



Ethnoveterinary Practices in Northcoastal Districts of Andhra Pradesh, India

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Abstract

The present communication paper deals with some important medicinal plants used by tribal communities (Savara, Jatapu, Bagatas, Kondakapu, Kondadora, Mannedora, Valmiki and Kammara, etc.) to treat common veterinary diseases in northcoastal districts of Andhra Pradesh, India. For ethnoveterinary practices, 78 species representing 68 genera and belonging to 42 families were identified. The common veterinary diseases in this region are abortion, anthrax, anorexia, bloat, cold and cough, constipation, diarrhoea, dog bite, dysentery, ephemeral fever, eye problems, foot and mouth disease, fractures, horn cancer, mastitis, retained placenta, renderpest, skin diseases, snake bite and wounds etc.

Keywords: Ethnoveterinary diseases, Medicinal plants, Andhra Pradesh

1. Introduction

The utilization of medicinal plants goes way back to early people, who discovered a wealth of therapeutic agents in the plant kingdom and exploited their healing potential as a remedy for several animal ailments. Very few authors [1–11] studied the ethnoveterinary practices in Andhra Pradesh; no study on folk veterinary medicine of northcoastal districts has been carried out so far.

Ethnoveterinary medicine is literally defined as traditional animal health care which comprises the folk knowledge, beliefs, practices, skills and methods pertaining to the health care of animal ailments. A broader survey has shown that above 80% of the tribals of Andhra Pradesh still depend on traditional medicine for their animal health practices and more than 95% of the traditional medical preparations are of plant origin. In the present investigation, an attempt has been made to gather the data as methodology adopted by the tribal people to control the various ailments in livestock.

2. Study Area

Andhra Pradesh is the fourth largest state in India. The tribal population of this state around 50.24 lakhs divided into 33 tribal communities. Northcoastal Andhra Pradesh lies between approximately $17^{\circ} 10'$ to $19^{\circ} 10'$ N latitudes and $81^{\circ} 53'$ to $84^{\circ} 50'$ E longitudes. The region extends an area of 23,48,612 ha which constitute 8.5% of the geographical area of the state of Andhra Pradesh. The region comprises the three districts Viz., Srikakulam, Vizianagaram and Visakhapatnam in which Visakhapatnam district is the largest district occupying nearly 45% of the area in the region.

3. Material and Methods

An ethno-botanical survey were undertaken during January-December 2011 to collect the desired information on ethnoveterinary practices devoted to acquaintance with the local chiefs, priests, vaidyas, herbal doctors,

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head man's, elderly people and educated students. The methodology was adopted as described by Jain, [12–15] and others [16–18]. Each medicinal practice was cross checked with at least 3 to 4 informants. Ethnoveterinary data and the vernacular names are collected for documentation. Plants specimens were collected and identified by referring to standard flora, [19, 20] and other local floras of Andhra Pradesh, [21–23].

4. Results and Discussion

In the present study a total of 78 plant species representing to 68 genera and belonging to 42 families have been enumerated for ethnoveterinary practices as remedy for 33 types of animal ailments. The scientific names of the species along with families, vernacular names (Telugu) with mode of administration are presented in Table 1. Among these leafy parts occupies the highest position (43%) followed by stem bark (13%), fruit (10%), root (9%), rhizome (7%), seed (5%), seed oil (5%), pod (3%), whole plant (3%), twigs (3%), bulb (2%), latex (2%), flowers, spines and wood respectively.

Among these families Fabaceae occupies highest position with 8 species followed by Euphorbiaceae with 6 species, Mimosaceae and Poaceae with 4 species each, 3 species of each by Solanaceae, Caesalpiniaceae, Vitaceae, Lamiaceae and Moraceae respectively. Eight families (Asclepiadaceae, Liliaceae, Malvaceae, Menispermaceae, Piperaceae, Rutaceae, Sapindaceae and Zingiberaceae) were represented by the two species of each.

Twenty five families were bearing single species only. To treat a disease more than one species may be used. Maximum number of species were allocated to bone fracture by 13 species followed by diarrhoea/dysentery by (7+9)16 species, wounds by 5, ephemeral fever, indigestion and constipation by 4 species of each, mastitis, abortion, anthrax, bronchitis, external parasite, foot and mouth disease, insect bite, skin disease, snake bite and tympany by 3 species of each, dog, gout/inflammation, immunity/health condition and renderpest by 2 species of each and minimum number of species were treated for anorexia, arthritis, asthma/pneumonia, back generator disease, bloat, cold & cough, colic pain, eye problem, fertility, filariasis, horn cancer and retained placenta.

