



Ethnobotanical notes on the diversity of tropical wild fruits used by the Adi tribe of Arunachal Pradesh, India

Momang Taram, Hage Yanka, Jambey Tshering¹ and Hui Tag²

Department of Botany, Rajiv Gandhi University, Rono Hills, Doimukh-791112, Arunachal Pradesh, India

¹Orchid Research Center, Tippi, Balukpong-790114, West Kameng, Arunachal Pradesh, India

²Corresponding author, e-mail: huitag2008@gmail.com

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Abstract

The objective of the study was to investigate the diversity, local status and bio-cultural importance of tropical wild fruits used among the Adi tribe residing in the East Siang District of Arunachal Pradesh in their traditional biocultural landscape. A total of 88 species representing 56 genera under 39 families have been reported. 87.5 % plants were harvested from wild source and 12.5% of plants were harvested from semi-domesticated source. The majority of these fruits species were used as food (71 spp.), followed by hunting and fishing (9 spp.), Others (5 spp.), medicinal (4 spp.) and magico-religious beliefs (3 spp.). The distribution, IUCN status, and related aspects on sustainable exploitation and strategies for conservation have been discussed.

Key words: Arunachal Pradesh, East Siang, Tropical forest, Adi Community, Ethnobotany, Edible Fruits

INTRODUCTION

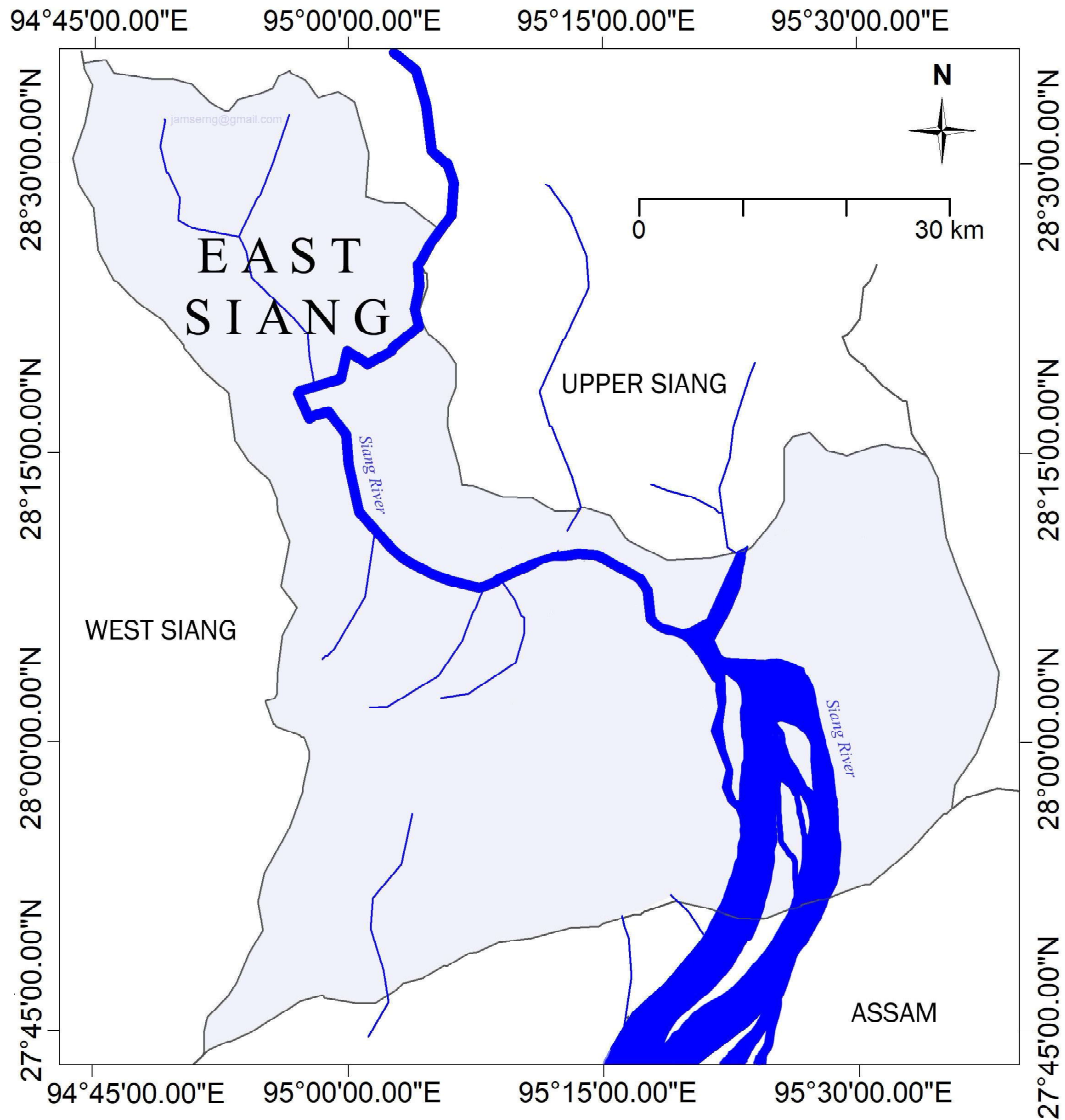
Arunachal Pradesh is an Indian state located in the extreme Northeastern corner of the country and is situated on Eastern Himalaya and Indo-Burma hotspots. Topologically it is predominantly hilly and mountainous (Bharali & Khan 2011) and covers an area of about 83,743 km², of which 82 % is under forest cover. It is endowed with very rich floral and faunal diversity due to its physiographic variations with elevations ranging from 150 to 6500 m a.m.s.l. and with unique ambient climatic conditions (Chakravarty *et al.* 2012; Taram *et al.* 2018).

