



COMMON POISONOUS PLANTS IN SRI LANKA

Dr. Anuruddhi Edirisinghe

ATHTHNA (THORN APPLE)



Most poisonous
flowers/ stem/ fruit/
leaves/roots



Fatal dose: 50-75 seeds

Botanical Name: Datura stramonium

Toxin: Belladonna alkaloids (atropine, hyoscine and hyoscyamine)

CIRCUMSTANCES OF DATURA POISONING

◎ Stupefying purpose

- ◎ Mixed with cigarettes produce state of unconsciousness to facilitate robbery & rape
- ◎ mixed with sweets (gingerly) robbery & rape

◎ Accidental poisoning: Children

◎ Suicidal

◎ Homicidal : very rare



DATURA POISONING SIGNS & SYMPTOMS



Produce characteristic manifestations of anticholinergic poisoning

- ◉ Dryness of mouth
- ◉ Dysphagia
- ◉ Dysarthria
- ◉ Diplopia
- ◉ Dry hot and red skin
- ◉ Drowsiness leading to coma
- ◉ Urinary retention
- ◉ Death : respiratory failure or cardiac arrhythmia

Autopsy findings
Seeds in stomach
& non specific
features



DIVI KADURU (EVE'S APPLE)



Most poisonous / latex/
fruit/ seeds



Botanical Name: Pagiyantha dichotoma

Botanical Name: Tabernaemanta dichotoma

Toxin: alkaloids/ strychnine

SIGNS & SYMPTOMS OF DIVI KADURU POISONING



- ◎ White latex : inflammation of eye
- ◎ Ingestion : dryness of mucus membranes, thirst, dilatation of pupils, rapid pulse, psychomotor disturbances, hallucinogenic effects.
- ◎ Accidental poisoning
- ◎ Suicidal poisoning

Autopsy findings
Seeds in stomach
& non specific
features

GODA KADURU (BITTER NUT)



Most poisonous: Seed
(although all parts toxics)

Fatal dose: 1-2 seeds

Botanical Name: Strychnos nux vomica

Toxin: alkaloids (strychnine/ brucine)



CIRCUMSTANCES OF GODA KADURU POISONING



◎ Strychnine injections are used to kill stray dogs/ seeds to kill animals, now found in pesticides (kill rats)



◎ Suicidal

◎ Accidental : With traditional medicine

◎ Homicidal : very rare (mixed with alcohol)



Asian Pacific Journal of Tropical Biomedicine (2011)S303–S304

S303



ELSEVIER

Contents lists available at [ScienceDirect](#)

Asian Pacific Journal of Tropical Biomedicine

journal homepage: www.elsevier.com/locate/apjtb



Document heading

A rare case of strychnine poisoning by consumption of *Strychnos nux-vomica* leaves

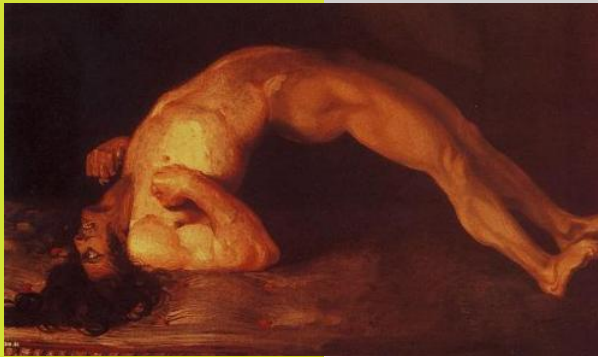
Sowjanya Dasari, Kushal Naha*

Department of Medicine, Kasturba Hospital, Manipal–576 104, Karnataka, India



STRYCHNINE POISONING

SIGNS & SYMPTOMS



Autopsy findings No
Macroscopic or
microscopic features
(non specific features) ,
seeds / powder in stomach,
poison in blood & urine

- ◎ Bitter taste
- ◎ Clonic (intermittent) & Tonic (sustained) seizures
- ◎ Affects flexor and extensor muscles simultaneously
- ◎ Facial Muscles : “risus sardonicus” , “trismus”(locked jaw)
- ◎ Opisthotonus
- ◎ Respiratory distress and death
- ◎ Agonizing death because of consciousness

