. H2SO4, for 5 minutes (60% germination; 38, GE).

Author J. A. Pino, J. C. Escalona, I. Licea, R. Perez and J. Aguero

Title Leaf oil of Tamarindus indica L.

Year 2002

Source title Journal of Essential Oil Research

Reference 14(3): 187-188

Abstract

The chemical composition of the leaf oil of Tamarindus indica was studied by GC/MS. Thirteen components were identified, of which limonene (24.4%) and benzyl benzoate (40.6%) were most predominant.

Author J. O. Akaninwor and S. N. Arachie

Title Nutritive values of fruits and seeds usually eaten raw in Nigeria.

Year 2002

Source title Journal of Applied Science & Environmental Management

Reference 6(2): 77-78

Abstract

The nutritive values of some fruits and seeds usually eaten raw in Nigeria have been studied. These include avocado pear (Persea americana), pawpaw (Garcine papaya), banana (Musa sapientum [M. paradisiaca]), coconut (Cosos nucifera), bitter kola (Garcine kola), black tamarind (Dalilium guineensis), mango (Mangifera indica) and garden egg (Solanum melongena). The fruits showed appreciable amounts of moisture; pawpaw (80.24+or-4.20%), garden egg (73.46+or-3.15%), banana (68.84+or-3.14%) and avocado pear (66.36+or-3.20) in decreasing content. Only avocado and coconut had high fat content with values of 30.27+or-1.20% and 18.05+or-2.50% respectively on a dry weight basis. The protein content of all the fruits and seeds were not high; the highest value of 3.00+or-0.21% was obtained for coconut. Appreciable amounts of calcium and vitamins C (13.80+or-210% and 7.19+or-0.14%) respectively have been obtained from fruit some of the seeds. The carbohydrate content (expressed as glucose) of the fruits and seeds also gave values ranging from 2.97+or-0.02% to 4.00+or-0.10%. The results show that thee fruits and seeds eaten raw are good sources of essential nutrients particularly Vitamin C which is destroyed by high temperature during preparation.

Author K. Ilango and C. Vijayalakshmi

Title Effect of growth regulators and chemicals on pod set and retention in Tamarind (T

Year 2002

Source title Myforest

Reference 38(2): 133-137

Abstract

An experiment was conducted to evaluate the effectiveness of foliar spray of cycocel (1500 ppm), Ethrel (500 ppm), Triacontanol (20 ml tree-1), IBA (150 ppm), planofix (100 ppm), Micronutrient mixture (0.5%), ZnSO4 (0.5%)+Boric acid (0.3%)+FeSO4 (0.5%) and Urea (1.5%) on flowering, pod set and retention of Tamarind during 1999-2000 under black cotton soils at Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu. All the treatments with growth regulators and chemicals exhibited significant effects on flowering, pod set and retention. Treatment with foliar feeding urea resulted in maximum number of flowering (75.66) and cycocel resulted in maximum pod set (32.27%) and retention (54.66%) per unit area. Number of flowers and pod set was significantly influenced by levels of canopy but not pod retention.

Author K. Ilango and C. Vijayalakshmi

Title Effect of some growth regulators and chemicals on yield and quality attributes in

Year 2002

Source title Orissa Journal of Horticulture

Reference 30(1): 35-39

Abstract

A field experiment was conducted to evaluate the effectiveness of foliar spray of growth regulators and chemicals such as Cycocel [chlormequat] (1500 ppm), Ethrel [ethephon] (500 ppm) Triacontanol (20 ml tree-1), IBA (150 ppm), Planofix [NAA] (100 ppm), micronutrient mixture (0.5%), ZnSO4 (0.5%)+boric acid (0.3%)+FeSO4 (0.5%) and urea (1.5%) on yield and quality of Tamarind (Tamarindus indica) pods during 1998-2000 at Idyarpalayam, Coimbatore, Tamil Nadu, India. All the treatments with growth regulators and chemicals exhibited significant effects on yield and quality attributes. Treatment with triacontanol 20 ml tree-1 resulted in maximum pod yield (8.33 kg tree-1). The pod characteristics such as pod weight (23.34 g), pod width (2.90 cm), pod length (15.10 cm) and pulp content (10.83 g) were enhanced by Cycocel at 1500 ppm. The foliar spray Urea at 1.5% enhanced the total acidity as percent of tartaric acid, protein and carbohydrate content and where as triacontanol at 20 ml tree-1 increased the ascorbic acid content, total sugars and total soluble solids.

Author K. Murugesan, K. Perumal and P. T. Kalaichelvan

Title Trichoderma viride paralyses lignolytic ability of a white rot fungus Ganoderma l

Year 2002

Source title Journal of Mycology and Plant Pathology

Reference 32(2): 225-230

Abstract

A strain of Trichoderma viride isolated from basidiocarp of Ganoderma lucidum (collected from Chennai, Tamil Nadu, India), a root rot pathogen of Tamarindus indica, was tested for its antagonistic activity against G. lucidum. The basal stem rot of T. indica caused by G. lucidum was associated with the production of lignolytic enzymes, lignin peroxidase, manganese peroxidase, laccase, cellulase, xylanase etc. The different carbon sources such as sawdust, extracted lignin, and glucose used in mono and dual culture media allowed the fungi to show an increased activity of lignolytic enzyme, such as lignin peroxidase, manganese peroxidase, and laccase. Indeed, in the dual cultures of T. viride and G. lucidum a significant decrease in lignolytic enzyme activity was observed whereas increased activity of mycolytic enzymes such as chitinase and proteinase was observed. In vivo studies on the infected host tissue, the pathogenic fungus produced the highest activity of lignin peroxidase and laccase. The introduction of antagonistic fungus T. viride on the infected tissue of T. indica significantly reduced the activities of lignocellulolytic enzymes and the growth of the pathogenic fungus.

Author K. S. Rao and A. Sampathrajan

Title Thermal response of selected dryland woody biomass under gasification.

Year 2002

Source title Indian Journal of Dryland Agricultural Research and Development

Reference 17(1): 44-48

Abstract

The results on gasification of Acacia nilotica, Casuarina equisetifolia, Eucalyptus hybrid [Eucalyptus tereticornis] and Tamarindus indica are discussed in this paper. The parameters like variation of temperatures at different zones of the gasifier reactor, different gas flow rates and reactor performance were analysed and the results are discussed with respect to the effectiveness of gasification. The temperature profile with in the reactor was monitored at gas flow rates of 28.80 to 30.96 Nm3/h. The results showed that as the gas flow rate increased the grate temperature increased. As the flow rate was reduced, maximum temperature was maintained at the mid point of the reactor. The reduction zone having a temperature of 500-900 degrees C, controlled the quality of the producer gas. The gas efficiency and thermal efficiency were found to vary between 59.0 to 94.60% and 6.6 to 11.66% respectively at different gas flow rates. The flame temperature at burner outlet varied from 550 degrees C to 833 degrees C at different gas flow rates for different species.

Author Lale, N. E. S. and Y. T. Maina

Title Evaluation of host resistance, solar heat and insecticidal essential oils for the man

Year 2002

Source title Journal of Plant Diseases and Protection

Reference 109(4): 410-420

Abstract

The prospect of utilizing possible resistance in groundnut (Arachis hypogaea) cultivars (Jato, Yar Dakar, Yar Damboa, Kampala) and tamarind (Tamarindus indica) accessions (TAs, TA I, TA II, TA III, TA IV, TA V), solar heat and insecticidal essential oils obtained from clove, Syzygium aromaticum, West African black pepper (WABP), Piper guineense, and ginger, Zingiber officinale, for the management of C. serratus was evaluated under tropical storage conditions. In groundnut cultivars, C. serratus laid considerably fewer eggs on 'Jato' seeds than on 'Yar Dakar' or 'Yar Damboa' seeds and fewer adult progeny developed in 'Jato' than in 'Yar Dakar' or 'Yar Damboa' seeds. Also, development from egg to adult was significantly longer in Jato than in Yar Dakar or Yar Damboa. Significantly fewer C. serratus adult progeny developed in TA V than in TA II or TA IV. Solar heating had no significant effect on the number of adult progeny that developed in groundnut seeds harbouring 1st, 2nd, 3rd or 4th larval instars. In contrast, significantly fewer adult progeny developed in seeds harbouring larvae exposed to solar heat for 4 or 6 h than in seeds exposed for 1 or 2 h or in seeds that were not exposed to solar heat and no adult progeny developed in seeds harbouring 4th instar larvae exposed for 6 h. Similarly, significantly fewer C. serratus adult progeny developed in tamarind pods exposed for 6 h than in pods exposed for 1 or 2 h or in pods that were not exposed. Treating groundnut seeds with the essential oils obtained from clove, WABP and ginger reduced egg laying in C. serratus by 69.6%, 73.9% and 4.3% in 'Jato'; 51.2%, 19.5% and 45.0% in 'Yar Dakar'; and by 25.0%, 10.0% and 45.0% in 'Yar Damboa', respectively. Significantly fewer eggs were laid on groundnut seeds treated with clove oil than on untreated seeds. Application of clove oil significantly suppressed development of adult progeny in groundnut seeds. Significantly fewer C. serratus adult progeny, on average, developed in tamarind pods protected with clove than in those protected with WABP or ginger oil or in unprotected pods

Author M. F. A. Maliro and M. B. Kwapata

Title Impact of deforestation on diversity of wild and semi-wild edible fruit tree species

Year 2002

Source title Discovery and Innovation

Reference Special Edition(98-105

Abstract

Impact of deforestation on diversity of wild and semi-wild edible fruit tree species in Mulanje and Mangochi districts of Southern Malawi was assessed. In each district, two sites designated as 'forested' and 'deforested' were selected where the former were government protected forest reserves, while the later were communal land covering grazing lands, graveyards and open areas of crop fields. Data was collected on historical background of vegetation of the areas, changes on the vegetation, species of wild and semi-wild edible fruit trees, ecology, availability, nutritional and economic importance through group interviews with local communities and by conducting an inventory of the fruit tree species by sampling transects across each site. Analysis using t-test showed that forested sites had significantly higher Species Richness (S) and Abundance (N) of wild and semi-wild fruit trees than deforested sites. On the other hand deforested sites had significantly higher Shannon Indices of diversity (H) and Evenness (E) than forested sites. Mulanje sites had generally higher S, H and E than Mangochi sites. Uapaca kirkiana was the most abundant species in forested sites of both districts, while Anona senegalensis, Azanza garkeana and Zizyphus mauritiana were the commonest in deforested sites. Despite the fruits' nutritional and economic importance no efforts have been made by the local communities to domesticate them. Lack of proper propagation techniques was a major problem to domestication of these fruit tree species. Fruit species like Tamarindus indica which were once common are now rare due to deforestation.

Author M. Idu, J. U. Ijomah and A. C. Omonhinmin

Title Histomorphology of the tracheary elements of some Fabaceae hardwood.

Year 2002

Source title Discovery and Innovation

Reference 14(1/2): 46-50

Abstract

Histomorphological investigations were carried out on Tamarindus indica, Daniellia oliveri, Afzelia africana, Piliostigma reticulatum and Detarium microcarpum. The parameters investigated include variations in their density, vessel, fibre, ray, parenchyma and tracheid. Based on their density, the economic potential of the timber are suggested. Fibre/vessel ratios are used for accessing the degree of specialization of the species studied.

Author Marathe, R. M., U. S. Annapure, R. S. Singhal and P. R. Kulkarni

Title Gelling behaviour of polyose from tamarind kernel polysaccharide

Year 2002

Source title Food Hydrocolloids

Reference 16(5): 423-426

Abstract

Polyose was isolated from tamarind kernel powder (TKP) in 50% yield by alcohol extraction of an acidified boiled aqueous extract, which was subsequently dried and pulverised. The gelling behaviour of polyose vis-a-vis pectin, and its blends with pectin was studied in a 65 degrees Brix sucrose solute as a function of pH and concentration. One percent pectin gave a good firm gel, while 80:20 and 60:40 blends of pectin/polyose gave a firm gel at 1.5 and 2.0%, respectively. A 40:60, 20:80 and 0:100 blend of pectin/polyose gave a good set at 2.0%, beyond which the jellies were hard and difficult to chew. From the values of gel strength, 2% polyose from TKP was found to adequately substitute 1% pectin in ready-to-eat jelly formulations.

Author N. E. S. Lale and Y. T. Maina

Title Evaluation of host resistance, solar heat and insecticidal essential oils for the man

Year 2002

Source title Zeitschrift fur Pflanzenkrankheiten und Pflanzenschutz

Reference 109(4): 410-420

Abstract

The prospect of utilizing possible resistance in groundnut (Arachis hypogaea) cultivars (Jato, Yar Dakar, Yar Damboa, Kampala) and tamarind (Tamarindus indica) accessions (TAs, TA I, TA II, TA III, TA IV, TA V), solar heat and insecticidal essential oils obtained from clove, Syzygium aromaticum, West African black pepper (WABP), Piper guineense, and ginger, Zingiber officinale, for the management of C. serratus was evaluated under tropical storage conditions. In groundnut cultivars, C. serratus laid considerably fewer eggs on 'Jato' seeds than on 'Yar Dakar' or 'Yar Damboa' seeds and fewer adult progeny developed in 'Jato' than in 'Yar Dakar' or 'Yar Damboa' seeds. Also, development from egg to adult was significantly longer in Jato than in Yar Dakar or Yar Damboa. Significantly fewer C. serratus adult progeny developed in TA V than in TA II or TA IV. Solar heating had no significant effect on the number of adult progeny that developed in groundnut seeds harbouring 1st, 2nd, 3rd or 4th larval instars. In contrast, significantly fewer adult progeny developed in seeds harbouring larvae exposed to solar heat for 4 or 6 h than in seeds exposed for 1 or 2 h or in seeds that were not exposed to solar heat and no adult progeny developed in seeds harbouring 4th instar larvae exposed for 6 h. Similarly, significantly fewer C. serratus adult progeny developed in tamarind pods exposed for 6 h than in pods exposed for 1 or 2 h or in pods that were not exposed. Treating groundnut seeds with the essential oils obtained from clove, WABP and ginger reduced egg laying in C. serratus by 69.6%, 73.9% and 4.3% in 'Jato'; 51.2%, 19.5% and 45.0% in 'Yar Dakar'; and by 25.0%, 10.0% and 45.0% in 'Yar Damboa', respectively. Significantly fewer eggs were laid on groundnut seeds treated with clove oil than on untreated seeds. Application of clove oil significantly suppressed development of adult progeny in groundnut seeds. Significantly fewer C. serratus adult progeny, on average, developed in tamarind pods protected with clove than in those protected with WABP or ginger oil or in unprotected pods.

Author N. Yamashita

Title Diets of two lemur species in different microhabitats in Beza Mahafaly special res

Year 2002

Source title International Journal of Primatology

Reference 23(5): 1025-1051

Abstract

Studies of primate diets usually focus on differences that distinguish species or populations. However, variation in diet can occur at a more local level of groups within a population, especially in a non-homogeneous habitat. I compared dietary variation in food composition and toughness across groups of 2 lemur species in Beza Mahafaly special reserve, Madagascar. Beza Mahafaly contains an 80-ha reserve (Parcel 1) that, while small, hosts a dense population of Lemur catta (ring-tailed lemurs) and Propithecus verreauxi verreauxi (sifakas). Microhabitats in the eastern vs. western sides of the parcel are structurally and floristically distinct. Sifakas in this parcel have small, discrete home ranges and are morphological folivores. For these reasons, I expected that the 6 groups studied would eat a different menu of food plants but with similar toughness values. Ring-tailed lemurs have comparatively large, overlapping home ranges, and I expected that the 5 study groups would eat similar foods. Despite living in different microhabitats across the parcel, sifakas exhibit high dietary uniformity both in dietary plant species composition and the toughness of the foods. Food selection in sifakas operates on two distinct levels. Sifaka groups share many key food species that appear independent of local abundances, but the ranking of the foods within each group appears related to availability. Ring-tailed lemur groups are more heterogeneous in the composition of their diets relative to sifakas, though the time spent feeding on individual foods reveals a marked preference for the fruits of Tamarindus indica by all groups. Food toughness is consistent across the parcel with the exception of the most western group. Ring-tailed lemurs are highly specific feeders, but indiscriminate nibblers. Sifakas are targeted, balanced feeders. There does not appear to be a consistent microhabitat effect operating across species. Differences within sifaka and ring-tailed lemur populations in food composition and toughness, however, correspond to an east-west microhabitat gradient. Measures of dietary flexibility must take into account not only the plant species consumed and the different parts eaten but also their associated food properties and proportion of time spent feeding on them.

Author Parameswari, K., P. Srimathi, K. Vanangamudi and G. Sasthri

Title Storability of scarified and nonscarified seeds of tamarind (Tamarindus indica L.)

Year 2002

Source title Madras Agricultural Journal

Reference 89(1/3): 52-55

Abstract

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Author R. Santana, F. Montagnini, B. Louman, R. Villalobos and M. Gomez

Title Secondary forest products from Southern Nicaragua with potential for their use in

Year 2002

Source title Revista Forestal Centroamericana

Reference 38(85-90

Abstract

The importance of secondary forests as a source of forest products and environmental and recreational services is increasing, as the primary forests become scarcer. The objective of this study was to determine which secondary forest products of southern Nicaragua have a potential for the elaboration of crafts. Surveys and workshops were carried out with owners of secondary forests from the municipalities of San Carlos and San Miguelito of Department Rio San Juan, and with artisans from the municipality of Masaya, Department of Masaya. In the agricultural units, 83 species were found to have a current use, 30 of these have potential for the elaboration of crafts. These species include wood, fibres, lianas and seeds. The timber species with greatest potential for crafts were Cordia alliodora, Guazuma ulmifolia, Enterolobium cyclocarpum, Anacardium excelsum and Tabebuia rosea. Of the existent fibres in the secondary forests, the most important was the Scheelea [Attalea] sp. used by artisans of Masaya for the production of brooms and with potential for the production of hats and baskets. The seeds of Enterolobium cyclocarpum, Pithecellobium saman [Samanea saman], Tamarindus indica, Coix lacryma-jobi, Mucuna sp., Cassia grandis and Erythrina sp. have potential for the elaboration of necklaces, curtains and earrings. These products have not been marketed due to lack of knowledge on the demand. The distance between the production areas and the main markets increases the commercialization costs and reduces the income for the producer.

Author S. C. Dwivedi and S. Venugopalan

Title Efficacy of Tabernaemontana livaricate and Tamarindus indica as an antifeedant a

Year 2002

Source title Baltic Journal of Coleopterology

Reference 2(2): 159-163

Abstract

Leaf extracts of Tabernaemontana livaricate [T. divaricata] and Tamarindus indica in acetone were found to be an effective antifeedent and adulticidal agent against Callosobruchus chinensis. The loss in seed weight was minimum (0.46 and 1.37 g) at 100% concentration of Tabernaemontana livaricate and Tamarindus indica, respectively. Percent adult mortality was 72.9% in Tabernaemontana livaricate and 67.6% in Tamarindus indica.

Author S. E. Atawodi, D. A. Ameh, S. Ibrahim, J. N. Andrew, H. C. Nzelibe, E. O. Onyik

Title Indigenous knowledge system for treatment of trypanosomiasis in Kaduna state of

Year 2002

Source title Journal of Ethnopharmacology

Reference 79(2): 279-282

Abstract

A survey was carried out in Kaduna State of Nigeria to establish the indigenous knowledge system for treating trypanosomiasis in domestic animals. Questionnaire and interviews were, respectively, administered to, or conducted with about 200 livestock farmers and traders spread around the state. Data obtained revealed the use of several plants either alone or in combination, for the treatment and management of trypanosomiasis. The most common plants encountered were Adansonia digitata, Terminalia avicennoides [Terminalia avicennioides], Khaya senegalensis, Cissus populnea, Tamarindus indica, Lawsonia inermis, Boswellia dalzielli, Pseudocedrela kotschi [Pseudocedrela kotschyi], Syzyium [Syzygium] quinensis, Sterculia setigera, Afzelia africana, Prosopis africana and Lancea kerstingii. The method of preparation and mode of administration of some of these plants in the treatment of trypanosomiasis are reviewed and discussed.

Author Salazar-Montoya, J. A., E. G. Ramos-Ramirez and V. A. Delgado-Reyes

Title Changes of the dynamic properties of tamarind (Tamarindus indica) gel with diffe

Year 2002

Source title Carbohydrate Polymers

Reference 49(4): 387-391

Abstract

The dynamic properties (storage moduli, G' and loss moduli, G") of tamarind gels and the influence of saccharose and polysaccharide concentrations were studied using model rings of 3 mm thickness and 20 mm diameter, prepared with three saccharose (55, 60 and 65% w/v) and three polysaccharide concentrations (1.5, 2.0 and 2.5% w/v). Small amplitude oscillatory measures were taken at 25 degrees C in a PHYSICA LS 100 rheometer with parallel plate geometry. Results for the 9 gels showed the zone of linear viscoelasticity between 0.637 and 6.37 Pa of oscillatory shear stress. The mechanical spectra obtained after 24, 48 and 72 h evidenced the presence of syneresis with an increase in G' as a function of time. The effects of polysaccharide concentrations on gel viscoelasticity were greater than those of saccharose.

Author V. M. Thadhani, E. R. Jansz and P. Hemantha

Title Effect of exogenous histidine and Garcinia cambogia on histamine formation in sk

Year 2002

Source title International Journal of Food Sciences and Nutrition

Reference 53(1): 29-34

Abstract

Histamine consumed with food gives rise to allergic reactions. Dark muscle fish, for example skipjack (Katsuwonus pelamis) has been shown to contain histamine. Studies using TLC (acetone: NH4OH, 80 : 20.5) on silica gel G60 plates and densitometry after spraying with ninhydrin, using a computerized densitometer, showed that freshly harvested skipjack has no detectable histamine (detection limit, 50 micro g.g-1 fish). However, with time histamine (Rf 0.84) is formed >1.5 mg.g-1 probably through microbial action. Skipjack contains high levels of free histidine at levels of >10 mg.g-1 (Rf 0.41) but fish like seer (Scomberomorus spp.), which are not reported to be allergenic, contain <4 mg.g-1 histidine. Addition of exogenous histidine (50 mg.g-1) results in histamine formation in seer 2.2-fold that of skipjack under the same conditions. A type of herring (Amblygaster spp., sinhala-hurulla) is not a histamine former, but had been shown to cause allergenic reactions, resulting in a ninhydrin positive spot (Rf 0.79) on incubating for 24 h. Addition of arginine and lysine to blended skipjack results in their loss probably by decarboxylation. Addition of the spice Garcinia cambogia (extracts 0.2 g ml-1) known as 'goraka' in Sri Lanka (sinhala) and 'kukum' in India (hindhi), to fresh skipjack incubates prevents histamine formation as a result of lowering pH to 3.2-3.6 whereas Averrhoa bilimbi (bilin) and Tamarindus indica (tamarind) extracts did not prevent histamine formation.

Author A. Jeyasankar, N. Raja, K. Elumalai, M. Jayakumar, A. Thangamani and S. Ignaci

Title Feeding budget of fifth instar larvae of silkworm Bombyx mori L. reared on suppl

Year 2001

Source title Environment and Ecology

Reference 19(4): 814-818

Abstract

The effect of mulberry cv. MR 2 leaves fortified with 1% tamarind solution (TS), groundnut meal solution (GS) and fish (Oreochromis mossambicus) muscle solution (FS) on Bombyx mori was investigated. Observations were recorded on the consumption, defaecation, assimilation, reference ratio, metabolism, production and growth efficiencies. Increased reference ratio, metabolism, production and growth efficiencies were recorded in larvae reared on leaves fortified with 1% GS and FS.

Author A. Tesfaye, B. Tamrat and D. Sebsebe

Title An ecological study of the vegetation of Gambella Region, Southwestern Ethiopia

Year 2001

Source title Sinet, Ethiopian Journal of Science

Reference 24(2): 213-228

Abstract

The vegetation of Gambella Region, southwestern Ethiopia, has been studied through five field trips made between 14 October 1995 and 10 October 1996. Systematic sampling method was used to select homogenous vegetation stands. Cover/abundance data was recorded for all plants from a total of 58 releves. For each releve, environmental data on topographic factors (altitude and slope), and soil (mainly Chromic and Pellic Vertisols, with Eutric Gleysols and Eutric Histosols) from a depth of 0-10 cm (topsoil) and 40-50 cm (subsoil) were collected. The soil samples were analysed for pH, texture, cation exchange capacity, organic carbon, total nitrogen, available phosphorus, exchangeable potassium and sodium. The species and releves were classified using a FORTRAN computer program TWINSPAN and seven major plant communities were described. Five plant communities (Commelina zambesica-Hygrophila auriculata, Sorghum purpureosericeum-Pennisetum thunbergii, Loudetia arundinacea-Hyparrhenia pilgeriana, Combretum adenogonium-Anogeissus leiocarpa, and Tamarindus indica-A. leiocarpa) were found to have phytogeographical affinity to the Sudanian vegetation type while two (Baphia abyssinica-Tapura fischeri and Manilkara butugi-Cordia africana) are affiliated to the Guineo-Congolian vegetation type of Africa. Comparison of the community types was made using ANOVA to find whether there are statistically significant variations in environmental factors.

Author C. Leksomboon, N. Thaveechai and W. Kositratana

Title Potential of plant extracts for controlling citrus canker of lime.

Year 2001

Source title Kasetsart Journal, Natural Sciences

Reference 35(4): 392-396

Abstract

The potential of leaf and other aqueous extracts of Hibiscus sabdariffa, Psidium guajava, Punica granatum, Spondias pinnata and Tamarindus indica in controlling citrus canker (Xanthomonas axonopodis pv. citri) infesting Citrus aurantiifolia was determined in laboratory and field experiments conducted in Thailand during 2000. Spraying with leaf extracts of T. indica resulted in the lowest citrus canker incidence (48%) under greenhouse conditions. Under field conditions, the number of diseased leaves and disease incidence was greatly reduced compared to the control after spraying of T. indica aqueous extracts.

Author C. R. Reddy, K. N. Rao and N. Ravindranath

Title Price behaviour analysis: a marketing strategy.

Year 2001

Source title Agricultural Marketing

Reference 44(2): 5-8

Abstract

The price behaviour of tamarind in the Anantapur and Chittoor districts of Rayalseema region, Andhra Pradesh, India is examined using data for the period 1990-99. The secular trend and the seasonal variation in prices are examined, and marketing implications are explored.

Author C. Tchiegang-Megueni, P. M. Mapongmetsem, C. H. Akagou Zedong and C. Kap

Title An ethnobotanical study of indigenous fruit trees in Northern Cameroon.

Year 2001

Source title Forests, Trees and Livelihoods

Reference 11(2): 149-158

Abstract

This ethno-botanical study identified the potential economic value of indigenous fruit trees in the three provinces of northern Cameroon. 25 households in two villages from each division in three northern provinces of Cameroon were selected and 175 persons interviewed. Villagers mentioned 72 fruit tree species with preferences varying from one province to another. Vitellaria paradoxa, Annona senegalensis, Parkia biglobosa, Vitex cienkowskii [V. doniana], Detarium microcarpum, Borassus aethiopum and Ximenia americana were among the top 14 species cited in all three provinces; the other seven were Aframomum latifolium, Balanites aegyptiaca, Hyphaene thebaica, Landolphia owariensis, Syzygium guineense var. macrocarpum, Tamarindus indica and Ziziphus mauritiana. The fruits of those species were regularly consumed by people as food, and sold to generate income. Fruits are sold in the local markets in small lots from 1-100 fruits, depending on size. The price varies from $US 0.02-0.1, so they make a significant contribution to household income. Farmers also identified their uses, indicated the reasons for the decline in the wild resource and suggested ways to promote the cultivation and improve their yield.

Author D. U. d. Lima and M. S. Buckeridge

Title Interaction between cellulose and storage xyloglucans: the influence of the degree

Year 2001

Source title Carbohydrate Polymers

Reference 46(2): 157-163

Abstract

The behaviour of storage cell wall xyloglucans (Xg) extracted from the primary cell walls of Phaseolus vulgaris, and seeds of Hymenaea courbaril, Copaifera langsdorfii, Tamarindus indica, Sesbania marginata [S. virgata] and Tropaeolum majus, was compared under different conditions of interaction with cellulose. Temperature and pH did not have a marked effect on the interaction, except for a slightly higher interaction at pH 6.0. Ultrastructural analysis showed that the binding capacity depends on the surface area of the cellulose. The binding capacity varied significantly among the different sources of Xgs. HPAEC-PAD analysis of the Xg cellulase-limit digest oligosaccharides of bound Xg suggested that there might be a certain pattern of galactosyl substitution that is related to a higher Xg binding capacity.

Author Danthu P; Hane B; Toure M; Sagna P; Sagna M; Ba S; de Troyer MA; Soloviev P

Title Microgreffage de quatre especes ligneuses saheliennes (Acacia senegal, Faidherbi

Year 2001

Source title Tropicultura

Reference 19(1): 43-47

Abstract

This paper proposes a protocol of rejuvenation of four Sahelian ligneous species: Acacia senegal, Faidherbia albida, Tamarindus indica and Ziziphus mauritiana. It was achieved by aseptically removing a small scion (5-10 mm in length) and micrografting it to a seedling grown in vitro as rootstock. The main factors affecting the effectiveness of the method are the age of the rootstock (two to six weeks depending on species), the level of grafting (on hypocotyl instead of epicotyl) and the origin of the scion (apex have higher growth after micrografting than axillary buds). The method developed was applied to the restoration of juvenile traits of adult trees. The main criterion is the rooting ability of microcuttings sampled on scions, after micrografting. Rooting competence restoration depends on the species, the nature of the first copy of the donor tree and the number of cycles of micrografting. The rejuvenation was more definite for F. albida mobilized by root cuttings. In this case, one third of the microcuttings rooted after the first cycle of micrografting and 75% after the second. For Z. mauritiana mobilized by horticultural budding, 25% of microcuttings were rooted after the second successive micrograft. No restoration of rooting competence was obtained with A. senegal and T. indica mobilized by cutting.

Author H. S. Randhawa, A. Y. Mussa and Z. U. Khan

Title Decaying wood in tree trunk hollows as a natural substrate for Cryptococcus neof

Year 2001

Source title Mycopathologia

Reference 151(2): 63-69

Abstract

The occurrence of Cryptococcus neoformans var. neoformans and other yeast-like fungi of clinical interest in decaying wood inside tree trunk hollows, bark and other plant materials is reported. The var. neoformans was isolated from 3 of 45 (6.6%) wood and one of 390 Eucalyptus bark samples. Two of the positive wood samples came from a tree trunk hollow of Butea monosperma (Family: Papilionaceae) growing in Roshan Ara Garden, Old Delhi whereas the third was from a trunk hollow of Tamarindus indica (Family: Papilionaceae) growing outside of Talkatora Garden, New Delhi. The solitary positive Eucalyptus bark sample originated from Amritsar. The isolations of var. neoformans from decaying wood inside trunk hollows of B. monosperma and T. indica constitute the first record of the natural occurrence of this pathogen in association with these trees. The observation reinforces the recent evidence for decaying wood inside trunk hollows of some trees to be a new natural habitat of the variety neoformans. Besides, in consonance with their essentially saprobic character, a number of other yeast-like fungi were sporadically isolated. This includes, Cryptoccus laurentii, Cryptococcus albidus, Candida lusitaniae, C. guilliermondii, C. krusei, C. tropicalis, C. zeylanoides, Trichosporon cutaneum, Rhodotorula mucilaginosa, R. glutinis, Geotrichum capitatum, G. klebahnii and Sporobolomyces salmonicolor. Cryptococcus neoformans var. gattii was not found in any of the 702 samples of plant materials, including the bark and detritus of Eucalyptus camaldulensis and E. tereticornis trees. A more extensive environmental survey, covering divergent climatic regions, is warranted to identify the natural reservoirs of var. gattii in India.

Author H. Sharanakumar, M. V. Ramakumar and B. Ranganna

Title A comparison of traditional and mechanical processing of tamarind fruit.

Year 2001

Source title Current Research - University of Agricultural Sciences (Bangalore)

Reference 30(11/12): 193-194

Abstract

Straight and curved tamarind fruits were subjected to mechanical and manual (traditional) dehulling, deseeding, and defibring processes. The use of a mechanical dehulling unit resulted in higher dehulling frequency (263.76 and 258.02 for straight and curved fruits, respectively) than the traditional process of fruit beating (69.04 and 62.12 kg/h, respectively). Cost and processing time was also lower in the former than in the latter method. Mechanical deseeding was 8-fold faster (25.24 kg/h for straight fruits and 20.85 kg/h for curved fruits) than manual deseeding using a wooden mallet (2.67 kg/h for straight fruits and 2.56 kg/h for curved fruits). Machine fibre separation was also 7-fold faster (29.11 and 28.95 kg/h for straight and curved fruits, respectively) than manual fibre separation (4.48 and 4.32 kg/h, respectively). Fruit damage, however, was slightly higher under mechanical processing.

Author J. Gebauer, K. El-Siddig and G. Ebert

Title Response of Tamarindus indica seedlings to salt stress.

Year 2001

Source title Journal of Applied Botany

Reference 75(3/4): 97-100

Abstract

Tamarind (Tamarindus indica) seedlings were grown in sand culture under greenhouse conditions in order to examine the responses of growth, leaf mineral concentration and leaf gas exchange to increasing salinity levels. Four-month-old seedlings were exposed to a 10-week treatment, either with 0 (control), 40, 80 or 160 mM NaCl. Plant growth (fresh and dry weight) was slightly affected by 40 and 80 mM NaCl, but was markedly reduced by the 160 mM NaCl treatment. The root/shoot ratio increased by 24% when the NaCl concentration in the irrigation solution increased from 0 to 160 mM. With increasing salinity levels, leaf moisture content also increased, indicating a salt-induced leaf succulence. In plants treated with 160 mM NaCl, the concentrations of Na+ and Cl- in the leaf dry matter reached 0.91 and 0.92 mM g-1, respectively. Leaf K+ decreased with higher salinity level, leading to higher Na+/K+ ratios. CO2 assimilation rate (A) diminished both with time of exposure and increasing salinity. T. indica seedlings tolerated a salinity level of 80 mM NaCl, probably as the result of their ability to avoid excess ion accumulation through increased leaf volumes associated with succulence.