The state hosts diverse local culture and dialects spoken by 26 major tribes and 110 sub-tribes in their traditional Biocultural landscape (Yanka *et al.* 2019). Of them, the Adi, resident of the Siang belt and Lower Dibang Valley is one of the numerically larger tribes and comprises 26.9% of the total tribal population of the state (Jha 1985; Krithika *et al.* 2008). They have mongoloid feature, patriarchal society and with rich heritage of art and craft (Kumar 2015). And are mostly dependent on both domesticated and wild plant resources which are uniquely significant and culturally associated. The use of wild plants is intrinsically linked to their cultural system and is an inseparable component (Angami *et al.* 2006)

Fruits are the seed-bearing structure of plants which may or may not be edible (Singh & Asha 2017). Workers like Singh & Asha (2017) and Lyndoh *et al.* (2016) had studied the diversity on wild edible fruits of Arunachal Pradesh focused on edibility prospects. Arunachal Pradesh flourishes enormous range of fruits with specific standards of nutritional and medicinal values. However, with the increasing anthropogenic activities due to population explosion and natural calamities over the state, several wild fruits have become vulnerable to their existence (Singh & Asha 2017). And, therefore, it is feared that if not documented immediately, the ethnobotanically important wild-fruits may face the consequences of being extinct without being recorded. Hence, the present study has tried to unveil the diversity and conservation status of wild fruits used among the Adi community in the tropical vegetations of East Siang District of Arunachal Pradesh.

MATERIALS AND METHOD

The present study was conducted in East Siang district of Arunachal Pradesh, it has unique characteristic vegetation types because of which it harbors different types of flora (Das 1986). The district is often known as the 'gateway to Arunachal Pradesh' and has derived its name from the mighty Siang River flowing through the area (Yumnam *et al.* 2011). It covers an area of 4005 km², geographically located between 27°43' to 29° 20' N latitudes and 94°42' to 95°35' E longitudes at an elevation range of 130 m to 752 m a.m.s.l. The district experiences both tropical and subtropical climate. The annual rainfall of the district is recorded about 4168 mm. East Siang district is predominantly inhabited by Adi community and they possess a strong base of traditional knowledge about forest structure and ecosystem functions. The study was conducted on the Tropical forests focusing mainly on bio-culturally important fruits.