DIYA KADURU / GON KADURU / WEL KADURU (SEA-MANGO)



Most poisonous: Fruit

Kernal

atai | uose. 2 fruits

Botanical Name: Cerbera manghas

Toxin: glycocides (Cerberin/ odollum and thevetin)

CIRCUMSTANCES, SIGNS & SYMPTOMS OF DIYA KADURU POISONING

- ◎ Suicidal : common in Eastern province
- ◎ Accidental , Homicidal : very rare
- ◎ Burning sensation and dryness of the mouth, nausea, vomiting, diarrhoea and abdominal pain are early features.
- ◎ CVS – Bradycardia, hypotension, 1st and 2nd degree heart block atrial and ventricular extrasystoles, ventricular fibrillation. (ECG Changes)
- ◎ Convulsions and coma

Autopsy findings
(non specific
features) , kernal
of the fruits

KANERU (YELLOW OLEANDER)



Most poisonous:
Fruit /seed/ all
parts of tree

Fatal dose: 2 seeds

Botanical Name: Thevetia peruviana

Toxin: Cardiac glycosides, Thevetin A & Thevetin B.

CIRCUMSTANCES OF KANERU POISONING

- ① medicinal plant as a folk medicine in many countries as an abortifacient, appetizer, and in the treatment of leprosy, ringworm, malaria and venereal disease
- ① Suicidal poisoning is very common
- ① Before 80s it was not reported. Jaffna 2 girls died and highly news coverage in 1983.
- ① Now common in : Anuradhapura, Pollonaruwa and Kurunegala Districts.
- ① Accidental : children and adults
- ① Homicidal : very rare



SIGNS & SYMPTOMS OF KANERU POISONING



Before treatment

nausea and vomiting due to
irritant effect of the stomach

Activated charcoal

Two hours post-treatment

Vomiting 6 to 12 hours
ingestion implies significant
absorption of the toxin.

Atropine

Eight hours post-treatment

Cardio-toxicity causes
bradycardia, varying degrees of
heart block and hypotension

KaneruTAB

KANERU (LORIER BOL, ROSEBAY, AND ROSE LAUREL)