Author K. El-Siddig, G. Ebert and P. Ludders

Title A comparison of pretreatment methods for scarification and germination of Tamar

Year 2001

Source title Seed Science and Technology

Reference 29(1): 271-274

Abstract

Seeds of tamarind (Tamarindus indica), collected in November 1998 in western Sudan, were germinated following seven pretreatments: control, mechanical scarification by scratching the region near the hilum on coarse sand paper or nicking it with a knife and acid scarification by immersion in concentrated sulfuric acid (H2SO4) for 15, 30, 45 and 60 minutes. Final emergence was 100% for all pretreatments, but days to first emergence (Eist), days to 50% emergence (E50) and mean emergence time (MET) varied significantly among them. The best germination response occurred with acid pretreatment followed by mechanical scarification. Eist, E50 and MET decreased as acid pretreatment time increased. Scratching on a coarse sand paper advanced the E50 by 4.5 days and shortened the MET by 4.1 days compared to nicking.

Author K. Parameswari, P. Srimathi and K. Malarkodi

Title Standardisation of dormancy breaking treatment in tamarind (Tamarindus indica L

Year 2001

Source title Legume Research

Reference 24(1): 60-62

Abstract

Twelve different dry and wet scarification methods were evaluated for breaking the physical dormancy of tamarind seeds, collected from Coimbatore, Tamil Nadu, India during May 1998. Among the treatments, scarification with sulfuric acid at 200 ml/kg for 15 minutes increased seed germination (67.21%) and reduced the incidence of abnormal seedlings (9.95%) and hard seed (0%). In general, the said treatment recorded the highest values for all seed quality parameters, i.e. root length (26.0 cm), hypocotyl length (15.0 cm), shoot length (28.0), dry matter production (282 mg per 10 seedlings) and vigour index (4616).

Author K. Parameswari, P. Srimathi and K. Malarkodi

Title Influence of biofertilizer pelletization on elite seedling production of tamarind (Ta

Year 2001

Source title Seed Research

Reference 29(1): 58-62

Abstract

Studies were conducted to evaluate the performance of seeds of tamarind (T. indica) in a nursery through biocide pelleting. Scarified seeds of tamarind were pelleted with biofertilizers (Azotobacter, Azospirillum, Rhizobium, Phosphobacteria, vesicular arbuscular mycorrhizas - VAM, and combinations of the different biofertilizers) at a rate of 50 g/kg of seed using maida 10% as adhesive at the rate of 200-300 ml/kg. Pelleting with biofertilizer combination i.e., Azospirillum+VAM recorded the maximum germination of 96% which was 17% higher than the control. The lowest germination percentage was recorded by the control (79%). The seedling parameters viz., root length (29.8 cm), hypocotyl length (14.8 cm) and shoot length (28.6 cm), were also higher in pelleting with biofertilizer combination (Azospirillum+VAM) at 90 days after sowing. The maximum accumulation of dry matter and vigour index were recorded by Azospirillum+VAM (482 mg and 5649, respectively) at 90 days after sowing. It is suggested that seed pelleting with Azospirillum in combination with seedling inoculation of VAM at 5 g polypot-1 aided the production of elite seedlings in the nursery.

Author K. Parameswari, P. Srimathi and K. Malarkodi

Title Influence of seed size and duration of acid scarification on seed germination of ta

Year 2001

Source title Madras Agricultural Journal

Reference 88(1/3): 56-60

Abstract

Studies were made to trace out the relationship between seed size and duration of acid scarification in tamarind seed for removal of hard seededness without affecting the quality of seed. The experiment was formulated with different size grades (27/64", 25/64" and 23/64" round perforated metal sieve) and various durations (20, 15 and 10 minutes) of acid scarification with commercial sulfuric acid at 200 ml kg-1 of seed. The study revealed that seed size and durations of acid scarification are positively related, where bigger sized seed require 20 minutes of acid scarification while it reduced to 15 and 10 minutes with medium and smaller sized seeds, respectively.

Author K. Parameswari, P. Srimathi, K. Malarkodi and G. Sasthri

Title Seed pelletization with botanicals for elite seedling production in tamarind.

Year 2001

Source title Madras Agricultural Journal

Reference 88(1/3): 161-163

Abstract

Studies were conducted with pre-sowing seed management (pelleting) for production of elite tamarind seedlings at nursery. Scarified and dried seeds were pelleted with fresh leaf powders of the following tree species at 200-300 g/kg seeds using 10% maida as adhesive at 200-300 ml/kg: arappu (Albizia amara), pongam (Pongamia pinnata), Prosopis (Prosopis juliflora), alone and in combinations, i.e. arappu + pongam, arappu + Prosopis and pongam + Prosopis. Observations were recorded at 30, 60 and 90 days after sowing (DAS). The unpelleted scarified seed served as the control. The highest germination of 93% was recorded in seeds pelleted with arappu + pongam, which was followed by arappu-pelleted seeds (88%). The lowest germination was recorded in the control seeds (77%). The root, hypocotyl and shoot were longer in arappu + pongam at 90 DAS (28.5, 15.0 and 31.1 cm, respectively). The highest number of leaves (9) and the greatest stem circumference (1.4) were also recorded in arappu + pongam at 90 DAS. This treatment also recorded the highest mean dry matter accumulation and vigour value (454 mg and 5330, respectively).

Author K. Parameswari, P. Srimathi, K. Malarkodi and K. Nelsonnavamaniraj

Title Orientation of seed at sowing on production of elite seedling in tamarind.

Year 2001

Source title Advances in Plant Sciences

Reference 14(2): 335-337

Abstract

The effects of seed orientation during sowing (horizontal position, and upright position with micropylar end positioned upwards, downwards and sidewards) on the performance of tamarind were evaluated to identify the most suitable for elite seedling production. Sowing seeds in an upright position with the micropylar end positioned upwards resulted in the greatest seed germination (87%), root length (27.6 cm), hypocotyl length (14.3 cm), shoot length (28.6 cm), dry matter production and vigour index (4881), and the lowest percentage of abnormal seedlings (3%).

Author K. S. Rajput and K. S. Rao

Title Cambial activity and development of xylem in Tamarindus indica L. growing in di

Year 2001

Source title Acta Botanica Hungarica

Reference 43(3/4): 379-390

Abstract

Seasonal behaviour of vascular cambium and development of xylem were investigated in Tamarindus indica growing in moist deciduous (MDF), dry deciduous (DDF) and scrubland (SF) forests of Gujarat state, India. The cambium was storied when dormant and gradually the storied arrangement was lost with the initiation of cambial activity and became non-storied when the activity reached a peak. Development of xylem continued for ten months in MDF, eight months in DDF and nine months in SF. Activity started in June and July in MDF and DDF, respectively, and maximum growth was seen only after the first shower of rains in July and October in MDF and August in DDF. Cambial cells ceased to divide in March and February in MDF and DDF, respectively. In SF, cambial cells began to divide in May and reached a peak in September-October during the monsoon and the divisions ceased in January. Cambial cell division and differentiation of xylem were suspended in April-May in MDF, March-June in DDF and February-April in SF. Cambial activity and xylem development are correlated with local climatic conditions and phenology of the trees.

Author K. S. Rao and A. Sampathrajan

Title Chemical characterization of selected dryland woody biomass tree species for ene

Year 2001

Source title Indian Journal of Dryland Agricultural Research and Development

Reference 16(1): 51-54

Abstract

Proximate and ultimate analyses were carried out in order to characterize 11 dryland wood species namely Eucalyptus hybrid, Prosopis juliflora, Tamarindus indicus, Acacia leucopholea, Leucaena leucocephala, Peltophorum ferugienum, Acacia nilotica, Delonix regia, Syzygium cumini, Albizia amara, Casuarina equisetifolia for effective gasification. The density of wood species was low for Leucaena leucocephala at 630 kg/m3 and high for T. indicus and A. amara species at 850 kg/m3. The moisture content of the wood species varied from 7.0% to 11.7% (wb). The carbon, hydrogen, nitrogen and oxygen contents were ranging from 41% to 50%, 2.31% to 6.10%, 0.26% to 1.51% and 43.54% to 52.54% respectively. The calorific value of the wood species was found to vary from 12.04 MJ/kg to 17.84 MJ/kg. The calorific value varied directly with hydrogen content and oxygen content varied inversely with carbon for all the species.

Author K. S. Rao and K. S. Rajput

Title Seasonal accumulation of starch in Tamarindus indica L. and Azadirachta indica

Year 2001

Source title Phytomorphology

Reference 51(1): 51-56

Abstract

Seasonal accumulation of starch in cambium, xylem and phloem of Tamarindus indica and Azadirachta indica plants in moist deciduous, dry deciduous and scrubland forests of Gujarat state, India was localized histochemically. In Tamarindus, starch grains began to appear in ray cambial cells with the initiation of cell divisions and development of floral and foliar buds during May. In the succeeding month the ray cambial cells were filled with deeply stained, relatively large starch grains. With the cessation of cambial activity, starch grains disappeared from the ray cambial cells in all the three forest types. The absence of starch in the ray cambial cells of Azadirachta from February to April coincided with the development of floral buds and fruit set in both moist deciduous and dry deciduous forests. In scrubland forests, the ray cambial cells were filled with starch grains throughout the year. The histochemical changes in the cambium, xylem and phloem are correlated with the phenology and cambial activity of the trees in all the three forest types.

Author M. Idu and C. A. Omonhinmin

Title Effect of various pretreatments on the seedling growth performance of Tamarindu

Year 2001

Source title Plant Biosystems

Reference 135(2): 165-168

Abstract

Pretreatment of seeds of T. indica with 95% sulfuric acid for 5, 10 or 15 min, methanol, ethanol, isopropanol [isopropyl alcohol] or butanol for 10 or 20 min, or boiling water for 10, 15, 20 or 30 min, was used to determine the effect of the various treatments on the development and vigour of the resultant seedlings. Seed germination percentages and growth under light and dark conditions were also recorded. Seeds immersed in methanol, ethanol and sulfuric acid for 10 min produced seedlings with high vigour. The seedlings from seeds immersed in boiling water were mostly low in vigour.

Author M. Madhu, A. K. Sikka, D. D. V. Singh and K. P. Tripathi

Title Alternate land use system with improved micro site conditions for rehabilitation o

Year 2001

Source title South Indian Horticulture

Reference 49(Special): 354-356

Abstract

The performance of mango cv. Neelam and tamarind cv. PKM-1 under different microsite conditions in watersheds in Tamil Nadu, India, was determined in 1997 and 1998. Mango and tamarind crops were planted at 6x6 and 8x8 m, respectively. Alternate land use treatments with improved microsite conditions included manual and mechanical pitting. Under the manual pitting with improved microsite condition, pits were either filled with original sieved soil + farmyard manure (FYM) or with original sieved soil + pond silt + FYM. Under mechanical pitting with improved microsite condition, pits were either filled with tank silt + FYM or with original gravel free soil. Improved microsite condition through pits filled with original sieved soil + pond silt + FYM recorded the best survival percentage and growth of grafted mango and tamarind. Mechanical pitting was better than manual pitting in improving the growth and survival characteristics of both crops.

Author M. Slingerland and A. Kiema

Title Vegetation resources in Sahelian villages. (Agro-silvo-pastoral land use in Sahelia

Year 2001

Source title Advances in Geoecology

Reference 33(179-192

Abstract

Sanmatenga is a province in Burkina Faso situated in the sub-Sahelian zone in which tree species such as Acacia spp., Boscia salicifolia, Commiphora africana and Pterocarpus lucens, and annual grasses such as Loudetia togoensis, Andropogon pseudapricus, Pennisetum pedicellatum, Schoenefeldia gracilis, Tripogon minimus and some Brachiaria and Eragrostis spp. dominate. Zoundweogo, also a province in Burkina Faso, is situated in the septentrional Sudanian zone which is very intensively cultivated. The savannas are dominated by useful and protected trees such as the shea butter tree (Vitellaria paradoxa), locust bean tree (Parkia biglobosa), Lannea microcarpa, the baobab (Adansonia digitata), Tamarindus indica and Faidherbia albida, and by perennial grasses such as Andropogon gayanus and Cymbopogon schoenanthus. Dominant annual grass species are Elionorus elegans, Schoenfeldia gracilis, Andropogon pseudapricus and Tephrosia spp. On the Mossi plateau in Burkina Faso many scattered trees can be seen. The so-called (farmed) parkland is defined as land with the presence of well-grown trees regularly scattered on cultivated or recently fallowed fields. Trees consist of species that can be used for firewood, construction wood, fodder, and fruit. Examples are fruits from Tamarindus, Lannea, Sclerocarya, Detarium, Ziziphus mauritiana, the locust bean and the shea butter tree. This chapter focuses on the various types of vegetation resources in Sahelian villages and explains their uses.

Author N. Chitra and R. P. Soundararajan

Title Incidence of Caryedon serratus (Olivier) (Bruchidae : Coleoptera) on tamarind see

Year 2001

Source title Insect Environment

Reference 7(1): 8-9

Abstract

A survey was conducted in different localities in Tamil Nadu, India, during 1999-2000 to study the percentage damage of C. serratus on stored tamarind seeds. A maximum damage of 100% was observed in seed samples from Coimbatore, Karaikal and Pondicherry, followed by 80% damage in those from Vamban. Zero damage was recorded in samples from Kovilpatti, Madurai and Tiruchengode. The highest number of insects (27 insects) were found in stored seeds from Vamban.

Author N. Chungsamarnyart and W. Jansawan

Title Effect of Tamarindus indicus L. against the Boophilus microplus.

Year 2001

Source title Kasetsart Journal, Natural Sciences

Reference 35(1): 34-39

Abstract

The crude extract of mature Tamarindus indicus [T. indica] was collected using either water and 10% ethanol in the ratio of 1:2 and 1:5 W/V for 7 days. Employing the dipping method, the extracts were tested for acaricidal activity against the engorged female cattle tick (Boophilus microplus). The mean of corrected mortality of ticks were 56-70, 70-89 and 77-99% after dipping for 24 h, 48 h and 7 days, respectively, but these did not differ significantly. The organic acids in tamarind fruits (oxalic, malic, succinic, citric and tartaric acids) were also bioassayed for their acaricidal activity. Oxalic acid of 0.5 and 1% concentration exhibited the highest acute acaricidal activity (56 and 62% mortality of ticks, respectively, after 24 h of dipping). Tartaric acid at 1% concentration showed the highest delayed acaricidal activity (73% mortality of ticks 7 days after dipping). The mixture of 0.5% of oxalic acid with 0.5% of malic, succinic, citric and tartaric acids at a concentration of 1:1 V/V were tested for acaricidal activity. The acaricidal activity of the mixtures were not stronger than those of each individual acid. Both the crude extract of tamarind fruits and their organic acids caused patchy haemorrhagic swelling on the skin of ticks after dipping for 15 min. This indicates that the crude extract of tamarind fruits extracted using water or 10% ethanol may be used for the control of the tropical cattle tick. The active substances are their organic acids, especially oxalic and tartaric acids.

Author N. M. Steele, Z. Sulova, P. Campbell, J. Braam, V. Farkas and S. C. Fry

Title Ten isoenzymes of xyloglucan endotransglycosylase from plant cell walls select a

Year 2001

Source title Biochemical Journal

Reference 355(3): 671-679

Abstract

To map the preferred cleavage sites of xyloglucan endotransglycosylases (XETs; EC 2.4.1.207) along the donor substrate chain, we incubated the enzymes with tamarind (Tamarindus indica) xyloglucan (donor substrate; ~ 205 kDa; 21 micro M) plus the nonasaccharide [3H]XLLGol (Gal2 . Xyl3 . Glc3 . [3H]glucitol; acceptor substrate; 0.6 micro M). After short incubation times, to minimize multiple cleavages, the size of the 3H-labelled transglycosylation products (determined by gel-permeation chromatography) indicated the positions of the cleavage sites relative to the non-reducing terminus of the donor. There was very little difference between the size profiles of the products formed by any of ten XETs tested [one native XET purified from cauliflower (Brassica oleracea) florets, four native XET isoenzymes purified from aetiolated mung-bean (Phaseolus aureus) shoots, native XETs purified from lentil (Lens culinaris) and nasturtium (Tropaeolum majus) seeds, and three insect-cell-produced thale-cress (Arabidopsis thaliana) XETs (EXGT, TCH4 and MERI-5)]. All such product profiles showed a good fit to a model in which the enzyme chooses its donor substrate independently of size and attacks it, once only, at a randomly selected cleavage site. The results therefore do not support the hypothesis that different XET isoenzymes are adapted to produce longer or shorter products such as might favour either the efficient integration of new xyloglucan into the cell wall or the re-structuring of old xyloglucan within an expanding wall.

Author P. Danthu, B. Hane, M. Toure, P. Sagna, M. Sagna, S. Ba, M. A. d. Troyer and P.

Title Micrografting of four Sahelian trees (Acacia senegal, Faidherbia albida, Tamarind

Year 2001

Source title Tropicultura

Reference 19(1): 43-47

Abstract

This paper proposes a protocol of rejuvenation of four Sahelian ligneous species: Acacia senegal, Faidherbia albida, Tamarindus indica and Ziziphus mauritiana. It was achieved by aseptically removing a small scion (5-10 mm in length) and micrografting it to a seedling grown in vitro as rootstock. The main factors affecting the effectiveness of the method are the age of the rootstock (two to six weeks depending on species), the level of grafting (on hypocotyl instead of epicotyl) and the origin of the scion (apex have higher growth after micrografting than axillary buds). The method developed was applied to the restoration of juvenile traits of adult trees. The main criterion is the rooting ability of microcuttings sampled on scions, after micrografting. Rooting competence restoration depends on the species, the nature of the first copy of the donor tree and the number of cycles of micrografting. The rejuvenation was more definite for F. albida mobilized by root cuttings. In this case, one third of the microcuttings rooted after the first cycle of micrografting and 75% after the second. For Z. mauritiana mobilized by horticultural budding, 25% of microcuttings were rooted after the second successive micrograft. No restoration of rooting competence was obtained with A. senegal and T. indica mobilized by cutting.

Author P. Siddhuraju and K. Becker

Title Effect of various domestic processing methods on antinutrients and in vitro protei

Year 2001

Source title Journal of Agricultural and Food Chemistry

Reference 49(6): 3058-3067

Abstract

The effect of various domestic processing methods on antinutrients and starch fractions and in vitro protein and starch digestibilities of white and black varieties of Mucuna pruriens var. utilis was studied. Cooking or autoclaving of both raw seeds and presoaked seeds in different solutions (water, tamarind extract, sodium bicarbonate and citric acid) significantly ($P<0.05$) reduced the content of total phenolics, phytic acid, trypsin inhibitor and chymotrypsin inhibitor activities and L-dopa compared to soaking or dry heating techniques. The germination processes (24 and 48 h) were also effective in the reduction of various antinutrients, although this reduction appeared to be more pronounced in a prolonged period of germination (72 h). Water soaking followed by dehusking was found to be ineffective in the reduction of trypsin and chymotrypsin inhibitor activities in both varieties. All of the treatments were effective in significantly ($P<0.05$) reducing the resistant starch content in the presently investigated samples. Cooking as well as autoclaving brought about a more significant ($P<0.05$) improvement in the digestibility of protein and starch compared to germination and dry heat treatment. Moreover, among the different processing techniques, soaking in sodium bicarbonate solution followed by cooking (29.6-34.8%) or autoclaving (33.0-37.2%) seemed to be the best method for improving starch digestibility.

Author R. Bhatta, U. Krishnamoorthy and F. Mohammed

Title Effect of tamarind (Tamarindus indica) seed husk tannins on in vitro rumen ferme

Year 2001

Source title Animal Feed Science and Technology

Reference 90(3/4): 143-152

Abstract

This study was conducted to determine the effect of tamarind seed husk (TSH) as a source of tannin on various parameters of rumen fermentation in vitro. The TSH contained 14% tannin (DM basis). The biological interference of TSH tannin on rumen fermentation was assessed using polyethylene glycol (PEG) 6000 as an indicator. Three compound feed mixtures (CFM) were prepared either without TSH (CFM-I), with 2.5% TSH (CFM-II) and with 7.5% TSH (CFM-III). Parameters studied were in vitro gas production with PEG, rate of substrate degradation, and microbial protein synthesis. Addition of PEG to TSH resulted in an increase in gas production from 5.5 to 16.5 ml/200 mg DM. Presence of TSH tannin depressed cumulative gas production by 16.8% in CFM-II, and by 29.2% in CFM-III during initial stages of fermentation (i.e. at 8 h). Rate of substrate disappearance (T1/2) was 14.4, 17.6 and 20.5 h in CFM-I, CFM-II and CFM-III, respectively. Irrespective of the carbohydrate source, presence of TSH tannin improved the efficiency of microbial protein synthesis in vitro. Thus, TSH is a natural source of tannin that can be used to beneficially manipulate rumen fermentation.

Author R. Coutino-Rodriguez, P. Hernandez-Cruz and H. Giles-Rios

Title Lectins in fruits having gastrointestinal activity: their participation in the hemaggl

Year 2001

Source title Archives of Medical Research

Reference 32(4): 251-257

Abstract

This study identifies lectins in crude extracts from fruits such as Tamarindus indica (tamarind), Spontia vulgaris (plum), Psidium guajava (guava), Mangifera indica (mango), Cydonia vulgaris [Cydonia oblonga] (quince), and Crataegus mexicana (tejocote). To verify the procedures, extracts from Ricinus communis (castor bean), Glycine max (soyabean), Phaseolus vulgaris (kidney beans), Vicia faba (faba bean), and Solanum tuberosum (potato) were used as controls for lectin activity. Both sources of lectins were analysed to determine their participation in the host-parasite interaction, using as a model the haemagglutinating properties of Escherichia coli 0157:H7 (EHA). All extracts showed haemagglutination to group O erythrocytes test (HA) with the exception of mango. Two new galactose-specific lectins were identified from tamarind and guava. When analysed for participation in EHA, only guava lectins inhibited this, while soyabean lectin induced haemolysis; as both lectins bind to galactose, it is probable that their recognition occurs in different domains. Sugars involved in the attachment between E. coli 0157:H7 and red cells were identified and again, galactose in addition to mannose was found to be related in EHA. On the other hand, guava lectins also agglutinated E. coli 0157:H7, perhaps due to the same galactose-specific lectin or to another type of lectin. It is concluded that guava has a galactose-specific lectin that prevents adhesion of E. coli 0157:H7 to red cells; this lectin is mediated by galactose. Prevention could also be due to their capacity of agglutinating E. coli by guava lectins. Soyabean lectin induces haemolysis only when bacteria is present, but not with floating secretions. This finding showed that guava is a source of lectin that can be explored to prevent adhesion of E. coli to epithelial intestinal cells; contrariwise, soya must be studied to see its participation in the uraemia caused during E. coli 0157:H7 pathogenesis.

Author S. C. Fry, J. C. Dumville and J. G. Miller

Title Fingerprinting of polysaccharides attacked by hydroxyl radicals in vitro and in the

Year 2001

Source title Biochemical Journal

Reference 357(3): 729-737

Abstract

Hydroxyl radicals (.OH) may cause non-enzymatic scission of polysaccharides in vivo, e.g. in plant cell walls and mammalian connective tissues. To provide a method for detecting the action of endogenous .OH in vivo, we investigated the products formed when polysaccharides were treated with .OH (generated in situ by ascorbate-H2O2-Cu2+ mixtures) followed by NaB3H4. Treatment with .OH increased the number of NaB3H4-reacting groups present in citrus pectin, homogalacturonan and tamarind xyloglucan. This increase is attributed partly to the formation of glycosulose and glycosulosuronic acid residues, which are then reduced back to the original (but radioactive) sugar residues and their epimers by NaB3H4. The glycosulose and glycosulosuronic acid residues were stable for >16 h at 20 degrees C in ethanol or buffer (pH 4.7), but were destroyed in alkali. Driselase-digestion of the radiolabelled polysaccharides yielded characteristic patterns of 3H-products, which included galactose and galacturonate from pectin and isoprimeverose, galactose, glucose and arabinose from xyloglucan. Pectin yielded at least eight 3H-labelled anionic products, separable by electrophoresis at pH 3.5. Patterns of radioactive products form useful 'fingerprints' by which .OH-attacked polysaccharides may be recognized. Applied to cell walls of ripening pear (Pyrus communis) cv. Conference fruit, the method gave evidence for progressive .OH radical attack on polysaccharides during the softening process.

Author S. Muhammad, A. Abubakar, M. D. Magaji and T. Amusa

Title Effects of soil amendment with sawdust and rice husks on the growth and inciden

Year 2001

Source title Journal of Sustainable Agriculture and the Environment

Reference 3(1): 39-44

Abstract

Soil in pots were pasteurized and infected with cultures of Macrophomina phaseolina and Rhizoctonia solani. The soil was impregnated with sawdust and rice husk, respectively. The amended soils in pots were allowed to stand for 5, 10, 15 and 20 days before sowing the seeds of T. indica. The incidence of seedling blight diseases was less in seedlings raised in soils with sawdust and rice husk amendments. The increase in the number of days between amendment application and planting also influenced the reduction in the incidence of seedling blight. The number of compound leaves and plant height were significant in seedlings produced from seeds sown at 20 days after the application of soil amendment. Sawdust was more effective in the reduction of the incidence of seedling blight of T. indica.

Author S. R. Birdar and S. I. Hanamashetti

Title Correlation studies in tamarind (Tamarindus indica L.) genotypes.

Year 2001

Source title Journal of Plantation Crops

Reference 29(3): 64-65

Abstract

A study was conducted during 2000/01 at Dharwad, Karnataka, India to evaluate the correlation among different growth (plant height, plant diameter, plant spread, crown size, number of pods and pod weight) and pod characteristics (pod length, pod width, pod thickness, pod weight, pulp weight, shell weight, vein weight, number of seeds and seed weight) of 17 tamarind genotypes. Significant and positive correlations were observed among the various growth and pod characteristics studied.

Author S. R. Dhawan, D. Poonam and S. K. Gupta

Title Allelopathic potential of leguminous plant species towards Parthenium hysteropho

Year 2001

Source title Legume Research

Reference 24(4): 256-259

Abstract

Fourteen crop and tree species, and wild bushes were tested for allelopathy towards Parthenium hysterophorus: chickpea cv. C-235, Trifolium alexandrinum cv. Mescavi, Trigonella foenum graecum cv. Kasuri, Acacia nilotica, Albizia procera, Bauhinia variegata, Delonix regia, Moringa indica, Parkinsonia aculeata, Pithecellobium dulce, Prosopis cineraria, Tamarindus indica, Cassia occidentalis and Tephrosia purpurea. Aqueous leachates (100%) from leaves of all tested species, except that of Pithecellobium dulce, decreased seed germination and vigour index of Parthenium hysterophorus. Allelopathy was strongest with leachates from D. regia, Cassia occidentalis, Albizia procera, Tephrosia purpurea and M. indica.

Author S. Ranjana and S. Rajendra

Title Effectiveness of certain plant extracts for their nematicidal potentialities.

Year 2001

Source title Journal of Applied Zoological Researches

Reference 12(1): 27-30

Abstract

In vitro experiments were undertaken to determine the effectiveness of various dilutions viz., S, S/2, S/4, S/8, S/16 and S/32 of aqueous extracts of bakain, Melia azedarach (fruits), jamun, Eugenia jumbolana [Syzygium cumini] (fruits and leaves), imli, Tamarindus indica (fruits), peepal, Ficus religiosa (leaves) and bargad, F. benghalensis (leaves) in controlling the root-knot nematode, Meloidogyne incognita was studied. Percent kill of second stage juvenile (J2) were recorded after 24, 48 and 72 h exposure to each concentration of above treatments. A trend of increasing percent J2 kill with decreasing dilutions and increasing time exposure was recorded in all treatments. Among all test plants, the fruit extracts of M. azedarach at its lowest dose (S/32) had extremely effective nematicidal potentials which exhibited a 67.75% larval mortality after 72 h exposure. A hundred percent juvenile mortality was recorded from the stock solution (S) to the S/8 concentration of M. azedarach (fruit), with S and S/2 concentration of T. indica and E. jumbolana (fruits) and only with S concentration of leaf extract of E. jumbolana, F. bengalensis and F. religiosa after 24-72 h exposure. Overall effectiveness in terms of percent nematode kill was highest in M. azedarach (fruit) followed by E. jumbolana (fruits), T. indica (fruit), F. religiosa (leaves), F. benghalensis (leaves), and F. jumbolana (leaves). Fruit extracts of the test plants showed greater efficacy than their leaf extracts.

Author T. B. Basavaraju, H. Pohris and M. R. G. Rao

Title Pattern of light interception and yield of finger millet in agroforestry systems unde

Year 2001

Source title Indian Journal of Forestry

Reference 24(1): 32-37

Abstract

A study was conducted in Karnataka, India during 1996 to determine the pattern of light interception and yield of finger millet in agroforestry. The trial included 9 treatment combination of 3 fruit three species (jackfruit, mango and tamarind) and 3 spacing levels (8x8, 12x8 and 16x8 m), and one control (no trees). The observation on growth parameters of trees such as tree height, collar diameter and diameter at breast height (DBH) at the age of 6 years were recorded during the course of investigation. Jackfruit recorded significantly greater tree height, collar diameter, crown height and crown width compared to mango and tamarind, while all the parameters except collar diameter were significantly least in mango. Different spacing had no significant effect on any of these growth parameters. Jackfruit intercepted more light compared to mango and tamarind, while mango and tamarind intercepted almost the same amount of light by their canopies. The light intercepted by finger millet was lower under jackfruit compared to mango and tamarind, which intercepted almost the same amount of light. Grain and straw yield of finger millet were significantly higher with mango and tamarind compared to jackfruit. In all the tree species, the reduction in grain and straw yield of finger millet was highest and significant at 0-2 m distance from the tree. The results indicated that growing of finger millet along with trees reduced the yield of finger millet due to reduced ability of light to finger millet crop. The reduction in yield was higher under jack compared to mango and tamarind. Similarly, yield reductions were more with closer spacing of 8x8 compared to wider spacing of 16x8 and 12x8 m.

Author T. S. Mungare, H. D. Jadhav, U. S. Shinde, B. S. Jadhav and S. Jaswant

Title Clarification technique in quality jaggery making - a review.

Year 2001

Source title Cooperative Sugar

Reference 32(12): 1013-1017

Abstract

A review is presented discussing the role and relative merits of different clarifiers in jaggery production. There are chemical clarifiers (lime water, sodium carbonate, sajji (sodium carbonate, sodium sulfate and sodium chloride), superphosphate, alum, SN-2 and SA-2 polymers, and hydros (Na2S2O4)) and vegetable clarifiers. Vegetable clarifiers include mucilaginous material from deola (Hibiscus ficulneus), bhindi (Abelmoschus esculentus), semal tree (Bombax ceiba), phalsa (Grewia asiatica), sukhlai (Kydia calycina), groundnut seed (Arachis hypogaea), guar seed (Cyamopsis tetragonoloba), tamarind seed (Tamarindus indica), ambadi (Hibiscus cannabinus), chikani (Sida caroinitolia), soyabean seed (Glycine max), and tapioca (Manihot esculenta).

Author V. M. Thadhani, E. R. Jansz and H. Peiris

Title Destruction of histamine by cooking ingredients - an artifact of analysis.

Year 2001

Source title Journal of the National Science Foundation of Sri Lanka

Reference 29(3/4): 129-135

Abstract

A recent article reported that histamine can be destroyed by cooking ingredients such as Garcinia cambogia (goraka), Tamarindus indica (siyambala) and Averrhoa bilimbi (bilin). It was further reported that the same effects are observed with some pure common organic acids normally present in food. In this paper, we provide evidence that the results previously obtained was an artifact of analysis, specifically caused by the use of methanol prior to extraction of histamine for assay. Quantification of histamine was done using TLC-densitometry. Silica gel G60 plates (100 micro g) were used as adsorbent and chromatographed using acetone: NH4OH (sp.gr. 0.88) 80:22.5 solvent system developed in this study. The spots were visualized using ninhydrin and quantified at 500 nm using an Advantec 300 densitometer.

Author V. Trate and K. P. Srivasuki

Title Influence of Glomus fasciculatum and Pisolithus tinctorius on growth and drought

Year 2001

Source title Biologia (Bratislava)

Reference 56(4): 411-416

Abstract

Seedlings of Acacia nilotica, Pterocarpus santalinus, Tamarindus indica and Peltophorum pterocarpum were inoculated with Glomus fasciculatum and Pisolithus tinctorius. The plants were subjected to unstressed (well-watered) and drought (water-stressed) conditions. In P. pterocarpum and T. indica both mycorrhizal inoculations stimulated plant growth, P and N uptake compared to their non-mycorrhizal (NM) plants under both watering regimes. However, in A. nilotica and P. santalinus, these parameters were only stimulated by either P. tinctorius (A. nilotica) or by G. fasciculatum (P. santalinus). This was attributed to competition for carbon between Acacia and G. fasciculatum and a parasitic association of P. santalinus and P. tinctorius.

Author Vernon-Carter, E. J., G. Espinosa-Paredes, C. I. Beristain and H. Romero-Tehuitzi

Title Effect of foaming agents on the stability, rheological properties, drying kinetics an

Year 2001

Source title Food Research International

Reference 34(7): 587-598

Abstract

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Author A. Babu, G. Sheeba, A. Sen and S. Ignacimuthu

Title Record of slug caterpillar on Ixora parviflora Vahl.

Year 2000

Source title Insect Environment

Reference 6(1): 19

Abstract

Latoia lepida [Parasa lepida] (slug caterpillar), which has been reported as a serious pest of Tamarindus indica, mango and Azadirachta indica, has been recorded on Ixora parviflora, an ornamental shrub known as jungleflame.

