

# An Ethnobotanical Study of Medicinal Plants Used by the Tribes in Upper Subansiri District of Arunachal Pradesh, India

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## ABSTRACT

Main objective of the study was to identify and document the ethno botanically important and economic plants of the Upper Subansiri district of Arunachal Pradesh, India. The *Tagin*, *Hill Miri* (now *Nyshi*) and *Galo* tribes of Upper Subansiri district of Arunachal Pradesh state of India use number of medicinal plants available in local forests as 'traditional medicine' for curing common illness. The ethnobotanical information was collected by field survey among aboriginal community, by study with herbaria and museum, by study of rituals, myths and folkfores and through folk market survey. The villages inhabited by the tribesmen were selected randomly for each tribe for the purpose of survey. The paper presents 140 numbers of medicinal plants used by these tribes for themselves and 18 numbers of plants for curing livestock diseases and for their feeding. Fresh leaves, young twigs, bark, fruits and roots are reported be used as traditional medicine for treatment of ailments among human beings and domestic livestock. The present documentation on the traditional medicine of the three tribes of Upper Subansiri district of Arunachal Pradesh emphasizes that many people of the region still depend upon herbal medicine for treatment of human as well as livestock diseases. Thorough biochemical investigation and clinical trials of local traditional medicines may provide new direction for human health care system. There is a need to focus on more ethnobotanical research, conservation and documentation of traditional medicinal knowledge among indigenous communities of the state.

**Keywords-** Tribes, Upper Subansiri district, Ethno-medicines, Arunachal Pradesh.

## INTRODUCTION

Arunachal Pradesh is the largest state, covering an area of 83743 sq km, among all North Eastern states of India bordering Tibet, Bhutan, China and Myanmar. Situated in the lap of Eastern Himalayan mountain range, it is recognized as one of the Mega Biodiversity hotspots of the world<sup>1</sup>. More than 25 different tribes and 110 sub tribes are living in 18 districts of the state from the time immemorial. Each of these tribes has a unique tradition, culture and lifestyle dependent mostly on biodiversity, mainly forest and wildlife, of the state<sup>2</sup>.

The Upper Subansiri district of Arunachal Pradesh lies in the central part of the state in between 28.5 degree and 28.25 degree latitudes and 93.15 degree and 94.20 degree longitudes covering a geographical area on 7032 sq km (Figure 1). The high mountain region near northern boundary of the district is generally cold as remain covered with snow almost throughout the year. The plain areas in foothills are intersected by number of water bodies mainly streams and rivers in the lap of forests<sup>3</sup>. The district is inhabited by three major tribes namely *Tagin*, *Hill Miri* (now *Nyshi*) and *Galo*. *Tagin* have the largest population followed by *Nyshi* and *Galo*. Culturally and linguistically the tribes more or less are akin to one another. These aboriginal tribes have learnt to co-exist with the nature over the years. The long associations with nature have made them dependent on it for all their day to day requirements. At one point of time the output from their traditional agricultural practices were not adequate to feed them for the whole year. Then there are crop failures. For all these natural calamities they had to depend on wild edibles for the lean period. They had also expertise on the treatment of diseases of man and woman including their domestic animals. The spread of education

and exposure of the people to the alien culture through mass media and contact have greatly influenced their age old traditional life style.

An ethnobotanical study takes into account knowledge of the tribes and the people inhabiting the area, with particular reference to their distribution, language/dialect spoken, food habit, rituals and practices, traditional practices followed in agriculture, house building, art and craft objects made out of plant products, etc. An ethnobotanical study of the area, therefore, aims at to cover under its purview the whole gamut of information about plants namely plants used as medicine, food, building materials, rituals, festivals, etc. The documentation of above information can provide brief taxonomic ideas of utmost economic value as medicine, or food, which could add to our limited knowledge of germplasm. Some significant studies on ethnobiology from different states of India include from Meghalaya<sup>4</sup>, Arunachal Pradesh<sup>5</sup>, Aravalli hills (Rajasthan)<sup>6</sup>, Mt. Abu (Rajasthan)<sup>7</sup>, Udaipur district (Rajasthan)<sup>8</sup>, Banswara district (Rajasthan)<sup>9</sup>, Alwar district (Rajasthan)<sup>10</sup>, and Eastern Ghats of Andhra Pradesh<sup>11</sup>. Considering the richness of ethnobotanical information of the Upper Subansiri district, a study was undertaken by State Forest Research Institute, Itanagar, Arunachal Pradesh during 2010-12. Main aim of the study was to identify and document the ethno botanically important and economic plants of the district. However, the present paper deals with the plants of medicinal importance used by the three tribes of the district. The primary information was gathered through field visit and observation, informal discussion and open ended interview with the informants and knowledgeable persons.

