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Underutilized Vegetables of Arunachal Pradesh – A New Source of Nutrition and Income

Arunachal Pradesh is one of the eighth states of North East India stretching over an area of 83,730 sq.km between 26^o30'N and 29^o30'N latitude, and 91^o31'E and 97^o30'E longitude. It has varied climate, ranging from sub-tropical in the south to alpine in the north and receives an annual rainfall of about 2000 to 5000 mm. Arunachal Pradesh, one of the North East Indian states is the 12th mega biodiversity region of the world which is a part of Indo-Burma and Himalaya biodiversity hotspot. It has a rich reservoir of wild edible plant species that has an immense potential to be used for development of new crops through domestication, besides being prospective source of broad gene pool of useful genetic resources essential to plant breeders.

INTRODUCTION

The tribal people of the region have their own indigenous traditional knowledge about the use of different plant species for different purposes like food, shelter, fodder and medicinal uses. Beside rice, maize, millet and tuber crops, wild edible leafy plants are widely consumed in the daily diet by local people in the boiled/steamed form mainly and sparsely fried. Wild edible plants provide staple food for the local people and serve as complementary food for non-indigenous communities. Many studies have revealed that wild edible plants are potential source of nutrition and in many cases they are found to be more nutritious than conventional food crops. Most of the wild leafy vegetables are perennial in nature. They exist as different plant type

Table 1: Botanical and local name of some of the local vegetables of Arunachal Pradesh

Sl. No	Botanical Name	Local Name	Parts use	Sl. No.	Botanical Name	Local Name	Parts use
1	<i>Allium hookerii</i>	Talap	Bulp and Leaf	21	<i>Mussenda roxburghii</i>	Akshap	Leaf
2	<i>Bambusa tulda</i>	Iku	Shoots	22	<i>Parkia roxburghii</i>	Yongchak	Pod
3	<i>Basella rubra</i>	Poi	Leaf	23	<i>Passiflora edulis</i>	Garandal	Flower
4	<i>Capsicum chinense</i> Jacq	Raja mircha	Fruit	24	<i>Phoebe cooperiana</i>	Tapil	Fruit
5	<i>Chenopodium spp.</i>	Bathua	Leaf	25	<i>Piper pedicellatum</i>	Raare	Tender Leaf
6	<i>Clerodendrum colebrookianum</i>	Oyin	Leaf	26	<i>Pouzolzia bennettiana</i>	Osik	Terminal leaves
7	<i>Cyphomandra betacea</i>	Tree tomato	Fruit	27	<i>Rhynchosyche ellipticum</i>	Jokke	Leaf
8	<i>Dendrocnide sinuata</i>	Pudrette	Leaf	28	<i>Sauropus androgynus</i>	Gam	Tender leaves
9	<i>Diplazium esculentum</i>	Dhekia sag, pakaraya	Tender leaves and shoots.	29	<i>Sechium edule</i>	Chow Chow	Fruit
10	<i>Dioscorea deltoidea</i>	Nyinke	Rhizome	30	<i>Solanum gilo</i>	Tita Baigun	Fruit
11	<i>Elatostema sessile</i>	Huji	Leaf	31	<i>Solanum indicum</i>	Petta Baake	Fruit
12	<i>Eryngium foetidum</i>	Maan dhania	Leaf	32	<i>Solanum khasianum</i>	Kopir	Leaves
13	<i>Fagopyrum esculentum</i>	Hukung panung	Leaf	33	<i>Solanum nigrum</i>	Okomanang,	Leaves
14	<i>Glochidion multiloculare</i>	Oporang,		34	<i>Solanum torvum</i>	Sote Baake	Fruit
15	<i>Gynura cusumbua</i>	Ogen	Leaf	35	<i>Solanum xanthocarpum</i>	Kantakari	Fruit
16	<i>Houttuynia cordata</i>	Muchandarin, Mumbre	Leaf and root	36	<i>Spilanthes oleracea</i>	Marsang	Leaf
17	<i>Litsea cubeba</i>	Tayir	Berries	37	<i>Urtica parviflora</i>	Tanu	Leaf
18	<i>Malva verticillata</i>	Lapha	Leaf	38	<i>Zanthoxylum rhetsa</i>	Onger esing	Tender Leaf
19	<i>Meyna laxiflora</i>	Meyna	Leaf		<i>Zingiber pardochlamys</i>	Red Ginger	Rhizome
20	<i>Musa arunachalensis</i>	Kulu Papuk	Pseudostem Male bud	39			

ranging from herb, shrubs, climbers and tree. These wild leafy vegetables are available almost throughout the year. The botanical name, local name and parts used are mentioned in (Table 1).

NUTRITION AND COMMERCIAL VALUE

The traditional leafy vegetables possess higher nutritional value than several commonly known vegetables. In addition to the presence of essential nutrients, they also have the anti-nutritional factors like phytic acid, phenols and tannins that can diminish the nutrient bioavailability, especially if they are present at high levels. It is reported that these anti-nutritional factors could help to prevent

and treat several important diseases; remarkably, the anti-carcinogenic activity of phytic acid has been demonstrated by in vitro and in vivo assays (Burlingame, 2000). Several researchers have demonstrated that many wild edible plants have therapeutic value due to the presence of biologically active compounds, and therefore, can be considered as food-medicine and quality food (Pereira *et al.* 2011). The wild edible plants are important source of nutrient, vitamin and mineral supplements for indigenous population and hence, reduce the vulnerability of local communities to food security and thereby act as a buffer for food shortage during emergency. But they are generally not cultivated and



Solanum gilo



Allium hookerii



Spilanthes oleracea



Solanum xanthocarpum



Parkia roxburghii



Sechium Spp.



Capsium chinensis
Jacq



Diplazium esculentum



Momordica dioica



Cyphomandra betacea



Zanthoxylum rhetsa



Solanum nigrum



Pouzolzia benettiana



Eryngium foetidum



Piper pedicellatum



Clerodendron colebrookianum



Fagopyrum esculentum



Sauropus androgynus



Urtica parviflora



Chenopodium Spp.



Gynura cusumbua



Malva verticillata



Colocasia spp.
(Shoots)



Dioscorea deltoidea



Colocasia spp.
(Corms)

hence remains underutilized or locally grown which limits their popularity. They have the potential to

contribute to food security, nutrition, health, income generation and environmental services. Considering

the importance as food, medicine, industries and also the prime minister's visions of vocal for local with global outreach, these underutilized crops should be exploited to commercial level.

CONCLUSION

Underutilized vegetables of Arunachal Pradesh have the potential to contribute to food security, nutrition, health, income generation and environmental services. Considering the importance as food, medicine, industries and also the prime minister's visions of vocal for local with global outreach, these underutilized crops should be exploited to commercial level.

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