Author A. M. Ba, C. Plenchette, P. Danthu, R. Duponnois and T. Guissou

Title Functional compatibility of two arbuscular mycorrhizae with thirteen fruit trees in

Year 2000

Source title Agroforestry Systems

Reference 50(2): 95-105

Abstract

Functional compatibility was investigated between the seedlings of 13 tropical fruit trees (Adansonia digitata, Afzelia africana, Aphania senegalensis [Lepisanthes senegalensis], Anacardium occidentale, Cordyla pinnata [C. africana], Dialium guineensis [D. guineense], Landolphia heudelottii, Saba senegalensis and Sclerocarya birrea, and 4 reference hosts - Balanites aegyptiaca, Parkia biglobosa, Tamarindus indica and Zizyphus mauritiana [Ziziphus mauritiana]) and 2 arbuscular mycorrhizal fungi (AMF, Glomus aggregatum and Glomus intraradices). Marked differences were found between them in terms of mycorrhizal formation, root colonization, relative mycorrhizal dependency (RMD) and phosphorus concentrations in shoot tissues. Afzelia africana, Landolphia heudelottii and Saba senegalensis did not form symbiotic associations, and the growth of A. africana decreased following mycorrhizal inoculation, while L. heudelottii and S. senegalensis showed no dependency. In contrast, Adansonia digitata, Lepisanthes senegalensis, Anacardium occidentale, B. aegyptiaca and Sclerocarya birrea were well colonized with AMF, but did not significantly increase in biomass production. Five fruit trees did, however, show dependency by a positive interaction with G. aggregatum, the most effective AMF. Z. mauritiana was very highly dependent (RMD>75%), T. indica was highly dependent (50-75% RMD), and D. guineense, P. biglobosa and C. africana were moderately dependent (25-50% RMD). Phosphorus absorption probably contributed to this dependency more than the absorption of potassium. These results indicate that some tropical fruit trees derive benefits from AM inoculation, while others do not.

Author A. Rashda and R. Faiza

Title Research needs and new product development from underutilized tropical fruits.

Year 2000

Source title Acta Horticulturae

Reference 518(241-248

Abstract

Underutilized tropical fruits identified as having considerable commercial potential and nutritive value are described. Falsa (Grewia asiatica) produces a small purple berry which is consumed fresh and also produces a highly nutritious juice of a very attractive colour which is converted to a powder through spray drying. The powder has a long shelf life when packed using modified atmosphere packaging (MAP). Karonda (Carassa carandas) [Carissa carandas] produces a small berry which is white while immature but becomes pink/maroon during maturation. The juice is bitter and acid (pH 3-4), but the flavour can be modified by enzymatic treatment and use of additives has shown wide acceptability. Wild almond (Terminalia catapa) [T. catappa] is biennial and produces a deep red juice which can be used as a colourant in many food products including dairy and bakery products and juices. The fruits are also consumed fresh. The plant looks attractive during the winter due to the orange to red colour of the leaves. The anthocyanins have been isolated and studied for their great affinity towards macromolecules, especially proteins. Thus, the water extract has shown potential for commercialization as a food colourant. The brown viscous pulp from tamarind (Tamarindus indica) has a delicious sour taste and is used as an additive in many food preparations, while the seed endosperm is a good gelling agent.

Author A. Ravi, D. S. Rao, M. Parthasarathy and Z. P. Rao

Title Utilization of water soaked tamarind seed in the diet of pregnant crossbred gilts.

Year 2000

Source title Indian Journal of Animal Nutrition

Reference 17(3): 227-231

Abstract

Nutrient digestibility of water soaked tamarind seed (Tamarindus indica) was determined by difference method using 6 pregnant 75% crossbred (LWY x Desi) gilts. The DCP and TDN values were 10.41 and 80.03%, respectively. Feeding of pregnant gilts on diets containing maize (R1) or water soaked tamarind seed (R2) did not reveal significant differences between the treatments on body weight gain and reproductive performance. However, the cost of feed per piglet weaned was significantly reduced ($P<0.01$) by Rs. 74.40 in gilts fed on R2. It was concluded that water soaked tamarind seed can be incorporated in diets of pregnant and lactating crossbred gilts to reduce cost of production.

Author B. A. Kelly and P. Cuny

Title Afforestation using indigenous forest tree species on hydromorphic soil. Results o

Year 2000

Source title Revue Forestiere Francaise

Reference 52(5): 453-466

Abstract

Trial plantations were established in Zangasso forest, Mali, in 1989 using six species (Anogeissus leiocarpus, Prosopis africana, Khaya senegalensis, Parkia biglobosa, Tamarindus indica and Faidherbia albida) established in holes either 30x30x30 cm or 60x60x60 cm in size and at a spacing of 3x3 metres on silty-clay and clay soils. Young plantations were protected from grazing animals and fire, and weeding and pruning operations were undertaken. Height, height growth rate and survival data are tabulated based on data recorded each year until 1995. Results at age 7 years show that A. leiocarpus, Prosopis africana and K. senegalensis are well-adapted to soil conditions of the test site. Parkia biglobosa and T. indica, despite exhibiting satisfactory height growth and survival, respectively, are not so well-adapted to the site. The silt-clay and clay soils appear to be unsuitable for F. albida. The small planting hole size was suitable for all six species, K. senegalensis requires a wider spacing to encourage good height growth, whereas a narrower spacing is suitable for T. indica particularly if the end product required is craft wood or building poles.

Author B. Azariah

Title Social forestry in India: an entomological approach.

Year 2000

Source title Biodiversity

Reference 1(3): 2-10

Abstract

The introduction of natural enemies in forests, as an ecological approach in pest control, is discussed. A study of the diversity, population dynamics and parasitism efficiency of biological control agents (e.g. predatory insects and parasitoids) on Acacia nilotica, Azadirachta indica, Albizia lebbeck, Tamarindus indica and Pongamia glabra in social forest stands in Tamil Nadu, India is presented. The relation of maintaining a balanced host-pest-natural enemy complex to sustainable forest management and to meeting the goals of social forestry is mentioned.

Author B. O. Muok, B. Owuor, I. Dawson and J. Were

Title The potential of indigenous fruit trees: results of a survey in Kitui District, Kenya.

Year 2000

Source title Agroforestry Today

Reference 12(1): 13-16

Abstract

A semi-structured questionnaire survey was conducted [date not given] at 6 divisions (Central, Chuluni, Kabati, Mutito, Mutomo and Yatta) in Kitui District, a semi-arid area of Kenya. Farmers (n=7-9) were asked on the identification, propagation, management, preference and market value of indigenous tree species in the area. A total of 62 wild species was identified in farmlands and woodlands. The top 10 priority species of the farmers (in descending order) were Vitex payos, Tamarindus indica, Sclerocarya birrea, Adansonia digitata, Azanza garckeana, Vangueria rotundata, Berchemia discolor, Carissa edulis, Ximenia caffra, Balanites aegyptica, and Loranthus uluguense. Marketing survey revealed that seven of the top 10 species (Adansonia digitata, Azanza garckeana, Berchemia discolor, S. birrea, T. indica, V. payos and X. caffra) already have commercial potentials as they are sold in local markets. The survey also revealed that indigenous knowledge existed on managing indigenous fruit trees species such as spot slashing around individual trees to reduce competition from less favoured trees, pruning trees, and supporting young regenerants. The constraints identified by farmers that limit planting and management of indigenous fruit tree species are presented. Recommendations made from the survey are also presented.

Author B. S. Reddy, D. R. Patil, H. B. Patil and N. Thamiah

Title Effect of time on success of detached grafting in tamarind.

Year 2000

Source title Advances in Agricultural Research in India

Reference 10(141-143

Abstract

The effects of pre-curing (defoliation) of scions and schedule of grafting on the success of graft union were studied in Karnataka, India during 1994-95. The time taken for graft union as influenced by the time of grafting varied significantly. During winter months (October to December), the time required for graft intake was higher compared to that of other months. As the temperature increased, the time taken for graft union and sprouting decreased, with the least number of days (13.73) being observed in March. The graft intake was better in pre-cured than uncured scions. The highest success percentage (100%) in cured scions was recorded during March, followed by 94.4% in February.

Author Bhatta, R., U. Krishnamoorthy and F. Mohammed

Title Effect of feeding tamarind (Tamarindus indica) seed husk as a source of tannin on

Year 2000

Source title Animal Feed Science and Technology

Reference 83(1): 67-74

Abstract

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Author Burgalassi, S., L. Raimondi, R. Pirisino, G. Banchelli, E. Boldrini and M. F. Saett

Title Effect of xyloglucan (tamarind seed polysaccharide) on conjunctival cell adhesion

Year 2000

Source title European Journal of Ophthalmology

Reference 10(1): 71-76

Abstract

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Author C. T. Lockett, C. C. Calvert and L. E. Grivetti

Title Energy and micronutrient composition of dietary and medicinal wild plants consu

Year 2000

Source title International Journal of Food Sciences and Nutrition

Reference 51(3): 195-208

Abstract

Two rural settled Fulani villages, northeastern Nigeria, were surveyed for dietary practices and use of edible wild plants (n=100 households). Commonly consumed species of edible wild barks, fruits, leaves, nuts, seeds, and tubers were analyzed for protein, fat, and carbohydrate and for minerals. Kuka bark (Adansonia digitata) given to infants to increase weight gain was high in fat, calcium, copper, iron, and zinc. Cediya (Ficus thonningii), dorowa (Parkia biglobosa) and zogale (Moringa oleifera) were good sources of protein and fat and excellent sources of calcium and iron or copper and zinc. Fruits, leaves, and nuts of aduwa (Balanites aegyptiaca) were widely used during the dry season and during drought. Edible wild species available during the wet season generally were inferior in energy and micronutrient mineral content compared to dry season plants. Fruits commonly eaten by children were poor sources of protein and minerals but rich in carbohydrate and fiber. Tsamiya seeds (Tamarindus indica) were good sources of zinc and used to make dawwa (porridge) commonly consumed during pregnancy. Kirya seeds (Prosopos africana) contained the highest zinc concentrations. Shiwaka leaves (Veronia colorate) consumed by pregnant women to increase breastmilk production and to expel intestinal worms, were high in fiber, phosphorus, magnesium, manganese, and were adequate sources of calcium.

Author El-Siddig, K., G. Ebert and P. Ludders

Title Emergence and early seedling growth of Tamarindus indica L aus unterschiedlich

Year 2000

Source title Journal of Applied Botany

Reference 74(1/2): 17-20

Abstract

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Author	Ganga, M., N. Chezhiyan and G. Prabakaran
Title	In vitro rhizogenesis of tamarind (Tamarindus indica L.) microshoots
Year	2000
Source title	Spices and aromatic plants; challenges and opportunities in the new century, Calic
Reference	ISS, 60-63 pp
Abstract	

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Author	Ghelardi, E., A. Tavanti, F. Celandroni, A. Lupetti, C. Blandizzi, E. Boldrini, M.
Title	Effect of a novel mucoadhesive polysaccharide obtained from tamarind seeds on t
Year	2000
Source title	Journal of Antimicrobial Chemotherapy
Reference	46 5): 831-834
Abstract	

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Author H. M. G. S. B. Hitinayake and R. M. W. R. Ratnayake

Title Secondary forests in the dry zone as a source of tree fodder

Year 2000

Source title Multipurpose tree species in Sri Lanka: green manuring and fodder tree species fo

Reference H. P. M. Gunasena. University of Peradeniya Peradeniya, Sri Lanka, Postgraduate

Abstract

A vegetation survey was carried out in a secondary forest in the dry zone of Sri Lanka to identify plant species as a source of tree fodder. The structure, composition, regeneration, coppicing ability and palatability for goats of plant species were examined. The study identified approximately 64 different plant species in the scrub forest. Out of which 29 were trees, 11 were shrubs and 24 were herbs. The vertical structure of the scrub forest has 4 strata: large, small, shrub and herb layers. A total of 44 plant species consisting of 15 trees, 10 shrubs and 19 herb species were identified as with high palatability; low palatability group consist of 17 species which includes 12 trees, 1 shrub and 4 herb species; and 3 trees and 1 herb species were identified as toxic to goats. Wira (Drypetes sepiara), Palu (Manilkara hexandra), Mayila (Bauhinia racemosa), Nitul (Streblus asper), Boradamana (Grewia polygama), Ehetu (Ficus tsiela) and Bat-hik (Lannea coromandelica) were the species commonly used for cut and feed goats in the area. Wa (Cassia siamea), Ehela (C. fistula), Seru (Premna tomentosa), Burutha (Chloroxylon swietenia) and Wal Kurundu (Cinnamomum litsaeaefolium) were the species having high population density due to low palatability to goats and cattle. Mayila, Wira, Huri-mara (Albizia odoratissima), Ehetu, Bat-hik, Siyambala (Tamarindus indica) and Kon (Schleichera oleosa) have relatively high coppicing ability compared to other species. Results indicate that secondary forest in the dry zone of Sri Lanka has a high potential as a source of tree fodder for goats.

Author H. T. Channal, M. B. Kurdikeri and P. A. Sarangamath

Title Allelopathic effect of tree leaf extracts on germination of sorghum and rice.

Year 2000

Source title Karnataka Journal of Agricultural Sciences

Reference 13(2): 338-342

Abstract

A study was conducted to evaluate the allelopathic effect of leaf extracts from Azadirachta indica, Acacia arabica [Acacia nilotica], Eucalyptus tereticornis, Tamarindus indica, Tectona grandis, Samanea saman and Syzygium cumini, all applied 5 and 10% concentration, on seed germination, vigour index, seedling length, and seedling dry matter of sorghum and rice. Irrespective of concentration, all tree leaf extracts promoted germination in sorghum (15-32% over the control), while only Azadirachta indica and Acacia arabica increased germination in rice (3.50-3.81% over the control). Seedling length was considerably decreased in sorghum due to Syzygium cumini, Tectona grandis and E. tereticornis and in rice due to E. tereticornis and Tamarindus indica. Seedling length was markedly increased in sorghum due to Acacia arabica and in rice due to Azadirachta indica, Samanea saman and Acacia arabica. Leaf extracts from Acacia arabica, Samanea saman and Azadirachta indica at 5 and 10% enhanced vigour index in sorghum, while Acacia arabica and Samanea saman at either concentration increased vigour index in rice. Vigour index was markedly decreased in sorghum due to Eucalyptus tereticornis and Syzygium cumini and in rice due to Syzygium cumini, Tamarindus grandis and Eucalyptus tereticornis. Leaf extracts decreased the seedling dry matter in sorghum and rice irrespective of concentrations.

Author Ilango, K., M. Vanangamudi, K. Vanangamudi, K. T. Parthiban and A. Venkatesh

Title Effect of some microbial inoculants on growth, biomass and nutrient uptake of ta

Year 2000

Source title Journal of Tropical Forest Science

Reference 12(3): 620-623

Abstract

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Author John, R., V. Yardi, N. Goyal and A. G. Page

Title Eta-aas determination of aluminium leached from acidic food products: A case stu

Year 2000

Source title Chemical and Environmental Research

Reference 9(3/4): 283-288

Abstract

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Author K. El-Siddig, G. Ebert and P. Ludders

Title Emergence and early seedling growth of Tamarindus indica L. from geographicall

Year 2000

Source title Angewandte Botanik

Reference 74(1/2): 17-20

Abstract

Seed emergence behaviour and early seedling growth were studied in three geographically diverse populations of T. indica from the Sudan. The Central Sudan (CS) and the Eastern Sudan (ES) populations exhibited a nearly threefold variation between the largest and smallest seeds, whereas the Western Sudan (WS) population showed about twofold variation. Seed size was largest for WS (0.55+or-0.09 g), intermediate for CS (0.48+or-0.08 g) and smallest for ES (0.43+or-0.11 g). Tamarind seeds are generally slow to germinate as indicated by the allowance of 15 to 42 days from planting before the first and the last emergence count, respectively. Even though differences were not significant, the highest total percent emergence (97%) was recorded for WS population, followed by CS (92%) and ES (90%) populations. Seeds of the WS population achieved E50 (days to 50% emergence) two and three days earlier than ES and CS, respectively. They also showed more uniform emergence with a span of 19.7 days versus 24.7 and 25.3 days for ES and CS populations, respectively. Seedling vigour, evaluated in terms of seedling height, number of leaflets, total leaf area, total dry weight and leaf dry weight, was superior in WS population, while there were no measurable differences between CS and ES. Leaf photosynthetic characteristics did not vary among the three populations. Mean values for CO2 assimilation rate (ACO2), transpiration rate (E) and stomatal conductance (gs) were low but well within the range expected for evergreen woody species. In conclusion, for faster and uniform emergence and plant establishment in the nursery the WS population is the most suitable candidate.

Author K. Ilango, V. Mallika, K. Vanangamudi, K. T. Parthiban and A. Venkatesh

Title Effect of some microbial inoculants on growth, biomass and nutrient uptake of ta

Year 2000

Source title Journal of Tropical Forest Science

Reference 12(3): 620-623

Abstract

The effect of microbial inoculants (Rhizobium sp. ALM2, 108 cells/g and Pseudomonas striata PB2, 109 cells/g) on growth, biomass production and nutrient uptake of tamarind (Tamarindus indica) was studied in a nursery soil mixture in Tamil Nadu, India. The microbial inoculants were applied to acid scarified seeds. Arbuscular mycorrhizas (AM) fungi (Glomus fasciculatum, 4 spores/g) were used in soil inoculation. The treatments were: T1 - 5 g Rhizobium/100 seeds; T2 - 5 g phosphobacteria/100 seeds; T3 - 2 g AM/bag; T4 - 5 g Rhizobium + 5 g phosphobacteria/100 seeds; T5 - 5 g Rhizobium/100 seeds + 2 g AM/bag; T6 - 5 g phosphobacteria/100 seeds + 2 g AM/ bag; T7 - 5 g Rhizobium/100 seeds + 5 g phosphobacteria/100 seeds + 2 g AM/bag. The combined inoculation of Rhizobium + phosphobacteria + AM (T7) improved the shoot and root lengths and total leaf area compared to the uninoculated control and other treatments. The increase in plant growth attributes might be due to increased uptake of nutrients in mycorrhizal associated plants and their synergistic effect with other inoculants. The increased uptake of N due to microbial inoculation was evident. The highest contents of N, P, and K, in T7 clearly imply that the treated soils improved the uptake of these nutrients. The increase in P content might be due to the symbiosis exhibited by the microorganisms that ultimately helped increase its availability for uptake at the root zone.

Author K. V. Krishnamurthy, A. Sivakumari and V. Nandagopalan

Title Effect of water stress on the wood of two tree legumes.

Year 2000

Source title Beitrage zur Biologie der Pflanzen

Reference 71(2): 183-201

Abstract

The effect of water stress, natural and induced (through water withholding and PEG treatment), on the tension wood of Tamarindus indica and Acacia nilotica was studied. Vessel diameter, vessel element length, and vulnerability and mesomorphy indices decreased with increasing water stress. Vessel frequency, vessel wall thickness, percentage area occupied by gelatinous fibres (G-fibres) in the tension wood, diameter of the G-fibres and the thickness of the gelatinous layer (Sg-layer) all increased with increasing water stress. Instead of remaining entirely cellulosic, the Sg-layer developed increasing amounts of acidic cell wall polysaccharides. The latter, probably because of their hydrophilic nature, were helpful in retaining more water under greater water stress. The data on relative water content and on water potential supported this opinion.

Author Khandare, A. L., P. U. Kumar and N. Lakshmaiah

Title Beneficial effect of tamarind ingestion on fluoride toxicity in dogs

Year 2000

Source title Fluoride

Reference 33(1): 33-38

Abstract

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Author Kumar, K. P. V. and M. G. Sethuraman

Title Aricanut fibre and tamarind seed coat as raw materials for varnish preparation

Year 2000

Source title Bulletin of Electrochemistry

Reference 16(6): 264-266

Abstract

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Author L. G. G. Rao, B. Joseph and B. Sreemannarayana

Title Growth and biomass production of some important multipurpose tree species on r

Year 2000

Source title Indian Forester

Reference 126(7): 772-781

Abstract

An experiment with 11 multipurpose tree species was conducted on red sandy loam soils on the agroforestry block in Acharya NG Ranga Agricultural University, Rajendranagar campus, Andhra Pradesh (India). Evaluation of tree species 9 years after planting showed that Dalbergia sissoo, Leucaena leucocephala, Acacia auriculiformis and Eucalyptus camaldulensis were fast growing and suitable for this Southern Telengana Zone of Andhra Pradesh. Data on biomass production (smallwood and logs) showed that D. sissoo yielded maximum biomass (214.6 t ha-1) followed by L. leucocephala (187.8 t ha-1) and A. auriculiformis (162.4 t ha-1). Maximum mean annual biomass production (MABP) was also most for D. sissoo (23.8 t ha-1) followed by L. leucocephala (20.9 t ha-1) and A. auriculiformis (18.0 t ha-1). Foliage yield 9 yr after planting was maximum (on an oven dry weight basis) in L. leucocephala (16.8 t ha-1) followed by A. auriculiformis (12.0 t ha-1) and E. camaldulensis (9.9 t ha-1). Cost benefit analyses showed that for every rupee spent on cultivation of these tree species, the highest return was obtained from D. sissoo (4.4) followed by L. leucocephala (4.0), A. auriculiformis (3.1) and E. camaldulensis (2.9). The other tree species included in the trial were: Albizia lebbeck, Dendrocalamus strictus, Acacia albida [Faidherbia albida], Acacia tortilis, Azadirachta indica, Acacia nilotica and Tamarindus indica.

Author Lynch, R. A., D. T. Boatright and S. K. Moss

Title Lead-contaminated imported tamarind candy and children's blood lead levels

Year 2000

Source title Public Health Reports

Reference 115(6): 537-543

Abstract

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Author M. K. Misra and S. S. Dash

Title Biomass and energetics of non-timber forest resources in a cluster of tribal village

Year 2000

Source title Biomass and Bioenergy

Reference 18(3): 229-247

Abstract

An empirical study on the non-timber forest products (NTFPs) in 3 tribal villages on the Eastern Ghats of India was made during 1994-95. These village ecosystems (Rajikakhola, Nediguda and Badruguda) are situated in the Phulbani district of Orissa and are inhabited by the Kondh tribe. The average annual production per village of the most important non-timber forest products (NTFPs) was 1.87 t (26.78 GJ) of mohua ([mahua] Madhuca latifolia [M. longifolia]) flowers (used to make country liquor or mohuli), 2.96 t (54.41 GJ) of siali (Bauhinia vahlii) leaves (used for making plates and cups), 6.73 t (107.06 GJ) of thatch grass, 4.2 t (8.01 GJ) of sago palm (Caryota urens) sap (only collected in Rajikakhola) and 0.93 t (11.39 GJ) of tamarind (Tamarindus indica) pulp per village. Total production of NTFPs was 253.55 GJ. Total consumption of NTFPs was 190.57 GJ per village. However, average household consumption was 9.60 GJ. Annual country liquor consumption was 2287 litre per village, out of which a total of 762 litres was prepared locally and the rest imported. Total annual export of NTFPs was 3.69 t (61.47 GJ) per village, maximum being by Rajikakhola. Among the exported products siali leaves ranked highest. Total human energy expended on collection of NTFP was 16.1 GJ per village, out of which men contributed 37.3%, women 53.8% and children 8.9%. The average input-output ratio of energy for NTFP was 16.56. For sustainable development of such tribal villages, conservation and proper management of existing forests, minimization of waste, and increase of the value of products through efficient processing, are all essential.

Author Mehta, U. J., K. V. Krishnamurthy and S. Hazra

Title Regeneration of plants via adventitious bud formation from mature zygotic embry

Year 2000

Source title Current Science

Reference 78(10): 1231-1234

Abstract

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Author N. G. Hegde

Title Decentralised nurseries for promotion of social forestry.

Year 2000

Source title Indian Forester

Reference 126(9): 1002-1007

Abstract

Based on observations made in by the BAIF Development Research Foundation in Maharashtra, India, decentralized nursery management is advocated as the key to people's participation in social forestry. Depending on the facilities, the nurseries are classified as permanent, semi-permanent and temporary. With the involvement of local people, the choices of species is changing towards non-wood forest product producing species apart from fruit and timber species. The establishment of nurseries to raise such species at the grassroots level can encourage farmers to take up afforestation on their marginal and waste lands, while creating opportunities for small farmers and women to generate sustainable livelihoods. The quality of the plants produced further determines the success and profitability of such decentralized nurseries. The selection of suitable tree species and superior varieties, production of plants by vegetative methods, raising of healthy and hardy plants free from pests and diseases, and the use of suitable containers to transport the plants economically without damage, would contribute to the quality of the nurseries. Macropropagation techniques can be useful for multiplying most of the tree species at a lower cost than when propagules from tissue culture are used. BAIF has already standardized macropropagation protocols for a number of species from shoot cuttings; these include neem [Azadirachta indica], bamboos, Casuarina, shisham [Dalbergia sissoo], Pongamia and tamarind [Tamarindus indica]. The use of gunny cloth to wrap the pot mixture with the root system has also been developed to facilitate easy transportation of plants.

Author N. L. Patel and S. P. Singh

Title Effect of different tree species on site amelioration.

Year 2000

Source title Indian Journal of Forestry

Reference 23(2): 192-196

Abstract

The effectiveness of 10 multipurpose tree species in ameliorating marginal farmland was tested from July 1991 to July 1993 at Junagadh in the semiarid South Saurashtra region of Gujarat (India). The trees were planted as 6-month-old saplings in pits at 3x1.5 m spacing, after the onset of the monsoon soil depth was 45-60 cm. Soil nutrient status under the canopy was measured at 0-20 and 20-40 (root zone) cm depth 1 and 2 yr after planting. The highest increased available N, P2O5 and K2O and percentage organic matter were found at 0-20 cm soil depth under the canopy of Albizia lebbeck, followed by Cordia dichotoma. Soil nutrients were also higher in the root zone of A. lebbeck, followed by Pithecellobium dulce. Increases found under the canopy of the other species tested (Azadirachta indica, Cassia fistula, Casuarina equisetifolia, Eucalyptus hybrid, Melia azedarach, Syzygium cumini and Tamarindus indica) were not so high. The soil pH under the canopy of the various tree species did not change markedly.

Author P. S. Jadhav and G. B. Shinde

Title An analysis of various fermentation substrates for single cell oil production (micr

Year 2000

Source title Flora and Fauna (Jhansi)

Reference 6(1): 21-23

Abstract

Agro-industrial wastes such as sugarcane bagasse, rice bran, wheat bran, tamarind kernel powder, orange peel, sweet lemon peel, mahuwa flower, carrot pomace and jack bean seed powder were used as carbon sources for growth and lipid production of Aspergillus terreus, Penicillium aurantiogriseum and P. decumbens, compared with a known oleaginous strain, Mucor plumbeus. Sugarcane bagasse produced good growth and was further compared with an Evans mineral medium containing glucose as a carbon source. Biomass growth in sugarcane bagasse medium was comparable to that in the Evans mineral medium but had a lower lipid production. The effect of different nitrogen sources (KNO3, (NH4)2SO4, NH4Cl and urea) on lipid production of the 4 fungi in an Evans mineral medium containing sugarcane bagasse as carbon source was then investigated. Sugarcane bagasse gave a lower level of biomass and lipid production compared with glucose as carbon source. It is concluded that a variety of agro-industrial wastes can be used as carbon sources provided that the fermentation parameters are optimized.

Author P. Vityakon, S. Meepech, G. Cadisch and B. Toomsan

Title Soil organic matter and nitrogen transformation mediated by plant residues of diff

Year 2000

Source title Netherlands Journal of Agricultural Science

Reference 48(1): 75-90

Abstract

Organic matter management is believed to solve many of the chemical and physical problems of coarse-textured, low fertility soils of NE Thailand. The influence of different plant residues available in this area on soil C and N dynamics in upland (Oxic Paleustult) and lowland (Aeric Paleaquult) soils was tested. Residues included groundnut (upland) or Sesbania rostrata stover (lowland), rice straw, Tamarindus indica and Dipterocarpus tuberculatus leaves applied at 10 t ha-1 (dry matter). For the former three residues additional application rates of 20 t ha-1 were included as well as a mixture (50:50) of groundnut/Sesbania - rice straw treatment. Groundnut stover and Sesbania had C:N ratios <28:1 and low lignin, and polyphenol contents whereas rice straw had the highest C:N ratio of 79:1. Dipterocarp and tamarind leaves were characterized by high lignin (>17%) and polyphenol (>4.5%) contents. These latter residues, despite slow decomposition, apparently resulted in only moderate soil C (<1 mm) build-up after one year due to the fact that a large proportion of their residues remained in particulate form (>1 mm). Thus the mixture of groundnut/Sesbania with straw was among those residue treatments that led to the highest soil C (<1 mm) build-up under both upland and lowland conditions. Groundnut stover under upland condition resulted in immediate net N mineralization but also an early decline in soil mineral N presumably due to leaching. By mixing groundnut or Sesbania with rice straw with a high C:N ratio residue N mineralization could be delayed and prolonged, improving potentially the synchrony of N release and plant demand. Additions of dipterocarp and tamarind resulted in an initial N immobilization phase and net mineral N release remained low thereafter. Dynamics of microbial biomass N were closely related to N mineralization and immobilization cycles in both upland and lowland experiments. Residue N concentration was the most significant factor controlling N release in both systems. While extractable polyphenols exhibited a significant influence on N release in upland conditions their effect was not evident in the lowland.

Author Parameswari, K., P. Srimathi, G. Sasthri and K. Malarkodi

Title Influence of locations on size grades of tamarind

Year 2000

Source title Progressive Horticulture

Reference 32(2): 131-137

Abstract

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Author Parameswari, K., P. Srimathi, K. Malarkodi and G. Sasthri

Title Influence of biocides on the storability of scarified seeds of tamarind (Tamarindus

Year 2000

Source title Progressive Horticulture

Reference 32(1): 32-37

Abstract

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Author R. Bhatta, U. Krishnamoorthy and F. Mohammed

Title Effect of feeding tamarind (Tamarindus indica) seed husk as a source of tannin on

Year 2000

Source title Animal Feed Science and Technology

Reference 83(1): 67-74

Abstract

The effect of feeding tamarind (T. indica) seed husk (TSH) as a source of tannin on DM intake (DMI), digestibility, N balance, milk yield and milk composition was studied in crossbred dairy cows in mid-lactation. A lactation trial was conducted using 9 multiparous cows in mid-lactation in a switchback design. Cows were divided into 3 groups of 3 each. Animals of Group I (GP-1) received a compounded feed mixture (CFM) without tamarind seed husk (control group), Group II (GP-II) CFM with 2.5% TSH and Group III (GP-III) CFM with 7.5% TSH. The trial lasted 18 weeks, each period lasting 6 weeks. The diet consisted of finger millet straw (FMS) and CFM. There was no difference between the groups with respect to DMI, milk yield, milk fat, solid-not-fat (SNF) and lactose. DOMD of the diets was similar. There was significant difference in liveweight gain ($P<0.05$) and milk protein content ($P<0.07$) between GP-I and GP-III. Although there were significant differences among the groups in faecal N ($P<0.05$) and urinary N ($P<0.01$) excretion, N balance was similar. There was a difference ($P<0.05$) in CP digestibility among the 3 groups; digestibility of other nutrients was similar. It is concluded that TSH tannin at a low concentration has a beneficial effect on the performance of crossbred lactating cows.

Author S. B. Gurumurthy and M. N. Sreenivasa

Title Occurrence and distribution of VAM fungi in the rhizosphere of five tree species

Year 2000

Source title Environment and Ecology

Reference 18(2): 500-502

Abstract

Survey work was conducted to isolate the predominant native VAM fungi in northern Karnataka, India, at different locations (Dharwad, Prabhunagar and Sirsi) in the rhizosphere of five tree species, namely, teak, silver oak, casuarina, shisham and tamarind. Occurrence of native endophytes of VAM fungi in the rhizosphere soil of teak and silver oak differed in their spore count at different locations. They were found to be higher in the rhizosphere soil samples collected in Dharwad followed by Sirsi and Prabhunagar. Two predominant VAM spore types were observed in the rhizosphere soils of teak and silver oak. Highest spore counts were observed in the rhizosphere soil samples of tamarind collected in Dharwad followed by Sirsi and Prabhunagar, while in casuarina and shisham, the spore counts were higher in soil samples collected from Dharwad followed by Prabhunagar and Sirsi. Two predominant VAM spore types were observed in the rhizosphere soils of tamarind, shisham and casuarina.

Author S. C. Tucker

Title Floral development in tribe Detarieae (Leguminosae: Caesalpinioideae): Amhersti

Year 2000

Source title American Journal of Botany

Reference 87(10): 1385-1407

Abstract

Floral development was compared among three taxa in caesalpinioid tribe Detarieae sensu lato: Amherstia nobilis and Tamarindus indica have racemose, helically arranged inflorescences, while Brownea latifolia has cauliflorous capitate flower clusters that arise as racemes. All have acropetal flower order; initiation and development are sequential in all except Brownea, which is synchronous. All have paired persistent showy bracteoles. Floral symmetry is dorsiventral (zygomorphic) in all except Brownea, with radial symmetry at anthesis. Sepals initiate helically on a circular floral apex, starting with a median abaxial sepal, in all. Petals are initiated helically in Brownea, and unidirectionally in Amherstia and Tamarindus. Stamens are initiated unidirectionally in each stamen whorl in all except Amherstia, in which the outer whorl is bidirectional. The carpel initiates concurrently with the petals in Brownea, and with the outer stamens in the other taxa. The two upper (adaxial) sepal primordia become fused during development in all, so that the calyx appears tetramerous. Some reduced petals occur in Amherstia and Tamarindus, and some reduced stamens occur in all. All produce a hypanthium by zonal growth, and all except Tamarindus have the gynoecium attached adaxially to the hypanthial rim.

Author S. Deepa, J. G. Gavali and N. S. R. Krishnayya

Title Stomatal studies of [a] few tree species growing in [an] industrial area.

Year 2000

Source title Advances in Plant Sciences

Reference 13(1): 209-212

Abstract

Stomatal studies were carried out on 5 tree species growing in the Baroda industrial region of [Gujarat] India - Anogeissus latifolia, Azadirachta indica, Bauhinia racemosa, Pithecellobium dulce and Tamarindus indica. Increases in stomatal density with decline in stomatal size and epidermal cell density were observed at the polluted sites in comparison with control sites.

Author S. K. Sen and L. M. Behera

Title Ethnomedicinal plants used against lecorrhoea at Bargarh district in Orissa (India)

Year 2000

Source title Neo Botanica

Reference 8(1/2): 19-22

Abstract

Thirteen plant species viz., Aloe barbadensis, Cassia tora, Celastrus paniculata [Celastrus paniculatus], Hemidesmus indicus, Mesua nagassarium [Mesua ferrea], Madhuca indica [Madhuca longifolia], Phyllanthus fraternus, Rivea hypocrateriformis, Saraca asoca, Sesbania grandiflora, Tamarindus indica, Withania somnifera and Wrightia tinctoria, collected as part of an ethnobotanical survey from different areas in Bargarh, Orissa, India were identified. Brief descriptions and details of the use of the plants in the treatment of leucorrhoea reported by the local people are provided.