## METHODOLOGY

The ethnobotanical information was collected by field questionnaire survey among aboriginal community, by study with herbaria and museum, by study of rituals, myths and folklores and through folk market survey. Maps prepared by the Directorate of Economics and Statistics, Government of Arunachal Pradesh were also consulted for identification of approaching routes and location of the select villages. The villages inhabited by the tribesmen were selected randomly for each tribe for the purpose of survey (Table 1).

## RESULTS AND DISCUSSION

In the North Eastern states on India, Asteraceae is the most dominant family of medicinal plants<sup>12</sup>. Some of the medicinal plants used by the tribes of Upper Subansiri district are also used by tribal population of other districts of Arunachal Pradesh and other states of India. For example, leaves of *Ageratum conyzoides* L for blood clotting is used by Mishing, Jaintia tribes of Assam<sup>13,14</sup> and by Tangsas and Singphos tribes of southern Arunachal Pradesh<sup>15</sup>. *Clerodendron colebrookianum* Walp leaves are reported to be used by Apatani tribe of Arunachal Pradesh<sup>15</sup> and by tribes of Assam<sup>16</sup>. Leaves and root decoction of this plant is also used by Adi and Apatani tribes of Arunachal Pradesh in malarial and bronchitis treatment<sup>17,15</sup>. Powdered bark of *Oroxylum indicum* is used by Mongpa tribe of Arunachal Pradesh<sup>15</sup> and Mishing community of Assam<sup>13</sup> in Malarial treatment and liver disorder. Crushed root and bark of *Gmelina arborea* Roxb are used by Padam (Adis) tribe of Arunachal Pradesh to purify blood and in stomach trouble<sup>15</sup>. Powdered tubers of *Stephania japonica* Miers is used in malarial treatment by Khamti tribe of Arunachal Pradesh<sup>18</sup>. The medicinal properties of *Piper nigrum* has been reported from southern state of Tamil Nadu also.<sup>19</sup>

The *Tagin*, *Hill Miri* (now *Nyshi*) and *Galo* tribes of Upper Subansiri district of Arunachal Pradesh state of India commonly use 140 plant species for treating human diseases (Table 2), out of which 55 species are herbs, 31 species are shrubs and 54 species are either trees or climbers. Most dominant families of Asteraceae and Scrophulariaceae are used by the tribal population of the district for above purpose, whereas Araceae and Moraceae families are in use for animal feeding and in the treatment of their diseases. About 18 species of medicinal plants are used either for livestock disease treatment or as their feed. Out of these 18 species 8 species are herbs, 6 species are trees and rests 4 are shrubs (Table 3).

Our above findings are in conformity with that of Saklani and Jain (1994) who mentioned that Asteraceae was the most dominant family of medicinal plants for the purpose of human ailments treatment in the North eastern states of India<sup>12</sup>. But our findings are slightly different from the plant species of Solanaceae and Lamiaceae which are reported to be used by the tribes of Arunachal Pradesh as top families<sup>12, 15</sup>. These families have been in use in our study's findings but not as top two families as far as medicinal plants in Upper Subansiri district are concerned (Table 2).

## CONCLUSION

The present documentation on the traditional medicine of the three tribes of Upper Subansiri district of Arunachal Pradesh emphasizes that many people of the region still depend upon herbal medicine for treatment of human as well as livestock diseases. Thorough biochemical investigation and clinical trials of local traditional medicines may provide new direction for human health care system<sup>3</sup>. These medicines have been reported to have lesser or negligible side health effects on

humans in comparison to other medical treatments. State Government has to conduct vigorous conservation and sustainable management programme among local people for the development of this sector. Arunachal Pradesh Biodiversity Board and Arunachal Pradesh State Medicinal Plants Board are doing some work in this direction but at the slow pace. This trend needs to be addressed soon.

### ACKNOWLEDGEMENT

The authors are thankful to the Director, State Forest Research Institute, Itanagar and officers of various departments especially revenue department of Upper Subansiri district of the state for their encouragement and help in providing relevant data/information for completion of the study.

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**Table 1:** Villages covered during study among three tribes of Upper Subansiri district

S.No.	Name of the Tribe	Name of the village	Name of the circle
1	Nyshi	i) Godak	Raga
		ii) Muri Mugli	Puchi – Geko
		iii) Babla	Puchi – Geko
		iv) Don	Daporijo
		v) Dakpe	Daporijo
		vi) Ligu	Daporijo
		vii) Niji	Daporijo
		viii) Mite	Daporijo
		ix) Jigi	Daporijo
2.	Tagin	i) Sippi	Giba
		ii) Manga	Giba
		iii) Talihia	Taliha
		iv) Siyum	Siyum
		v) Nacho	Nacho
		vi) Limiking	Limiking
		vii) Orak	Limiking
		viii) Reddi	Limiking
		ix) Taksing	Taksing
3.	Galo	i) Dumporijo	Dumporijo
		ii) Pakka	Dumporijo
		iii) Haji	Baririjo
		iv) Maro	Baririjo
		v) Dula	Baririjo
		vi) Tapi	Baririjo
		vii) Tashi Doni	Baririjo