Map - 1. Study area, East Siang district of Arunachal Pradesh

For the field survey, methods suggested by Martin (2008) was followed and was conducted in 8 villages viz. *Mirsam, Mirbuk, Balek, Mebo, Ayeng, Bodak, Ledum* and *Rengging* of East Siang District during the years 2017 – 2019. These villages are predominantly inhabited by the Adi Community. Prior Informed Consent (PIC) were taken from the potential informers like Traditional knowledge holders, farmers, priests, elders etc. of both the sexes and all the relevant ethnobotanical data were recorded in pre-structured questionnaire format and in field notebook. Voucher specimens were collected and processed following the methods as suggested by Jain & Rao (1977). Plants were identified through consultation of standard regional floras such as *Materials for the Flora of Arunachal Pradesh* (Hajra *et al.* 1996; Giri *et al.* 2008; Chowdhery *et al.* 2009), *Flora of Assam* (Kanjalil *et al.* 1934 – 1940), *The Flora of British India* (Hooker, 1875 – 1897), e-Flora of China, and e-Herbarium of Kew and the present status of nomenclature were taken from <http://www.worldfloraonline.org> and www.plantsoftheworldonline.org. After the works are over the voucher specimens were deposited at HAU in the Department of Botany, Rajiv Gandhi University, Rono Hills, Doimukh, Arunachal Pradesh for future reference.

RESULT AND DISCUSSION

A total of 88 species from 56 genera, covering 39 families were found to be used by the Adi people of East Siang District. Of these, 87.5% (77 spp.) are procured from wild and 12.5% (11 spp.) are semi-domesticated (Table 1). Plants like *Zanthoxylum rhetsa*, *Phoebe cooperiana*, *Litsea cubeba*, *Citrus latipes*, *Garcinia lanceifolia*, *Saurauia punduana*, etc. are partially domesticated by the local people though these are available naturally in the forest. This is an indication of the importance of these plants in their preferred diet as majority of these are edible. Now, fruits of these plants are also regularly marketed. Such incorporation of wild plants into the farming system will not only protect biodiversity but will also provide sufficient food and will contribute to the rural economy (Angami *et al.* 2006).

Considering the habit groups, tree was the most dominant with 48 species (54.54 %), followed by shrub (14 spp., 15.90 %), liana (6 spp., 6.81%), geophytic herbs (5 spp., 5.68 %), annual herbs (4 spp., 4.54%), shrubby climbers and perennial herbs had 2 species each (2 spp., 2.27 %). Whereas, herbaceous climber, stem parasite and suffrutescent plants had 1 species each (1 sp., 1.13 %). So, at least for the edible fruits Adi people selected mainly arboreal or woody plants.

Considering the use categories, it was found that majority of the plants are food plants that consist of 77.1 % (71 spp.), followed by Hunting and fishing 9.8 % (9 spp.), other uses 5.4 % (5 spp.), medicinal 4.3 % (4 spp.) and magico-religious beliefs and customs 3.3 % (3 spp.). Arunachal Pradesh is the home to diverse range of fruits which forms important part of dietary supplement and at times used for curing many diseases and takes important part in their social culture and traditions since the time immemorial (Prakash *et al.* 2012; Singh & Asha 2017). The present study in East Siang District reported more diversity of edible fruits than earlier studies conducted in Arunachal Pradesh (Singh & Asha 2017; Lyndohet *et al.* 2016). The study shows that a large number of wild fruits are used in the tropical regions, as due to their great diversity. Apart from food, many species are used as bait in traditional hunting and fishing techniques which are eaten by animals. Dependencies of present generation on domesticated crop plants, unavailability of sufficient written literatures and rapid modernization, the traditional knowledge in these societies are on the verge of extinction (Lungphi *et al.* 2018).