Author Sonia, L. Sahoo, A. Gulati, S. Dahiya, R. P. Singh and P. K. Jaiwal

Title In vitro multiplication of a multipurpose tree legume, tamarindus indica from coty

Year 2000

Source title Physiology and Molecular Biology of Plants

Reference 6(1): 21-25

Abstract

Author T. Ishii

Title The utilization of mycorrhizal fungi in agroforestry systems in the semiarid region

Year 2000

Source title Scientific Reports of the Kyoto Prefectural University, Human Environment and

Reference 52(21-37

Abstract

About 80% of Kenyan land is arid and semiarid, and the introduction of tree-planting techniques is needed for improving the land. Soil productivity in Kenya has been attributed to a low content of vesicular arbuscular mycorrhizas (VAM), minerals (especially N and P). When soil samples were collected from 103 orchards at 25 locations representing 13 soil types and 4 regions, the number of VAM spores in 25 g of soil was 200 or less; in >60% of these orchards the number of spores was <50/25 g of soil. The paper reports a pilot project at Kitui, investigating the utilization of mycorrhizal fungi in agroforestry systems, and supported by JICA. Data are reported on the types of VAM spores collected (Glomus spp. were most common), the variation intensity of VAM infection with plant type (a high percentage of VAM infection was observed in several weeds) and in some tropical fruit trees (Carica papaya, Mangifera indica, Psidium guajava, Tamarindus indica and 2 indigenous species - Pachystigma schumannianum and Sclerocarya birrea). Various other tree species (shown in a table) also formed VAM. When papaya seedlings inoculated with Glomus caledonium were transplanted to a pilot field, inoculated plants showed both improved resistance to water stress and higher survival percentages than non-inoculated plants. A millet-cultivated soil medium was very effective as a VAM inoculum, although stimulation of VAM formation in the roots of Cassia (Senna) siamea, Melia volkensii, Terminalia prunioides, Vitex doniana and Ziziphus mauritiana was observed without VAM inoculation. Furthermore, the growth of nursery trees was increased by the soil medium, in particular, there was increased VAM colonization in the roots of Acacia aulacocarpa, Carica papaya, Cordia ovalis, Mangifera indica, Persea americana, Psidium guajava and Schinus molle, which was reflected in vigorous tree growth. The inoculation of VAM fungi and the application of charcoal will be also very useful for the production of nursery trees. These results suggest that the use of VAM fungi can make a useful contribution to agroforestry systems in the semiarid regions of Kenya.

Author T. Senguttuvan

Title Insect pest associated with three semi arid fruits under agroforestry.

Year 2000

Source title Insect Environment

Reference 6(2): 78

Abstract

A table is presented listing insect species attacking Tamarindus indica, Emblica officinalis [Phyllanthus emblica] and Syzygium cumini in Tamil Nadu, India.

Author Tucker, S. C.

Title Floral development in tribe detarieae (Leguminosae: Caesalpinioideae): Amhersti

Year 2000

Source title American Journal of Botany

Reference 87(10): 1385-1407

Abstract

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Author U. J. Mehta, K. V. Krishnamurthy and H. Sulekha

Title Regeneration of plants via adventitious bud formation from mature zygotic embry

Year 2000

Source title Current Science

Reference 78(10): 1231-1234

Abstract

A protocol for in vitro regeneration of plants via adventitious bud formation from the mature embryo axis of tamarind (Tamarindus indica) was standardized. Explants consisting of the longitudinal section of the embryo axis with attached cotyledon were cultured in Murashige and Skoog (MS) medium with various combinations and concentrations of NAA, 6-benzylaminopurine (BAP [benzyladenine]) and sucrose. Induction of adventitious shoot buds was achieved on the cut surface of the axis when cultured in a medium containing 2.69 micro M NAA, 44.39 micro M BAP and 4% sucrose. A medium consisting of 0.91 micro M zeatin, 2.22 micro M BAP, 0.41 micro M calcium pantothenate and 0.40 micro M biotin supported the differentiation of the buds to form elongated shoots. The shoots developed roots in a half strength MS medium with 2% sucrose following a 72 h treatment with auxin mixture in the dark. On transfer to soil 24 plants survived.

Author Yamanaka, S., Y. Yuguchi, H. Urakawa, K. Kajiwara, M. Shirakawa and K. Yam

Title Gelation of tamarind seed polysaccharide xyloglucan in the presence of ethanol

Year 2000

Source title Food Hydrocolloids

Reference 14(2): 125-128

Abstract

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Author Arya, A., C. Arya, R. Agarwal and B. Lal

Title A new species of Phomopsis on Tamarindus indica L

Year 1999

Source title National Academy Science Letters

Reference 22(9/10): 152-155

Abstract

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Author Chavan, R., R. Lokesha and S. N. Nayak

Title Studies on flowering phenology, floral biology and phenotypic variability for flora

Year 1999

Source title Karnataka Journal of Agricultural Sciences

Reference 12(1/4): 55-59

Abstract

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Author D'Amico, M., C. Di Filippo, E. Lampa, E. Boldrini, F. Rossi, A. Ruggiero and A.

Title Effects of timolol and of timolol with tamarind seed polysaccharide on intraocular

Year 1999

Source title Pharmacy and Pharmacology Communications

Reference 5(5): 361-364

Abstract

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Author El-Siddig, K., G. Ebert and P. Ludders

Title Tamarind (Tamarindus indica L.): A review on a multipurpose tree with promisin

Year 1999

Source title Journal of Applied Botany

Reference 73(5/6): 202-205

Abstract

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Author Guimaraes, T., P. N. Junior, J. Brito and Z. Souza

Title Global analysis on the Tamarindus indica (tamarind)'s action on cholesterol and pl

Year 1999

Source title Pathology and laboratory medicine, Sao Paulo, Brazil

Reference Bologna, 237-240 pp

Abstract

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Author Karale, A. P., A. R. Wagh, B. G. Pawar and T. A. More

Title Association of fruit characters in tamarind

Year 1999

Source title Journal of the Maharashtra Agricultural Universities

Reference 24(3): 319-320

Abstract

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Author Karale, A. R., A. P. Wagh, B. G. Pawar, M. B. Shete and T. A. More

Title Floral abnormalities in the tamarind

Year 1999

Source title Journal of the Maharashtra Agricultural Universities

Reference 24(2): 209

Abstract

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Author Nakamura, F. and Y. Machida

Title Effect of sucrose esters of fatty acids on in vitro release and physico-chemical pro

Year 1999

Source title Journal of Pharmaceutical Science and Technology Japan

Reference 59(3): 121-127

Abstract

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Author Patil, S. G., G. S. Shinde and V. S. Khandar

Title Effects of foliar application of zinc, boron, urea and iaa on growth of tamarind see

Year 1999

Source title Journal of the Maharashtra Agricultural Universities

Reference 24(1): 106-107

Abstract

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Author Rimbau V; Cerdan C; Vila R; Iglesias

Title Antiinflammatory activity of some extracts from plants used in the traditional med

Year 1999

Source title Phytotherapy Research

Reference 13(2): 128-132

Abstract

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Author Romero-Tehuitzil, H., E. J. Vernon-Carter, M. G. Vizcarra-Mendoza and C. I. Ber

Title Effect of biopolymers on the formation, drying kinetics and flavor retention of ta

Year 1999

Source title Acs Symposium Series

Reference 723: 283-291

Abstract

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Author Veena, T. and V. T. Jayaprakash

Title Tamarind as a sailogogue

Year 1999

Source title Indian Journal of Physiology and Pharmacology

Reference 43(3): 401-402

Abstract

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Author Yamanaka, S., M. Mimura, H. Urakawa, K. Kajiwara, M. Shirakawa and K. Yama

Title Conformation of tamarind seed xyloglucan oligomers

Year 1999

Source title Fiber

Reference 55(12): 590-596

Abstract

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Author Yamanaka, S., Y. Yuguchi, H. Urakawa, K. Kajiwara, M. Shirakawa and K. Yam

Title Gelation of enzymatically degraded xyloglucan extracted from tamarind seed

Year 1999

Source title Fiber

Reference 55(11): 528-532

Abstract

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Author Ali MS; Ahmad VU; Azhar I; Usmanghani K

Title Chemotropism and antimicrobial activity of Tamarindus indica

Year 1998

Source title Fitoterapia

Reference 69(1): 43-46

Abstract

-

Author Awasthi OP; Sharma S

Title Variability in Tamarind

Year 1998

Source title World

Reference 60

Abstract

-

Author Cardet C; Kandji T; Delobel A; Danthu P

Title Efficiency of neem and groundnut oils in protecting leguminous tree seeds against

Year 1998

Source title Agroforestry Systems

Reference 40(1): 29-40

Abstract

The objective of our study was to test the comparative efficiency of neem (Azadiruchta indica) kernel oil, groundnut oil and a synthetic insecticide, K-Othrine(R), in protecting stocks of leguminous tree seeds against seed beetles under Sahelian conditions. The following insect/seed combinations were used as models: Caryedon acaciae/Acacia nilotica, C. longispinosus/A. raddiana and C. serratus/Tamarindus indica. Neem oil, when used at concentrations of 5 to 20 mi per kg of seeds, had pronounced adulticidal and ovicidal effects which were maintained for five months. No significant fall in seed viability was observed except in the case of C. acaciae/A. nilotica. Groundnut oil, when used at concentrations of 5 to 20 mi per kg of seeds, had pronounced adulticidal and ovicidal effects which were relatively short-lived. A significant fall in seed viability was observed over five months. K-Othrine(R), when used at concentrations ranging from 25 to 100 mg per kg, had high adulticidal effects which were maintained for five months. However, K-Othrine(R) was found to have no ovicide properties. No significant fall in seed viability was observed. This study concluded that it is possible to use neem oil, a product that can be obtained locally at low cost, to efficiently protect tree seed stocks in the Sahel.

Author El Tahir A; Ibrahim AM; Satti GMH; Theander TG; Kharazmi A; Khalid SA

Title The potential antileishmanial activity of some Sudanese medicinal plants

Year 1998

Source title Phytotherapy Research

Reference 12(8): 576-579

Abstract

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Author FAO

Title Tropical food plants: A resource book for promoting the exploitation and consum

Year 1998

Source title FAO Food and Nutrition Paper

Reference 42:478-483.

Abstract

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Author Fry SC

Title Oxidative scission of plant cell wall polysaccharides by ascorbate-induced hydrox

Year 1998

Source title Biochemical Journal

Reference 332(2): 507-515

Abstract

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Author Grollier, C., C. Debien, M. Dornier and M. Reynes

Title Prominent characteristics and possible uses of the tamarind

Year 1998

Source title Fruits (Paris)

Reference 53(4): 271-280

Abstract

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Author Guissou, T., A. M. Ba, J. M. Ouadba, S. Guinko and R. Duponnois

Title Responses of Parkia biglobosa (Jacq.) Benth, Tamarindus indica L. and Zizyphus

Year 1998

Source title Biology and Fertility of Soils

Reference 26(3): 194-198

Abstract

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Author Hanamashetti, S. I., G. S. Sulikeri and P. M. Salimath

Title Multivariate analysis in clonal progenies of tamarind (Tamarindus indica L.)

Year 1998

Source title Multipurpose tree species for agroforestry systems; research, retrospect and prosp

Reference Jodhpur, 105-108 pp

Abstract

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Author	Ijomah, J. U. and M. Udu
Title	Effects of various pre-germination treatments on seeds of Prosopis africana (Guill
Year	1998
Source title	Global Journal of Pure and Applied Sciences
Reference	4(4): 369-374
Abstract	

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Author	Ilango, K., M. Vanangamudi, A. Venkatesh, R. S. Vinayarai and S. Balaji
Title	Effect of foliar spray of growth hormones on morpho-physiological attributes in T
Year	1998
Source title	Myforest
Reference	34(2): 815-820
Abstract	

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Author Kaitho RJ; Nsahlai IV; Williams BA; Umunna NN; Tamminga S; Bruchem J van

Title Relationships between preference, rumen degradability, gas production and chemi

Year 1998

Source title Agroforestry Systems

Reference 39(2):, 129-144

Abstract

The aim of this work was to assess whether degradability, gas production or chemical constituents could predict the preference of browses. Forty tropical brows species leaves with a crude protein (CP) content ranging from 79 to 307 g kg-1 DM were used for this study. The neutral detergent fibre (NDF) ranged from 220 to 694 g kg-1 DM, while acid detergent fibre (ADF) ranged from 146 to 523 g kg-1 DM. The NDF-bound nitrogen (NDFN) and ADF-bound nitrogen were particularly high in Calliandra calothyrsus, Acacia polyacantha, Sesbania sesban, Acacia venosa and Acacia hockii. High levels of tannins were observed in Acacia species, especially A. dolichocephala, A. hockii, A. microbotrya and A. salicina. High levels were also observed in Flemingia macrophylla and Leucaena pallida. The browse species differed ($P < 0.05$) in DM in sacco degradability coefficients. High potential degradability (PD) and effective degradability (ED) were observed in Sesbania spp., Moringa stenopetala, Indigofera arrecta, Chamaecytisus palmensis and Atriplex spp. The browses differed ($P<0.05$) in asymptotic gas (Ag) production (ml g-1 OM), but had similar ($P>0.05$) times of incubation at which half of the asymptotic gas had been formed. Preference and DM intake were positively correlated ($P<0.01$) to NDFN, but negatively correlated ($P<0.05$) to NDF and ADF. The PD and Ag were negatively ($P<0.001$) related to NDF, ADF and lignin. Total phenols (TP) and condensed tannins (CT) were negatively ($P<0.05$) related to PD, ED and Ag. A positive correlation was observed between CT and NDF-bound condensed tannins ($r=0.55$, $P<0.001$) and, CT and TP ($r=0.40$, $P<0.01$). Prediction equations were poor for DM intake and preference, moderate for gas production and good for potential and effective degradabilities. The phenolic components were more related to dry matter degradation and gas production than to preference and dry matter intake. NDFN and Ag made a positive contribution to both preference and DM intake. It was concluded that chemical constitutes such as N, NDF, NDFN, ADF and lignin are essential to predict the nutritive value of browses.

Author Kaitho RJ; Umunna NN; Nsahlai IV; Tamminga S; Bruchem J van

Title Nitrogen in browse species: ruminal degradability and post-ruminal digestibility

Year 1998

Source title Journal of the Science of Food and Agriculture

Reference 76(4): 488-498

Abstract

This study determined the N degradability and digestibility of rumen undegradable N using the mobile nylon bag (MNB) and a pepsin/pancreatin in vitro technique (IV) in 40 browse species. 30 Ethiopian highland sheep fitted with rumen cannulae were used. Six steers fitted with rumen cannulae were used in preparation of 16 and 24-h ruminal undegraded residues and 4 steers fitted with distal abomasal cannulae were used in MNB technique. The browses varied widely in N solubility (15-468 g/kg), potential degradability (223-976 g/kg), rate of degradation (0.13-24% h-1) and effective degradability (135-821 g/kg). The apparent N digestibility (ND) of the rumen undegraded residues differed significantly among browse species. No significant difference was observed in ND of 16 and 24-h residues. The ND of the 16-h residue varied from -218 to 759 g/kg and 169 to 851 g/kg for MNB and IV methods, respectively. Browse species with high tannin contents such as Acacia hockii, A. horrida, A. melanoxylon, A. persiciflora, A. salicina, A. saligna and Flemingia macrophylla had high rumen by-pass and a low ND, while Sesbania spp. and A. nilotica with low tannin contents underwent rapid and extensive DM and N degradation in the rumen. Acacia sieberiana, Chamaecytisus palmensis, Erythrina spp., Gliricidia sepium, Samanea saman [Albizia saman] and Enterolobium cyclocarpum had high proportions of protein escaping rumen degradation (BP) and with a high proportion of the by-pass protein digested in the intestine, therefore these browses had a high potential as protein supplements. The ND measured with the MNB were lower ($P<0.001$) than by the IV method. The correlation between MNB and IV was high ($R2 = 0.89$, $P<0.0001$) as also indicated by the regression equation (SE in parentheses): MNB = -22.8 (4.55) + 1.0 (0.08)IV (RSD = 10.56, $R2 = 0.79$, $n=40$, $P<0.001$). The intercept of the linear relationship obtained was different from zero while the slope was not different from unity. Multiple regression analysis suggested that some of the unexplained variation could be accounted for by either N, acid detergent fibre, total phenolics or neutral detergent fibre bound tannin concentrations in browses. It was concluded that the IV method was accurate for estimating digestibility of ruminally undegradable N and hence its use would considerably reduce the need for delicate surgery and the elaborate procedures involving the MNB technique.

Author Kulkarni D; Dwivedi AK; Singh S

Title Performance evaluation of tamarind seed polyose as a binder and in sustained rele

Year 1998

Source title Indian Journal of Pharmaceutical Sciences

Reference 60(1): 50-53

Abstract

Evaluation of tamarind seed polyose as a binder for tablet dosage forms was taken up for the wet granulation as well as direct compression methods. The drug release sustaining properties of tamarind seed polyose polymer were also studied using 5 mg of terbutaline sulphate matrices. The results indicated that tamarind seed polyose could be used as binder for wet granulation and direct compression tableting methods as well as a suitable polymer for sustained release formulations of low drug loading.

Author Le HT; Hancock JF; Trinh TT

Title The fruit crops of Vietnam: Introduced species and their native relatives

Year 1998

Source title Fruit Varieties Journal

Reference 52(3): 158-168

Abstract

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Author Limyati DA; Juniar BLL

Title Jamu Gendong, a kind of traditional medicine in Indonesia: the microbial contami

Year 1998

Source title Journal of Ethnopharmacology

Reference 63(3): 201-208.

Abstract

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Author Mirza, M., Z. Yaqeen, Yaqeenuddin, M. Qadiruddin and Y. Badar

Title Trace elements in Tamarindus indica Linn and their nutritional importance

Year 1998

Source title Pakistan Journal of Scientific and Industrial Research

Reference 41(6): 310-311

Abstract

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Author Mishima T; Hisamatsu M; York WS; Teranishi K; Yamada T

Title Adhesion of beta-D-glucans to cellulose

Year 1998

Source title Carbohydrate Research

Reference 308(3-4): 389-395

Abstract

Schizophyllan, a Schizophylium commune beta-D-glucan, a Tamarindus xyloglucan, locust bean gum, a galactomannan, a barley beta-D-glucan, and chitosan show specific adhesion to microcrystalline cellulose (cellulose I). Xyloglucan, locust bean gum, barley beta-D-glucan, and chitosan also show the ability to adhere mercerized cellulose (cellulose: II), while schizophyllan does not. As the molecular weight of schizophyllan decreases, both its ability to form triple- helical structures and its adhesion to cellulose I diminish and finally disappear, indicating that the adhesion of schizophyllan to cellulose I depends on high-molecular-weight domains that adopt the triple-helical structures. On the other hand, the adhesion of locust bean gum, chitosan, and xyloglucan to celluloses was found to be largely independent of molecular weight. Furthermore, it is thought that the adhesion of barley beta-D-glucan occurs because it belongs to a group of xyloglucans.

Author Mishima, T., M. Hisamatsu, W. S. York, K. Teranishi and T. Yamada

Title Adhesion of ç-d-glucans to cellulose

Year 1998

Source title Carbohydrate Research

Reference 308(3/4): 389-395

Abstract

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Author Miyazaki S; Suisha F; Kawasaki N; Shirakawa M; Yam_

Title Thermally reversible xyloglucan gels as vehicles for rectal drug delivery

Year 1998

Source title Journal of Controlled Release

Reference 56(1-3): 75-83

Abstract

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Author Nagarajan, B., A. Nicodemus, A. K. Mandal, R. K. Verma, K. Gireesan and N. P.

Title Phenology and controlled pollination studies in tamarind

Year 1998

Source title Silvae Genetica

Reference 47(5/6): 237-240

Abstract

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Author Patil, B. G., D. V. Gokhale, K. B. Bastawde, U. S. Puntambekar and S. G. Patil

Title The use of tamarind waste to improve ethanol production from cane molasses

Year 1998

Source title Journal of Industrial Microbiology and Biotechnology

Reference 21(6): 307-310

Abstract

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Author Pino, J. A.

Title Los constituyentes voiatiles del tamarindo (Tamarindus indica L.)

Year 1998

Source title Alimentaria

Reference (292): 85-88

Abstract

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Author Rajput KS; Rao KS

Title Occurrence of the intercellular spaces in cambial rays

Year 1998

Source title Israel Journal of Plant Sciences

Reference 46(4): 299-302

Abstract

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Author Reddy, B. S., D. R. Patil, H. B. Patil and N. Thamiah

Title Effect of time on success of detached grafting in tamarind

Year 1998

Source title Advances in Agricultural Research in India

Reference 10: 141-143

Abstract

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Author Sembene M; Delobel A

Title Genetic differentiation of groundnut seed-beetle populations in Senegal

Year 1998

Source title Entomologia Experimentalis et Applicata

Reference 87(2): 171-180

Abstract

Caryedon serratus, the groundnut seed-beetle, is a major pest of groundnut (Arachis hypogaea), an introduced legume in the subfamily Papilionoideae. Native hosts of C. serratus in Senegal include Bauhinia rufescens, Cassia sieberiana, Piliostigma reticulatum and Tamarindus indica, all of which belong to the legume subfamily Caesalpinioideae. The biology and natural history of C. serratus suggest that it is a candidate for population differentiation via host-race formation. Evidence for host-tree associated differentiation in C. serratus would be important for the design of rational pest management practices.

To test this possibility, we analyzed the genetic structure of 20 adult collections of C. serratus from six sites in Western Senegal, on its five hosts. Results show a strong differentiation of insects from different host trees, with specimens from C. sieberiana possibly representing a sibling species and insects from B. rufescens a distinct host-race.

Author Shankaracharya NB

Title Tamarind - chemistry, technology and uses - A critical appraisal

Year 1998

Source title Journal of Food Science and Technology (Mysore)

Reference 35(3): 193-208

Abstract

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Author Shirakawa M; Yamatoya K; Nishinari K

Title Tailoring of xyloglucan properties using an enzyme

Year 1998

Source title Food Hydrocolloids

Reference 12(1): 25-28

Abstract

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Author Sims, I. M., A. M. Gane, D. Dunstan, G. C. Allan, D. V. Boger, L. D. Melton and

Title Rheological properties of xyloglucans from different plant species

Year 1998

Source title Carbohydrate Polymers

Reference 37(1): 61-69

Abstract

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Author Singh, J., K. Arora and R. K. Jethi

Title Effect of tamarind extract supplementation on calcium oxalate crystallization

Year 1998

Source title Journal of Endourology

Reference 12(1): BS4-16

Abstract

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Author Sonia, P. K. Jaiwal, A. Gulati and S. Dahiya

Title Direct organogenesis in hypocotyl cultures of Tamarindus indica

Year 1998

Source title Biologia Plantarum

Reference 41(3): 331-337

Abstract

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Author Suisha F; Kawasaki N; Miyazaki S; Shirakawa M; Yam_

Title Xyloglucan gels as sustained release vehicles for the intraperitoneal administratio

Year 1998

Source title International Journal of Pharmaceutics

Reference 172(1-2): 27-32

Abstract

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Author Thiara N; Wadhwa R; Sharma SP

Title Age-related changes in total and mitochondrial proteins in Caryedon serratus Oliv

Year 1998

Source title Journal of Animal Morphology and Physiology

Reference 35(1): 31-38

Abstract

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Author Thomas, A., R. Gangadharan and S. V. Amma

Title Anti-inflammatory and analgesic properties of the leaves of Tamarindus indicus

Year 1998

Source title Ancient Science of Life

Reference 18(2): 120-126

Abstract

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Author Vivekanandan P

Title New tree, new system: neem production in south India

Year 1998

Source title Agroforestry Today

Reference 10(1): 12-14

Abstract

Due to rising demand for both the seeds and timber, neem (Azadirachta indica) has become prevalent in south India, where the species has been integrated into the farmers' traditional cropping systems. The agroforestry practices that have evolved at village level reflect the ingenuity and resourcefulness of local people and have been developed largely without assistance from outsiders. This article describes neem production in Siddireddiapatti, a small, drought-prone village in Tamil Nadu, where neem has largely replaced tamarind [Tamarindus indica] since it competes less with annual crops. Neem is highly compatible with peerkai (dryland cucumber, Luffa sp.) which is mainly grown by women. Coriander also grows well under the trees, and cotton can be grown under the tree until it is 3 yr old, when it is replaced by other crops. Drawbacks are that neem competes with crops for water during long dry seasons, and also, since it is not planted in straight lines, ploughing costs are greater (experimentation with more regular spacing is in progress). Siddireddiapatti has a 'watch-and-ward' system for protecting trees and crops against livestock and theft. Neem trees usually reach maturity at about 10 yr old when they start to bear seed. They may be felled at any time after this up to 15-20 yr old and time for felling is estimated from the girth as measured when the arms of an adult can only just meet round the tree. Trees of several ages are maintained in the farmers' fields. Foliage is used for goat fodder and mulch, twigs for tooth cleaning, and flowers for making special food dishes. Some trees are kept until they are 100 yr old or more, and the bark and roots used for medicinal preparations.

Author Wong, K. C., C. P. Tan, C. H. Chow and S. G. Chee

Title Volatile constituents of the fruit of Tamarindus indica L

Year 1998

Source title Journal of Essential Oil Research

Reference 10(2): 219-222

Abstract

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Author Yamagaki T; Mitsuishi Y; Nakanishi H

Title Determination of structural isomers of xyloglucan octasaccharides using post-sour

Year 1998

Source title Tetrahedron Letters

Reference 39(23): 4051-4054

Abstract

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Author Yamagaki T; Mitsuishi Y; Nakanishi H

Title Influence of different glycosidic linkages on relative ion intensities in post-source

Year 1998

Source title Rapid Communications in Mass Spectrometry

Reference 12(6): 307-311

Abstract

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Author Bakar, J. and S. A. Hamzah

Title The effect of tamarind (Tamarindus indica) and lime (Citrus medica) juice washin

Year 1997

Source title Pertanika Journal of Tropical Agricultural Science

Reference 20(2/3): 107-112

Abstract

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Author Bhattacharya S; Bal S; Mukherjee RK; Bhattacharya

Title Kinetics of tamarind seed hydration

Year 1997

Source title Journal of Food Engineering

Reference 33(1-2): 129-138

Abstract

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Author Buckeridge MS; Crombie HJ; Mendes CJM; Reid JSG; Gidley MJ; Vieira CCJ

Title A new family of oligosaccharides from the xyloglucan of Hymenaea coubaril L. (

Year 1997

Source title Carbohydrate Research

Reference 303(2): 233-237

Abstract

The xyloglucan from cotyledons of Hymenaea courbaril was hydrolysed with endo-(1,4)-beta-D-glucanase (cellulase) and analysed by TLC and HPAEC. The limit digest was different from those obtained from xyloglucans of Tamarindus indica and Copaifera langsdorffii. On treatment with nasturtium beta- galactosidase, two main oligosaccharides were detected by TLC and HPAEC. Using a process of enzymatic sequencing involving alternate treatments with a pure xyloglucan oligosaccharide-specific alpha-xylosidase, and a pure beta-glucosidase, both from nasturtium, their structures were deduced to be XXXG and a new oligosaccharide XXXXG. These structures were confirmed by H-1 NMR. The relative proportions of XXXG and XXXXG indicate that approximately half of the subunits in Hymenaea xyloglucan are based on the new oligosaccharides. In the native polymer the XXXXG subunits are likely to carry galactosyl substituents in varying proportions, since cellulase hydrolysates contained many bands which were converted to XXXXG on hydrolysis with nasturtium beta-galactosidase. Although no comparative studies on the physico-chemical properties of Hymenaea courbaril xyloglucan have yet been performed, our results indicate that this polymer is less interactive with iodine when compared with T. indica and C. langsdorffii xyloglucans, suggesting that changes in conformation may occur due to the presence of XXXXG.

Author Buwalda AO; Otsyina R; Filson G; Machado VS

Title Indigenous miombo fruit trees - health and wealth for the Sukuma people

Year 1997

Source title Agroforestry Today

Reference 9(3): 23-25

Abstract

A questionnaire survey was conducted of 91 households and 20 markets on indigenous miombo fruit trees used by the Sukuma people in Maswa District of Shinyangha Region, Tanzania, during the March-October dry season of 1995. Data are tabulated on the uses of various parts (flowers, fruits, leaves, bark, roots and stems/branches) of 10 species mentioned by at least 10% of respondents, and on the percentage of respondents owning and using the fruits of these same 10 species. Tamarindus indica was the most abundant and used species, followed by Canthium burtii, Grewia fallax, Diospyros fischeri, Vitex payos, Ximenia caffra, Adansonia digitata, Vitex mombassae, Azanza garckeana and Ficus natalensis.

Author Carmen Sanchez M del; Gonzalez N; Gonzalez E

Title Larvicidal effect of aqueous plant extracts on Aedes aegypti. OT: Efecto larvicida

Year 1997

Source title Manejo Integrado de Plagas

Reference 45: 30-33

Abstract

Eighteen bioassays were performed to determine insecticidal properties of aqueous plant extracts against 4th-instar larvae of A. aegypti. Plants belonged to the families Anacardiaceae, Annonaceae, Apocynaceae, Asclepiadaceae, Cucurbitaceae, Euphorbiaceae, Leguminosae [Fabaceae], Meliaceae, Moraceae, Myrtaceae, Nyctaginaceae, Solanaceae and Verbenaceae. Plant extracts were prepared by mixing 50 g of fresh material with 150 ml of distilled water. Larval mortality was observed after 12, 24 and 48 h. Annona muricata, Melia azedarach, Lycopersicon esculentum var. ceraciforme and Tamarindus indica showed insecticidal effects. A. muricata was further tested at 10 concentrations (25-285 ppm), and caused 100% mortality at all concentrations after 12 h of immersion.

Author Chattopadhyay A; Subrahmanyam K; Anwar M

Title Natural organic compounds as iron carrier for recovery of iron chlorosis in citrone

Year 1997

Source title Journal of Medicinal and Aromatic Plant Sciences

Reference 19(3): 705-708

Abstract

In a field study in Uttar Pradesh, India, citronella Java (Cymbopogon winterianus), suffering from iron chlorosis, received foliar application of iron solutions containing different chelators of iron, both natural and synthetic organic substances. The soil was a sandy loam Ustifluvent, pH 8.1. The 6 treatments consisted of ferrous sulfate alone or combined with EDTA, citric acid, lemon juice, tartaric acid or tamarind extract. Foliar applications of iron chelates were more effective than inorganic ferrous sulfate; natural organic substances like lemon juice could be utilized as effective iron carriers in place of EDTA or analogous compounds.

Author Devaraj P; Chandrasekaran P; Lakshmidevi R; Durairaj S

Title Comparative studies on the growth performances of various tree species in black c

Year 1997

Source title Journal of Ecobiology

Reference 9(1): 071-073

Abstract

Tests were made of the performance of 21 tree species (mostly multipurpose trees) on black cotton soil (vertisol) at the Institute of Forest Genetics & Tree Breeding campus, Coimbatore, Tamil Nadu. The soil is acid (pH 8.2-8.5), with a canker pan 10-20 cm thick at 100 cm depth, and the area suffers from drought. The only tree species previously grown successfully on it was Prosopis juliflora, which has become naturalized in the area. None of the 21 species tested performed as well as P. juliflora, often dying when their roots reached the canker pan after a few years growth. The best performance was given by Delonix regia, followed by Tamarindus indica, Hardwickia binata, Acacia leucophloea, Cassia glauca, Santalum album and Hibiscus tiliaceus.

Author Elzubier AG; Ansari EHH; El Nour MH; Bella H

Title Knowledge and misconceptions about malaria among secondary school students a

Year 1997

Source title Journal of the Royal Society of Health

Reference 117(6): 381-385

Abstract

The responses of secondary school students (n=333, mean age 18.5 years) and teachers (n=38, mean age 36.7 years) from 5 schools in Kassala, Eastern Sudan, to a questionnaire on their knowledge and misconceptions about malaria are reported. Knowledge about symptoms and cause of malaria were considered to be adequate. However, there were deficiencies regarding knowledge of the seriousness of malaria in primigravidae and children. There was an exaggerated belief that chloroquine may cause abortion. There were also important sconceptions regarding the causation of malaria by eating unripe Unkoleeb (Sorghum saccharatum), the belief that the local beverage Aradaib (Tamarindus indica) cures malaria, as well as beliefs that chloroquine injections are more effective than tablets, that iv fluids are essential for treatment of every attack, and that multi-vitamins may prevent the d i s e a s e .

Author Faik A; Chileshe C; Sterling J; Maclachlan G

Title Xyloglucan galactosyl- and fucosyltransferase activities from

Year 1997

Source title Plant Physiology

Reference 114(1): 245-254

Abstract

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Author Faik, A., C. Chileshe, J. Sterling and G. Maclachlan

Title Xyloglucan galactosyl- and fucosyltransferase activities from pea epicotyl micros

Year 1997

Source title Plant Physiology

Reference 114(1): 245-254

Abstract

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Author Foldi I

Title The Xylococcinae (Hemiptera:Coccoidea:Margarodidae): Analysis of species cha

Year 1997

Source title Annales de la Societe Entomologique de France

Reference 33(2): 185-195

Abstract

A new genus, Jansenus, gen. n. is described for a new species Jansenus burgeri, sp. n. collected under the bark of Tamarindus indica L. from Thailand. First and second instars nymphs and the adult female an described and illustrated. A key to the genera of the sub-family Xylococcinae is proposed. The phylogenetic position, biology, host plants, geographical distribution and economic importance of the species of Xylococcinae are discussed.

Author Hayashi Y; Carsky RJ

Title Effect of use of savanna tree leaves as mulch materials on germination and growth

Year 1997

Source title Japanese Journal of Tropical Agriculture

Reference 41(1): 14-21

Abstract

Leaves of indigenous and exotic tree species adapted to the climatic conditions of the northern Guinea savanna of West Africa were evaluated for use as a mulch material and screened for their effect on germination and early growth of two cultivars each of soyabeans, cowpeas (Vigna unguiculata), maize, sorghum and millet (Pennisetum glaucum). Seed germination, and radicle and shoot fresh weight were examined after 7 days of incubation in Petri dishes with aqueous extracts of dried ground tree leaves. Aboveground dry matter content and weed numbers were observed in a pot study in which dried ground tree leaves were mixed with the top 3 cm layer of soil. The most consistent negative effects across both trials and all crops were observed in the Erythrophleum suaveolens and Combretum molle treatments. Vitellaria paradoxum [V. paradoxa], Prosopis africana and Entada africana induced adverse effects in the Petri dish test but not in soil in pots. Tamarindus indica also induced negative effects on germination and radicle growth in Petri dishes but stimulated early crop growth in the pot study. Based on these studies E. suaveolens, C. molle, and Daniellia oliveri should not be used as mulch materials in the development of agroforestry systems utilizing multi-purpose trees, whereas T. indica, Ficus polita and Piliostigma reticulatum [Bauhinia reticulata] show promise. Since the in vitro screening method applied is rapid but some discrepancies in the results were observed, it is suggested that it should be complemented by pot screening.