**Table 2:** Medicinal plants used in treatment of human diseases

S No	Botanical Name	Local Name	Family	Habit	Uses
1	<i>Aconitum ferrox</i> Wallich ex setinge	<i>Omle, Omyu</i>	Ranunculaceae	Herb	Whole plant used in diarrhea, dysentery, fever and cold
2	<i>Coptis teeta</i> Wallich	<i>Rinke</i>	-do-	Herb	A multiple usages whole plant for gastric, diarrhea, dysentery, fever
3	<i>Thalictrum foliolosum</i> DC.	<i>Tayo</i>	-do-	Shrub	Decoction of root used in fever and eye diseases
4	<i>Dillenia indica</i> Linn.	<i>Jampa</i>	Dilleniaceae	Tree	Gummy substance from fruit used in hair fall problem. Fruits also edible
5	<i>Stephania japonica</i> Miers.	<i>Yapom Geep, Raikey</i>	Manispermaceae	Climber	Stem used in dysentery, leaves in malarial fever
6	<i>Tinospora cordifolia</i> Miers.	<i>Swein kije</i>	-do-	Climber	Stem used in stomach trouble, dysentery and skin diseases
7	<i>Brassica campestris</i> Linn.	<i>Horyo</i>	Brassicaceae	Herb	Oil from seed along with ginger, turmeric, garlic used in various ailments
8	<i>Gynocardia odorata</i> R.Br.	<i>Taek, Taeke</i>	Flocourtiaceae	Tree	Fruit is used in tooth ailment
9	<i>Drymaria diandra</i> Blume,	<i>Ropsik-Romnik</i>	Caryophyllaceae	Herb	Decoction of leaves used in skin diseases
10	<i>Stellaria media</i> (Linn.) Vill.	<i>Tai Auy Nab</i>	-do-	Herb	Paste of crushed plant used to stop bleeding
11	<i>Garcinia pedunculata</i> Roxb.	<i>Mibia</i>	Clusiaceae	Tree	Leaves used in dysentery and cough
12	<i>Schima wallichii</i> (DC.) Korth.	<i>Salsang Sagne</i>	Theaceae	Tree	Seeds used in stomach trouble
13	<i>Saurauia armata</i> Kurz. Syn.	<i>Hero, Heru</i>	Saurauiaceae	Tree	Leaves applied on the wounds
14	<i>Hibiscus fragans</i> Roxb.	<i>Leachi Uppu</i>	Malvaceae	Shrub	Paste of leaves/flowers used in hair fall/dandruff problem
15	<i>Sterculia hamiltonii</i> (Kuntze) Adelb. Syn.	<i>Taach Pool</i>	Sterculiaceae	Small tree	Ayurvedic preparations have medicinal uses
16	<i>Eleocarpus floribundus</i>	<i>Jolphai Schein</i>	Eleocarpaceae	Tree	Fruits have medicinal properties

	Blume.				
17	<i>Oxalis acetosella</i> Ls. Syn.	<i>Pak Huku</i>	Oxalidaceae	Herb	Juice of whole plant applied on cuts/injuries
18	<i>Oxalis corniculata</i> Linn.	<i>Pak Hukku</i>	-do-	Herb	Paste of plant applied on fire burn
19	<i>Oxalis debilis</i> H.B.K. Var. Corymbosa (DC.) Lourt.	<i>Pak Hukku</i>	-do-	Herb	Juice of whole plant used on cuts/injuries and fire burn
20	<i>Aegle marmelos</i> (L.) Correa.	<i>Bhel</i>	Rutaceae	Tree	Fruits used as digestive
21	<i>Canarium strictum</i> Roxb.	<i>Schellum</i>	Burseraceae	Tree	Juice from bark used against insect bite
22	<i>Azadirachta indica</i> A.Juss. Syn.	<i>Dokam Belam</i>	Meliaceae	Tree	Leaves used in skin disease and boiled water extract taken for stomach ache
23	<i>Melia azedarach</i> Linn.	<i>Tapa Tale</i>	Meliaceae	Tree	Bark used against burning sensation
24	<i>Wedantia scarba</i> Kurz. Syn.	<i>Kepo Ae</i>	Vitaceae	Shrub	Roots used for cholera and dysentery treatment
25	<i>Dalbergia pinnata</i> (Lour.) Prain Syn.	<i>Seda Nyi</i>	Fabaceae	Climber	Leaves used for healing cuts/wounds
26	<i>Mastersia assamica</i> Benth.	<i>Rem, Rading</i>	-do-	Climber	Paste of stem used for healing cuts/wounds
27	<i>Mucuna macrocarpa</i> DC.	<i>Dimpa</i>	-do-	Climber	Stem juice used in eyes problem
28	<i>Oromosia robusta</i> Wight Syn.	<i>Porghum</i>	-do-	Tree	Paste of leaves applied on boils for healing
29	<i>Caesalpinia cucullata</i> Roxb. Syn.	<i>Pani Pgig traw</i>	Caesalpiniaceae	Tree	Leaves and seeds used in stomach ache and body pain
30	<i>Cassia fistula</i> Linn.	<i>Tuluk shein</i>	-do-	Tree	Dried fruits taken during constipation
31	<i>Cassia tora</i> Linn.	-	-do-	Shrub	Leaves used against ringworms and skin diseases
32	<i>Acacia caesia</i> (L.) Willd Syn.	<i>Ragra</i>	Mimosaceae	Climber	Crushed leaves applied on head for killing lice
33	<i>Entada purseatha</i> DC. Syn.	<i>Rich</i>	-do-	Climber	Paste of stem and leaves used in bone fracture
34	<i>Prunus persica</i> Linn.	<i>Chekom</i>	Rosaceae	Tree	Paste of leaves used in killing worms and boils of animals
35	<i>Terminalia chebula</i> Retz.	<i>Bumura</i>	Combretaceae	Tree	Fruits used in constipation and gastric
36	<i>Terminalia citrina</i>	<i>Hilika</i>	-do-	Tree	-do-