Moraceae was the most dominant family which comprises of 12.5 % (11 spp.), followed by Rosaceae 9.1 % (8 spp.), Zingiberaceae and Rutaceae with 5 species each (5.7 %), Arecaceae,



PLATE - I. Ethnobotanically useful fruits of Adi tribe: **A.** *Alpinia roxburghii*; **B.** *Casearia vereca*; **C.** *Dillenia indica*; **D.** *Ficus variegata*; **E.** *Ficus oligodon*; **F.** *Ficus semicordata*; **G.** *Syzygium formosum*; **H.** *Garcinia lanceifolia*; **I.** *Helixanthera parasitica*; **J.** *Maclura cochinchinensis*; **K.** *Myrica esculenta*; **L.** *Sterculia lanceolata* var. *coccinea*

Table 1. Recorded ethnobotanical fruits used by the Adi tribe in the East Siang district of Arunachal Pradesh, India

[Abbreviations used. *Habit*: HA = Annual Herb; HG = Geophytic Herb; HP = Perennial Herb; CH = Herbaceous Climber; CS = Shrubby Climber; L = Liana; PR = Root Parasite; PS = Stem Parasite; Sf = Suffrutescent; S = Shrub; T = Tree. *Uses*: F = Food; M = Medicine; HF = Hunting and Fishing; RBC = Rituals, Beliefs and Customs; O = Others. *IUCN status*: CR= Critically Endangered; DD=Data Deficient; NE= Not Evaluated. *Source*: WD = Wild; SM = Semi-domesticated]

Botanical name [Family]; Voucher specimen	Adi name	Habit	Use and application	IUCN Status	Source
<i>Alpinia nigra</i> (Gaertn.) Burtt [Zingiberaceae]; MT3110	Gumba-Bera	HG	F: Ripe fruit eaten raw	NE	WD
<i>Alpinia roxburghii</i> Sweet [Zingiberaceae]; MT-1683	Gumba-Bera	HG	F: Ripe fruit eaten raw	NE	WD
<i>Amomum maximum</i> Roxb. [Zingiberaceae]; MT-1591	Taaling	HG	F: Seed eaten raw, aromatic	NE	WD
<i>Amomum subulatum</i> Roxb. [Zingiberaceae]; MT-1592	Taalingliite	HG	F: Aromatic seeds edible	DD	WD
<i>Artocarpus lacucha</i> Buch.Ham. [Moraceae]; MT-1779	Raami	T	F: Taken raw when ripe, sour	NE	WD
<i>Baccaurea ramiflora</i> Lour. [Phyllanthaceae]; MT-1629	Bureng, Buri	T	F: Aril on seeds edible	NE	WD
<i>Beaumontia grandiflora</i> Wall. [Apocynaceae]; MT-1636	Dongko-Rjyo	L	RBC: seed coma used to decorate traditional hats "Leebro" - worn during war dance (Taapu)	NE	WD
<i>Bombax ceiba</i> L. [Malvaceae]; MT-1699	HingyoGyomur, Simul	T	O: Seed floss as stuffing material for pillows	NE	WD
<i>Calamus erectus</i> Roxb. [Arecaceae]; MT-1562	Tara	L	F: fruits sour	NE	SM
<i>Calamus flagellum</i> Griff. ex Mart. [Arecaceae]; MT-1541	Yoyi, Jeying	L	F: Ripe fruits edible	NE	SM
<i>Canarium strictum</i> Roxb. [Burseraceae]; MT-1687	Hilum, Komkel	T	F: Fruits edible	NE	WD
<i>Casearia vareca</i> Roxb. [Salicaceae]; MT- 1597	Sipe-Siile	S	HF: Ripe ones used as bait in traditional trap (Etku) to hunt birds and rodents	NE	WD
<i>Castanopsis indica</i> (Roxb. ex Lindl.) A.DC. [Fagaceae]; MT-1602	Suirang	T	F: Endosperm eaten raw or roasted	NE	WD
<i>Castanopsis purpurella</i> (Miq.) N.P.Balagr. [Fagaceae]; MT-1618	Angke	T	F: Endosperm eaten raw or roasted	NE	WD
<i>Choerospondias axillaris</i> (Roxb.) B.L. Burtt&A.W.Hill [Anacardiaceae]; MT-1529	Belam	T	F: Ripe fruits sweet and edible HF: bait for hunting deer	NE	WD