Most poisonous: Pod/seed/
all parts of tree



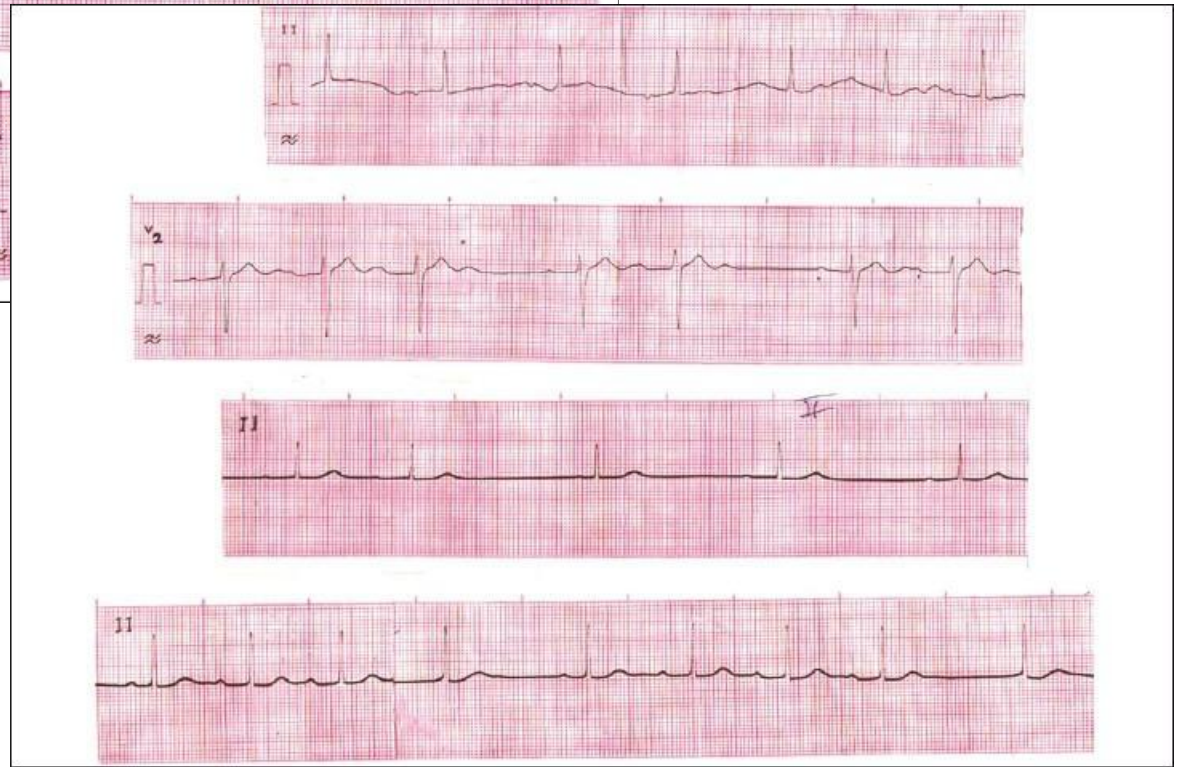
Botanical Name: Nerium oleander

Toxin: Cardiac glycosides (oleandrin, nerin)

SIGNS & SYMPTOMS



Figure1: Intermittent AV Block 15 hours after ingestion



NIYANGALA (GLORI LILY)