	(Gaertner) Flem.				
37	<i>Psidium guajava</i> Linn.	<i>Modhori</i>	Myrtaceae	Tree	Leaves used in dysentery
38	<i>Carica papaya</i> Linn.	<i>Omita schein</i>	Caricaceae	Tree	Unripened fruits used in stomach problems
39	<i>Cucumis sativus</i> Linn.	<i>Mukku</i>	Cucurbitaceae	Shrub	Bark of fruit good for improving digestion
40	<i>Momordica charantia</i> Linn.	<i>Khechak Kerela</i>	-do-	Climber	Fruit good for correcting stomach disorder and blood pressure
41	<i>Trichosanthes tricuspidata</i> D.Don.	<i>Yappen</i>	-do-	Climber	Stem and root used in fever, cold and cough
42	<i>Begonia palmate</i>	<i>Bikku yulu</i>	Begoniaceae	Herb	Root powder used in diarrhea and dysentery
43	<i>Mollugo disticha</i>	<i>Talen</i>	Molluginaceae	Herb	Roasted roots used in relieving muscular pain
44	<i>Centella asiatica</i>	<i>Nguri</i>	Apiaceae	Herb	Leaves used in stomach trouble and as brain tonic
45	<i>Coriandrum sativum</i>	<i>Dhania</i>	-do-	Herb	Fruits used in many medicinal preparations
46	<i>Eryngium foetidum</i>	<i>Dhaniya pat</i>	-do-	Herb	Leaves used in headache and as appetitizer
47	<i>Hydrocotyle javanica</i>	-	-do-	Herb	Paste of leaves used in snake/scorpion bite
48	<i>Brassiopsis glomerulata</i>	<i>Tago</i>	Araliaceae	Tree	Fruits used in cough. Dried fruit powder used against skin eruptions
49	<i>Viburnum colebrookianum</i>	<i>Tarko Kusus</i>	Caprifoliaceae	Shrub	Pounded leaves used in curing old sores
50	<i>Hedyotis scandens</i>	<i>Taja hoor</i>	Rubiaceae	Climber	Dried root powder used orally in stomach pain
51	<i>Ixora acuminata</i>	<i>Oju</i>	-do-	Shrub	Infusion of tender twigs mixed with <i>Piper nigrum</i> and salt given in fever
52	<i>Paedaria foetida</i>	<i>Upter Nemi</i>	-do-	Climber	Decoction of leaves used in stomach trouble
53	<i>Rubia cordifolia</i>	<i>Tamen</i>	-do-	Climber herb	Powdered root applied on forehead in headache
54	<i>Ageratum conyzoides</i> Linn.	<i>Nyeam ei</i>	Asteraceae	Herb	Paste of leaves applied on cuts and wounds
55	<i>Artemesia indica</i> Willd.	<i>Tappen</i>	-do-	Shrub	Leaves used against cuts and skin disease
56	<i>Artemesia nilagirica</i> (C.B.Charke)	<i>Tappen</i>	-do-	Shrub	Leaves used in stomach trouble and body pain. Young aromatic leaves