Botanical name [Family]; Voucher specimen	Adi name	Habit	Use and application	IUCN Status	Source
<i>Cinnamomum bejolghota</i> (Buch.-Ham.) Sweet [Lauraceae]; MT-1690	Hipir-Ayin	T	F: Young fruits steamed as chutney	NE	WD
<i>Citrus indica</i> Yu. Tanaka [Rutaceae]; MT-1681	Goyeng-Hingkin	T	F: Ripe fruits sour, taken raw	NE	WD
<i>Citrus latipes</i> (Swingle) Yu. Tanaka [Rutaceae]; MT-1809	Hinnong/Hingkom	T	F: Fruit taken raw, sour	NE	SM
<i>Citrus medica</i> L. [Rutaceae]; MT-1688	Hingkom	S	F: Fruit taken raw, sour	NE	WD
<i>Coffea benghalensis</i> B. Heyne ex Schult. [Rubiaceae] MT-6002	-	S	F: Ripe fruit eaten raw by children	NE	WD
<i>Cordia dichotoma</i> G. Forst [Boraginaceae]; MT-1514	Jongge	T	O: Sticky mesocarp as glue for light materials like paper	NE	WD
<i>Curculigo capitulata</i> (Lour.) Kuntze [Hypoxidaceae]; MT-1548	Tayek	HP	F: Fruit edible	NE	WD
<i>Curculigo prainiana</i> (Deb) Bennet & Raizada [Hypoxidaceae]; MT-1815	Tayek	PH	F: Fruit edible	NE	WD
<i>Dillenia indica</i> L. [Dilleniaceae]; MT-1593	Sompa	T	F: Acrescent calyx eaten raw	NE	WD
<i>Duchesnea indica</i> (Jacks.) Focke [Rosaceae]; MT-1648	Eki-Tangkin	HA	F: Ripe fruit eaten raw, watery	NE	WD
<i>Ficus auriculata</i> Lour. [Moraceae]; MT-1756	Paapop, Tapok	T	F: Ripe hypanthodia	NE	WD
<i>Ficus fulva</i> Reinw. ex Blume [Moraceae]; MT-6004	Takpi	T	O: Hypanthodia as fodder for cattle	NE	WD
<i>Ficus geocarpa</i> Teijsm. ex Miq. [Moraceae]; MT-1641	EeBerii	T	F: Ripe hypanthodia edible, sweet	NE	WD
<i>Ficus heteropleura</i> Blume [Moraceae]; MT-1790	-	T	HF: Ripe hypanthodia used as bait for birds	NE	WD
<i>Ficus hispida</i> L.f. [Moraceae]; MT-6003	Ek-itakuk; Tapang; Eki-tapang	T	O: Hypanthodia as fodder for cattle	NE	WD
<i>Ficus oligodon</i> Miq. [Moraceae]; MT-1761	Pameng; Tapang	T	F: Ripe hypanthodia edible, sweet	NE	WD
<i>Ficus semicordata</i> Buch. Ham. ex Sm. [Moraceae]; MT-1574	Takuk	T	F: Ripe hypanthodia edible, sweet	NE	WD
<i>Ficus variegata</i> Blume [Moraceae]; MT-1588	Taasik	T	F: Ripe hypanthodia edible, sweet	NE	WD
<i>Fissistigma bicolor</i> (Roxb.) Merr. [Annonaceae]; MT-1816	Rika-Riya	L	F: Ripe fruits sweet, taken raw	NE	WD
<i>Fissistigma polyanthum</i> (Hook.f. & Thomson) Merr. [Annonaceae]; MT-1772	Rika-Riya	S	F: Eaten ripe one raw, sweet	NE	WD