Most poisonous: tubers/
all parts of the plant



Botanical Name: *Gloriosa superba*

Toxin: Alkaloid Colchicine, Gloriosine, Superbine

Fatal dose: 10g tubers

CIRCUMSTANCES OF NIYANGALA POISONING

Case Report

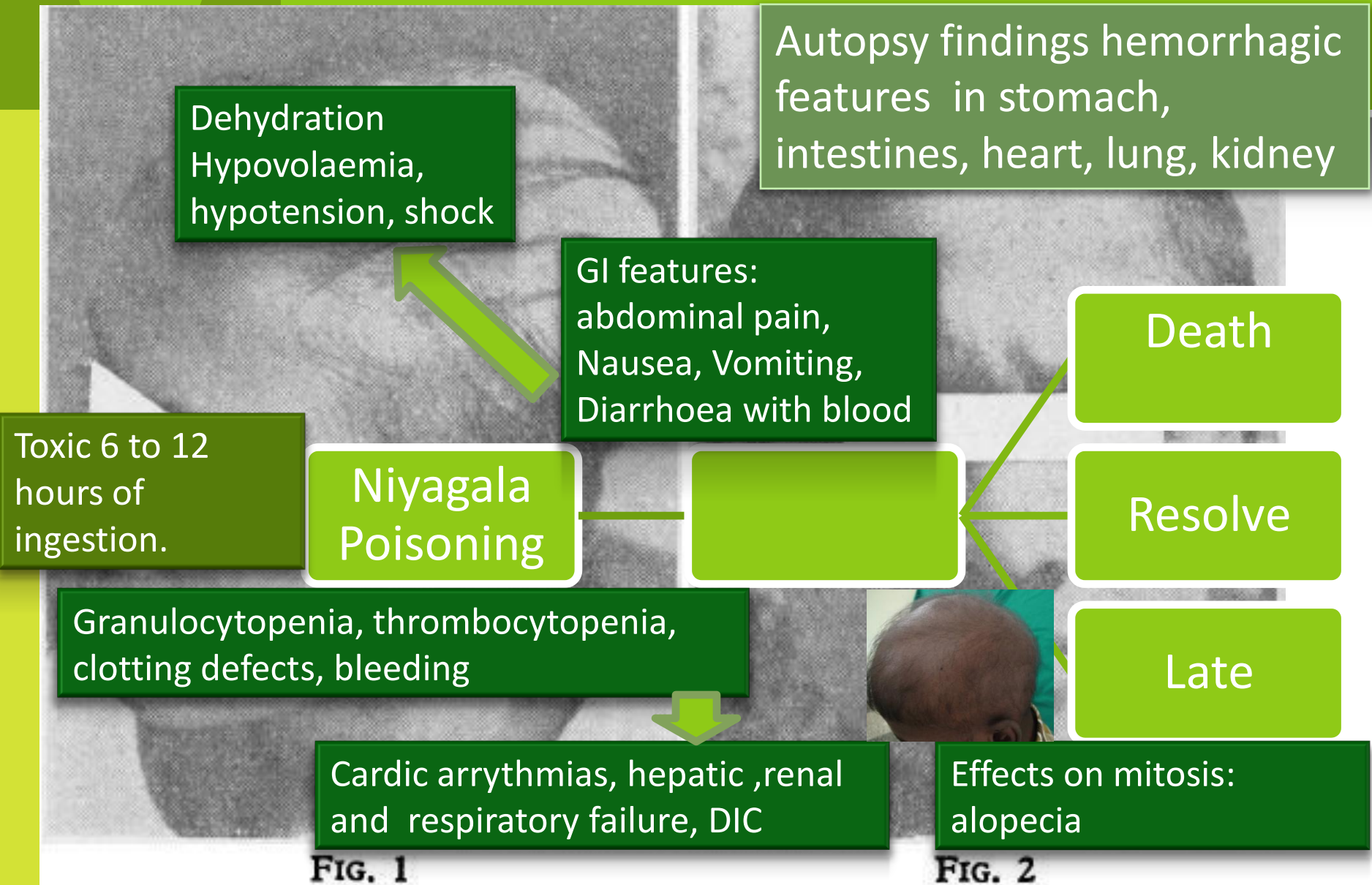
Medicine Section

Death related to **Herbal Therapy** for **Joint Pains** – A rare case of *Gloriossa Superba* Poisoning



- ◎ Native practitioners use tuber for the treatment of joint pains, bruises, sprains, colic, chronic ulcers, haemorrhoids, cancer, impotence, nocturnal seminal emissions, leprosy, inducing labour pains and abortion
- ◎ Used in rheumatological and immunological conditions in modern western medicine.
- ◎ Accidental poisoning is common(sweet potato/ Hulankeeriya
- ◎ suicidal and rarely homicidal poisoning

SIGNS & SYMPTOMS OF NIYAGALA POISONING



WETA ENDERU (BARBADOS NUT, PURGING NUT, PHYSIC NUT)



Most poisonous: seeds



Botanical Name: Jatropha curcas

Toxin: Toxalbumin Curcin

Fatal dose: 2 seeds cause purging

CIRCUMSTANCES, SIGNS & SYMPTOMS OF WETA ENDERU POISONING



☉ Trees are now grown commercially to obtain bio-diesel



- ☉ The seeds have been used as abortifacients, anthelmintics and purgatives
- ☉ Poisoning is mainly seen in children as accidental
- ☉ nausea, vomiting, epigastric and abdominal pain and diarrhoea resulting in dehydration, electrolyte imbalance, cramps and shock.
- ☉ Other features of poisoning are hypoglycaemia, retinal haemorrhages, haematuria, convulsions, and shock. Hepatic necrosis and acute renal failure have been reported



BEHETH ENDARU / THEL ENDARU / CASTOR PLANT



Most poisonous: seeds/plant

Fatal dose: 1 seeds



Botanical Name: Ricinus communis

Toxin: alkaloid Ricinin & toxalbumin Ricin

CIRCUMSTANCES OF BEHETH ENDERU POISONING



Oil is used for medical purposes: laxative , treatment of infection and inflammation, in treatment of cancer



Grow & **Thicken** up your hair

industrial raw material for lubricants, paints, coats, cosmetic products



press cake of the seeds: after detoxification used as additive in organic fertilizer, or animal feed (animal poisonings: dog/horse/sheep)

Accidental ingestion of seeds by children

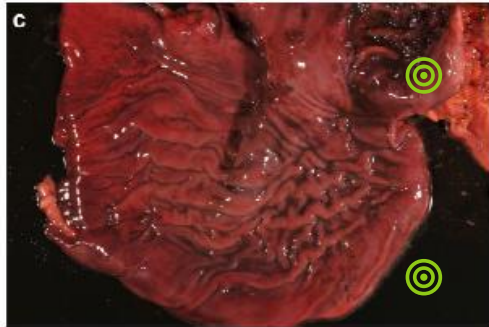


Occasional suicide ingestion of seed extracts / oil (oral/parental/ IM)