	Pamp.				used as disinfectant
57	<i>Crassocephalum crepidiodes</i> (Benth) Syn.	Yamen	-do-	Herb	Paste of leaves used in small injuries/wounds
58	<i>Emilia sonchifolia</i> DC.	Genta Ao	-do-	Climbing herb	Leaves juice used against eye inflammation
59	<i>Gerbera piloselloides</i> (L.)	Pangnesir	-do-	Herb	Leaves used for hot fermentation to relieve rheumatic pain
60	<i>Laggera pterodonta</i> (DC) Sch-Bip.Ex.Oliver	Dindo eh	-do-	Herb	Leaves paste used against inflammation and swellings
61	<i>Mikania scandens</i>	Tare Nemi	-do-	Climbing herb	Paste of leaves used on cuts and wounds
62	<i>Spilanthes paniculata</i> DC.	Mersha Ao	-do-	Herb	Flower heads chewed to relieve toothache and tongue infection
63	<i>Vernonia volkamerifolia</i> DC.	Tajop Ei Nem Mang	-do-	Tree	Paste of dried leaves applied on burn wounds
64	<i>Lobelia Montana</i> Reinwardt.	-	Lobeliaceae	Creeping herb	Leaves are used in stomach pain
65	<i>Alastonia scholaris</i> Broom.	Tai sen	Apocynaceae	Tree	Latex and bark used against skin eruption. Powdered bark with water used in malaria
66	<i>Potssia laxiflora</i> (Blume) O.Ktze.	Nara Ei	-do-	Climber	Paste of young leaves with honey used on portion of bee sting
67	<i>Calotropis procera</i> Br.	Akon-Asing	Asclepiadiaceae	Shrub	Leaves used in dysentery, pains and burns
68	<i>Calotropis gigantea</i> (Linn.) Dryland.	Takom Ash	-do-	Shrub	Roots and flowers used against dog bites
69	<i>Buddleja asiatica</i> Lour.	Faab Shang	Buddlejaceae	Shrub	Flowers used in sinus
70	<i>Datura metel</i> Linn.	Tuppu Uppu	Solanaceae	Herb	Leaves used in headache. Seeds are toxic and used for removing worms on cattle wounds
71	<i>Solanum khasianum</i> Clarke.	Byak Tha	-do-	Shrub	Paste of ripened fruits used in dental or gum pain
72	<i>Solanum kurzii</i> Br.	Beyak	-do-	Shrub	Fruits are good for stomach disorder

73	<i>Solanum nigrum</i> Linn.	<i>Hor</i>	-do-	Herb	Leaves used in gastric problem
74	<i>Solanum torvum</i> Swartz.	<i>Shoat Beyak</i>	-do-	Shrub	Fruits used in stomach ache and high blood pressure, Fresh roots known as oral contraceptive
75	<i>Physalis peruviana</i> L.	<i>Donam As</i>	-do-	Herb	Fruits used in gastric
78	<i>Lindernia cordifolia</i> (Colsm.) Merr.	<i>Ae-Eche Ae</i>	Scrophulariaceae	Herb	Leaves used in headache/body ache
79	<i>Mazus pumillus</i> (Burm.f.) var <i>steenii</i>	<i>Uy-Naan Ei</i>	-do-	Herb	Leaves used for blood clotting in cuts
80	<i>Picrorhiza kurroa</i> Royale ex Benth	<i>Rente</i>	-do-	Herb	Plant used in stomach problems, malaria treatment
81	<i>Scoparia dulcis</i> Linn.	<i>Uy kabnam</i>	-do-	Herb	Paste of leaves used in jaundice and blood clotting
82	<i>Torenia asiatica</i> Linn.	<i>Suji Ei</i>	-do-	Herb	Leaves used in stomach disorder
83	<i>Torenia diffusa</i> D.Don.	<i>Ocheng</i>	-do-	Herb	-do-
84	<i>Torenia parviflora</i> Ham.	<i>Suji Ei</i>	-do-	Herb	Leaves used in gastric
85	<i>Oroxylum indicum</i> (L) Vent.	<i>Orok Tak Shein</i>	Bignoniaceae	Tree	Bark powder used in skin itching, swelling. Also used in liver and stomach problem
86	<i>Pedaliium murex</i> Linn.	<i>Un Nemi</i>	Pedaliaceae	Herb	Crushed plant used in wound healing
87	<i>Adhatoda zeylanica</i> Medic.	<i>Basak</i>	Acanthaceae	Shrub	Soup of young leaves used in cough/cold
88	<i>Andrographis paniculata</i> Nees in Wall.	<i>Chirata</i>	-do-	Herb	Leaves used in malaria, fever etc
89	<i>Justicia gendarussa</i> Linn.	<i>Esh talo</i>	-do-	Shrub	Leaves used in bone fracture, muscle pain
90	<i>Callicarpa arborea</i> Roxb.	<i>Yaal Schein</i>	Verbenaceae	Tree	Bark used in tooth ache and skin problem
91	<i>Clerodendron colebrookianum</i> Walp.	<i>Tippin, Tappin</i>	-do-	Shrub	Boiled leaf soup used in high blood pressure, stomach trouble
92	<i>Clerodendron viscosum</i> Vent.	<i>Tapin</i>	-do-	Shrub	Flowers believed to purify blood