Botanical name [Family]; Voucher specimen	Adi name	Habit	Use and application	IUCN Status	Source
<i>Garcinia anomala</i> Planch. & Triana [Clusiaceae]; MT-1561	Taraak	T	F: Fruit edible, sour	NE	WD
<i>Garcinia lanceifolia</i> Roxb. [Clusiaceae]; MT-1560	Taraak	T	F: Fruit edible, sour	NE	SM
<i>Garcinia pedunculata</i> Roxb. ex Buch. Ham. [Clusiaceae]; MT-1586	Tabing	T	F: Ripe ones eaten raw, sweet; M: Smoked fruit-wall taken orally to treat gastrointestinal problems	NE	WD
<i>Gynocardia odorata</i> R.Br. [Achariaceae]; MT-1731	Mondo-Tulpi, Sibetulpi	T	HF: Fruit paste mixed in water for stupefying fishes	NE	WD
<i>Helixanthera parasitica</i> Lour. [Loranthaceae]; MT-1555	Tasik	PS	F: Ripe fruit eaten raw, sweet	NE	WD
<i>Heteropanax fragrans</i> (Roxb.) Seem. [Araliaceae]; MT-1656	Gaatum – Bopang	T	HF: Fruit as bait to trap rodents and birds	NE	WD
<i>Hodgsonia macrocarpa</i> (Blume) Cong. [Cucurbitaceae]; MT-1552	Tatar-Api	L	F: Embryo edible after cooking	NE	WD
<i>Hornstedtia arunachalensis</i> S. Tripathi & V. Prakash [Zingiberaceae]; MT-1627	Bele-Belaak	HG	F: fruits eaten raw	NE	WD
<i>Litsea cubeba</i> (Lour.) Pers. [Lauraceae]; MT-1777	Rayil, Tayir	T	F: Fruit as condiment, strongly aromatic	NE	SM
<i>Livistona jenkinsiana</i> Griff. [Arecaceae]; MT-1520	Taek	T	F: Ripe fruits edible	NE	SM
<i>Macaranga peltata</i> (Roxb.) Mull. Arg. [Euphorbiaceae]; MT-1521	Lagar	T	HF: Fruit as bait for birds and rodents	NE	WD
<i>Maclura cochinchinensis</i> (Lour.) Corner [Moraceae]; MT-1808	Tanyum-Tang	S	F: Ripe fruit eaten, sweet	NE	WD
<i>Maesa indica</i> (Roxb.) A. DC. [Primulaceae]; MT-1654	Etjun – Jayun, Nyanyur	S	F: Ripe fruits eaten raw	NE	WD
<i>Mangifera sylvatica</i> Roxb. [Anacardiaceae]; MT-1686	Hidum – Tagung, Nyomrang-tagung	T	F: Ripe fruits edible, sour	NE	WD
<i>Melastoma malabathricum</i> L. [Melastomataceae]; MT-1709	Kasii-Rai, Jojer	Sf	F: Fruits eaten raw	NE	WD
<i>Melothria trilobata</i> Cogn. [Cucurbitaceae]; MT-1635	Dongkong-kayong	CH	F: Ripe fruits eaten raw	NE	WD
<i>Microtropis discolor</i> (Wall.) Arn. [Celastraceae]; MT-1827	-	T	HF: Red seed used as bait for rodents	NE	WD