As a weapon of bio-terrorism (aerosol) (IM)

SIGNS & SYMPTOMS OF BEHETH ENDERU POISONING

- ☉ Symptoms seen after 3 to 20 h



- ☉ Abdominal pain, emesis, diarrhea with or without blood, muscular pain

- ☉ cramps in the limbs, circulatory collapse, dyspnoea and dehydration



- ☉ Late features: liver and kidneys dysfunction

- ☉ injected ricin: pain at the injection site, muscular necrotizing,

- ☉ Autopsy: haemorrhagic necrosis in intestines and heart and oedema in lungs

HONDALA



Botanical Name: Adenia palmata

Toxin: cyanogenic glycoside and toxalbumin

Most poisonous: Fruits seeds



CIRCUMSTANCES, SIGNS & SYMPTOMS OF HONDALA POISONING



Closely resembles to passion fruit, responsible for accidental poisoning among children.



Clinical features: 3 phases

1

- vomiting, fever, restlessness, dizziness, disorientation, abdominal pain and diarrhoea.

2

- necrotising enteritis leading to diarrhoea with blood and mucus, abdominal colic, tenderness over the right iliac fossa

3

- myocarditis, tender hepatomegaly and retinopathy occurs 2-3 weeks after ingestion

OLINDA/ CRAB EYES/ ROSARY BEAN/ JEQUIRITY BEAN



Botanical Name: Abrus precatorius

Most poisonous: seeds

Toxin: Toxalbumin called *Abrin*



Fatal dose: 1 seed



CIRCUMSTANCES, SIGNS & SYMPTOMS OF OLINDA POISONING



- ⊙ Used in native medicine and ornamental makings
- ⊙ Accidental poisoning by children
- ⊙ Nausea, vomiting, diarrhoea and abdominal cramps, haematemesis and melaena.
- ⊙ Hepatotoxicity
- ⊙ Haemagglutination, haemolysis of red cells, hypovolaemic shock and direct toxic effect on kidneys lead to acute renal failure.
- ⊙ Retinal haemorrhages, anaemia, hypoglycaemia, drowsiness and convulsions

KAPUM KIRIYA / CORAL PLANT



Botanical Name: Jatropha multifida

Toxin: Toxalbumin Jatropin

Most poisonous: seeds

Fatal dose: 1 seed



CIRCUMSTANCES, SIGNS & SYMPTOMS OF KAPUM KIRIYA POISONING



- ◎ It is called 'kapum kiriya' because latex of the plant is applied to wounds and ulcers.
- ◎ In Africa the leave juice is used for Oral candidiasis
- ◎ Commonly seen as accidental poisoning in children
- ◎ Clinical features are: nausea, vomiting, abdominal pain, diarrhoea, shock
- ◎ Known to mimic organo-phosphate poisoning

KEPUNKIRIYA/ BUDADAKIRIYA/DADAKIRIYA / AUSTRALIAN ASTHMA WEED/ THAWA THAWA



<http://rubygold.sulit.com.ph>

purplemelastoma.blogspot.c

Botanical Name: Euphorbia hirta

Toxin: Alkaloid xanthoramine, gallic acid, phenolic substance

Clinical effects: Nausea, vomiting, and drowsiness, Observe for cyanide poisoning features