Author Khanna, M., A. K. Dwivedi and S. Singh

Title Polyose from seeds of Tamarindus indica of unique property and immense pharma

Year 1997

Source title Carbohydrate; Emerging trends in carbohydrate chemistry, Lucknow, India

Reference Surya International Publications, 79-82 pp

Abstract

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Author Kulkarni D; Dwivedi AK; Sarin JPS; Singh S

Title Tamarind seed polyose: a potential polysaccharide for sustained release of verapa

Year 1997

Source title Indian Journal of Pharmaceutical Sciences

Reference 59(1): 1-7

Abstract

Tamarind seed polyose, a polysaccharide obtained from seeds of Tamarindus indica, was studied for sustaining the release of verapamil hydrochloride. The release pattern was compared with matrices of other polysaccharide polymers such as ethyl cellulose, hydroxyethyl cellulose and hydroxypropyl methyl cellulose, as well as the commercially available sustained release tablets (Isoptin SR). Formulation was also done by substituting part of the polymer with ethyl hydroxyethyl cellulose for enhancement of drug release. The in vitro release of the drug from the matrices prepared were studied using the Sartorius Dissolution Simulator. Two formulations, found comparable with isoptin SR, were subjected to in vivo studies in rabbits. A good correlation between in vitro and in vivo studies was found.

Author Mackeen MM; Ali AM; Abdullah MA; Nasir RM; Mat NB,

Title Antinematodal activity of some Malaysian plant extracts against the pine wood ne

Year 1997

Source title Pesticide Science

Reference 51(2): 165-170

Abstract

Methanolic extracts of 79 Malaysian plants representing 42 families were assessed for nematicidal activity against B. xylophilus using a fungal-feeding assay. Extracts of 27 plants from 19 families showed nematicidal activity, while 52 species were inactive. Five extracts (Sauropus androgynus, Eugenia polyantha, Areca catechu, Piper betle and Piper nigrum) exhibited very strong activity against the nematode at a minimum effective dose (MED) of 0.625 mg per ball. Strong activity (MED: 1.25-2.5 mg per ball) was shown by the extracts of Spondias cyntherea, Codiageum variegatum, Euodia glabra and Cicca acida. Eleven extracts (Carica papaya, Ipomoea aquatica, Ocimum basilicum, Leea gigantea, Pithecellobium jiringa, Crypteronia paniculata, Myristica fragrans, Murraya koenigii, Leucaena leucocephala, Melastoma malabathricum and Morinda citrifolia) demonstrated moderate activity between MED of 5 and 10 mg per ball, and weak activity was observed in 7 extracts (Ipomoea batatas, Cymbopogon citratus, Garcinia atroviridis, Psophocarpus tetragonolobus, Tamarindus indica, Allium odorum and Stenochalaena palustris).

Author Mastromarino P; Petruzziello R; Macchia S; Rieti S

Title Antiviral activity of natural and semisynthetic polysaccharides on the early steps o

Year 1997

Source title Journal of Antimicrobial Chemotherapy

Reference 39(3): 339-345

Abstract

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Author Murthy, K. N.

Title Tamarind tree improvement works in Karnataka

Year 1997

Source title Myforest

Reference 33(2): 457-464

Abstract

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Author Nagarajan, B., A. Nicodemus, A. K. Mandal and R. Verma

Title Tree improvement and reproductive biology studies in tamarind

Year 1997

Source title Southern forest tree improvement, Orlando; FL

Reference [np], 285-292 pp

Abstract

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Author Nakamura, F. and Y. Machida

Title In vitro release property and shelf stability of halopredone acetate ground mixture

Year 1997

Source title Journal of Pharmaceutical Science and Technology Japan

Reference 57(3): 132-138

Abstract

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Author Niemann C; Carpita NC; Whistler RL

Title Arabinose-containing oligosaccharides from tamarind xyloglucan

Year 1997

Source title Starch (Staerke)

Reference 49(4): 154-159

Abstract

Oligosaccharide mixtures were obtained by enzymatic degradation of tamarind xyloglucan from the seeds of Tamarindus indica by commercial Aspergillus niger endo-(1-->4)-beta-D-glucanase, and their composition analyzed by HPAE-PAD liquid chromatography revealing two major groups of oligosaccharides. The first group contained oligomers of DP 7, 8 and 9, while the second group consisted of a large variety of oligomers of DP 12 to 18. After purification by SEC and HPLC in semi-preparative scale, single oligomers were characterized by glycosyl-residue composition, glycosyl-linkage analysis and plas ma desorption mass spectrometry. Beside beta-D-glucosyl, beta-D-galactosyl and alpha-D-xylosyl units, some higher oligomers contained beta-D-galactosyl-(1-->5)-alpha-L-arabinosyl units, linked to 0-6 in the glucosyl units of the (1-->4)-beta-D-glucan backbone. Other L-arabinosyl residues were located in terminal positions of alpha-D-xylosyl side chains. The variety of isolated oligomers reflected a complicated random distribution of side chains in tamarind xyloglucan. Based on the characteristics of the oligomers, four structure forming units for the polysaccharide are proposed.

Author Niemann, C.

Title Arabinose-containing oligosaccharides from tamarind-xyloglucan

Year 1997

Source title Starch

Reference 49(4): 154-159

Abstract

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Author Ravindranath, N. H., A. Meili and R. Anita

Title Tamarind orchards: Agroforestry for dry land

Year 1997

Source title Technologies for Activities Implemented Jointly, Vancouver; Canada

Reference Oxford, 493-502 pp

Abstract

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Author Rema J; Krishnamoorthy B; Mathew PA

Title Vegetative propagation of major tree spices - a review

Year 1997

Source title Journal of Spices and Aromatic Crops

Reference 6(2): 87-105

Abstract

Vegetative propagation of major tree spices grown in India, including Myristica fragrans, Syzygium aromaticum, Cinnamomum verum [C. zeylanicum], C. aromaticum, Pimenta dioica, Garcinia gummi-gutta (syn. G. cambogia), G. indica, Tamarindus indica and Punica granatum, is described. Propagation methods including cuttings, air layering, budding, grafting and micropropagation are discussed.

Author Romero-Tehuitzil, H., E. J. Vernon-Carter, M. G. Vizcarra-Mendoza and C. I. Ber

Title Effect of biopolymers on the formation, drying kinetics and flavor retention of ta

Year 1997

Source title Natural polymers as advanced materials: Biopolymers: utilizing nature's advanced

Reference Washington DC, 283-291 pp

Abstract

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Author Santos NC; Prieto MJE; Morna Gomes A; Betbeder_

Title Structural characterization (shape and dimensions) and stability of polysaccharide

Year 1997

Source title Biopolymers

Reference 41(5): 511-520

Abstract

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Author Satisha J; Melanta KR; Venkatesha J

Title Effect of age of rootstocks on success of softwood grafting in tamarind

Year 1997

Source title Current Research - University of Agricultural Sciences Bangalore

Reference 26(6-7): 93-94

Abstract

In order to determine the optimum age of rootstocks for softwood grafting of tamarinds, scions preconditioned for 30 days were grafted onto 3-, 6-, 9-, 12-, 15- or 18-month-old rootstocks, growing in a greenhouse in India during 1993-94. The contents of reducing sugars, non-reducing sugars, starch, total carbohydrates and total N of rootstocks and C:N ratio were also recorded. Graft success was associated with rootstock age. At 60 days after grafting, success was significantly higher for 6- and 9-month-old rootstocks (69-72%) than for the others. The 6- and 9-month-old rootstocks also contained a higher proportion of non-reducing sugars and total sugars than the other rootstocks.

Author Shiroishi M; Amano Y; Hoshino E; Nisizawa K; Kanda

Title Hydrolysis of various celluloses, (1->3),(1->4)-beta-D-glucans, and xyloglucan by

Year 1997

Source title Mokuzai Gakkaishi

Reference 43(2): 178-187

Abstract

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Author Singh G; Dagar JC; Singh NT

Title Growing fruit trees in highly alkali soils - A case study

Year 1997

Source title Land Degradation and Development

Reference 8(3): 257-268

Abstract

The performance of 10 fruit species, namely pomegranate (Punica granatum), guava (Psidium guajava), sapota (Achras japota), baelpather (Aegle marmelos), amla (Emblica officinalis), ber (Zizyphus mauritiana), karaunda (Carissa carandas), date palm (Phoenix dactylifora), jamun (Syzygium cuminii) and imli (Tamarindus indica), as affected by site preparation and amendment use, was evaluated in a replicated field trial established in 1992 in a highly alkali soil (pH 10.5) at the Bichhian experimental farm of the Central Soil Salinity Research Institute, Karnal. The treatments involved two site preparation methods: (1) augerholes of 20-25 cm diameter and 160-180 cm deep made in the centre of 45 cm x 45 cm pits in the main plot and (2) pits of 90 cm x 90 cm x 90 cm; variable amendments composition in the subplot and fruit species in the sub-subplots. Growth observations recorded 26 months after planting showed that survival, height and girth of all species remained unaffected owing to site preparation techniques and amendment use. Irrespective of planting techniques and amendment use, jamun, guava, ber and imli performed best. Date palm and baelpather performed poorly. Initial growth of sapota was satisfactory, but it was found highly sensitive to frost. Similarly, pomegranate which was performing exceedingly well was found very sensitive to prolonged water stagnation. This 3- year study indicated that out of 10 species tried, about half a dozen fruit plants can be established in alkali soils after following appropriate site preparation methods and better management practices. Established species came to bearing between 18 and 24 months after planting, but the fruits were damaged by prolonged water stagnation during the monsoon season and chilling temperatures of the 1994-95 winter. This study further indicated that the augerhole method of root bed preparation, is an economical, less laborious and faster way of planting fruit trees than is the pit method. The experiment will be continued to study treatment effects on fruit production and quality before making final recommendations.

Author Singh R; Jeeva V; Mahalakshmi R

Title An outbreak of Achaea janata Linn. (Lepidoptera: Noctuidae) on Tamarindus indi

Year 1997

Source title Insect Environment

Reference 3(2): 30-31

Abstract

An outbreak of Achaea janata on Tamarindus indica was observed at Madurai, Tamil Nadu, India, over an area of about 100 ha, in April-May 1996. An average of 400-650 larvae per tree were counted. Large numbers of larvae were found dead on the branches or on the ground, and they were subsequently shown to be infected with a nuclear polyhedrosis virus.

Author Veluraja, K., S. Ayyalnarayanasubburaj and A. J. Paulraj

Title Preparation of gum from tamarind seed - and its application in the preparation of c

Year 1997

Source title Carbohydrate Polymers

Reference 34(4): 377-379

Abstract

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Author Vincens A; Semmanda I; Roux M; Jolly D

Title Study of the modern pollen rain in Western Uganda with a numerical approach

Year 1997

Source title Review of Palaeobotany and Palynology

Reference 96(1-2): 145-168

Abstract

Modern soil samples from western Uganda, for a range of 10 plant communities belonging to 5 African phytogeographical regions, and distributed along an altitudinal gradient from 600 to 4400 m, were analysed for pollen content to define modern pollen/vegetation relationships. The main plant communities were: (1) from 600 to 900 m altitude grass savannas with deciduous thicket, Hyparrhenia savannas with Borassus aethiopum, Piliostigma and Tamarindus, and moist semi-deciduous forest with Cynometra and Celtis; (2) at mid-altitudes forest-savanna mosaic with 3 types of forest (moist evergreen with Parinari excelsa, moist semi-deciduous and mixed), and also intermediate Acacia and Combretum savannas; and (3) highland vegetation >1800 m altitude, consisting of 3 types - montane forest (Afromontane type), ericaceous vegetation dominated by Erica arborea, and the alpine belt of forest, scrub, grassland and bog. Correspondence analysis (CA) applied to the pollen counts (100 sites and 167 taxa) indicated 4 distinct vegetation types (Sudanian; Kibale forest Lake Victoria Mosaic type; Afromontane/Afroalpine but with few significant numerical contributions from the Afromontane taxa; and Guineo-Congolian) arranged along an altitudinal gradient (CA axis 1) and a physiognomical gradient (densely structured to open, CA axis 3). These results confirm the empirical interpretation proposed on the initial pollen data set and are in agreement with those obtained previously on modern or fossil pollen spectra from other African regions.

Author Yamagaki T; Mitsuishi Y; Nakanishi H

Title Structural analyses of xyloglucan heptasaccharide by the post-source decay fragm

Year 1997

Source title Bioscience, Biotechnology and Biochemistry

Reference 61(8): 1411-1414

Abstract

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Author Yamatoya K; Shirakawa M; Kuwano K; Suzuki J; Baba_

Title Hypolipidemic effects of hydrolyzed xyloglucan

Year 1997

Source title Macromolecular Symposia

Reference 120: 231-236

Abstract

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Author Ajiwe, V. I. E., C. A. Okeke, H. U. Agbo, G. A. Ogunleye and S. C. Ekwuozor

Title Extraction, characterization and industrial uses of velvet-tamarind, physic-nut and

Year 1996

Source title Bioresource Technology

Reference 57(3): 297-299

Abstract

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Author Amano Y; Shiroishi M; Nisizawa K; Hoshino E; Kanda

Title Fine substrate specificities of four exo-type cellulases produced by Aspergillus ni

Year 1996

Source title Journal of Biochemistry

Reference 120(6): 1123-1129

Abstract

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Author Amano, Y., M. Shiroishi, K. Nisizawa, E. Hoshino and T. Kanda

Title Fine substrate specificities of four exo-type cellulases produced by Aspergillus ni

Year 1996

Source title Journal of Biochemistry

Reference 120(6): 1123-1129

Abstract

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Author Arjunan MC; Tamilselvi M; Lakshmanan KK

Title Morphology of pods and seeds in some tree species

Year 1996

Source title Madras Agricultural Journal

Reference 83(6): 392-394

Abstract

Information is given from a study of 15 (multipurpose) tree species from Tamil Nadu, India (Acacia fernesians [A. farnesiana], Adenanthera pavonia [A. pavonina], Aegle marmelos, Albizia lebbek [A. lebbeck], Cassia fistula, C. siamea, Ceiba pentandra, Delonix elata, Erythrina indica, Limonia acidissima, Parkia biglandulosa, Peltophorum pterocarpum, Samanea saman [Albizia saman], Tamarindus indica and Weightia tinctoria [Wrightia tinctoria]) on the morphological characteristics of their pods and seeds. These data made it possible to recognize individually each of the 15 species.

Author Bogale M; Petros B

Title Evaluation of the antimalarial activity of some Ethiopian traditional medicinal pla

Year 1996

Source title Sinet - Ethiopian Journal of science

Reference 19(2): 233-243

Abstract

Thirty-three crude extracts from 9 Ethiopian medicinal plants were tested for antimalarial activity against chloroquine-resistant Plasmodium falciparum (strain FCM-29) in vitro. The following plants were collected from Addis Ababa and the northern and western regions of Shoa: Clutia abyssinica; Cucumis ficifolius; Jasminum abyssinicum; Justicia schimperiana; Leonotis velutina var rugosa; Securidaca longepedunculata; Tamarindus indica; Vernonica amygdalina; Withania somnifera. The measurement of radiolabelled hypoxanthine incorporation by the parasite was used to assess inhibition of parasite growth. The chloroform and methanol extracts of leaves of W. somnifera, and the chloroform extract of leaves of V. amygdalina, showed substantial antimalarial activity with IC50 and IC90 values less than 20 and 100 micro g/ml, respectively. The antimalarial activity of these crude extracts improved several-fold following column-fractionation. The 3rd column fraction from the leaves of W. somnifera reduced the IC50 values to 2.04 and 3.98 micro g/ml for the chloroform and methanol extracts respectively; the IC90 values were reduced to 18.61 and 23.82 micro g/ml for the chloroform and methanol extracts respectively. Similarly, for the leaves of V. amygdalina, the IC50 value was reduced to 3.47 and the IC90 value reduced to 27.60 micro g/ml with the 6th column fraction of the chloroform extract. Crude extracts of W. somnifera and V. amygdalina showed cytotoxicity against human HeLa cells in vitro, with lower IC50 and IC90 values than those obtained with P. falciparum.

Author Burgalassi S; Panichi L; Saettone MF; Jacobsen J

Title Development and in vitro in vivo testing of mucoadhesive buccal patches releasin

Year 1996

Source title International Journal of Pharmaceutics

Reference 133(1-2): 1-7

Abstract

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Author Burgalassi, S., L. Panichi, M. F. Saettone, J. Jacobsen and M. R. Rassing

Title Development and in vitro/in vivo testing of mucoadhesive buccal patches releasin

Year 1996

Source title International Journal of Pharmaceutics

Reference 133(1/2): 1-7

Abstract

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Author Chiemsombat P; Naritoom K; Jiwajinda S; Klingkong S

Title Microscopic studies on association of microorganisms with tamarind roots and the

Year 1996

Source title Thai Journal of Agricultural Science (special issue)

Reference 1: 68-92

Abstract

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Author Contractor RM; Badanur VP

Title Effect of forest vegetation on properties of a Vertisol

Year 1996

Source title Journal of the Indian Society of Soil Science

Reference 44: 3, 510-511

Abstract

On the basis of the effects of different tree plantations in the properties of a Vertisol Tectona grandis (teak), Acacia nilotica, Tamarindus indica (tamarind), and Azadirachta indica (neem) were the most suitable for growing in the dry tract of Karnataka, India.

Author Dwivedi SK; Wahid Ali; Pathak RK; Ali W

Title Effect of sodicity on growth and mineral composition of tamarind (Tamarindus in

Year 1996

Source title Annals of Agricultural Research

Reference 17(4): 447-449

Abstract

The effect of high soil concentrations of sodium (applied as sodium bicarbonate) on the growth of 8-month-old tamarind seedlings in pots was investigated. Plant survival decreased with increasing concentrations of Na (>30% exchangeable Na). Plant growth (height, stem diameter and number of branches/plant) and root weight (DW and FW) decreased with increasing concentrations of Na. Concentrations of N, K, P, Ca and Mg in plants decreased and the concentration of Na increased with increasing sodicity. It was concluded that tamarind can be grown in soils containing 45% c h a n g e a b l e N a .

Author Feungchan S; Yimsawat T; Chindaprasert S; Kitpowsong P

Title Tamarind (Tamarindus indica L.) plant genetic resources in Thailand

Year 1996

Source title Thai Journal of Agricultural Science (special issue)

Reference 1: 1-11

Abstract

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Author Feungchan S; Yimsawat T; Chindaprasert S; Kitpowsong P

Title Studies on the color change of tamarind pulp in storage

Year 1996

Source title Thai Journal of Agricultural Science (special issue)

Reference 1: 52-56

Abstract

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Author Feungchan S; Yimsawat T; Chindaprasert S; Kitpowsong P

Title Evaluation of tamarind accessions on the chemical composition of pulp

Year 1996

Source title Thai Journal of Agricultural Science (special issue)

Reference 1: 28-33

Abstract

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Author Feungchan S; Yimsawat T; Chindaprasert S; Kitpowsong P

Title Studies on the selection of tamarind rootstock

Year 1996

Source title Thai Journal of Agricultural Science (special issue)

Reference 1: 34-41

Abstract

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Author Feungchan S; Yimsawat T; Chindaprasert S; Kitpowsong P

Title Effects of spacing on shoot formation for propagation of tamarind seedlings

Year 1996

Source title Thai Journal of Agricultural Science (special issue)

Reference 1: 42-44

Abstract

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Author Feungchan S; Yimsawat T; Chindaprasert S; Kitpowsong P

Title Evaluation of tamarind accessions on fruit production

Year 1996

Source title Thai Journal of Agricultural Science (special issue)

Reference 1: 12-27

Abstract

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Author Feungchan S; Yimsawat T; Chindaprasert S; Kitpowsong P

Title Effects of plant regulators on fruit setting

Year 1996

Source title Thai Journal of Agricultural Science (special issue)

Reference 1: 48-51

Abstract

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Author Ganga Prasad, S., G. S. K. Swamy, T. E. Nagaraja, G. T. Basavaraja and R. S. Kul

Title Studies on character association and path analysis in tamarind (Tamarindus indica

Year 1996

Source title Myforest

Reference 32(2): 124-127

Abstract

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Author Kadiri-M; Bedri BA; Ajao SS

Title Toxicological screening of some Nigerian wild legumes

Year 1996

Source title Revista de Biologia Tropical

Reference 4419): 269-274

Abstract

Toxicological screening was carried out on seeds of five wild leguminous plants: Delonix regia, Cassia tora, Sesbania sesban, Crotalaria naragutensis and Tamarindus indica. The animals used in the toxicological screening were mice and rats. The leguminous seeds had protein contents between 21.1% for S. sesban and 47.7% for C. naragutensis, while the mineral elements detected in appreciable quantities were calcium, magnesium, potassium, iron, copper, zinc, phosphorus and sodium. Oxalate contents were very low, between 0.03% for S. sesban and 0.09% for C. tora. Acute toxicity tests for 12 days using mice and rats given water extracts of the 5 legumes orally and intraperitoneally were negative. The legumes increased body weight of the rats and mice when compared with controls that were given distilled water. There were also increases in blood protein and blood sugar in rats injected intraperitoneally with concentrated water extracts. Similar results were obtained in the prolonged toxicity screening.

Author Kaitho RJ; Umunna NN; Nsahlai IV; Tamminga S; Van B

Title Palatability of multipurpose tree species: Effect of species and length of study on i

Year 1996

Source title Agroforestry Systems

Reference 33(3)): 249-261

Abstract

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Author Kobayashi A; Adenan MI; Kajiyama SI; Kanzaki H; Kawazu K

Title A cytotoxic principle of Tamarindus indica, di-n-butyl malate and the structure-ac

Year 1996

Source title Zeitschrift Fur Naturforschung C-A Journal of Biosciences

Reference 51(3-4): 233-242

Abstract

Bioassay-guided fractionation of the methanolic extract of T. indica fruits led to the isolation of L-(-)-di-n-butyl malate which exhibited a pronounced cytotoxic activity against sea urchin (Hemicentrotus pulcherrimus) embryo cells. In order to study structure-activity relationships, close-structure relatives of di-n-butyl malate were synthesized using D-(+)- and L-(-)-malic acid as starting materials, and their cytotoxic activities were examined using the sea urchin embryo assay. L-(-)-Di-n-pentyl malate was the most effective inhibitor of the development of the fertilized eggs. Significant inhibitory activity was not seen in the esters of the D-(-)-isomer.

Author Lal S

Title Rehabilitation of fly ash dump yard [of] Shaktinagar super thermal power station t

Year 1996

Source title Indian Forester

Reference 122(9): 777-782

Abstract

The first part of this paper briefly describes the thermal power stations in the area of the Rihand Hydro Electric Power Station, Madhya Pradesh/Uttar Pradesh, which use Singrauli coal, characterized by a very low sulfur content, and hence do not give rise to severe air pollution. However, the power stations do produce large amounts of fly ash (30-35% of the amount of coal used), which is dumped in ponds. The ash has poor water holding capacity and hence dries quickly and is susceptible to wind erosion. The author made attempts in 1982-85 and again in 1989-91 to persuade the power stations to afforest their fly ash dumps. In 1991 the Shaktinagar Super Thermal Power Plant started this work, by giving funds to raise 2000 plants. Plantations were raised in 1991-93, using planting stock of multipurpose trees in large polybags containing soil and FYM, planted in pits of (45 cm)3 at 2x2 m spacing. The planting area was protected by wire fencing. The different combinations of species planted over the 3 yr were selected from Dalbergia sissoo, Terminalia arjuna, Albizia lebbeck, Cassia siamea, Eucalyptus hybrid [E. tereticornis], Inga dulce, Pithecellobium dulcis, Pongamia pinnata, Acacia nilotica, Acacia auriculiformis, Eugenia jambolana [Syzygium cumini] and Tamarindus indica. Data are tabulated on growth measurements made in December 1994. More than 50% of plants survived, and the area is now fully covered with planted trees and naturally colonizing herbs, shrubs and grasses between them. The most important species of the latter were Cynodon dactylon, Calotropis procera, Parthenium, Saccharum spontaneum, Solanum nigrum, Xanthium strumarium and Lantana camara.

Author Lanhers MC; Fleurentin J; Guillemni F

Title Tamarindus indica L

Year 1996

Source title Ethnopharmacologia

Reference 18: 42-57

Abstract

Tamarindus indica L. has numerous applications in traditional medicine and all parts of the plant have therapeutic uses.

The value of many traditional uses have been confirmed by experiment, and in particular, the antibacterial and antifungal value of fruit and seed extracts. Recommendation of the use of the fruits to improve drinking water is dependent, however, on complementary research in chemistry and microbiology.

Author Lebot V

Title Genetic improvement of exotic broadleaved species in Madagascar (L'amelioratio

Year 1996

Source title Bois et Forets des Tropiques

Reference 247: 21-36

Abstract

An account is given of forest tree genetic improvements being undertaken in Madagascar, part of a programme aided by the European Union (through the FED, Fonds Europeen de Developpement) for the supply of improved forest tree seedlings for village afforestations. The multipurpose trees Acacia spp. and Eucalyptus spp. were the principal genera selected, although Casuarina spp., Cedrela odorata, Grevillea robusta, Tectona grandis, Tamarindus indica and Azadirachta indica were also investigated (24 species in all). Descriptions are given of seed orchard arrangements and operations (e.g., site preparation, early thinning) in each of the four bioclimatic zones of the country: Anstirinala in the central zone (E. cloeziana, E. grandis, E. muellerana, E. robusta germplasm introduced); Ampitabe and Ivoloina in the eastern zone (4 Acacia, 7 Eucalyptus spp. and 3 others tested), and Anarafaly in the southern zone (E. camaldulensis and Acacia albida [Faidherbia albida]). Genotype environment interactions are important, and consideration was given to regional smallholder or farmer needs for reforestation (which were good coppicing ability, a thick bark for fire resistance, juvenile growth vigour and performance, and volume production for fuelwood and charcoal production).

Author Malik YP; Singh SV; Pandey ND

Title Field evaluation of some plant extracts and insecticides against linseed bud fly, D

Year 1996

Source title Indian Journal of Entomology

Reference 58(1): 32-35

Abstract

Ethyl alcohol extracts of various parts of seven plants i.e., seeds of Tamarindus indica, leaves of Lantana camara, leaves of neem (Azadirachta indica), rhizomes of sweet flag (Acorus calamus), leaves of eucalyptus (Eucalyptus globulus), leaves of Murraya paniculata and leaves of Tabernaemontana coronaria each in 0.5 and 1.0% concentration along with four insecticides i.e., phosphamidon 85 SL (0.03%), decamethrin [deltamethrin] 2.8 EC (0.002%), chlorpyrifos 20 EC (0.05%) and endosulfan 35 EC (0.07%) were tested against Dasyneura lini on linseed variety Neelum under field conditions in India. Among the plant extracts, sweet flag (1.0%) received significantly lower (11.70%) bud infestation at harvest with a higher yield of 12.30 q/ha followed by neem (1.0%) having 12.75% bud infestation and 11.80 q/ha yield. The synthetic insecticides were found to be superior to all the plant extracts. Decamethrin (0.002%) gave the best performance among all the treatments providing significantly less bud infestation (6.55%) and high yields of 15.10 q/ha compared with the control.

Author Mohamedain KM; Mohamed OSA; ElBadwi SMA; Adam SEI

Title Effect of feeding Tamarindus indica ripe fruit in brown hisex chicks

Year 1996

Source title Phytotherapy Research

Reference 10(7): 631-633

Abstract

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Author Mustapha A; Yakasai IA; Aguye IA

Title Effect of Tamarindus indica L on the bioavailability of aspirin in healthy human v

Year 1996

Source title European Journal of Drug Metabolism and Pharmacokinetics

Reference 21(3): 223-226

Abstract

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Author Mustapha, A., I. A. Yakasai and I. Abdu Aguye

Title Effect of Tamarindus indica L. on the bioavailability of aspirin in healthy human

Year 1996

Source title European Journal of Drug Metabolism and Pharmacokinetics

Reference 21(3): 223-226

Abstract

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Author Nakagawa, K., M. Sugita, T. Komoriya, T. Ashina, N. Hasegawa and A. Yamamo

Title Application of tamarind as a retanning agent

Year 1996

Source title Hikaku Kagaku

Reference 42(1): 55-61

Abstract

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Author Nakamura F; Ohta R; Machida Y; Nagai T

Title In vitro and in vivo nasal mucoadhesion of some water-soluble polymers

Year 1996

Source title International Journal of Pharmaceutics

Reference 134(1-2): 173-181

Abstract

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Author Pal RK; Tripathi RA; Prasad R

Title Relative toxicity of certain plant extracts to khapra beetle, Trogoderma granarium

Year 1996

Source title Annals of Plant Protection Sciences

Reference 4(1): 35-37

Abstract

The insecticidal properties of alcohol extracts obtained from the leaves of chandani (Taberna montana coronaria) [Tabernaemontana coronaria], curry (Murraya paniculata), asriple (Lantana camara), eucalyptus (Eucalyptus sp.), neem (Azadirachta indica), rhizomes of sweet flag (Acorus calamus) and seeds of imli (Tamarindus indica), and oil from neem kernels compared with the mmonly used organophosphate insecticides malathion 50 EC and chlorpyrifos-methyl 50 EC were tested for their comparative toxicity against the fully grown larvae of Trogoderma granarium. The relative toxicity on the basis of LC50 in descending order was: malathion > chlorpyrifos-methyl > A. indica oil > A. calamus > T. coronaria > T. indica > A. indica leaves > L. camara > M. paniculata > Eucalyptus sp.

Author Patel NL; Singh SP

Title Dynamics of growth in some agroforestry tree species under South Saurashtra regi

Year 1996

Source title Indian Forester - Special Issue - Agroforestry

Reference 122(7): 570-576

Abstract

Trials were conducted from July 1991 to January 1994 at Junagadh, Gujarat, with 10 multipurpose tree species commonly used in agroforestry systems. Data are tabulated on survival, height and girth growth, and numbers of leaves and leaf area over this period. Survival was >94% for all species except Eucalyptus hybrid [E. tereticornis] (78%). Albizia lebbeck and Melia azedarach had the best height growth, while girth growth was highest in Cordia dichotoma and Melia edarach. The number of leaves retained per plant was highest in Pithecellobium dulce followed by Melia azedarach. The total leaf area per plant was highest in Melia azedarach, followed by Albizia lebbeck and Azadirachta indica. The other species included in the trial were Cassia fistula, Casuarina equisetifolia, Syzygium cumini and Tamarindus indica.

Author Patil SG; Hebbara M; Devarnavadagi SB

Title Screening of multipurpose trees for saline vertisols and their bioameliorative effec

Year 1996

Source title Annals of Arid Zone

Reference 35(1): 57-60

Abstract

The performance of 23 multipurpose trees (categorized as fuelwood, fruit, non-edible oil and green manure species) was evaluated under saline and high water table conditions in a field trial initiated in 1989 at Thungabhadra, in Karnataka. Based upon observations on survival, height and collar diameter after 4 yr, the best performing species were Casuarina equisetifolia, Acacia auriculiformis, Dalbergia sissoo, Syzygium cumini, Pongamia pinnata and Glyricidia maculata [Gliricidia sepium]. Other species performed intermediately, and some were very poor, with 4 (Acacia aneura, Cassia siamea, Tamarindus indica and Phyllanthus niruri) not surviving at all. In general fuelwood species performed better than fruit tree species. All tree species enriched the soil nutrient pool (N, P, K and organic carbon) and reduced the dispersibility of clays.

Author Paulsamy S; Arumugasamy K; Rangarajan RN; Manorama S

Title Evaluation of calcareous mine spoils for tree seedling growth

Year 1996

Source title Annals of Forestry

Reference 4(2): 159-162

Abstract

Seedling growth of Pongamia pinnata, Tamarindus indica and Azadirachta indica was studied in soils from lime mine spoils of 3 ages (fresh, 5 and 10 yr old) from the Associated Cement Company at Madukkarai, Coimbatore, Tamil Nadu. The mine spoil was amended with rock phosphate or farmyard manure (both at the rate of 20 g/2 kg mine spoil). Growth over 60 days was generally poor in unamended spoil. However, it improved significantly with the age of the spoil. Amendments with either rock phosphate or farm yard manure enhanced growth, the latter being more effective. The 10-yr-old spoil with farmyard manure almost supported equal growth of seedlings to that of soil from an adjacent non-mined site.

Author Prasad, G., T. E. S. Nagaraja and R. S. Kulkarni

Title Studies of genetic variability and diversity in tamarind (Tamarindus indica L.) acr

Year 1996

Source title Myforest

Reference 32(3): 237-240

Abstract

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Author Purohit M; Jamaluddin; Mishra GP

Title Testing of seeds of some tropical tree species for germination and mycoflora

Year 1996

Source title Indian Forester

Reference 122(6): 492-495

Abstract

The seeds of Pithecellobium dulce, Tamarindus indica and Terminalia bellirica were collected from different localities in Madhya Pradesh. Seed germination was studied one month after collection (after storage in paper bags at room temperature). Germination of >70% were obtained on blotter paper as well as in a soil mixture. Eight fungal species (5 species of Aspergillus, Chaetomium sp., Rhizopus stolonifer and Penicillium notatum) were isolated from the seeds, and of these A. flavus, A. niger, Chaetomium and Rhizopus stolonifer were commonly associated with the seeds of all 3 tree species. Seed dressing with Bavistin [carbendazim], Dithane M-45 [mancozeb], Thyride [thiram], Fytolan [copper oxychloride] and Ceresan [an organomercury fungicide] at 3 g per kg seed weight gave best control of the majority of seed-borne fungi.