Botanical name [Family]; Voucher specimen	Adi name	Habit	Use and application	IUCN Status	Source
<i>Morus alba</i> L. [Moraceae]; MT-1789	Nini-guti	T	F: Ripe ones sweet, edible	NE	SM
<i>Musa aurantiaca</i> G.Mann ex Baker [Musaceae]; MT-1640	Dumji	HP	F: Ripe fruit sweet	NE	WD
<i>Myrica esculenta</i> Buch.Ham. ex D.Don [Myricaceae]; MT-1551	Tatir	T	F: Ripe ones eaten raw	NE	WD
<i>Nephelium lappaceum</i> L. [Sapindaceae]; MT-1583	Tadar	T	F: Ripe ones eaten raw, sour and sweet	NE	WD
<i>Pandanus furcatus</i> Roxb. [Pandanaeae]; MT-1788	Tako	T	F: Dried seed edible	NE	WD
<i>Persicaria capitata</i> (Buch.Ham. ex D.Don) H.Gross [Polygonaceae]; MT-1624	Babing-kaling, Mijjinkalin g	HA	F: Ripe fruit eaten raw	NE	WD
<i>Phoebe cooperiana</i> P.C. Kanjilal & Das [Lauraceae]; MT-1563	Tapir	T	F: Ripe fruits eaten raw	NE	SM
<i>Phrynium pubinerve</i> Blume [Marantaceae]; MT-1649	Ekkam	HP	F: Seeds eaten raw	NE	SM
<i>Physalis lagascae</i> Roem. &Schult. [Solanaceae]; MT-1702	Jojing-belang	HA	F: Ripe ones eaten raw	NE	WD
<i>Rhaphidophora decursiva</i> (Roxb.) Schott [Araceae]; MT-6001	Talo	PH	HF: Fruit used as bait for fish	NE	WD
<i>Rhus chinensis</i> Mill. [Anacardiaceae]; MT-1580	Tagmo	T	M: Cooked with wild mushroom to avoid food poisoning	NE	WD
<i>Rhynchosyche vestitum</i> Wall. ex C.B. Clarke [Gesneriaceae]; MT-1706	Jongkot	S	F: Fruits watery, eaten raw	NE	WD
<i>Rubus alceifolius</i> Poir. [Rosaceae]; MT-1763	Pasi-Payi	S	F: Ripe ones eaten raw, sweet	NE	WD
<i>Rubus ellipticus</i> Sm. [Rosaceae]; MT-1759	Pakkom – Tayin	S	F: Ripe ones eaten raw, sweet	NE	WD
<i>Rubus niveus</i> Thumb. [Rosaceae]; MT-1542	Yokpo – Pongkung	CS	F: Ripe ones eaten raw, sweet	NE	WD
<i>Rubus paniculatus</i> Sm. [Rosaceae]; MT-1569	Tangkin	CS	F: Ripe ones eaten raw, sweet	NE	WD
<i>Rubus rosifolius</i> Sm. [Rosaceae]; MT-1831	Tangkin	S	F: Ripe ones eaten raw	NE	WD
<i>Rubus sieboldii</i> Blume [R. moluccanus L.], [Rosaceae]; MT-1567	Tapa – Tara	S	F: Ripe fruits eaten raw, sweet	NE	WD
<i>Rubus sumatranus</i> Miq. [Rosaceae]; MT-1713	kinbu – Beru	CS	F: Ripe fruits edible, sweet	NE	WD
<i>Sapindus mukorossi</i> Gaertn. [Sapindaceae]; MT-6006	Kuku-rabak	T	O: Dried fruit used to clean ornaments	NE	WD
<i>Saurauia armata</i> Kurtz [Actinidiaceae]; MT-1619	Anpum	T	F: Ripe fruits eaten raw, sweet	NE	WD