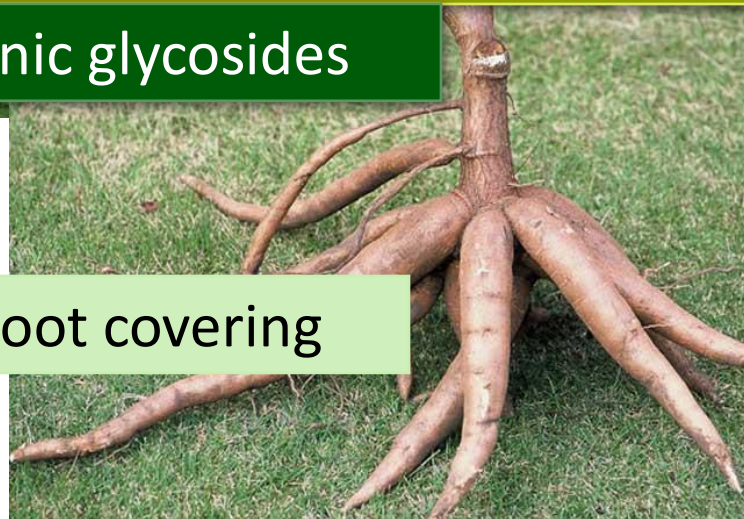
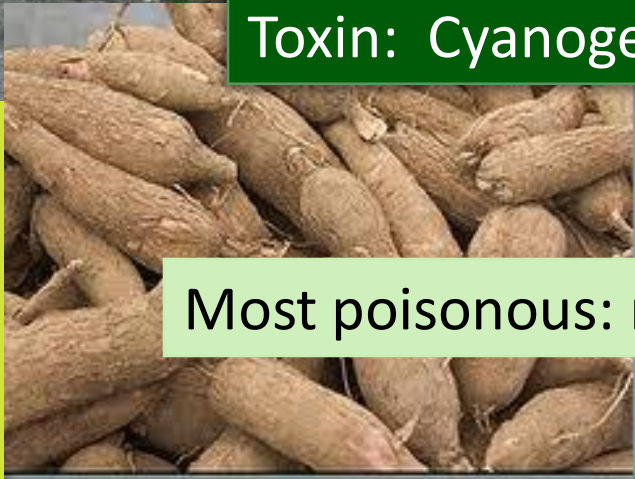
MANYOKKA / TAPIOCA / CASSAVA / MANIOC



Botanical Name: Manihot utilissima

Toxin: Cyanogenic glycosides

Most poisonous: root covering



Improper cooking :
Vomiting,
abdominal pain,
dehydration, loose
stools, shock,
drowsiness,
Collapse,
convulsions

HABARALA/ ELEPHANT'S EAR PLANT



Botanical Name: Alocasia macrorrhiza

Toxin: – Sapotoxin , Calcium oxalate crystals

Most poisonous: stems/ leaves



KETALA / KOTAKIMBULA / DUMB CANE



Botanical Name: Dieffenbachia amoena



Toxin: – Calcium oxalate crystals

Most poisonous: stems

Decorative plants
in houses

CALADIUM/ ANGEL'S WINGS/ RATHU HABARALA/ MAL HABARALA



Botanical Name: Caladium andreanum

Toxin: – Calcium oxalate crystals

Most poisonous: stems

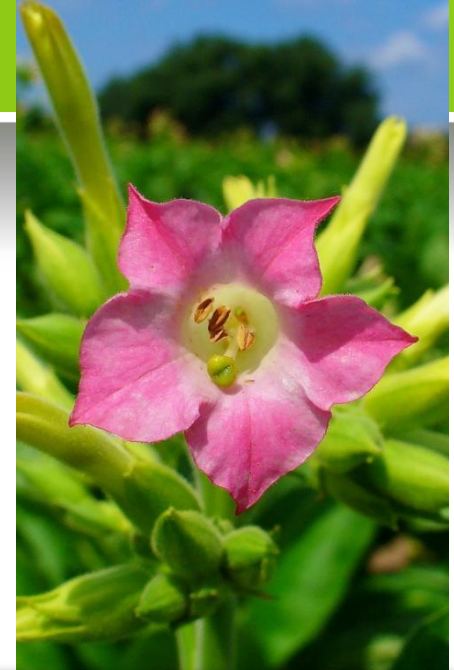
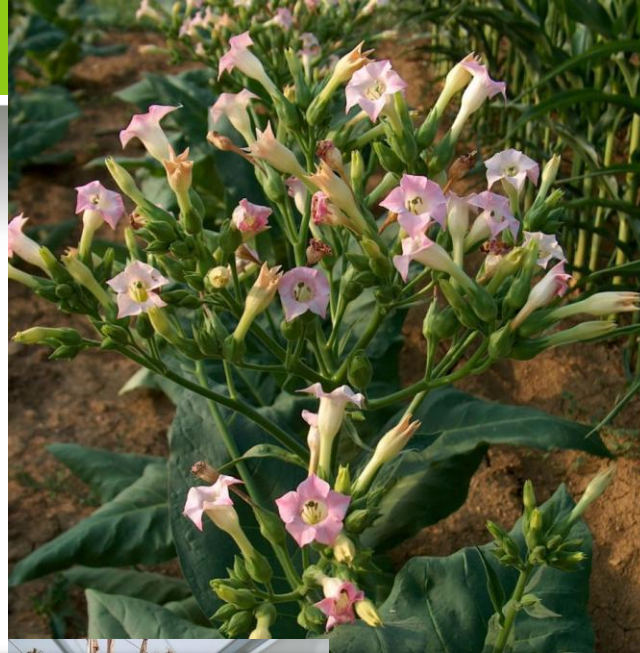
Decorative plants
in houses