Author Rao AR; Singh BP

Title Non-wood forest products contribution in tribal economy. (A case study in south

Year 1996

Source title Indian Forester

Reference 122(4): 337-342

Abstract

Non-wood forest products (NWFP) contribute significantly in tribal/rural economy in India. They provide employment for about one million people every year. Surveys undertaken in tribal dominated villages in south Bihar and the southwestern part of West Bengal showed that mahua (Madhuca latifolia [longifolia])] flowers and seeds, sal (Shorea robusta) seeds and leaves, kendu (Diospyros melanoxylon) leaves, tamarinds (Tamarindus indica) and edible fungi were the major NWFPs collected by tribals. Out of the total forest revenue of Bihar, about 17% is contributed by NWFP, while in West Bengal the figure is only 1.7%. In south Bihar about 41% of families collect mahua flowers and in southwestern West Bengal about 73% of families collect sal leaves to augment their income. However, the processing technology is lacking in these states and needs to be developed.

Author Rao RV; Sujatha M; Shashikala S; Sarma CR

Title Wood anatomical variation in certain hardwood trees - part II

Year 1996

Source title Journal of the Timber Development Association of India

Reference 42(4): 25-38

Abstract

Pith to periphery variation in anatomical features like vessel frequency, vessel diameter, vessel length, fibre length, fibre diameter, lumen diameter, wall thickness and tissue proportions were investigated in Broussonetia papyrifera, Poinciana regia [Delonix regia]. Pittosporum, tetraspermum, Grevillea robusta, and Tamarindus indica. Results indicate that trends vary from pith to periphery depending upon the anatomical feature in question.

Author	Sano M; Miyata E; Tamano S; Hagiwara A; Ito N and ????
Title	Lack of carcinogenicity of tamarind seed polysaccharide in B6C3F(1) mice
Year	1996
Source title	Food and Chemical Toxicology
Reference	34(5) 463-467
Abstract	

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Author	Sano, M., E. Miyata, S. Tamano, A. Hagiwara, N. Ito and T. Shirai
Title	Lack of carcinogenicity of tamarind seed polysaccharide in b6c3f~1 mice
Year	1996
Source title	Food and Chemical Toxicology
Reference	34(5): 463-467
Abstract	

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Author Sekar C; Rai RSV; Ramasamy C

Title Role of minor forest products in tribal economy in India: a case study

Year 1996

Source title Journal of Tropical Forest Science

Reference 8(3): 280-288

Abstract

A study was carried out to assess the extent of tribal involvement in the collection and marketing of minor forest products (MFPs) by the largest cooperative society operating in the province of Tamil Nadu, viz. the Sathyamangalam Hill Tribes LAMP (Large Area Multipurpose) Cooperative Society. Around 83% of the members were tribals who were actively involved in MFP collection. Non-tribals and Adi Dravidars comprised the remaining members. On an average, the tribals spent 8-10 h a day collecting MFPs. During the farming season, 20% of the tribal households also worked as agricultural labourers. Through MFP collection, the tribals earned on an average Rs 11 180 per annuum per household of 3 earning members. Among the MFPs, amla (Emblica officinalis [Phyllanthus emblica]) topped the list yielding a revenue of Rs 24.57 lakhs in a year followed by broom grass (Thysanolaena maxima), and stone and tree moss. In terms of quantity, that of broom grass was the most followed by amla, and stone and tree moss. Other major products were from poochakai (Sapindus emarginatus), tamarind (Tamarindus indica), kadukai (Terminalia chebula), pungam (Pongamia pinnata, kernels), chikakai (Acacia concinna), ber (Ziziphus sp., dried fruits), wood apple (Limonia acidissima, dried fruits). Two marketing channels were operating for the MFP trade: channel I involved the tribals selling to the cooperative society, and the society acting as retailer to consumers, and channel II involved tribals selling to the cooperative as wholesaler, who then sold on to retailers (private traders) who sold to the consumers. Channel I provided a higher producers' share. The existence of a monopsony in marketing of MFPs in tribal areas leads to inefficiency in their marketing. Remedial measures are discussed.

Author Selvaraj M; Syamala D; Arumugam S; Rao MV

Title Growth and productivity of AM inoculated tropical tree seedlings

Year 1996

Source title Indian Forester

Reference 122(12): 1161-1167

Abstract

Container grown seedlings of the multipurpose tree species Acacia leucophloea, A. mangium, A. nilotica, Delonix regia, Derris indica [Pongamia pinnata] and Tamarindus indica were inoculated with 3 arbuscular mycorrhizal fungi (AMF), viz. Glomus fasciculatum, G. mosseae and Gigaspora margarita. The growth responses of the seedlings (height, root collar diameter, root and shoot biomass) were analysed. In addition, accumulation of phosphate in roots, stems and leaves was also analysed. Different mycorrhizal fungi colonized differentially on different tree species, and also affected different growth parameters and phosphorus uptake differentially. Overall growth response was best with Gigaspora margarita for A. mangium, A. nilotica and Delonix regia, Glomus fasciculatum for A. leucophloea and Glomus mosseae for P. pinnata, while there was no significant response by T. indica.

Author Selvi MT; Arjunan MC; Lakshmanan KK

Title Effect of storage container, temperature, biocides and growth performance of som

Year 1996

Source title Current Research in Plant Sciences

Reference 2: 253-257

Abstract

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Author Shekar, C., Majhi and Thangavelu

Title The cooking performance of tamarind for tasar cocoons

Year 1996

Source title Journal of the Textile Institute

Reference 87(1/N2): 396

Abstract

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Author Shetty CS; Bhaskar N; Bhandary MH; Raghunath_

Title Effect of film-forming gums in the preservation of salted and dried Indian macker

Year 1996

Source title Journal of the Science of Food and Agriculture

Reference 70(4): 453-460

Abstract

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Author Singh UV

Title Conservation of forest genetic resource - an ex-situ management of secondary fore

Year 1996

Source title Indian Forester

Reference 122(9): 787-794

Abstract

Ex-situ management for the conservation of germplasm is one of the economic and socially accepted land use methods. Phenotypically superior germplasm for various economically valued species (fruit, timber and fuelwood yielding) was selected from various states in India and multiplied through vegetative reproduction. The trees/clones selected included the species Tamarindus indica, Artocarpus integrifolius [A. heterophyllus], Syzygium cumini, Santalum album, Casuarina equisetifolia, Eucalyptus hybrid [E. tereticornis], Feronia elephantum [Limonia acidissima], Emblica officinalis [Phyllanthus emblica], Tectona grandis, Semecarpus anacardium, Dalbergia sissoo, Zizyphus jujuba [Ziziphus mauritiana], Pterocarpus marsupium, Annona squamosa, Annona mucrinata [A. muricata], Mangifera indica, Anogeissus latifolia, Grewia tiliifolia, Artocarpus lakoocha, Garcinia indica, Pongamia pinnata, Lagerstroemia lanceolata, Terminalia tomentosa and Azadirachta indica. Details are given of the propagation methods used (seedlings, cuttings, grafting and layering, propagules, root suckers) for some of the species. The propagated improved stock was established in a clonal orchard at Gugargatti, Dharwad, Karnataka. Methods of orchard management and maintenance (soil management, fertilizer application, pest control, irrigation, pruning), record keeping requirements, and the advantages of germplasm conservation in clonal orchards are discussed.

Author Tigno, X. T., B. Z. Garcia and S. E. Caoili

Title Anti-inflammatory and vasodilator actions of Tamarindus indica

Year 1996

Source title International Congress Series

Reference 1117: 139-148

Abstract

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Author Towprayoon S; Rodtong S; Feungchan S; Chindaprasert S

Title Rhizobium studies on tamarind root

Year 1996

Source title Thai Journal of Agricultural Science (special issue)

Reference 1: 57-67

Abstract

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Author Usha K; Singh B

Title Selection of tamarind tree types for higher yield

Year 1996

Source title Crop Improvement

Reference 23(2): 199-202

Abstract

Tamarind (Tamarindus indica) is an economically important drought resistant tree crop. Since high yielding tamarind varieties are not available, this study was undertaken to select high yielding tamarind types based on their flowering pattern. In a seedling population of tamarind distinct early, mid and late flowering types were identified. The duration of flowering was more in late flowering trees followed by mid and early flowering types. In late and mid season flowering types, increased cross-pollination was promoted, whereas early flowering types were mostly self-pollinated under natural conditions. Studies indicated that mid and late flowering types should be selected for planting to obtain higher total yields.

Author Usha K; Singh-B

Title Influence of open, self and cross-pollination on fruit set and retention in tamarind

Year 1996

Source title Recent Horticulture

Reference 3(1): 60-61

Abstract

In a trial on 4 trees, cross pollination resulted in higher fruit set and retention than self or open pollination.

Author Yamatoya K; Shirakawa M; Kuwano K; Suzuki J; Mi_

Title Effects of hydrolyzed xyloglucan on lipid metabolism in rats

Year 1996

Source title Food Hydrocolloids

Reference 10(3): 369-372

Abstract

-

Author Yimsawat T; Feungchan S; Chindaprasert S; Kitpowsong P

Title Effects of chemical substances on young tamarind leaves initiation

Year 1996

Source title Thai Journal of Agricultural Science (special issue)

Reference 1: 45-47

Abstract

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Author Ambwani K; Kar RK

Title Volcanic effect on the plant tissues with particular reference to middle lamella

Year 1995

Source title Phytomorphology

Reference 45(3-4): 153-157

Abstract

The effect of the volcanic activity and fire on the middle lamella has been studied. The middle lamella is absent in the fusinite produced by the volcanic activity in the Narcondam Island, Andaman, and the Deccan Intertrapean woods. It is also destroyedin the extant woods when subjected to open fire. The middle lamella is however, present in controlled charcoal and non volcanic fossil woods.

Author Arjunan MC; Selvi MT; Lakshmanan KK

Title Phenology of some woody angiosperms of Coimbatore District

Year 1995

Source title Annals of Forestry

Reference 3(1): 45-52

Abstract

Phenological data are tabulated and discussed for 25 tree species growing in the Coimbatore-Mettupalayam area of Tamil Nadu. The species were Acacia farnesiana, Acacia nilotica, Acacia leucophloea, Adenanthera pavonina, Aegle marmelos, Ailanthus excelsa, Albizia lebbek [A. lebbeck], Azadirachta indica, Cassia fistula, Cassia javanica, Cassia siamea, Ceiba pentandra, Delonix regia, Delonix elata, Hardwickia binata, Holoptelia integrifolia [Holoptelea integrifolia], Leucaena leucocephala, Limonia acidissima, Parkia biglandulosa, Peltophorum pterocarpum, Polyalthia longifolia, Samanea saman [Albizia saman], Tamarindus indica, Terminalia arjuna and Wrightia tinctoria. The data were collected over 24 continuous months and are correlated with those available from different climatic regions of the country, such as the Central Himalayas, Kashmir, Arunachal Pradesh, Maharashtra, Garhwal Himalaya, Rajasthan, Karnataka and the Andaman islands.

Author Bhole AG

Title Relative evaluation of a few natural coagulants

Year 1995

Source title Journal of Water Supply Research and Technology - Aqua

Reference 44(6): 284-290

Abstract

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Author Challapilli AP; Chimmad VP; Hulamani NC

Title Studies on correlation between some fruit characters in tamarind fruits

Year 1995

Source title Karnataka Journal of Agricultural Sciences

Reference 8(1): 114-115

Abstract

Fruits from 24 established Tamarindus indica trees of seedling origin were compared for 8 characters. Analysis of the data indicated that fruit weight was positively and significantly associated with pulp, fibre and seed weights and fruit length and breadth.

Author Dagar JC; Singh G; Singh NT

Title Evaluation of crops in agroforestry with teak (Tectona grandis), maharukh (Ailant

Year 1995

Source title Journal of Tropical Forest Science

Reference 7(4): 623-634

Abstract

To identify suitable crops for growing in interspaces of six-year-old teak (Tectona grandis), maharukh (Ailanthus excelsa) and tamarind (Tamarindus indica) plantations on reclaimed salt affected soils, various combinations of crops, viz. rice (Oryza sativa)-berseem (Trifolium alexandrinum), rice-wheat (Triticum aestivum), pearl millet (Pennisetum purpureum [P. glaucum])-mustard (Brassica campestris [B. juncea]), pearl millet-lentils (Lens esculenta [L. culinaris]), and sorghum (Sorghum vulgare [S. bicolor])-gram (Cicer arietinum) were examined during kharif and rabi seasons for two years in 1990-92 at the Central Soil Salinity Research Institute, Karnal, Haryana. There was a reduction in yield of all the crops interplanted in the plantations compared with the control (outside plantation), but the reduction was minimum with tamarind because of less canopy. Lentils, am, sorghum, berseem, wheat and rice could be grown successfully with tamarind without much reduction in yield, but with teak only berseem and gram could be grown, while with maharukh only gram could be grown with 25% reduction in yield. All the tree species benefitted by growing all the interspace crops because additional water was made available to them through irrigation. However, with tamarind the advantage of growing rice, wheat, and berseem was minimum compared with sorghum, lentils and gram. Regression equations were derived to calculate the aerial biomass of trees after harvesting 5-8 trees of each species. Annual litter productions with maharukh, teak and tamarind were 8215, 4538 and 3629 kg/ha, respectively and maximum litter was produced from January to April. Nutrient concentrations (P, K Ca, Mg, Na, Fe, Mn, Zn and Cu) in the litter of the plantations are also discussed.

Author Dagar, J. C., G. Singh and N. T. Singh

Title Evaluation of crops in agro-forestry with teak (Tectona grandis), maharukh (Ailan

Year 1995

Source title Journal of Tropical Forest Science

Reference 7(4): 623

Abstract

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Author Delobel A

Title The shift of Caryedon serratus Ol. from wild Caesalpiniaceae to groundnuts took

Year 1995

Source title Journal of Stored Products Research

Reference 31(1): 101-102

Abstract

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Author Devarnavadagi SB; Murthy BG

Title Performance of different tree species on eroded soils of northern dry zone of Karn

Year 1995

Source title Advances in Agricultural Research in India

Reference 4: 73-77

Abstract

A species trial was established in kharif 1989 at the Regional Research Station at Bijapur, using saplings (about 6 months old) of 34 multipurpose tree species. Survival and growth were assessed 3 yr after planting (in 1991). The best surviving species (95-98%) were Acacia auriculiformis, Acacia catechu, Acacia nilotica, Albizia lebbeck, Anogeissus latifolia, Azadirachta indica, Bauhinia purpurea, Cassia siamea, Dalbergia sissoo, Hardwickia binata, Leucaena leucocephala, Pongamia pinnata, Prosopis juliflora, Syzygium cumini and Tamarindus indica. Mortality was most (43%) in Casuarina equisetifolia. Height growth was best in Leucaena leucocephala (3.86 m), followed (in decreasing order) by Albizia lebbeck, Eucalyptus citriodora, Hardwickia binata, Prosopis juliflora, Inga dulce and Dalbergia sissoo (3.05 m); the least height growth was in Butea monosperma (1.05 m) and Syzygium cumini (1.21 m). Diameter at breast height (dbh) was most in Albizia lebbeck (4.59 cm) followed by Delonix regia, Prosopis juliflora and Dalbergia sissoo (4.28 cm); dbh was least in Butea monosperma (1.78 cm) and Casuarina equisetifolia (1.75 cm). The other species in the trial were Emblica officinalis [Phyllanthus emblica], Eucalyptus hybrid [E. tereticornis], Peltophorum ferrugineum and Samanea saman [Albizia saman].

Author Donadio LC; Durigan JF

Title Evaluation of new fruit species in Sao Paulo, Brazil

Year 1995

Source title Proceedings of the Interamerican Society for Tropical Horticulture

Reference 39: 162-165

Abstract

Over 2 years, fruits were sampled from 10-year-old trees of 12 introduced species in the FCAV-UNESP germplasm collection and evaluated in relation to local conditions in Jaboticabal, Brazil (1431.4 mm of rain/year, 22.2 deg C mean temperature, 575 m altitude, 48 deg W and 21 deg S). The species studied were Chrysophyllum cainito, Dovyalis hebecarpa, Pouteria campechiana, Tamarindus indica, Averrhoa carambola, Calocarpum mamosum [Pouteria sapota], Achras sapota [Manilkara zapota], Diospyros discolor, Bunchosia spp., Malpighia glabra, Clausena lansium and Ziziphus jujuba [Ziziphus sp.]. Some species showed good adaptation to local conditions, but others had problems with dry periods and frost. Tree development was variable. In term of fruit quality, the species that performed best were Achras sapota and Calocarpum mamosum.

Author Fujii S

Title Effect of natural stabilizer on gelatinization property of etherified tapioca starch

Year 1995

Source title Journal of the Japanese Society for Food Science and Technology - Nippon Shok

Reference 42(10): 843-848

Abstract

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Author Gautami S; Rao RN; Raghuram TC; Rajagopala

Title Accidental acute fatal sodium nitrite poisoning

Year 1995

Source title Journal of Toxicology and Clinical Toxicology

Reference 33(2): 131-133

Abstract

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Author Grant G; More LJ; McKenzie NH; Dorward PM; Buchan_

Title Nutritional and hemagglutination properties of several tropical seeds

Year 1995

Source title Journal of Agricultural Science

Reference 124(3): 437- 445

Abstract

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Author Ibrahim NA; El-Gengaihi S; El-Hamidi A; Ba

Title Chemical and biological evaluation of Tamarindus indica L. growing in Sudan

Year 1995

Source title Acta Horticulturae

Reference 390: 51-57. Note Paper presented at the International Symposium on Medicinal an

Abstract

The mesocarp pulp of fruits of T. indica is used as a laxative and as a tonic after infusion. Seven hydrocarbons, beta -amyrin, campesterol and beta -sitosterol were identified in the unsaponifiable matter of the seeds. The major fatty acids were palmitic, oleic, linoleic and eicosanoic acids. Arabinose, xylose, galactose, glucose and uronic acid were identified from the mucilage and pectin hydrolysates. The hypoglycaemic and hypocholesterolaemic properties of the seed pectin and the mucilage of seeds and fruits were tested in alloxan-induced diabetic rats. Administration of seed and mesocarp mucilages significantly decreased blood glucose concentrations (60.48 and 54.68%, respectively). Administration of seed pectin also reduced blood glucose concentration by 28.49% after 24 h. No hypocholesterolaemic properties were observed.

Author Jayan, K., L. Jose, M. R. Raghunath and K. Devadasan

Title Tamarind fruit shell inhibits autolysis in mackerel and squid muscle

Year 1995

Source title National Symposium on Technological Advancements in Fisheries and its Impact

Reference Cochin, 342-345 pp

Abstract

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Author Joyeus M; Mortier F; Fleurentin J

Title Screening of antiradical, antilipoperoxidant and hepatoprotective effects of 9 plant

Year 1995

Source title Phytotherapy Research

Reference 9(3): 228-230

Abstract

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Author Kulkarni RS; Kumar BMK; Swamy GSK; Gangaprasad S

Title Path analysis of pulp yield in tamarind (Tamarindus indica) across provenances of

Year 1995

Source title Journal of Non Timber Forest Products

Reference 2(3-4): 157-159

Abstract

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Author Nakamura, K., Y. Nishimura, T. Hatakeyama and H. Hatakeyama

Title Liquid crystalline formation of tamarind-water systems

Year 1995

Source title Polymer Preprints Japan

Reference 44(1): E147

Abstract

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Author Ndoye I; Gueye M; Danso SKA; Dreyfus B

Title Nitrogen fixation in Faidherbia albida, Acacia raddiana, Acacia senegal and Acaci

Year 1995

Source title Plant and Soil

Reference 172(2): 175-180

Abstract

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Author Prabhanjan, H. and S. Zakiuddin Ali

Title Studies on rheological properties of tamarind kernel powder, its derivatives and th

Year 1995

Source title Carbohydrate Polymers

Reference 28(3): 245-253

Abstract

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Author Saideswara Rao Y

Title Tamarind economics

Year 1995

Source title Spice India

Reference 8: 10-11

Abstract

-

Author Shafi M; Khan MS

Title Suitability of village tree species of Bangladesh for hardboard manufacture

Year 1995

Source title Bangladesh Journal of Forest Science

Reference 24(1): 36-40

Abstract

Nine tree species (mango, Mangifera indica; jackfruit, Artocarpus heterophyllus; neem, Azadirachta indica; raintree, Samanea saman [Albizia saman]; babla, Acacia nilotica; shisham, Dalbergia sissoo; pannya mandar, Erythrina fusca; mandar, Erythrina orientalis; and tentul, Tamarindus indica) growing in villages in Bangladesh were studied to determine their suitability for making hardboard from mechanically defiberized pre-steamed chips. Strength and water-resistance properties of the boards were determined. None of the species were suitable for making hardboard good enough to meet the requirements of Class-1 hardboard of the US Hardboard Association Specifications. Nevertheless, all of the species except neem, produced good, or even better, hardboards compared with that made from sundri [Heritiera fomes] which is used in Khulna Hardboard Mills.

Author Siddhuraju, P., K. Vijayakumari and K. Janardhanan

Title Nutritional and antinutritional properties of the underexploited legumes Cassia lae

Year 1995

Source title Journal of Food Composition and Analysis

Reference 8(4): 351-362

Abstract

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Author Sinha RK

Title Biodiversity conservation through faith and tradition in India: Some case studies

Year 1995

Source title International Journal of Sustainable Development and World Ecology

Reference 2(4): 278-284

Abstract

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Author Suriyapananont S; Subhadrabandhu S; Chandraprasong C; Kongkathip N

Title Classification of some tamarind varieties by using peroxidase isozymes

Year 1995

Source title Kasetsart Journla, Natural Sciences

Reference 29(2): 266-278

Abstract

Peroxidase (PER) isoenzymes were studied in 81 leaf samples from 54 varieties of Tamarindus indica using vertical PAGE. Typical PER zymograms from sour and sweet tamarinds showed three different band colours: light brown, light grey and dark brown. The dark brown band was a key band that could be used for variety classification. PER patterns differed between genotypes, and showed that tamarind plants from the same habitat were closely related. Environment had an effect on the position of the light brown and light grey bands but not on the dark brown bands.

Author Tigno, X. T., B. Z. Garcia and S. E. Caoili

Title Anti-inflammatory and vasodilator actions of Tamarindus indica

Year 1995

Source title Microcirculatory approach to Asian traditional medicine, Beijing

Reference Amsterdam, 139-148 pp

Abstract

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Author Tsuda T; Fukaya Y; Ohshima K; Yamamoto A; Kawakish

Title Antioxidative activity of tamarind extract prepared from the seed coat

Year 1995

Source title Journal of the Japanese Society for Food Science and Technology - Nippon Shok

Reference 42(6): 430-435

Abstract

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Author	Tsuda T; Mizuno K; Oshima K; Kawakishi S; Osawa T
Title	Supercritical carbon-dioxide extraction of antioxidative components from tamarin
Year	1995
Source title	Journal of Agricultural and Food Chemistry
Reference	43(11): 2803-2806
Abstract	

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Author	Tsuda, T., K. Mizuno, K. Ohshima, S. Kawakishi and T. Osawa
Title	Supercritical carbon dioxide extraction of antioxidative components from tamarin
Year	1995
Source title	Journal of Agricultural and Food Chemistry
Reference	43(11): 2803-2806
Abstract	

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Author Weerawardane NDR; Phillips GB

Title Seven-year results from a species and provenance trial at Meegahakiula in the mid

Year 1995

Source title Sri Lanka Forester

Reference 20(1-2): 89-93

Abstract

Six acacia species (Acacia mangium, A. auriculiformis. A. crassicarpa, A. leptocarpa, A. polystachya, A. oraria), seven eucalypt species (Eucalyptus melanophloia, E. camaldulensis, E. torelliana, E. microtheca, E. crebra, and E. tereticornis and E. alba each represented by two provenances), and six other species (Casuarina cunninghamiana, Calliandra calothyrsus, Leucaena leucocephala, Tamarindus indica, Terminalia arjuna and Azadirachta indica) were included in the trial. Eleven other species failed either in the nursery or soon after planting. All the species/provenances were Australian except for some local representatives. The species were classified into three types, and the best performers in each identified, as follows. Trees of coarse form, suitable for fuelwood and occasionally for poles and timber were A. mangium, A. crassicarpa (with some qualifications) and A. auriculiformis. Trees of good form were mainly eucalypts, suitable for poles and low to high-grade timber. Eucalyptus camaldulensis showed some potential, but because of a general failure to protect the eucalypts from termite attacks, this result is inconclusive. Indigenous trees with good timber and non-timber values were Azadirachta indica and Terminalia arjuna.

Author Whitney, S. E. C., J. E. Brigham, A. H. Darke and J. S. Grant Reid

Title In vitro assembly of cellulose/xyloglucan networks: Ultrastructural and molecular

Year 1995

Source title Plant Journal

Reference 8(4): 491

Abstract

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Author Atawodi SE; Spiegelhalder B

Title Precursors of N-nitroso compounds in some Nigerian medicinal plants

Year 1994

Source title Cancer Letters

Reference 79(1): 107-115

Abstract

-

Author Bhattacharya S; Bal S; Mukherjee RK; Bhattach_

Title Functional and nutritional properties of tamarind (Tamarindus indica) kernel prote

Year 1994

Source title Food Chemistry

Reference 49(1): 1-9

Abstract

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Author Bhattacharya, S., S. Bal and R. K. Mukherjee

Title Studies on the characteristics of some products from tamarind (Tamarindus indica

Year 1994

Source title Journal of Food Science and Technology

Reference 31(5): 372

Abstract

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Author Chidumayo EN

Title Effects of wood carbonization on soil and initial development of seedlings in mio

Year 1994

Source title Forest Ecology and Management

Reference 70(1-3): 353-357

Abstract

An assessment of the effects of wood carbonisation by the traditional earth kiln method in Brachystegia-Julbernardia (miombo) woodland on soil nutrients in the field and seedling growth under laboratory conditions was made from August 1992 to March 1993. Wood carbonisation increased soil pH and exchangable P and K. Generally seed germination was better in charcoal soil than in undisturbed soil among the seven indigenous woody plants studied. Seedling growth incharcoal soil was good, except for Isoberlinia angloensis which had lower growth rate than in undisturbed soil.

Author FAO

Title Non-wood forest products of Asia

Year 1994

Source title RAPA Publication

Reference 28: 41

Abstract

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Author Fujii S

Title Optimizing stabilizer composition in starch-based frozen pudding to satisfy foam s

Year 1994

Source title Journal of the Japanese Society for Food Science and Technology - Nippon Shok

Reference 41(6): 440-447

Abstract

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Author Ganigara, B. S., B. S. Vyakarnal and S. D. Shashidhar

Title Effect of temperature and media on germintion of Tamarindus indica seeds

Year 1994

Source title Myforest

Reference 30(1): 29-32

Abstract

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Author Hayashi T, Ogawa K, Itsuishi Y

Title Characterisation of the adsorption of xyloglucan to cellulose

Year 1994

Source title Plant and Cell Physiology

Reference 35(8): 1199-1205

Abstract

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Author Hayashi T; Takeda T; Ogawa K; Mitsuishi Y

Title Effects of the degree of polymerization on the binding of xyloglucans to cellulose

Year 1994

Source title Plant and Cell Physiology

Reference 35(6): 893-899

Abstract

Results of experiments using cellulose filter paper or powder cellulose and xyloglucan from Tamarindus indica suggest that the mode of binding xyloglucan oligosaccharides to cellulose is different from that of cello-oligosaccharides.

Author Joshua J; Johnsingh AJT

Title Impact of biotic disturbances on the habitat and population of the endangered griz

Year 1994

Source title Biological Conservation

Reference 68(1): 29-34

Abstract

The impact of biotic pressures on the habitat and population of the endangered grizzled giant squirrel Ratufa macroura dandolena was quantified from December 1987 to January 1989 during a three year study in Alagarkoil Valley (15km2) in the Srivilliputtur Grizzled Giant Squirrel Wildlife Sanctuary in south India. This valley has about 40% of the total population of c.300 of this subspecies in south India. A total of 40,079 people visited the 11km2 study area during the study period. This included pilgrims (57%), wood cutters (40%) and collectors of minor forest produce such as Combretum ovalifolium climbers and Tamarindus indica fruits. The squirrel population did not show a decline during annual counts over three years but these disturbances resulted in loss of cover, food trees and nesting sites. Conservation measures are needed to safeguard this population and its habitat by the creation of a 40km2 Alagarkoil Valley National Park and planting of desired species to promote canopy continuity and availability of food plants, nesting sites and cover.

Author Komwihangilo DM

Title Behaviour of sheep and goats on stall feeding conditions

Year 1994

Source title Research and Training Newsletter (Dar es Salaam)

Reference 9(1/2): 24-27

Abstract

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Author Kulkarni, R. S., G. S. K. Swamy, B. M. Dushyantha Kumar and S. Gangaprasad

Title Commercial propagation techniques of tamarind clones

Year 1994

Source title Management of Minor Forest Produce for Sustainability

Reference New Delhi, 142-144 pp

Abstract

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Author Kulkarni, R. S., S. Ganga Prasad, G. S. K. Swamy and K. R. Melanta

Title Assessment of genetic divergence in tamarind

Year 1994

Source title Myforest

Reference 30(2): 1-4

Abstract

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Author Mahmoud BM; Ali HM; Homeida MMA; Bennett J

Title Significant reduction in chloroquine bioavailability following coadministration wi

Year 1994

Source title Journal of Antimicrobial Chemotherapy

Reference 33(5): 1005-1009

Abstract

-

Author Maksoud MA; Haggag LF; Azzazy MA; Saad RN

Title Effect of VAM inoculation and phosphorous application on growth and nutrient c

Year 1994

Source title Annals of Agricultural Science - Cairo

Reference 39(1): 355-363

Abstract

Eight-month-old tamarind seedlings were planted in black plastic pots containing 10 kg sandy soil supplemented with phosphate fertilizer (superphosphate or rock phosphate) at 0, 50, 100 and 200 kg/feddan [1 feddan = 0.42 ha]. Half the pots were inoculated with vesicular arbuscular mycorrhiza (VAM, a mixture of mostly Glomus sp. and Gigaspora sp.) at the rate of 10 ml of spore suspension (25 spores/ml)/pot. Significant increases were observed in seedling growth parameters and leaf P and K contents as a result of VAM inoculation. The largest increases in plant height and leaf number as a result of VAM inoculation occurred with rock phosphate at 200 kg/feddan.

Author Maksoud, M. A., L. F. Haggag, M. A. Azzazy and R. N. Saad

Title Effect of vam inoculation and phosphorus application on growth and nutrient cont

Year 1994

Source title Annals of Agricultural Science - Cairo

Reference 39(1): 355

Abstract

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Author Masano; Mawazin

Title The effect of pretreatment on the germination process of asam (Tamarindus indica

Year 1994

Source title Buletin Penelitian Hutan

Reference 563: 33-41

Abstract

Four pretreatments were tested: slicing off the end of the seed, soaking in cold or hot water for 24 h, and soaking in cold water with leaves of Albizia in a sealed bottle. Best germination was in the sliced seeds (92%, compared with a control value of 86.7%). The 2 cold water treatments had no effect on germination percentage and the hot water treatment reduced it to 22.7%. Germination began after 7 days and lasted for 2 days in the slicing treatment compared with 17 days in the control. Other treatments gave intermediate durations.

Author Pal P; Basu RN

Title Extension of wheat seed viability with plant leaf powders and an aspirin containin

Year 1994

Source title Indian Agriculturist

Reference 38(2): 145-149

Abstract

Wheat cv. Sonalika seeds were dry-dressed with powdered leaves of Aegle marmelos, mangoes, tamarinds, Vitex negundo or Thevetia peruviana at rates of 1-2 g leaf powder/kg seed or powdered aspirin at 20-500 mg/kg seed, and subjected to accelerated aging at 98% RH and 40 deg C for 8-9 days. All the leaf powders were as effective as neem [Azadirachta indica] in maintaining viability in aged seeds, and aspirin proved effective at doses of less than or equal to 200 mg. Seedling emergence and early growth in soil after aging for 3 months was greater for neem- and aspirin-treated seeds (65% and 76%, respectively) than for the control (39%).

Author Prins H; Maghembe JA

Title Germination studies on seed of fruit trees indigenous to Malawi

Year 1994

Source title Forest Ecology and Management

Reference 64(2-3): 111-125

Abstract

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Author Rao MSRM; Padmaiah M; Raizada A; Ayyappa

Title Productive utilisation of non-arable lands through watershed management in the s

Year 1994

Source title Indian Forester

Reference 120(1): 48-57

Abstract

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Author Saeed M; Ghaffar A

Title Experimental host range studies of the shethoid nematode Hemicriconemoides ma

Year 1994

Source title Ghana Journal of Science

Reference 22/28: 1/2, 55-58

Abstract

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Author Sagrero-Nieves, L., J. P. Bartley and A. Provis-Schwede

Title Supercritical fluid extraction of the volatile constituents from tamarind (Tamarind

Year 1994

Source title Journal of Essential Oil Research

Reference 6(5): 547

Abstract

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Author Sankaranarayanan R; Vijayakumar M; Rangasamy P

Title Cow urine for ideal seed germination in tamarind

Year 1994

Source title Indian Horticulture

Reference 38(4): 15

Abstract

Tamarind seeds have a hard seed coat that causes slow and poor germination. Soaking the seeds in 10% cow urine or in cowdung solution (500 g in 10 litres of water) for 24 h increased the germination percentage from 37% (untreated controls) to 72.6 and 82.8%, respectively.

Author Shaida, M.

Title Tamarind, turmeric and the triumphant tomato

Year 1994

Source title Disappearing food: studies in foods and dishes at risk, Oxford

Reference Prospect, 189-191 pp

Abstract

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Author Slovakova L; Subikova V; Farkas V

Title Influence of xyloglucan oligosaccharides on some enzymes involved in the hypers

Year 1994

Source title Journal of Plant Diseases and Protection

Reference 101(2): 278-285

Abstract

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Author Subikova V; Slovakova L; Farkas V

Title Inhibition of tobacco necrosis virus infection by xyloglucan fragments

Year 1994

Source title Zeitschrift fuer Pflanzenkrankheiten und Pflanzenschutz

Reference 101(2): 128-131

Abstract

Oligosaccharide fragments from xyloglucans prepared from tamarind seeds and pea stems inhibited the development of local lesions induced by tobacco necrosis necrovirus on cotyledons of cucumber cv. Laura. Inhibition ranged from 44 to 84% when the xyloglucan fragments were applied in amounts ranging from 10 to 100 micro g per cotyledon 24 h prior to virus inoculation. Results suggested a possible role of the cell wall polysaccharides or their oligosaccharide fragments in the mechanism of induced resistance against viruses.