93	<i>Gmelina arborea</i> Roxb.	<i>Gomori</i> <i>schein</i>	-do-	Tree	Fruits used for medicinal purpose, Bark chewed in stomach problem
94	<i>Anisomeles ovata</i> Br.	<i>Norutami</i>	Lamiaceae	Shrub	Whole plant crushed and paste used in relieving body pain
95	<i>Mentha piperata</i> Linn. Emend.Huds.	<i>Pudina</i>	-do-	Herb	Paste of leaves used in gastric
96	<i>Ocimum basilicum</i> Linn.	<i>Tulsi</i>	-do-	Shrub	Seed powder and leaves used in cough and cold
97	<i>Perilla frutescens</i> (L.) Britt	<i>Tanam</i>	-do-	Shrub	Seed oil is used against headache and fever
98	<i>Pogostemon benghalensis</i> (Burm,f) Kuntz.	<i>Khobu</i> <i>Tanam</i>	-do-	Herb	Crushed leaves applied to relieve muscular pain or body pain
99	<i>Plantago erosa</i> Wall.	<i>Talak Ao</i>	Plantaginaceae	Herb	Paste of leaves used against cuts/wounds
100	<i>Chenopodium ambrosioides</i> Linn.	<i>Teya</i>	Chenopodaceae	Herb	Paste of leaves used against toothache
101	<i>Fagopyrum dibotrys</i> (D.Don) Trev.	<i>Hukku</i>	Polygonaceae	Herb	Grains are used in cold, cholera and diarrhea
102	<i>Rumex nepalensis</i> Spring	<i>Yalak Ao</i>	-do-	Herb	Leaves used against snakebite
103	<i>Piper mullesua</i> D.Don.	<i>Rer Edik</i>	Piperaceae	Climber	Fruits used in cough and cold problem
104	<i>Piper nigrum</i> Linn.	<i>Jaluk</i>	-do-	Shrub	Fruits used in cough, bronchitis, tonsillitis
105	<i>Piper trioicum</i> Roxb.	<i>Redik</i>	-do-	Climber	Leaves used in relieving muscle pain
106	<i>Piper peepuloides</i> Roxb.	<i>Pipli</i>	-do-	Climber	Fruits used in cough
107	<i>Houttunyyia cordata</i> Thunb.	<i>Checha</i> <i>Peya</i>	Saururaceae	Herb	Roots are used for appetite
108	<i>Cinnamomum zeylanicum</i> Breya.	<i>Dalchini</i>	Lauraceae	Tree	Bark is used in oral infections
109	<i>Litsea salicifolia</i> Roxb.	<i>Taor</i>	-do-	Tree	Bark used in bone fracture
110	<i>Euphorbia ligularia</i> Roxb.	<i>Hiju</i>	Euphorbiaceae	Tree	Soft stem used in stomach pain
111	<i>Jatropha curcas</i> Linn.	<i>Solung</i> <i>Schein</i>	-do-	Small tree	Latex from stem used in scabies
112	<i>Phyllantus emblica</i> L., Hk. f.	<i>Amlaki</i> <i>Schein</i>	-do-	Tree	Fruits used as appetizer and give freshness to