CIRCUMSTANCES, SIGNS & SYMPTOMS OF HABARALA, KETALA, RATU HABARALA POISONING

- ① Mainly accidental poisoning in children due to chewing of the stems
- ② The name 'dumbcane' is used as the cane-like stem can cause instant "dumbness" when chewed
- ③ profuse salivation, irritation, burning sensation and pain of the oral cavity
- ④ Oedema of the tongue, lips, cheeks, salivary glands and throat lead to dysphagia and aphonia.
- ⑤ Ingestion of large amount lead to necrotic oesophagitis and haemorrhagic gastritis.
- ⑥ Death may result from laryngeal oedema.
- ⑦ Bradycardia, tremors, muscle twitching and trismus, convulsions and acute renal failure also can occur

DUMKOLA/ TOBACCO



Botanical Name: Nicotiana tabacum



Toxin: – Alcoloid Nicotine

Most poisonous:
leaves, stems, roots,
flowers

CIRCUMSTANCES, SIGNS & SYMPTOMS OF TOBACCO POISONING

- ◎ Accidental in children and adults
- ◎ Mild: salivation, nausea, dizziness, drowsiness, headache, vomiting, diarrhoea, hand tremor
- ◎ Serious: mental confusion, circulatory collapse (shallow rapid pulse, 'cold sweating'), convulsions, loss of consciousness, cardiac arrest, respiratory paralysis

SADIKKA / NUT MEG



Botanical Name: Myristica fragrans

Toxin: – Myristicin & elemicin

Most poisonous: seeds (nutmeg), aril (mace)

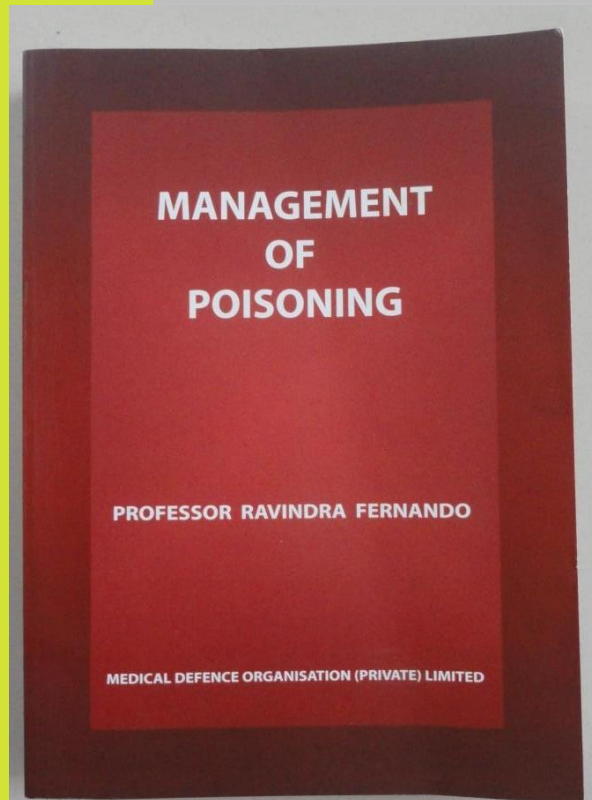


Fatal dose: adults 3 seeds, children 2

CIRCUMSTANCES, SIGNS & SYMPTOMS OF NUTMEG POISONING

- ⊙ Used as a spice and has many medicinal use
- ⊙ Poisoning is usually accidental in children
- ⊙ symptoms are usually seen within 3-6 hours after ingestion
- ⊙ intoxication resembles anti-cholinergic intoxication ie profuse sweating, flushed face, dry mouth, burning epigastric pain, tachycardia, restlessness, giddiness, hallucinations