Author Sussman RW; Rakotozafy A

Title Plant diversity and structural analysis of a tropical dry forest in soutwestern Mada

Year 1994

Source title Biotropica

Reference 26(3): 241-254

Abstract

For this paper we sampled a fenced and unprotected portion of a dry gallery forest (the Beza Mahafaly Reserve) in southwestern Madagascar for structure and floristic composition. Seedling plots were also sampled to assess invasion and regeneration. A total of 923 plants were greater than or equal to 2.5 cm diameter at breast height (DBH) were censused in 25 transects. Sixty nine species and 43 genera were represented. In plant density, diversity and size classes of individuals the forest is similar to many continental tropical dry forests in Africa and the Neotropics. Over 80% of those species identified were native, as were 26% of the genera. Unlike many insular forests Beza Mahafaly is not being invaded by fast growing exotic species. There were no noticable differences in density, diversity, size classes, or proportion of native speices between transects within and outside the protected reserve. Two distinct microhabitats were noticed. Individual plants were more dense on "drier" soils; whereas large trees greater than or equal to 25 cm DBH were over twice as frequent on "wetter" soils. The floristic composition also differed, with only two species of tree, Tamarindus indica and Azima tetracantha, being common to both habitats. The distribution and density of lemur populations within the forest appear to be directly related to microhabitat differences.

Author Tiwari RJ; Barholia AK

Title Effect of different levels of soil:sand:compost ratios on emergence rate index, rela

Year 1994

Source title Crop Research (Hisar)

Reference 8(1): 77-79

Abstract

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Author Tsuda T; Watanabe M; Ohshima K; Yamamoto A; Kawaki_

Title Antioxidative components isolated from the seed of tamarind (Tamarindus indica

Year 1994

Source title Journal of Agricultural and Food Chemistry

Reference 42(12): 2671-2674

Abstract

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Author Tsuda, T., M. Watanabe, K. Ohshima and A. Yamamoto

Title Antioxidative components isolated from the seed of tamarind (Tamarindus indica

Year 1994

Source title Journal of Agricultural and Food Chemistry

Reference 42(12): 2671

Abstract

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Author Abideen KAMZ; Gopikumar K; Jamaludheen V

Title Effect of seed characters and its nutrient content on vigor of seedlings Pongamia p

Year 1993

Source title Myforest

Reference 29(4): 225-230

Abstract

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Author Ali-Diallo B; Huignard J

Title Oviposition of four strains of Caryedon-serratus Oliver Coleoptera Bruchidae in t

Year 1993

Source title Journal of Africa Zoology

Reference 107(2): 113-120

Abstract

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Author Anon

Title Fiche espece sur Tamarindus indica L. (Caesalpiniaceae)

Year 1993

Source title Revue de Medecines et Pharmacopees Africaines

Reference 7(2): 155, 157-168

Abstract

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Author Bhargava DS; Sheldarkar SB

Title Use of TNSAC in phosphate adsorption studies and relationships - literature, expe

Year 1993

Source title Water Research

Reference 27(2): 303-312

Abstract

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Author Bhargava DS; Sheldarkar SB

Title Use of TNSAC in phosphate adsorption studies and relationships - isotherm relati

Year 1993

Source title Water Research

Reference 27(2): 325-335

Abstract

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Author Bhargava DS; Sheldarkar SB

Title Use of TNSAC in phosphate adsorption studies and relationships - effects of adso

Year 1993

Source title Water Research

Reference 27(2): 313-324

Abstract

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Author Bhattacharya S; Bal S; Mukherjee RK

Title Some physical and engineering properties of tamarind (Tamarindus indica) seed

Year 1993

Source title Journal of Food Engineering

Reference 18(1): 77-89

Abstract

Abstract The chemical composition of tamarind (Tamarindus indica) seeds and kernels, as well as some industrially important physical and engineering properties, were determined. The kernel powder was rich in potassium. The shape of the whole tamarind seed did not conform to any of the standard shapes of seeds. The length, breadth, thickness, sphericity, roundness, surface area, average weight and volume per seed were also determined. The bulk density of raw, whole seed was slightly greater than that of roasted kernels. The surface area of seeds was linearly related to weight per seed (r greater than or equal to 0.96, p less than or equal to 0.01). The angle of friction of the whole seeds was determined on rough, smooth, and very smooth surfaces. The angle of repose for roasted kernel (34-39 degrees) was higher than that of the raw whole seeds (31-35 degrees).

Author Das SC; Akhter S; Sayeed M

Title Chemical composition and water repellency property of ten village wood species

Year 1993

Source title Bangladesh Journal of Forest Science

Reference 22(1-2): 61-67

Abstract

A study on chemical analysis and water repellency properties of ten village wood species was conducted to find out the percentages of their chemical components. It was found that raintree (Samanea saman [Albizia saman]) possessed the highest amount of water soluble extractives. It was followed by babla (Acacia nilotica sub. indica), mango (Mangifera indica) and painya mandar (Erythrina ovalifolia). Neem (Azadirachta indica) and jackfruit (Artocarpus heterophyllus) contained the least amount of these kinds of extractives. Alcohol-benzene soluble extractives of the species fell in the range of 1.38-6.60% The holocellulose content was the highest in tentul (Tamarindus indica). Ghora neem (Melia azedarach) ranked the next in this respect. In consideration of the cellulose content, tentul, ghora neem, sissoo (Dalbergia sissoo), mango and babla may be suitable for chemical pulping and conversion products. These ten species were explored for water repellency. Neem was found to absorb the least amount of water. Sissoo, babla and tentul were found to absorb slightly more water. These species may be suitable both for indoor and outdoor uses. Sorption of water in the remaining six species was considerably higher and consequently they are deemed not suitable for outdoor uses.

Author Delobel B; Grenier A M

Title Effect of noncereal food on cereal weevils and tamarind pod weevil (Coleoptera,

Year 1993

Source title Journal of Stored Products Research

Reference 29(1): 7-14

Abstract

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Author Delobel, B. and A. M. Grenier

Title Effect of non-cereal food on cereal weevils and tamarind pod weevil (Coleoptera:

Year 1993

Source title Journal of Stored Products Research

Reference 29(1): 7

Abstract

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Author Gangadhar MA; Prasad JR; Krishna N

Title Chemical composition and in vitro digestibility of important conventional and un

Year 1993

Source title Indian Journal of Animal Sciences

Reference 63(9): 1004-1005

Abstract

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Author Goce SP; Ombico MFT; Raymundo LC

Title Processing of Fruit Sauces

Year 1993

Source title Philippine Agriculturist

Reference 76: 103-112

Abstract

-

Author Gomez-Hurtado JE

Title Evaluacion de fungicidas y algunas practicas culturales en el control de la antracn

Year 1993

Source title ASCOLFI-Informa

Reference 19(3): 24-25

Abstract

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Author Kibon A; Orskov ER

Title The use of degradation characteristics of browse plants to predict intake and diges

Year 1993

Source title Animal Production

Reference 57(2): 247-251

Abstract

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Author Kulkarni-RS; Gangaprasad-S; Swamy-GSK

Title Tamarind: economically an important minor forest produce

Year 1993

Source title MFP-News

Reference 3: 3, 6

Abstract

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Author Kuppusamy A; Kannan S

Title Life-history of Eumeta cramerii (Westwood) (Lepidoptera : Psychidae) and its nat

Year 1993

Source title Phytophaga Madras

Reference 5(2): 109-121

Abstract

Information on the life cycle, population density and percentage parasitism of Eumeta cramerii living on Acacia nilotica (Mimosaceae) and Tamarindus indica (Cesalpiniaceae) in the field in India and under laboratory conditions is provided. E. cramerii feeding on A. nilotica exhibited shorter life cycle durations and higher fecundity than when reared on T. indica. The other life cycle parameters such as larval and pupal durations of E. cramerii on A. nilotica were significantly different from the values obtained when reared on T. indica. Populations of E. cramerii reached a maximum on A. nilotica in April, when the parasitism by different parasitoids was also proportionately high. The significant differences in pest development for each of the host plants studied indicated that A. nilotica appeared to be the preferred host for E. cramerii. The life cycle of Sinophorus psycheae, a natural enemy of E. cramerii larvae, was determined. Percentage parasitism of E. cramerii by different parasitoids such as S. psycheae, Brachymeria spp. and tachinids are discussed.

Author Lang P and Burchard W

Title Structure and aggregation behavior of tamarind seed polysaccharide in aqueous-so

Year 1993

Source title Makromolekulare Chemie - Macromolecular Chemistry and Physics

Reference 194(11): 3157-3166

Abstract

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Author Lang P; Kajiwara K

Title Investigations of the architecture of tamarind seed polysaccharide oin aqueous sol

Year 1993

Source title Journal Biomater Sci Polym Ed

Reference 4(5): 517-528

Abstract

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Author Lang P; Kajiwara K; Burchard W

Title Investigations on the solution architecture of carboxylated tamarind seed polysacc

Year 1993

Source title Macromolecules

Reference 26(15): 3992-3998

Abstract

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Author Lang, P. and K. Kajiwara

Title Investigations of the architecture of tamarind seed polysaccharide in aqueous solut

Year 1993

Source title Journal of Biomaterials Science Polymer Edition

Reference 4(5): 517

Abstract

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Author Lang, P. and W. Burchard

Title Structure and aggregation behavior of tamarind seed polysaccharide in aqueous so

Year 1993

Source title Makromolekulare Chemie

Reference 194(11): 3157

Abstract

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Author Lingappa, K., N. S. Padshetty and N. B. Chowdary

Title Tamarind vermouth - a new alcoholic beverage from tamarind (Tamarindus indica

Year 1993

Source title Indian Food Packer

Reference 47(1): 23

Abstract

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Author Marothia DK; Gauraha AK

Title Marketing of denationalised minor forest products in tribal economy

Year 1993

Source title Indian Journal of Agricultural Marketing

Reference 6(2): 84-91

Abstract

The marketing mechanism for denationalized minor forest products (DMFPs) prevailing in the tribal economy in Madhya Pradesh is examined and suggestions are made for policy interventions that will improve their marketability, based on data collected from 19 and 56 households selected from, respectively, Nirrabeda and Farsiya villages, Nagri Tehsil, Raipur district. The data related to the year 1990-91. DMFPs were categorized into tubers and roots, bark and fibres, leaves, fruits, flowers, seeds, gums and biological products. The collection and consumption patterns for all these were examined. Price spread and channel flow analysis were carried out for lac, aonla, mahua [Madhuca] flowers, tamarind [Tamarindus] and cherongi as these are the major contributors to DMFP earnings. In Madhya Pradesh the trading of only four MFPs viz. tendu [Diospyros] leaves, sal [Shorea] seed, harra and gums has been nationalized. The other MFPs are denationalized and the tribals have usufruct rights to collect them. The tribals now have to cover longer distances to procure a smaller quantity of DMFPs due to rapid deforestation. The prices received for the DMFPs were very low. In order to minimize exploitation of the tribals it is suggested that village-level marketing institutions and small-scale collection centres be established in the villages. It is also suggested that fair-price shops of household items be introduced into tribal areas so that DMFP collectors will not be forced to sell their produce at lower prices in order to purchase basic commodities for home consumption.

Author Mohandas KK; Narayana Prasad TR; Zoolagud SS

Title Evaluation of commonly used extenders for UF resin adhesives in the plywood in

Year 1993

Source title IPIRTI Research Report

Reference 62: 15

Abstract

Tamarind seed powder, de-oiled groundnut cake powder and de-oiled maize gluten were compared as extenders in UF resin adhesives for moisture resistant grade plywood. The maize gluten extender was best with liquid UF resin, but groundnut cake powder performed better with powdered UF resin.

Author Raghunath Rao DM; Zoolagud SS

Title Study on the effect of proteinous starch based fillers and extenders on phenolic re

Year 1993

Source title IPIRTI Research Report

Reference 63: 20

Abstract

A comparison was made between protein/starch extenders such as de-oiled groundnut cake powder and de-oiled maize gluten, starch-based extenders such as tamarind seed powder and tapioca starch, and the conventional lignocellulosic type extender, coconut shell flour. The protein/starch extenders performed very well with phenolic formaldehyde resin in the bonding of boiling water-resistant and boiling water-proof plywoods.

Author Rathore, P.

Title Effectiveness of tamarind on calcium oxalate and phosphate crystallisation

Year 1993

Source title Indian Journal of Clinical Biochemistry

Reference 8(2): 136

Abstract

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Author Sissoko K; Soumare S; Soumare A

Title Woody species, a trump to protect. OT: Les especes ligneuses, un atout a preserve

Year 1993

Source title Lettre du Reseau Recherche Developpement

Reference 19: 4-7, GRET, Ministere de la Cooperation; Paris; France

Abstract

A socioeconomic survey of farmer preferences for tree species was carried out in five villages (124 persons were interviewed, representing all farming families in the area) near Niono, Mali, in 1990. The survey formed part of an agroforestry project which aims to improve crop yields and increase forage supply in the region. Data were collected on ethnic group, family size, livestock, farming practices, and preferences for indigenous or exotic tree species; they included a field inventory of trees. Twenty-eight tree species were identified in the field, and these are considered in three groups: (1) the most common species, which also tended to be the most highly valued, often multipurpose trees (more than 100 individuals counted, found on 31-74% of land holdings) - in descending numerical order, Sclerocarya birrea, Adansonia digitata, Acacia albida [Faidherbia albida] and Combretum galazense [Combretum gazalense]; (2) less common (found on 10-18% of holdings), but still considered important - Vitalaria paradoxa [Vitellaria paradoxa], Anogeissus leiocarpus, Cordyla pennata [Cordyla africana], Balanites aegyptiaca, Tamarindus indica and Diospyros mespiliformis; and (3) rare (1-14 individuals), found on only 1-4% of holdings. Provision of foliage for human and/or animal consumption (e.g. Adansonia digitata and T. indica) was considered one of the most important and valued features of trees by respondents. Other uses included; fruit and oil seed production (for animal or human consumption, for processing, or for medicinal use); timber (Piliostigma reticulatum [Bauhinia reticulata], Terminalia avicennioides, Commiphora africana); and fuelwood or charcoal production (Anogeissus leiocarpus, B. reticulata, T. avicennioides, Cardenalia ternifolia [Gardenia ternifolia], Entada africana and Pterocarpus erinaceus). The survey suggested that fruit-producing trees would be the most suitable indigenous species to consider for development; for introduced species, priority should be given to those that enhance soil fertility, and/or forage species.

Other species: Commiphora africana, Vitellaria paradoxa, Anogeissus leiocarpus, Cordyla africana, Balanites aegyptiaca, Diospyros mespiliformis, Entada africana, Pterocarpus erinaceus, Sclerocarya birrea.

Author Sreelekha TT; Vijayakumar T; Ankanthil R; Vijayan KK

Title Immunomodulatory effects of a polysaccharide from Tamarindus indica

Year 1993

Source title Anti Cancer Drugs

Reference 4(2): 209-212

Abstract

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Author Tambe TB; Ramshe DG; Walunjkar RB

Title Dryland fruit crops for scarcity zone

Year 1993

Source title Maharashtra Journal of Horticulture

Reference 7(1): 105-106

Abstract

Among 23 species of fruit trees assessed for their ability to grow and survive in the hot, dry climate of Rahuri (India), mahua (Bassia latifolia [Madhuca longifolia]), soapnut (Sapindus mukorossi), jamun (Syzygium cumini), aonla (Emblica officinalis [Phyllanthus emblica]), charoli (Buchanania latifolia), ber (Zizyphus mauritiana [Ziziphus mauritiana]), karonda (Carissa carandas), tamarinds (Tamarindus indica) and particularly drumstick (Moringa pterygosperma [M. oleifera]) performed best. Five-year-old drumstick trees were tallest (annual increase in height, 0.94 m), showed the largest collar girth (0.79 m), the largest GBH [girth at breast height] (0.48 m), and the largest tree volume (35.16 m3). The survival rate of this and 2 other species was 87.5%, compared with 75% for 2 species, 50% for 3 species, and 100% for 13 species.

Author Wali ur Rehman

Title Trial of insecticides and a fumigant against forest seed pests

Year 1993

Source title Pakistan Journal of Forestry

Reference 43(2): 85-90

Abstract

In a laboratory trial of control methods for Hypsipyla robusta, a fruit borer of Cedrela toona [Toona ciliata], DDVP 50% EC [dichlorvos] killed 100% larvae at 0.05 and 0.03% doses, and 83% larvae at 0.01%, while Laser 25% EC [a pyrethroid insecticide] gave 80, 43 and 33% kill of larvae, respectively, at 0.05, 0.03 and 0.01% doses. Malathion showed poor results, with 36.6 and 26.6% mortality of larvae at 0.05 and 0.03% doses, respectively. In another trial, phostoxin (a fumigant) caused 100% mortality of adults of the seed and stored seed pests, Caryedon serratus (a pest of Tamarindus indica, Acacia farnesiana and Acacia nilotica) and Tribolium castaneum (a pest of Ceratonia siliqua and Juglans regia), in doses of 50, 100, 150 and 200 mg per 0.043 m3. No toxic effect of phostoxin was found on seed germination of Pinus roxburghii, Dalbergia sissoo, Acacia modesta and Acacia tortilis in these doses.

Author Yoneyama T; Muraoka T; Murakami T; Boonkerd N

Title Natural abundance of 15N in tropical plants with emphasis on tree legumes

Year 1993

Source title Plant and Soil

Reference 153(2): 295-304

Abstract

Natural abundance of 15N (delta 15N) was analysed in leaves harvested from tropical plants in Brazil and Thailand. The delta 15N values of non-N2-fixing trees in Brazil were +4.5 plus or minus 1.9%, which is lower than those of soil nitrogen (+8.0 plus or minus 2.2%). In contrast, Mimosa pudica and Pueraria humbergiana had very low delta 15N values (-1.4 plus or minus 0.5%). The delta 15N values of Panicum maximum and leguminous trees (except for Leucaena leucocephala) were similar to those of non-N2-fixing trees, suggesting that the contribution of fixed N in these plants is negligible. The delta 15N values of non-N2-fixing trees in Thailand were +4.9 plus or minus 2.0%. Leucaena leucocephala, Sesbania grandiflora, Casuarina spp. and Cycas spp. had low delta 15N values, close to the value of atmospheric N2 (o/oo), pointing to a major contribution of N2 fixation in these plants. Cassia spp. and Tamarindus indica had high delta 15N values, which confirms that these species are non-nodulating legumes. The delta 15N values of Acacia spp. and Gliricidia sepium and other potentially nodulating tree legumes were, on average, slightly lower than those of non-N2-fixing trees, indicating a small contribution of N2 fixation in these legumes.

Author York WS; Harvey LK; Guillen R; Albersheim P; Darvill AG

Title Structural analysis of tamarind seed xyloglucan oligosaccharides using beta-galact

Year 1993

Source title Carbohydrate Research

Reference 248: 285-301

Abstract

The borohydride-reduced forms (oligoglycosyl alditols) of two isomeric octasaccharides (Glc4Xyl3Gal) that are released from xyloglucans of various plant species upon treatment with a fungal endo-(1 leads to 4)-beta-glucanase were isolated and structurally characterized. A mixture of oligosaccharides that is released from tamarind seed xyloglucan by the endo-(1 leads to 4)-beta-glucanase was digested with a commercially available beta-galactosidase (Aspergillus niger). The beta-galactosidase selectively hydrolyzed the galactosyl residue of one of the two isomeric octasaccharides present in the mixture. A homogeneous preparation of the beta-galactosidase-resistant octasaccharide was prepared by high-resolution gel-permeation chromatography of the enzyme-digestion products. Spectroscopic characterization of the oligoglycosyl alditol prepared by reduction of this octasaccharide confirmed the previously proposed structure that had been based on analysis of the mixture of isomeric octasaccharides. The availability of large amounts of the pure, reduced octasaccharide and of a pure, reduced pentasaccharide (Glc3Xyl2) made it possible to completely assign their 1H and 13C NMR spectra. In addition, the borohydride-reduced form of the beta-D-galactosidase-susceptible octasaccharide isomer was purified by high pH anion-exchange chromatography of the endo-(1 leads to 4)-beta-glucanase-released octasaccharides from rape-seed xyloglucan (no beta-galactosidase treatment), and its 1H and 13C NMR spectra were assigned. Additional correlations between specific structural features of xyloglu Abstract in their NMR spectra were deduced and added to the extensive list that we have compiled. The effects of recording the NMR spectra of the xyloglucan oligoglycosyl alditols in the presence of borate salts, which could lead to incorrect structural assignments, are also described.

Author York, W. S., L. K. Harvey, R. Guillen and P. Albersheim

Title Structural analysis of tamarind seed xyloglucan oligosaccharides using ç-galactosi

Year 1993

Source title Carbohydrate Research

Reference 248 (Com): 285

Abstract

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Author Yuan F; Tian RG

Title Finding of Oxyrhachininae in China and a description of a new species (Homopter

Year 1993

Source title Entomotaxonomia

Reference 15(3): 173-177

Abstract

The taxonomic status of the genus Hemicentrus is discussed and 6 species are described or redescribed, of which 5 are new, including H. latus sp. nov., on Tamarindus indica and Mangifera indica in Yunnan, H. brunneus sp. nov. on Persea americana in Hainan, and H. obliquus sp. nov. on Choerospondias axillaris in Yunnan. A key is given to the species of the genus from China.

Author Bhargava DS; Sheldarkar SB

Title Effects of adsorbent dose and size on phosphate-removal from wastewaters

Year 1992

Source title Environmental Pollution

Reference 76(1): 51-60

Abstract

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Author Bimlendra K; Toky OP

Title Seedling growth of some important fuelwood species of semi-arid climate in north

Year 1992

Source title Myforest

Reference 28(2): 225-230

Abstract

Growth data are given for 9-month-old saplings of 20 species - 4 Acacia spp., 2 Albizia spp., 3 Cassia spp., Cordia myxa (3 provenances), Dendrocalamus hamiltonii, Leucaena leucocephala, Parkinsonia aculeata, Pongamia pinnata, 2 Prosopis spp., Melia azedarach, Tamarindus indica, Terminalia tomentosa and Zizyphus mauritiana [Ziziphus mauritiana] planted under semiarid conditions in Haryana, and raised from polybag stock.

Author Bimlendra K; Toky-OM; Singh P

Title Performance of tree species in relation to water requirement in semi-arid regions o

Year 1992

Source title Myforest

Reference 28(2): 235-240

Abstract

The results are reported of a nursery trial over 7 months with 14 species. Seeds were sown on 20 March 1987 in polypots in soil/FYM (3:1). Only one seedling was allowed to grow in each pot. Seedlings were watered uniformly for the first 45 days and 4-weekly thereafter. Watering was witheld from 30 August, and growth measurements and leaf water potential recorded on 11 October. On the basis of these data species were divided into 4 groups: (1) favourable plant water relations and high productivity, (2) unfavourable plant water relations and high productivity, (3) favourable plant water relations and low productivity, and (4) unfavourable plant water relations and low productivity. Five species (Acacia nilotica, Albizia lebbeck, Cassia siamea and Cordia myxa) fell into the first 2 classes and are, therefore, recommended for planting in semiarid regions in Haryana. The other species tested were Acacia cupressiformis, Albizia procera, Cassia glauca, Dalbergia sissoo, Erythrina indica, Melia azedarach, Pithecellobium dulce, Prosopis juliflora, Tamarindus indica and Zizyphus mauritiana [Ziziphus mauritiana].

Author Burguera JL; Burguera M; Becerra G

Title Mineral-content of some fruits from Venezuela

Year 1992

Source title Revista Espanola de Cienca y Tecnologia de Alimentos

Reference 32(6): 667-672

Abstract

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Author Challapilli AP; Hulamani NC; Chimmad VP

Title Studies on evaluation of some promising Tamarind (Tamarindus indica) trees

Year 1992

Source title Myforest

Reference 28(4): 317-322

Abstract

Evaluation of Tamarind (Tamarindus indica) trees was done taking into consideration all the desirable physical fruit and quality characters at Silver Jubilee Orchard, Cottage of Agriculture, Dharwad. The tree number 33 records highest fruit weight (25.22g), fruit length (15.84cm) , pulp weight (9.18g) and also ascorbic acid of 2.64mg/100g and acidity of 14.62%. The yield per tree was highest in the tree number 5 (504kg/tree) followed by tree number 33 (474kg/tree). Among all the trees studied tree number 33 was found to be superior with respect to yield, physical and quality characters.

Author Challapilli, A. P., N. C. Hulamani and V. P. Chimmad

Title Studies on evaluation of some promising tamarind (Tamarindus indica L.) trees

Year 1992

Source title Myforest

Reference 28(4): 317

Abstract

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Author Dash DK; Dhar AN; Samant PKS

Title Minor fruits and their development in Orissa

Year 1992

Source title Orissa Journal of Horticulture

Reference 20: 67-71 (Special issue)

Abstract

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Author Farkas V; Sulova Z; Stratilova E; Hanna R; Maclachlan

Title Cleavage of xyloglucan by nastutium seed xyloglucanase and tranglycosylation to

Year 1992

Source title Archives of Biochemistry and Biophysics

Reference 298(2): 365-370

Abstract

-

Author Gomathi V; Oblisami G

Title Effect of pulp and paper mill effluent on germination of tree crops

Year 1992

Source title Indian Journal of Environmental Health

Reference 34(4), 326-328

Abstract

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Author Howlader MA

Title Host range suitability of host plants as food and seasonal abundance of the badwo

Year 1992

Source title Bangladesh Journal of Zoology

Reference 20(1): 177-183

Abstract

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Author Imbabi E; Abu al Futuh IM

Title Investigation of the molluscicidal activity of Tamarindus indica

Year 1992

Source title International Journal of Pharmacognosy

Reference 30(2)s: 157-160

Abstract

Water and methanol extracts of Tamarindus indica (Leguminosae) fruit pulp were found to have molluscicidal activity against Bulinus truncatus. The molluscicidal activity was greater in samples extracted with methanol than with water and was thought to be due to the presence of saponins.

Author Imbabi, E. S., K. E. Ibrahim, B. M. Ahmed and I. M. Abulfutuh

Title Chemical characterization of tamarind bitter principle, tamarindineal

Year 1992

Source title Fitoterapia

Reference 63(6): 537

Abstract

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Author ImbabiI ES; Ibrahim KE; Ahmed BM; Abulfutuh IM; HUL

Title Chemical characterisation of tamarindineal bitter principle

Year 1992

Source title Fitoterapia

Reference 63(6): 537-538

Abstract

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Author Jaiwal PK; Gulati A

Title Micropropagation of Tamarindus indica from shoot tip and nodal explants

Year 1992

Source title National Academy Science Letters (India)

Reference 15(3): 63-67

Abstract

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Author Jaiwal, P. K. and A. Gulati

Title Micropropagation of Tamarindus indica L. from shoot tip and nodal explants

Year 1992

Source title National Academy Science Letters

Reference 15(3): 63

Abstract

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Author Jambhulkar V; Shankhapal KV

Title Effect of minerals on lipid production by Rhizopus nigricans and Penicillium nigri

Year 1992

Source title Journal of Food Science and Technology (Mysore)

Reference 29(5): 333-335

Abstract

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Author Jambhulkar, V. and K. V. Shankhapal

Title Effect of minerals of lipid production by rhizopus nigricans and penicillium nigric

Year 1992

Source title Journal of Food Science and Technology

Reference 29(5): 333

Abstract

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Author Johnson MB

Title Tree legumes for reforestation and afforestation of arid and semiarid lands

Year 1992

Source title Arid Lands Newsletter

Reference 32: 28-32

Abstract

-

Author Kopp MS; Nataraja K

Title Regeneration of plantlets from excised nodal segments of Tamarindus indica L

Year 1992

Source title Myforest

Reference 28(2): 231-234

Abstract

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Author Lang P; Masci G; Dentini M; Crescenzi V; Cooke D; Gidle

Title Tamarind seed polysaccharide preparation, characterisation and solution propertie

Year 1992

Source title Carbohydrate Polymers

Reference 17(3): 185-198

Abstract

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Author MacLachlan G; Levy B; Farkas V

Title Acceptor requirements for GDP-fucose xyloglucan 1 2-alpha-L fucosyl transferas

Year 1992

Source title Archives of Biochemistry and Biophysics

Reference 294(1): 200-205

Abstract

-

Author McSorley R

Title Nematological problems in tropical and subtropical fruit tree crops

Year 1992

Source title Nematropica

Reference 22(1): 103-116

Abstract

-

Author Milian C; Bruzon N; Herrero G; Sanchez A

Title Trial of forest species on areas degraded by opencast mining

Year 1992

Source title Revista Baracoa

Reference 22(1): 83-89

Abstract

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Author Milimo PB; Dick J McP; Munro RC

Title Domestication of trees in semi-arid East Africa: the current situation

Year 1992

Source title Tropical trees: the potential for domestication and the rebuilding of forest resourc

Reference RRB Leakey & AC Newton (Eds.), ITE Symposium No. 29, ECTF Symposium N

Abstract

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Author Nagahiro J; Iwamoto J; Higuchi K

Title Experiments for fine air bubble production in liquids using ejectors

Year 1992

Source title Transactions of the ASAE

Reference 35(5): 1581-1590

Abstract

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Author Nagaraju; Kumar-YSA; Ramachandran KS; Syed-Ibrahim; Ranganna B; Krishnap

Title Contour 'V' ditch - a new technqiue in forest plantation

Year 1992

Source title Current Research - University of Agricultural Sciences Bangalore

Reference 21(11-12): 148-150

Abstract

The use of a new technique which involved planting in a V-shaped ditch along contours (or in pits in a V shaped ditch) is described and evaluated in comparison with conventional techniques (pit planting, trench planting and contour trench planting) during a pilot project funded by the World Bank at the Kabbalanala Watershed Project in Bangalore, Karnataka, in 1988. The planting areas were characterized by undulating topography and bushy plants, with reddish brown to dark red and shallow to moderately deep soils, sandy clay loam to sand loam on the surface, of neutral pH and prone to erosion. Average annual rainfall was 775 mm. Details and costs of each method are given, with survival data for 9 species in February 1988 (6 months after planting) and February 1989. The highest average survival (89.8%) was found in the contour V ditch in 1988, followed by the contour trench method (79.6%). The same trend was found in 1989 where respective average survivals for these 2 methods were 82.8 and 69.7%. Average survivals in the other methods were 58.4% in 1988 and 18.2% in 1989. The best surviving species were Dalbergia sissoo, Leucaena leucocephala, Azadirachta indica, Syzygium jambolana [S. jambos] and Phyllanthus amblica [P. emblica], all of which had more than or equal to 80% survival in the contour V ditch planting method in 1989. The other species tested were Aegle marmelos (78%) and A. auriculiformis (66%), and Cassia siamea and Tamarindus indica, which were not planted using the new technique but survived better than the other species (78 and 80%, respectively, in 1989) after contour trench planting.

Other species included: Dalbergia sissoo, Leucaena leucocephala, Azadirachta indica, Phyllanthus emblica, Aegle marmelos, Cassia siamea, Syzygium jambos, Acacia auriculiformis.

Author Nilsson JA; Johnson CD

Title New host, Bauhinia variegata L., and new locality records for Caryedon serratus (

Year 1992

Source title The Pan-Pacific Entomologist

Reference 68(1): 62-63

Abstract

-

Author Pere Laguillo O; Segui D; Betancourt C

Title Xerophilic yeasts present in syrups for refreshments produced in Puerto Rico

Year 1992

Source title International Journal of Mycology and Lichenology

Reference 5(3): 281-290

Abstract

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Author Ramanujam CGK; Kalpana TP

Title Tamarindus indica L. an important forage plant for Apis florea F. in south central

Year 1992

Source title Apidologie

Reference 23(5): 403-413

Abstract

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Author Ramanujam, C. G. K. and T. P. Kalpana

Title Tamarindus indica L.: An important forage plant for apis florea in south central In

Year 1992

Source title Apidologie

Reference 23(5): 403

Abstract

-

Author Shaikh MHA

Title Ecological approach to waste land development

Year 1992

Source title Myforest

Reference 28(1): 123-128

Abstract

-

Author Sinibaldi L; Pietropaolo V; Goldoni P; Ditaranto C

Title Effect of biological and synthetic-polymers on BK virus infectivity and hemagglut

Year 1992

Source title Journal of Chemotherapy

Reference 4(1): 16-22

Abstract

-

Author Sivasubramaniam K

Title Spotlight on species - Tamarindus indica

Year 1992

Source title Farm Forestry News

Reference 5(2)

Abstract

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Author Sone Y; Makino C; Misaki A

Title Inhibitory effect of oligosaccharides derived from plant xyloglucan on intestinal g

Year 1992

Source title Journal of Nutritional Science and Vitaminology

Reference 38(4): 391-395

Abstract

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Author Srinivasan K; Sambaiah K; Chandrasekhara N

Title Loss of active principles of common spices during domestic cooking

Year 1992

Source title Food Chemistry

Reference 43(4): 271-274

Abstract

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Author Usha K; Thimmaraju KR

Title Environmental physiological and incompatibility factors limiting fruit-set and rete

Year 1992

Source title J. Nucl. Agric. Biol.

Reference 21(3): 199-200 (National Symposium on Maximising and Sustaining Crop and An

Abstract

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Author Vyakaranahal BS; Shashidhara SD; Merwade MN; Havaldar YN

Title Effect of grading on seed quality in Tamarindus indica (L.)

Year 1992

Source title Myforest

Reference 28(4): 325-328

Abstract

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Author Ahmad Z; Kalimullah

Title Effect of air pollution on the bark of Tamarindus indica L. a tree of the Gangetic p

Year 1991

Source title Geobios (Jodhpur)

Reference 18(5-6): 252-253

Abstract

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Author Bhattacharya S; Bal S; Mukherjee RK; Bhattacharya_

Title Rheological behaviour of tamarind (Tamarindus indica) kernel powder (TKP) sus

Year 1991

Source title Journal of Food Engineering

Reference 13(2): 151-158

Abstract

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Author Blech MF; Guillemin F; Baure L; Hartemann P

Title Preliminary study of antimicrobial activity of traditional plants against E. coli. OT

Year 1991

Source title Zentralblatt fur Hygiene und Umweltmedizin

Reference 192(1): 45-56

Abstract

The bacteriological quality of drinking water is a major public health problem in some developing countries. Plants with known antiseptic properties, tamarinds and Derris elliptica, were collected from Burkina Faso and Vietnam, respectively, and screened for activity against Escherichia coli and potential use as water purifying agents. Decoctions and macerations of tamarind seeds exhibited the strongest antibacterial activity and are under further investigation. D. elliptica was ineffective.