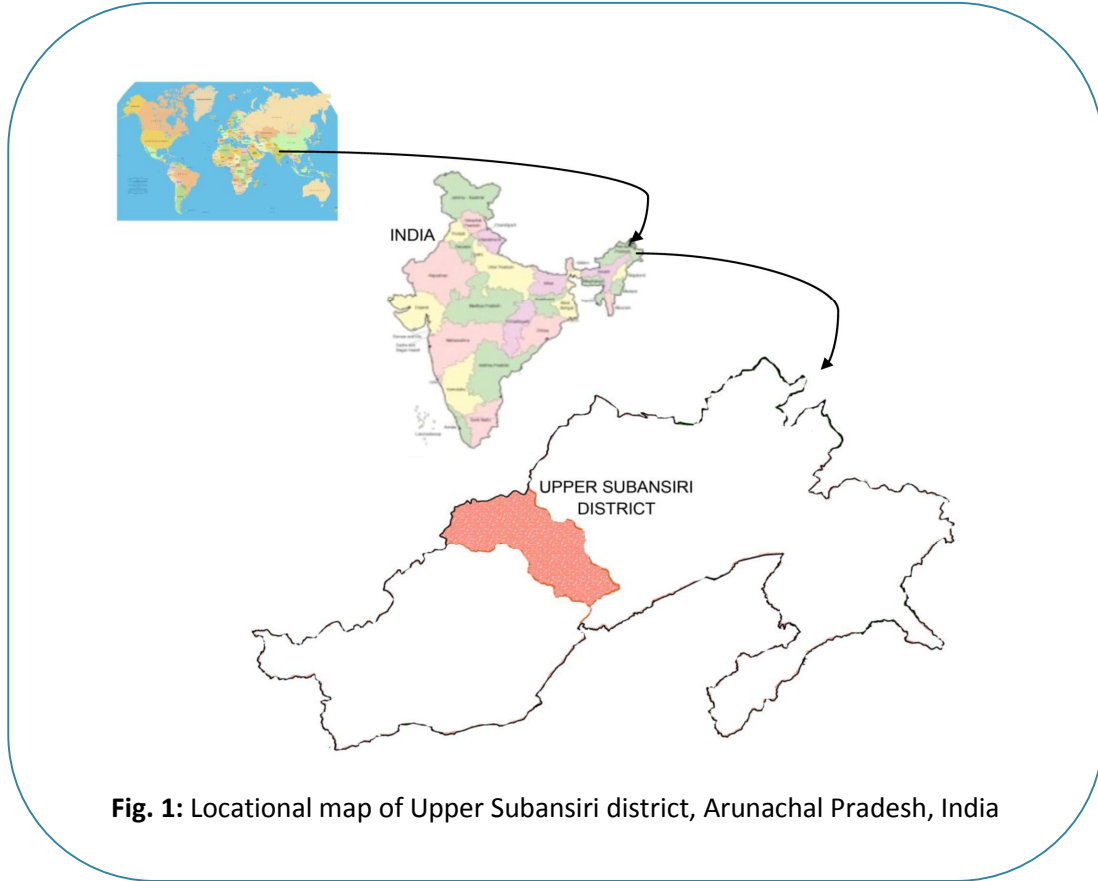
					mouth
113	<i>Ricinus communis</i> Linn.	<i>Porok Ekam</i>	-do-	Shrub	Local application of young twigs in vagina causes abortion. Leaves also used in stomach ache
114	<i>Elatostema platyphyllum</i> Wed	<i>Hoj Ao</i>	Urticaceae	Shrub	Roots used for inducing vomiting
115	<i>Girardinia diversifolia</i> (Links) Friss.	<i>Posh Phon</i>	-do-	Shrub	Roasted leaves used for relieving muscular pain
116	<i>Laportea crenulata</i> Gaud.	<i>Pud Raat</i>	-do-	Shrub	Young shoots used in gastric problem
117	<i>Pouzolzia bennetiana</i> Wight.	<i>Huyiek</i>	-do-	Climber	Leaves used in removing constipation
118	<i>Villebrunea frutescens</i> Blume.	<i>Tappen</i>	-do-	Tree	Fresh leaves used in curing wounds
119	<i>Urtica parviflora</i> Roxb.	<i>Posh Phon</i>	-do-	Herb	Roasted leaves used for relieving muscular pain
120	<i>Cannabis sativa</i> Linn.	<i>Bhang</i>	Cannabinaceae	Herb	Paste of leaves used against ringworms
121	<i>Conocephalus suaveolens</i> non Blume	<i>Hogen Ao</i>	Moraceae	Climbing shrub	Sap from stem used in eye trouble
122	<i>Ficus squamosa</i> Roxb.	<i>Talagi</i>	-do-	Tree	Latex from stem used against pimples
123	<i>Morus laevigata</i> Wall.	<i>Cheknyium</i>	-do-	Tree	Bark juice used on boils, itching
124	<i>Costus speciosus</i> Smith.	<i>Yachi Bapi</i>	Zingiberaceae	Herb	Paste of leaves used in snake bite. Decoction of rhizome used in urinary disorder
125	<i>Curcuma longa</i> Linn.	<i>Kaya Haldi</i>	-do-	Herb	Rhizomes used in fracture and pain relieving
126	<i>Curcuma aromatic</i>	<i>Haldi</i>	-do-	Herb	Rhizomes used in cough and cold
127	<i>Zingiber officinale</i> Rosc.	<i>Take</i>	-do-	Herb	Rhizomes used in cough, cold and tonsillitis
128	<i>Tacca integrifolia</i> var. Grawl.	<i>Pisir, Paser</i>	Taccaceae	Herb	Rhizome and berry used in wounds and stomach trouble
129	<i>Tacca laevis</i> Roxb.	<i>Kanjok</i>	-do-	Herb	Rhizome and berry used in wounds and stomach trouble