Botanical name [Family]; Voucher specimen	Adi name	Habit	Use and application	IUCN Status	Source
<i>Saurauia griffithii</i> Dyer [Actinidiaceae]; MT-1829	Taan	T	F: Ripe ones eaten raw	NE	WD
<i>Saurauia napaulensis</i> DC. [Actinidiaceae]; MT-1590	Taan	T	F: Ripe fruits eaten raw, sweet	NE	WD
<i>Saurauia punduana</i> Wall. [Actinidiaceae]; MT-1589	Taan	T	F: Ripe fruits eaten raw, sweet	CR	SM
<i>Solanum torvum</i> Sw. [Solanaceae]; MT-1526	Kodu/ Migom Kopi/Kopi- Piite	S	F: Young ones, bitter, cooked as chutney	NE	WD
<i>Solanum viarum</i> Dunal [Solanaceae]; MT-1525	Peeli-Taang, Kili-taang	HA	M: Warmed on fire and then applied on infected teeth	NE	WD
<i>Spondias pinnata</i> (L.f.) Kurz [Anacardiaceae]; MT-1530	Dorgu- dorge, Dorge	T	F: Eaten raw, sour	NE	WD
<i>Sterculia lanceolata</i> var. <i>coccinea</i> (Jack) Phengklai [Malvaceae]; MT-1549	Tayam	T	F: Immature seeds eaten raw and mature ones roasted; RBC: open ripe fruit is hung on the door to scare the evil spirits	NE	WD
<i>Sterculia striatiflora</i> Mast. [Malvaceae]; MT-1786	Tayam	S	F: Immature seeds eaten raw and mature ones roasted; RBC: open ripe fruit is hung on the door to scare the evil spirits	NE	WD
<i>Stixis suaveolens</i> (Roxb.) Pierre [Capparaceae]; MT-1613	Rokpo- ketum – kelum	L	F: Ripe ones taken raw, sweet	NE	WD
<i>Syzygium formosum</i> (Wall.) Masam [Myrtaceae]; MT-1826	Ponkan	T	F: Ripe ones eaten raw	NE	WD
<i>Syzygium fruticosum</i> DC. [Myrtaceae]; MT-1828	Jongkeng	T	F: Ripe ones eaten raw	NE	WD
<i>Terminalia chebula</i> Retz. [Combretaceae]; MT-6000	Ilikang	T	M: Fruit taken orally for cold and cough	NE	WD
<i>Trevesia palmata</i> (Roxb. ex Lindl.) Vis. [Araliaceae]; MT-1679	Gorpak, Tagor	T	F: Young fruits bitter and cooked as chutney	NE	WD
<i>Zanthoxylum armatum</i> DC. [Rutaceae]; MT-1535	Ombeng, Ombe	S	F: Fruits as spice	NE	WD
<i>Zanthoxylum rhetsa</i> (Roxb.) DC. [Rutaceae]; MT-1533	Onger	T	HF: Fruits paste used as stupefying agents for fish poisoning	NE	SM

Clusiaceae and Lauraceae with 3 species each (3.40 %). Among the genera *Ficus* and *Rubus* were the most dominant (7 species each), followed by *Saurauia* (4 species), *Garcinia* and *Citrus* (3 species each). According to IUCN Red list categories (IUCN 2020) *Saurauia punduanais* evaluated as Critically Endangered (CR), *Amomum subulatum* as Data deficient (DD) and remaining species (86 spp., 97.72 %) are not evaluated.

Arunachal Pradesh is facing several threats and biotic pressures in the form of shifting cultivation, grazing, forest fires, loss of pollinators, commercial monoculture plantations and illegal extraction of forest products and diversion of forest land for developmental projects (Kumar & Chaudhry 2015; Kanwal & Lodhi 2018). Because of this many species of plants are now on the verge of extinction. Although most of the species in the study area are not listed in IUCN categories, they may abundantly distributed globally but species viz. *Saurauia griffithii*, *Citrus latipes*, *Citrus indica*, *Ficus geocarpa*, *Zanthoxylum rhetsa*, *Sterculia striatiflora* have scattered and very less population in the study area. Local extinction of a species may have far reaching implications which includes ecological imbalances in an area (Lyngdoh *et al.* 2016). Therefore knowledge on the availability of wild resources as well as their status is crucial at this point of time and for any locality.

CONCLUSION

This paper documents the diversity of wild fruits in East Siang district of Arunachal Pradesh. More similar studies are needed to be done in the entire North-eastern India. Some of the wild fruits could be produced through cultivation and could be commercialized. For this proper awareness on the existing fruit diversity and their importance need to be generated so that people can understand the potential of these fruits (Singh & Asha 2017). The study shows that fruit are not only used for food and medicinal purposes but are used in many other purposes viz. sticky mesocarp of *Cordia dichotoma* as glue for light materials like paper; dried fruits of *Sapindus mukorossi* used as detergent to remove dirt from ornaments and woolen clothes; *Microtropis discolor*, *Casearia vareca*, *Macaranga peltata* are used as bait; fruit paste of *Zanthoxylum rhetsa* and *Gynocardia odorata* are used for stupefying fishes and ripe open fruits of *Sterculia striatiflora* and *Sterculia lanceolata* **var.** *coccinea* are hung on the door to prevent the entry of evil spirits. Use of fruits has lesser impact on the plant population as in compared with use of wood, bark or rootstock.

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