RECOMMENDED READING



Professor C C de Silva Oration – 2006

Plant poisoning in Sri Lankan children: A hospital based prospective study

G N Lucas¹

Sri Lanka Journal of Child Health, 2006; 35: 111-24

(Key words: Plant poisoning, children, Sri Lanka, hospital based study)

It was my good fortune to have studied paediatrics under the tutelage of the late Professor C C de Silva. In fact, I belonged to the very last batch of students to have been examined by Professor C C de Silva at the final MBBS examination held in June 1966, just prior to his retirement.

Professor C C de Silva was educated at St Thomas College, Mount Lavinia. After one year at the Ceylon Medical College, he proceeded to the United Kingdom where he passed the MBBS (London) and later the same year, the MRCP (London) examination, truly a Herculean feat. In 1938, he was successful at the MD (London) examination. In 1949, he was appointed to the newly created chair of paediatrics, University of Ceylon, which he adorned for 17 years. He accepted the challenge of organizing and developing the department of paediatrics from scratch and in the process established the first teaching unit at the Lady Ridgeway Hospital. In 1956, the Royal College of Physicians conferred on him the FRCP (London). Professor C C de Silva was a pioneer in promoting breastfeeding and nutrition. In 1956, he established a malnutrition clinic at the Lady Ridgeway Hospital. The booklet "Mother your baby" was jointly authored by Professor C C de Silva and Mrs N Visvaanathan. Professor C C de Silva also pioneered home visiting and family planning. In 1954, in association with the late Dr L O Abeyratne, he established the Talagolla Convalescent Home for malnourished children from Ridgeway Hospital. He was elected President of the Ceylon Paediatric Association from 1955 to 1957. In 1961, he was President of the Ceylon Association for the Advancement of Science. In 1975, he was founder President of the Sri Lanka Nutrition Society. In 1983, he received the Doctorate in Science awarded by the Peradeniya University for services rendered to the University and to the academic field at large.

¹Consultant Paediatrician, Lady Ridgeway Hospital, Colombo at the time of the study. Retired from government service in 2001.

Professor C C de Silva firmly believed in the aphorism "All work and no play makes Jack a dull boy". Thus, he readily appreciated my participation in a table tennis tournament during my professorial appointment. However, he did not equally appreciate my lack of knowledge about the time required to boil an egg. Professor C C de Silva strode across the paediatric world like a Colossus and there is no doubt that he put Sri Lanka on the international map of paediatrics. When I sat for the MRCP (UK) in 1974, the first question I was asked at the oral was where I hailed from. When I replied "Sri Lanka", the next question was whether I knew Professor C C de Silva. Thus, you can imagine with what esteem he was held abroad. Professor C C de Silva was a prolific writer and his publications in national and international journals are plentiful. He was well versed in music, art and literature. "Out steps the Don" and "Life as I lived it" are two of his non-medical literary efforts. He passed away peacefully on 20th May 1987, soon after he completed his autobiography.

For the Professor C C de Silva memorial oration I have chosen the topic "Plant poisoning in Sri Lankan children, a hospital based prospective study".

Introduction

Plants have been around for a very long time and are the very essence of life on mother earth. Almost every herb, vegetable and fruit has medicinal properties. '*Walpenela*' is used to treat piles, rheumatism and nervous disorders. '*Karapinchu*' is used to relieve stomach disorders and flavour Sri Lankan curries. '*Karavila*' and '*Polos*' are given to nursing mothers to increase the flow of milk. '*Cucumber*' keeps kidneys healthy. Flowers of the '*delum*' tree relieve sore eyes. '*Tala*' is a laxative whilst '*waraka*' benefits diabetics. '*Nelli*' is rich in vitamin C. '*Gonkola*' is purported to prolong life, as its leaves are commonly eaten by elephants. Numerous skin diseases are treated with '*gotukola*' which is rich in vitamin A and folic acid and is commercially available. '*Kohomba*' has antiseptic



THANK YOU