130	<i>Allium hookeri</i> Thwaites	<i>Nyishi Talap</i>	Liliaceae	Herb	Bulb used in cough and cold problem
131	<i>Asparagus racemosus</i> Willd.	<i>Shatavar (Hindi)</i>	-do-	Shrub	Whole plant has got diuretic and cooling properties
132	<i>Glorosia superba</i> Linn.	<i>Teek Nan</i>	-do-	Climbing shrub	Tubers and leaves used to kill lice in head
133	<i>Tupistra aurantiaca</i> Wall.	<i>Rinkey</i>	-do-	Shrub	Dries stem boiled with water used in treating malaria, stomach ache
134	<i>Acorus calamus</i> Linn.	<i>Talyo</i>	Acoraceae	Herb	Rhizome used in treating diarrhea, dysentery. Juice of rhizome also used in asthma and bronchitis
135	<i>Homalomena aromatica</i> Linn.	<i>Eng Namnen</i>	-do-	Herb	Rhizome used in treatment of diabetes
136	<i>Pothos cathartii</i> Schott.	<i>Lochi-Lomik</i>	-do-	Shrub	Whole plant used in bone fracture
137	<i>Dendrocalamus hamiltonii</i> Nees et. Arn.	<i>Ae Heroom</i>	Poaceae	Tall bamboo	Green peel of culm is effective in cuts
138	<i>Saccharum officinarum</i> Linn.	<i>Taab</i>	-do-	Herb	Raw culm used in jaundice
139	<i>Equisetum diffusum</i> D. Don.	<i>Alak Allo</i>	Equisetaceae	Herb	Whole plant used in bone fracture
140	<i>Angiopteris evecta</i> (Forst.) Hoffm.	<i>Tach</i>	Angiopteridaceae	Shrub	Powdered rhizome used in dysentery and diarrhea

**Table 3:** Medicinal plants used in treatment of livestock diseases or feeding

S No.	Botanical name	Local name	Family	Habit	Uses
1	<i>Gynocardia odorata</i> R.Br.	<i>Taek</i>	Flocourtiaceae	Tree	Crushed fruits in water used in treating wounds of livestock
2	<i>Canarium bengalense</i> Roxb.	<i>Shellum</i>	Burseraceae	Tree	Incense burnt from oleoresin of plant act as mosquito repellent for livestock
3	<i>Indigofera tinctoria</i> Linn.	<i>Shob Setin</i>	Fabaceae	Shrub	Powdered roots applied on worm infested sores
4	<i>Heteropanax fragrans</i> Roxb. Ex DC. Seem.	<i>Kesuru</i>	Araliaceae	Tree	Leaves used for raising <i>Moga</i> worm which yields essential fibre

5	<i>Chromolaena odorata</i> (L.) King & Rob.	<i>Gocham Nemi</i>	Asteraceae	Shrub	Paste of leaves used on wounds infested by worms
6	<i>Manihot esculenta</i> Cranz.	<i>Sida Eighein</i>	Euphorbiaceae	Shrub	Leaves used for feeding pigs
7	<i>Pouzolzia sanguinea</i> (Bl.) Merr.	<i>Tanu</i>	Urticaceae	Shrub	Leaves and tubers used as pig feed
8	<i>Cannabis sativa</i> Linn.	<i>Bhang</i>	Cannabinaceae	Herb	Leaves given to cattle for flatulence and indigestion
9	<i>Ficus auriculata</i> Lour.	<i>Takuk</i>	Moraceae	Tree	Fruits used as pig feed
10	<i>Ficus hirta</i> Vahl var. <i>roxburghii</i>	<i>Takchin</i>	-do-	Tree	Fruits used as pig feed
11	<i>Morus indica</i> Linn.	<i>Latek</i>	-do-	Tree	Leaves used for rearing <i>Moga</i> or <i>Eri</i> worms
12	<i>Acorus calamus</i> Linn.	<i>Talyo</i>	Araceae	Herb	Crushed rhizomes mixed with water, given to hen and goats for treating loose motion
13	<i>Colocasia antiquorum</i> Schott Melet	<i>Takche Reba</i>	-do-	Herb	Bark used on cuts/wounds of pigs
14	<i>Collocasia affinis</i> Schott.	<i>Nyepop</i>	-do-	Herb	Tubers, stem, leaves used as pig feed
15	<i>Collocasia esculenta</i> var.	<i>Nyepu yulu</i>	-do-	Herb	Tubers, stem, leaves used as pig feed
16	<i>Collocasia macrorrhiza</i> var.	<i>Telli</i>	-do-	Herb	Whole plant used as pig feed in boiled form
17	<i>Equisetum diffusum</i>	<i>Alak Allo</i>	Equisetaceae	Herb	Plant used as fish feed in cut form
18	<i>Angiopteris evecta</i>	<i>Tach</i>	Angiopteridaceae	Herb	Stem cut into pieces and used as pig feed



**Fig. 1:** Locational map of Upper Subansiri district, Arunachal Pradesh, India

Source: <http://arunachalpradesh.gov.in>