Author Borderes M

Title The timber of Reunion

Year 1991

Source title Bois et Forets des Tropiques

Reference 229: 85-94 (English Summary)

Abstract

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Author Chauhan KS; Pundir JPS; Singh S

Title Studies on the mineral composition of certain fruits

Year 1991

Source title Haryana Journal of Horticultural Sciences

Reference 20(3-4): 210-213

Abstract

The mineral composition of the following fruits was determined: guava cultivars Allahabad Sefeda and Red Fleshed; banana cv. Harichal, ripe and unripe; grapefruit cultivars Ruby, Marsh Seedless and Duncun; lemon cv. Seedless; lime cv. Kagzi; China orange; sweet orange cultivars Malta, Valencia, Washington, Navel and Mosambi; custard apple [Annona reticulata]; pomegranate; aonla [Phyllanthus emblica] cv. Baranasi; grape cv. Anab-e-Shahi; tamarind cultivars White Pulp and Red Pulp; sapota [sapodilla] cv. Cricket Ball; papaya [pawpaw] cv. Coorrg (ripe and unripe); and ber (Zizyphus [Ziziphus] mauritiana). Fruits with high mineral concentrations were ripe and green papaya, grapefruit, sweet orange and guava. Banana, custard apple and aonla were generally poor in minerals.

Other species included: Phyllanthus emblica, Musa, Citrus paradisi, Citrus, Punica granatum, Vitis, Manilkara zapota, Carica, Psidium.

Author Farkas V; Hanna R; Maclachlan G

Title Xyloglucan oligosaccharide alpha-L-fucosidase activity from growing pea stems

Year 1991

Source title Phytochemistry

Reference 30(10): 3203-3207

Abstract

[14C]Fucose-labelled xyloglucan (XG) was synthesized from tamarind seed XG by incubating it with GDP-[14C] fucose plus solubilized pea fucosyltransferase, and [14C]fucose-labelled XG nonasaccharide was prepared from the parent hemicellulose by partial hydrolysis with fungal cellulase, alpha-L-Fucosidase activity was readily detected in crude enzyme extracts of growing regions of etiolated pea stems (Pisum sativum) and in cotyledons of germinating nasturtium seedlings (Tropaeolum majus) using the fucosylated XG-nonasaccharide as substrate. Both enzymes showed little activity against intact fucosylated XG and they were totally inactive against p-nitrophenyl-alpha-L-fucoside. Auxin treatment of pea stems, which greatly increased the activity of endo-1,4-beta-glucanases that hydrolyse XG in apical growing regions, failed to result in a similar increase in XG-nonasaccharide alpha-fucosidase activity. However, germination of nasturtium seed, which resulted in a large increase in endo-1,4-beta-glucanase (XG-ase) activity in the cotyledons, was accompanied by comparable increases in XG-alpha-fucosidase activity.

Author Gidley MJ; Lillford PJ; Rowlands DW; Lang P; Dentini M; Crescenzi V; Edward

Title Structure and solution properties of tamarind-seed polysaccharide

Year 1991

Source title Carbohydrate Research

Reference 214 (2): 299-314

Abstract

The major polysaccharide in tamarind seed is a galactoxyloglucan for which the ratios galactose:xylose:glucose are 1:2.25:2.8. A minor polysaccharide (2-3%) contains branched (1 leads to 5)-alpha-L-arabinofuranan and unbranched (1 leads to 4)-beta-D-galactopyranan features. Small-angle X-ray scattering experiments gave values for the cross-sectional radius of the polymer in aqueous solution that were typical of single-stranded molecules. Marked stiffness of the chain (C infinity 110) was deduced from static light-scattering studies and is ascribed partially to the restriction of the motion of the (1 leads to 4)-beta-D-glucan backbone by its extensive (approx. 80%) glycosylation. The rigidity of the polymer caused significant draining effects, which heavily influenced the hydrodynamic behaviour. The dependence of "zero-shear" viscosity on concentration was used to characterise "dilute" and "semi-dilute" concentration regimes. The marked dependence on concentration in the "semi-dilute" region was similar to that for other stiff neutral polysaccharide systems, ascribed to "hyperentanglements", and it is suggested that these may have arisen through a tenuous alignment of stiffened chains.

Author Guinko S; Pasgo LJ

Title Harvest and trade of non-wood forest products of local forest spp in Zitenga Dept,

Year 1991

Source title Revue Forestiere Francaise

Reference 6: 125-130 (Proceedings, 10th World Forestry Congress (Forests, a heritage for th

Abstract

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Author Gupta GN

Title Effects of mulching and fertiliser application on initial development of some tree

Year 1991

Source title Forest Ecology and Management

Reference 44(2-4): 211-222

Abstract

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Author Gupta GN; Mohan S

Title Response of various tree species to management and their suitability on degraded

Year 1991

Source title Indian Journal of Forestry

Reference 14(1): 33-41

Abstract

A field experiment on skeletally, degraded forest land of a semi-arid region revealed that adoption of water harvesting technique coupled with preplant application of 25g each of urea and single superphosphate per plant increased the early growth of tree species. Of the 11 tree species tried, 7 responded dramatically yo management. The increase in biomass yield varied from 5 times to 22 times. The most suitable tree species, in order of their performance on these waste lands were P.pterocarpum, E.camaldulensis, A.planifrons, A.nilotica, C.pentandra, A.lebbeck, and A.leucophloea. Root growth of these tree species also increased many folds owing to management t r e a t m e n t .

Other species included: Peltophorum pterocarpum, Eucalyptus camaldulensis, Acacia nilotica, Ceiba pentandra, Acacia leucophloea, Azadirachta indica, Pongamia pinnata, Syzygium cumini, Albizia l e b b e c k .

Author Jaiwal PK; Gulati A

Title In vitro high frequency plant regeneration of a tree legume Tamarindus indica (L.)

Year 1991

Source title Plant Cell Reports

Reference 10(11): 569-573

Abstract

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Author Jena S

Title Preliminary observations on the effect of tamarind seed husk on fish

Year 1991

Source title Journal of the International Fish Society, India

Reference 18(1): 1-3

Abstract

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Author Kavathekar KY; Panda PK; Sastry TCS; Gupta R; Rethinam P; Edison S; Pareek

Title Trees for life

Year 1991

Source title India Farming

Reference 41(8): 1-70

Abstract

The second of 2 special issues, containing 12 papers on various aspects of trees, with emphasis on their diverse uses: (1) Forests as a source of timbers - information on 10 species/genera (Acacia catechu, Albizia lebbek, Cedrus deodara, Dalbergia sissoo, Pterocarpus marsupium, Santalum album, Shorea robusta, Tectona grandis, Bambusa and Dendrocalamus); (2) Trees in Indian medicine; (3) Trees with a spicy twang - information on 11 species (Syzygium aromaticum, Myristica fragrans, Cinnamomum spp., Garcinia indica, Pimenta dioica, Murraya koenigii, Tamarindus indica, Illicium spp., including I. verum, Ferula assa-foetida, Pimenta racemosa and Punica granatum), and discussion on constraints to production; (4) Fruit trees for arid and semiarid lands - suitable species are listed and discussed, including nutritional aspects/data, propagation and planting methods, water harvesting and moisture conservation, and fertilizing; (5) Trees for fighting malnutrition - a brief discussion of the nutritive value of tree fruits with data for 19 species (Prunus amygdalus [P. dulcis], Emblica officinalis [Phyllanthus emblica], Malus pumila, Prunus armeniaca, Persea americana, Aegle marmelos, Musa sp., Ziziphus mauritiana, Artocarpus altilis, Anacardium occidentale, Annona squamosa, Phoenix dactylifera, Vitis vinifera, Psidium guajava, Artocarpus heterophyllus, Mangifera indica, Carica papaya, Ananas comosus and Juglans regia); (6) Under-utilized trees for food: promise and potentials - data on underutilized trees in 5 categories (bamboos, trees for vegetable and table purposes, fruit trees, edible oil-yielding trees and exotics); (7) Trees for agroforestry; (8) Trees yielding gums and resins - data on gums used for international trade are listed, and some important gums further discussed (gum arabic from Acacia senegal; tragacanth gum from Astragalus spp.; karaya gum from Sterculia urens; frankincense from Boswellia carterii [B. sacra]; myrrh from Commiphora molmol in Yemen and Somalia or from C. whitii (C. mukul) in India; rosin from Pinus spp.; dammars from various dipterocarp species; copals from African Leguminosae, e.g. Copaifera spp. and Trachylobium verrucosum [Hymenaea verrucosa]; and elemi from species of Burseraceae, e.g. Canarium and Amyris); (9) Tree-based land use for utilizing salt-affected soils - the distribution and characteristics of salt affected soils in India and promising tree species (and grasses) for use on them are discussed, demonstrating the ameliorative effects of such trees on soil properties; (10) Trees for fodder - data on suitable species for arid and semiarid regions, the Indo-Gangetic Plains, the Central and Coastal Zones, the North-eastern Region and the Subtemperate zone, showing periods of fodder availability, livestock preferences and nutritive value for various species suitable for tropical regions; (11) Trees for timber - wood properties required and suitable species for use are discussed for various wood products and constructions; and (12) Plants for life - the use of different plant (including tree) parts for food.

Other species included: Boswellia sacra, Commiphora mukul, Illicium verum, Prunus dulcis, Acacia catechu, Cedrus deodara, Dalbergia sissoo, Pterocarpus marsupium, Santalum album, Shorea robusta, Tectona grandis, Bambusa, Dendrocalamus, Myristica fragrans, Cinnamomum, Illicium, Pimenta racemosa, Punica granatum, Phyllanthus emblica, Prunus armeniaca, Persea americana, Aegle marmelos, Artocarpus altilis, Anacardium occidentale, Phoenix dactylifera, Psidium guajava, Mangifera indica, Carica papaya, Juglans regia, Acacia senegal, Astragalus, Sterculia urens, Pinus,

Copaifera, Canarium, Amyris, Lamiales.

Author Korwar GR; Osman M; Tomar DS; Singh RP

Title Dryland horticulture

Year 1991

Source title Extension Bulletin - Central Research Institute for Drylans Agriculture

Reference 4, 38 pp

Abstract

This bulletin is intended to serve as a general guide for farmers, extension workers and others interested in dryland horticulture. It deals with the following aspects: climate and soil; establishment techniques; cultural practices for dryland fruit trees; a system of agricultural + horticultural (fruit) crops for arable drylands; a system of horticultural (fruit) + pasture crops for non-arable drylands; and comparative economics. The fruit tree species cited comprise Annona squamosa, Ziziphus mauritiana, Punica granatum, Psidium guajava, Carissa carandas, Tamarindus indica, Mangifera indica, Emblica officinalis [Phyllanthus emblica], Grewia subinaequalis and Syzigium [Syzygium] cumini. In addition to fruits, these trees can also yield fodder (foliage) and firewood (annual prunings) and some, such as C. carandas, may be grown for hedging.

Author Lokesha S; Shetty HS

Title A Pestalotia species causing stony fruit disease in tamarind

Year 1991

Source title International Journal of Tropical Plant Diseases

Reference 9(2): 179-181

Abstract

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Author Mahadevan NP

Title Phenological observations of some forest tree species as an aid to seed collection

Year 1991

Source title Journal of Tropical Forestry

Reference 7(3): 243-247

Abstract

Phenological studies are reported for 7 species (Acacia nilotica, Albizia lebbek [A. lebbeck], Azadirachta indica, Hardwickia binata, Pongamia pinnata, Prosopis juliflora and Tamarindus indica) based on a survey conducted in Tamil Nadu and Andhra Pradesh to locate plus trees. A noticeable tree-to-tree variation within the species was observed in flowering and fruit ripening. Seeds could not be collected at one time from a single tree because fruit maturation and seed ripening appeared to occur in spurts. Efforts are being made to introduce a tree improvement strategy and seed certification taking such observations into consideration.

Other species included: Acacia nilotica, Azadirachta indica, Pongamia pinnata, Prosopis juliflora, Albizia lebbeck, Hardwickia binata.

Author Maille P

Title Low-tech leaf mulch experiment in Madagascar: negative effects of Tamarindus i

Year 1991

Source title TRI-News

Reference 10: 2, 18-20

Abstract

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Author Mairal AK; Karmakar SR

Title Studies in the aggregation of acid dyes

Year 1991

Source title Colourage

Reference 38(2): 30-41

Abstract

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Author Manohar B; Ramakrishna P; Udayasankar K

Title Some physical properties of tamarind (Tamarindus indica L.) juice concentrates

Year 1991

Source title Journal of Food Engineering

Reference 13(4): 241-258

Abstract

-

Author Martinez E; Noa N; Gonzalez-Abreu A; Renda A

Title Study of the establishment of experimental plantations of forest species on a salin

Year 1991

Source title Revista Baracoa

Reference 21(1): 29-36

Abstract

Results are presented of nursery performance, and survival and height growth up to 40 months after planting out in Cuba, for 8 tree species: Simaruba glauca [Quassia simarouba], Tamarindus indica, Albizzia [Albizia] lebbek, Lysiloma bahamensis, Coccoloba uvifera, Guaiacum officinalis, Casuarina equisetifolia and Leucaena leucocephala. The most promising species for these saline sites are Lysiloma bahamensis, Leucaena leucocephala, A. lebbek and G. officinalis.

Other species included: Quassia simarouba, Coccoloba uvifera, Casuarina equisetifolia, Leucaena leucocephala.

Author Navaneetha N; Palaniswamy KP; Khader MA; Kumar N

Title Studies on rooting tamarind airlayers

Year 1991

Source title South Indian Horticulture

Reference 39(2): 102-105

Abstract

Healthy uniform tamarind [Tamarindus indica] shoots were etiolated for one month before treatment with IBA at 1000-10 000 p.p.m. in lanolin paste. Air layering was carried out at 2-monthly intervals between May 1989 and Mar. 1990. In another experiment, mixtures of IBA and NAA, each at 1000 or 5000 p.p.m., were applied in June 1989. Controls were not treated with growth regulators. Rooting was best (75%) and subsequent survival was highest with IBA at 1000 p.p.m. applied in May. No rooting was observed in Jan. and Mar. In the second experiment, the highest rooting (62.86%) was obtained with IBA + NAA, each at 1000 p.p.m.

Author Obot E

Title The savanna woodlands of Kainji Lake National Park, Nigeria diversity, regnerati

Year 1991

Source title Discovery and Innovation

Reference 3(1): 45-51

Abstract

-

Author Ohashi S; Ura F; Takeuchi M; Iida H; Sakaue K; Ochi T; Ukai S; Hiramatsu K

Title Interaction of thaumatin with carrageenans .4. Method for prevention of reduction

Year 1991

Source title Food Hydrocolloids

Reference 5(4): 375-391

Abstract

-

Author Pathak RK; Ojha CM; Dwivedi R

Title Adopt patch-budding for quicker multiplication in tamarind

Year 1991

Source title Indian Horticulture

Reference 36(3): 17

Abstract

Tamarind (Tamarindus indica) seeds were sown in raised beds in July-Aug. Seedlings were transplanted when 10-15 cm tall. Patch-budding and modified ring-budding were performed on 9-month-old saplings during June 1987 and 1988. Patch-budding achieved 96% success and modified ring-budding 94% success. All budded plants were subsequently established in the field. This technique could therefore be used for large-scale multiplication of tamarind.

Author Sambaiah K; Srinivasan K

Title Effect of cumin, cinnamon, ginger, mustard and tamarind in induced hypercholest

Year 1991

Source title Nahrung

Reference 35(1): 47-51

Abstract

-

Author Sanbaiah K; Srinivasan K

Title Secretion and composition of bile in rats fed diets containing spices

Year 1991

Source title Journal of Food Science and Technology

Reference 28(1): 35-38

Abstract

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Author Shivalingaswamy TM; Balasubramanian R; Sivaramakrishnan VR

Title Studies on the biology of Caryedon serratus (Olivier) (Coleoptera: Bruchidae) inf

Year 1991

Source title Myforest

Reference 27(2): 112-116

Abstract

-

Author Silavanich C; Wonkhalaung C; Niyomathai S

Title Preservation of sweet tamarind

Year 1991

Source title Food

Reference 21: 94-112

Abstract

-

Author Srimathi P; Rai RSV; Surendran C

Title Studies on method of seed collection and optimum duration for acid scarification i

Year 1991

Source title Myforest

Reference 27(1): 57-61

Abstract

-

Author Surekha M; Reddy SM

Title Effect of spices on penitrem-b production by Penicillium aurantiogriseum

Year 1991

Source title National Academy Science Letters (India)

Reference 14(12): 463-465

Abstract

-

Author Verinumbe I

Title Agroforestry development in northeastern Nigeria

Year 1991

Source title Forest Ecology and Management

Reference 45(1-4): 309-317

Abstract

-

Author Vian B; Nairan J; Reid JSG

Title Enzyme-gold cytochemistry of seed xyloglucans using two xyloglucan-specific hy

Year 1991

Source title Histochemical Journal

Reference 23(3): 116-124

Abstract

-

Author Ahmed M

Title Deviation in feeding behaviour of Achaea janata L. (Lepidoptera: Noctuidae)

Year 1990

Source title Annals of Entomology

Reference 8(2): 15-17

Abstract

-

Author Anasuya A; Sasikala M

Title Tamarind ingestion and lithogenic properties of urine - study in men

Year 1990

Source title Nutrition Research

Reference 10(10): 1109-1117

Abstract

-

Author Danaatmadja O

Title Reforestation of Kaledong and Haruman Mountains OT: Penghutanan G Kaledon

Year 1990

Source title Duta Rimba

Reference 16: 121-122, 44-49

Abstract

An account of reforestation efforts on these mountains in the highly eroded upland catchment area of Cimanuk, in West Java, which have strategic value in sustaining soil and water conservation in the catchment area of the proposed Jatigede reservoir. Species used include Swietenia mahagoni, Eucalyptus deglupta, Schima wallichii, Calliandra calothyrsus, Hibiscus tiliaceus, Ficus benjamina, Spathodea gigantea, Gliricidia maculata [G. sepium], Antidesma bunius, Lagerstroemia speciosa, Albizia procera, Delonix regia, Tamarindus indica, Michelia velutina, Elaeocarpus ganitrus and Hibiscus microphyllus [H. macrophyllus].

Author de Lumen BO; Becker R; PS

Title Legumes and cereals with high methionine/cyctine contents

Year 1990

Source title Journal of Agricultural and Food Chemistry

Reference 34(2): 361-364

Abstract

-

Author El Sheikh SH; Bashir AK; Suliman SM; Wassila ME

Title Toxicity of certain Sudanese plant extracts to Cercariae and Miracidia of Schistos

Year 1990

Source title International Journal of Crude Drug Research

Reference 28(4): 241-245

Abstract

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Author Gambhir RK; Dhanachand C

Title Nematodes of fruit plants in Manipur I: Three known and one new species of Thor

Year 1990

Source title Indian Journal of Hill Farming

Reference 3(2): 33-37

Abstract

Thornenema clavicaudatum sp. Nov. females are described and illustrated from soil around roots of pomegranate from Manipur, India. They closely resemble T. caudatum but differ in having a slightly shorter body (L = 0.57-0.64 mm), shorter odontostyle (6-9 micro m) and odontophore (7-8 micro m), more anterior guiding ring, shorter oesophagus (146 micro m), more anterior vulva, shorter prerectum (40 micro m long) and in the shape and size (46-48 micro m long) of the tail. T. baldum, T. cavalcantii and T. mauritianum were also found in the survey of nematodes from fruit plants in Manipur and are briefly described.

Author Gupta GN; Mohan S

Title Response of several tree species to management on degraded soil of semi-arid regi

Year 1990

Source title Indian Forester

Reference 116(8): 622-630

Abstract

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Author Hoda FM; El-Naggar ME; Taha HA; El-Beheiry MM

Title Prostigmatid mites associated with stored products

Year 1990

Source title Agricultural Research Review

Reference 68(1): 77-85

Abstract

A survey was carried out in 1982-84 in stored products (including wheat grain, wheat flour, wheat straw, maize, barley, cowpeas, rice grain, rice hay, broad beans [faba beans], beans [Phaseolus sp.], watermelon seed, onion, dates, tobacco, cucumber seed, squash seed, animal feeds, biscuit, skins, Tamarindus indica, sorghum and garlic) in Egypt. A total of 23 species of prostigmatid mites were recorded from the families Cheyletidae, Tydeidae, Tarsonemidae, Pyemotidae, Cunaxidae and Raphignathidae. The species are listed with their distributions.

Author Ishola MM; Agbaji EB; Agbaji AS

Title A chemical study of Tamarindus indica (Tsamiya) fruits grown in Nigeria

Year 1990

Source title Journal of the Science of Food and Agriculture

Reference 51(1): 141-143

Abstract

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Author Kalimullah; Ahmad Z

Title Identification of some cultivated leguminous trees on the basis of phloem fibres

Year 1990

Source title Acta Botanica Indica

Reference 18(1): 144-145

Abstract

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Author Kapu MM; Shehu KM; Ega RAI; Akanya HO

Title Protein quality of Tamarind and African Locust bean seed meals

Year 1990

Source title Lebensmittel-Wissenschaft & Technologie (Food Science + Technology)

Reference 23(3): 260-261

Abstract

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Author Khan FA

Title Nematicidal potentials of some naturallt-growing medicinal plants against Pratyle

Year 1990

Source title Rev Nematol

Reference 13(4): 463-465

Abstract

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Author Kopp MS; Nataraja K

Title In vitro plantlet regeneration from shoot tip cultures of Tamarindus indica L

Year 1990

Source title Indian Journal of Forestry

Reference 13(1): 30-33

Abstract

Shoot tips excised from in vitro grown seedlings of Tamarindus indica L. regenerated intp plantlets on MS containing IAA or IBA. Higher concentrations of IAA or IBA induced better rooting, but media supplemented with CW or BAP did not favour rooting but but only supported further growth of shoot tips. In vitro regenerated plantlets were successfully transferred to soil.

Author Krishnayya NSR; Bedi SJ

Title Effect of low levels of ambient air pollutants on biochemical constituents of three

Year 1990

Source title Indian Journal of Ecology

Reference 17(2): 97-100

Abstract

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Author Krishnayya NSR; Bedi SJ

Title Differential response of three tree species growing at low levels of ambient air pol

Year 1990

Source title Indian Journal of Ecology

Reference 17(1): 1-5

Abstract

Deciduous species (Azadirachta indica and Moringa pterygosperma [M. oleifera]) growing at polluted localities in the Vadodara Urban Development Area in Gujarat (which contains a variety of chemical industries) showed a decrease in foliar glutathione and ascorbic acid compared with control samples from a less polluted area, while the evergreen species Tamarindus indica showed an increase in foliar ascorbic acid. T. indica showed a lower increase in foliar peroxidase over the control value than the other 2 species. Overall fluctuations were more in the deciduous species than in T. indica.

Other species included in article: Azadirachta indica, Moringa oleifera, Tamarindus indica.

Author Lakashmanan KK; Naryanan ASS

Title Antifertility herbals used by the tribals in Anaikkatty Hills, Coimbatore District, T

Year 1990

Source title Journal of Economic and Taxonomic Botany

Reference 14(1): 171-173

Abstract

An ethnobotanical study was conducted among the "Irulars", the tribal of Anaikkatty hills, northwest of Coimbatore, Tamil Nadu, to collect information on the drugs for birth control and their plant use practices. The data was collected at three different levels - prevention of pregnancy, contraceptive methods and abortion. The data included binomials, names in Sanskrit, Tamil and Hindi and uses have been provided for 16 plant species. Ficus benghalensis L., Embelia ribes Burn., Cissampelos L., Butea frondosa Koen., Piper betle L., Piper nigrum L., Ocimum sanctum L. and Thespesia populnea Corr. are plants uesd in the prevention of pregnancy, described with the parts used, methods of preparation and administration. The gum from Acacia arabica Willd. And oil from Azadirachia indica A. Juss are considered to be contraceptive. For abortion , Tamarindus indica L., Aloe vera L., Plumbago zeylanica L., Amaranthus spinosus L., and Carica papaya L., are employed.

Author Mohan S; Prasad KG; Gupta GN

Title Fertiliser response of selected social forestry species under varying soil texture

Year 1990

Source title Indian Forester

Reference 116(1): 49-57

Abstract

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Author Navaneetha N; Palaniswamy KP; Md Abdul-Khader; Kumar N

Title Studies on rooting of cuttings of tamarind

Year 1990

Source title South Indian Horticulture

Reference 38(4): 220-224

Abstract

Hardwood, semi-hardwood and softwood cuttings taken from etiolated and non-etiolated shoots of tamarind (Tamarindus indica) were treated with IBA at 0, 1000, 2000 or 3000 p.p.m. by a quick dip method before planting in pots which were placed in a mist chamber for 3-4 days, before placing outdoors. Except for the apical primordial bud, and adjacent 2-3 leaves, other leaves were removed to a distance of 10 cm below the bud and this area of the stem was wrapped in black polythene film strips. After 10 days the shoots were girdled below the taped region. Rooting characteristics and survival were recorded after 45 days. No rooting occurred in hardwood cuttings. The most rooting (19.0%) and best survival (48.8%) occurred in etiolated semi-hardwood cuttings treated with 1000 p.p.m. IBA, followed by softwood cuttings treated in the same way (11.25% rooting, 48.3% survival). In a second experiment, the effect of season on the rooting of etiolated semi-hardwood cuttings treated with 1000 p.p.m. IBA was investigated from June to November 1989. Best rooting and survival occurred in June (20.6 and 52.8% respectively), followed by September and October. No rooting occurred in any cuttings not treated with IBA.

Author Nichols D; Rodriguez PE

Title Costa Rican nitrogen fixing trees with possibilities for greater use

Year 1990

Source title Nitrogen Fixing Tree Research Reports

Reference 8: 30-31

Abstract

The potential wider use is discussed of 12 Costa Rican species in agroforestry systems or in the silvicultural management of natural forests: Myroxylon balsamum, Platymiscium pinnatum, Albizia saman, Pithecellobium pseudo-tamarindus, Dalbergia retusa, Enterolobium cyclocarpum, Hymenaea courbaril, Peltogyne purpurea, Diphysa robinioides, Pentaclethra macroloba, Pithecellobium longifolium and Albizia guachapele.

Author Purushotham K; Narasimharao SBS

Title Propagation of tamarind by veneer and soft-wood grafting

Year 1990

Source title South Indian Horticulture

Reference 38(4): 225

Abstract

Tamarind [Tamarindus indica] seeds were sown in 36x24 cm polybags in soil; at about 6 months old, seedlings of uniform height and thickness were selected for grafting by 2 methods (100 plants each), in December 1989. Rootstocks 6 months old and of the same thickness as the seedlings to be grafted, and scion sticks 10 cm long, were defoliated before veneer and softwood grafting. Veneer grafting was done at 8 cm height on the rootstock and the stock was cut above the graft union immediately after the operation. In softwood grafting, the stock seedlings were defoliated and the top cut off at 15 cm height just before grafting was done. A vertical downward cut was made to about 4 cm depth in the centre of the cut stem and scion sticks were cut into a wedge shape and grafted onto the stock using 200 gauge polythene ribbon 2 cm wide. Graft success was recorded in April and was 68% for softwood grafts and 49% for veneer grafts. Sprout numbers were also marginally greater for softwood grafting (3.22 vs. 3.00), but average sprout length was marginally less (15.95 vs. 16.69 cm).

Author Reena J; Bagyaraj DJ

Title Growth stimulation of Tamarindus indica by selected VA mycorrhizal fungi

Year 1990

Source title World Journal of Microbiology and Biotechnology

Reference 6(1): 59-63

Abstract

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Author Rodrigo TMASK

Title Revitalization of degraded forest land in the dry zone by planting medicinal specie

Year 1990

Source title Sri Lanka Forester

Reference 19(3-4): 43-45

Abstract

Aegle marmelos, Azadirachta indica, Phyllanthus emblica, Pterocarpus marsupium, Tamarindus indica, Terminalia bellirica, and Terminalia chebula, which are all of pharmaceutical value, have been successfully planted at 10x10 foot (3x3 m) spacing (in lines of each species) in unproductive scrub forest by the Janatha Estates Development Board in Sri Lanka. Brief notes are given on the medicinal properties ascribed to these species, and the planting methods are described.

Author Ruggiero RG

Title The ecology and conservation of the African elephant (Loxodonta africana oxyoti

Year 1990

Source title Dissertation Abstracts International B Sciences and Engineering

Reference 50(12): 5408B

Abstract

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Author Salam MA; Sreekumar D; Mammen MK

Title Mixed farming on homestead agriculture - an economical approach

Year 1990

Source title Indian Farming

Reference 40(5): 14-16

Abstract

A case study of a typical small mixed farming [agrosilvopastoral] system in Kerala, operating on 0.28 ha of fertile land. The family consists of 7 members, and the homestead farm supplies all the agricultural produce and income necessary for its requirements. The farm has 60 mature and highly productive coconut palms (supplying on average 140 nuts p.a.) which are fertilized with organic manures (such as cowdung, dried leaves, coir dust etc.) applied in basins of radius 1.8 m round each tree. A milch cow (supplying milk for consumption and sale) and a heifer are kept and supply the dung for the crops. Guinea grass is grown in the coconut basins and interspaces to meet the fodder requirements of the cattle, which are also supplied with feed concentrate (as purchased oilseed cakes). Many other crops are grown mixed in the coconut garden to form a multistorey system with coconuts in the top layer, arecanuts trailed by pepper, and jackfruit, tamarind, mango, lime and breadfruit in the second layer, banana, tapioca [cassava] and fruit plants in the third layer, and tuber crops, vegetables and the guinea grass in the lowest layer. The available space is utilized effectively in both horizontal and vertical directions. The entire farm is irrigated using a 3 hp electric pump. Detailed data are tabulated on the labour requirements (mostly family, with some hired for crop harvesting) and input and output costs for the different farm components, and these give estimated annual total input costs of Rs 21 750, output costs (returns) of Rs 44 460, and a net profit of Rs 22 710. Accounting for the cost of family labour (Rs 8750) raises the profit to Rs 31 460 p.a., or Rs 86.2 per day. After meeting family annual expenditure (Rs 30 000) a balance of Rs 1460 is available as savings.

Other species included: Cocos nucifera, Areca, Piper nigrum, Artocarpus, Mangifera indica, Citrus, Musa.

Author Sidhu OP; Behl HM

Title Endomycorrhizal fungi from leguminous tree species for fuelwood plantation in al

Year 1990

Source title Nitrogen Fixing Tree Research Reports

Reference 8: 34-36

Abstract

Three-month-old seedlings of 8 species raised in the nursery in a mixture of local (Uttar Pradesh) soil/sand/FYM (1:1:1) were screened for ectomycorrhizal associations by washing and staining the roots. Mycorrhizal spores were also isolated from the soil surrounding the roots and data recorded on percentage root and cortex infection, spores/100 g soil, and fungi identified. All the tree species investigated formed ectomycorrhizas, and 4 fungal species were identified: Glomus fasciculatum, Glomus sp., Scutellospora gigantea and S. calospora. Four species formed ectomycorrhizas with 3 of the fungi: Acacia nilotica and Parkinsonia acul[e]ata (not with S. calospora), and Leucaena leucocephala and Prosopis juliflora (not with S. gigantea). The other 4 species (A. auriculiformis, A. nilotica var. cupressiformis, Cassia siamea and Tamarindus indica) only formed ectomycorrhizas with 2 fungal species (G. fasciculatum and S. calospora). G. fasciculatum was the most commonly found mycorrhizal species and S. gigantea the least. Spore numbers in the soil varied considerably between tree species after 3 months growth but did not correlate with percentage infection. Cortex infection was less than root infection and the 2 values were not correlated.

Other species included: Glomus, Acacia nilotica, Parkinsonia aculeata, Leucaena leucocephala, Prosopis juliflora, Cassia siamea, Acacia auriculiformis, Glomus fasciculatum.

Author Sinhghal VK; Gill BS; Sidhu MS

Title Cytological explorations of Indian woody legumes

Year 1990

Source title Proceedings of the Indian Academy of Sciences-Plant Sciences

Reference 100(5): 319-332

Abstract

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Author Some LM; Sary H; Bellefontaine R

Title Conserving in cold room pretreated seeds of six Sahelo-Sudanese species

Year 1990

Source title Bois et Forets des Tropiques

Reference 225: 42-46

Abstract

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Author Srivasuki KP; Reddy RD; Reddy KK

Title Rooting of terminal cuttings in Tamarindus indica L

Year 1990

Source title Indian Forester

Reference 116(12): 984-985

Abstract

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Author Swaminath MH; Ravindran DS; Jaweed Mumtaz; Mumtaz-

Title Propagation of Tamarindus indica through stem cuttings

Year 1990

Source title Myforest

Reference 26(2): 207-208

Abstract

The technique of approach grafting has been successfully used in the propagation of Tamarindus indica but it is expensive and time consuming. This note describes a trial using stem cuttings 6-8 inches long taken from 1-2 yr old branches of a plus tree at the Hoskote Research Centre, Karnataka, in April 1990. Immediately after preparation cuttings were wrapped in moist cloth, brought to the nursery and dipped in 'Quickroot' (a hormone preparation) for 45 s. They were then planted in sand beds in a mist chamber and observed periodically for bud, root and callus formation. Bud sprouting and root initiation occurred after 20 days, and leaves formed after 45 days. By 90 days 52% of cuttings had rooted.

Author Vadiraj BA; Rudrappa N

Title Studies on the nutrients status of soil under different plantations

Year 1990

Source title Myforest

Reference 26(2): 157-162

Abstract

Chemical analyses were carried out on soil samples collected from under 5-yr-old plantations of 4 species (Tamarindus indica, Casuarina equisetifolia, Eucalyptus camaldulensis and Mangifera indica) and from a (control) fallow site, at Hoskote Taluk, Bangalore district, Karnataka. Compared with the control site the pH, and available P and K of plantation soils were reduced, while the organic matter content increased. Micronutrients exhibited various trends.

Other species included: Casuarina equisetifolia, Eucalyptus camaldulensis, Mangifera indica.

Author Young H; Paterson VJ

Title The flavour of exotic fruit

Year 1990

Source title Developments in Food Science

Reference 3(C): 281-326

Abstract

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Author Zhang Y; Ho CT

Title Volatile flavor components of tamarind (Tamarindus indica L.)

Year 1990

Source title Journal of Essential Oil Research

Reference 2(4): 197-198

Abstract

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