Table 1: Plant species used by tribal people for treatment of veterinary diseases and the mode of administration.

S. No	Name of the species / Local names	Family	Part(s) used	Ailment	Mode of administration
1	<i>Abrus precatorius</i> L. Guruvinda	Fabaceae	Root	Dysentery	Root paste is given to the cattle along with boiled rice.
2	<i>Acacia cateche</i> L.F. Willd. Podilimanu	Mimosaceae	Wood	Wounds	Burnt heart wood mixed with alum and vaseline is applied on the wounds as an ointment.
3	<i>A. chundra</i> L. Sandra	Mimosaceae	Stem bark	Ephemeral fever	Decoction is administered once daily for 4–5 days.
4	<i>A. nilotica</i> (L.) Del. ssp indica (Benth.) Brenan Nalla tumma	Mimosaceae	Spines	Colic pain	Decoction of spines is given to cow or buffalo for colic pain.
5	<i>Achyranthes aspera</i> L. Uttareni	Malvaceae	Leaf	Dog bite	Paste of hand full leaves is given orally to the cattle to cure dog bite for a week.
6	<i>Ailanthus excelsa</i> Roxb. Peda manu	Simaroubaceae	Stem bark	Anorexia	Bark extract is boiled in gingelly oil and the extract is given orally twice daily for four days.

Table 1: (Continued)

S. No	Name of the species / Local names	Family	Part(s) used	Ailment	Mode of administration
7	<i>Allium cepa</i> L. Ulli	Liliaceae	Bulb and Leaf	Dog & Insect bite	Bulb paste is applied in insect bites to relieve pain. paste of leaves is given orally to the cattle to cure dog bite for a week.
8	<i>A. sativa</i> L. Vellulli	Liliaceae	Bulb	Indigestion	Paste of garlic bulb and ginger rhizome in equal parts is given in digestion of domestic animals.
9	<i>Ampelocissus latifolia</i> Roxb. Bidasa tivva	Vitaceae	Leaf and Fruit	Snake bite	Leaf and fruit is given orally to dog for three to four days against snake bite.
10	<i>A. temontosa</i> (Heyne ex Roth) Planch. Atukula baddu	Vitaceae	Leaf	Fractures	Leaf paste mixed with turmeric, egg albumen and black goat milk is smeared over the fractured area and bound it.
11	<i>Anisomeles indica</i> Kuntze. chinnaranaberi	Lamiaceae	Leaf	Ephemeral fever	Leaf decoction is administered once daily for 4 days against ephemeral fever.
12	<i>Annona squamosa</i> L. Seethaphalam	Annonaceae	Leaf	Indigestion, Flatulence, Gas trouble and ecto parasite	Leaves of plant mixed with sugarcane cutting or used as fodder to cure indigestion, flatulence and gas trouble in abdomen. Leaf juice is applied to kill ecto parasite of domestic animals.
13	<i>Argemone mexicana</i> L. Mysurapala	Papaveraceae	Leaf	Arthritis	Paste of young leaves mixed with young twigs of <i>Maytenus emerginata</i> and equal quantity of salt is applied externally on injury of arthritis.
14	<i>Atlantia malabarica</i> (L.) Correa Konda Nimma	Rutaceae	Stem bark	Anthrax	Stem bark paste with sufficient quantity of pepper and garlic is administered twice daily for a week to cure anthrax.
15	<i>Atylosia scarabaeoides</i> (L.) Benth. Adavi kandi	Fabaceae	Leaf	Diarrhoea	Leaf paste is given to cattle to treat diarrhoea.
16	<i>Azadirachta indica</i> A. Juss. Vepa	Meliaceae	Leaf	Skin disease	The leaf axis without leaf let is rubbed like brush on the palate of animal.
17	<i>Bambusa arundinacea</i> (Retz) Willd. Veduru	Poaceae	Leaf and Stem	Dysentery and fracture	Finely cut leaves are fed to cattle twice a day for three days against blood dysentery. These stick is tied on the bones for fifteen days.

(Continued)

Table 1: (Continued)

S. No	Name of the species / Local names	Family	Part(s) used	Ailment	Mode of administration
18	<i>Bombax ceiba</i> L. Buruga	Bombacaceae	Stem bark	Dislocated bones, delivery and indigestion	Stem bark paste is mixed with turmeric powder is applied on dislocated bones. Slime obtained crushing the stem bark is applied to vaginal ostium to facilitate delivery and for indigestion.
19	<i>Brassica nigra</i> L. Koch. Nalla avalu	Brassicaceae	Oil and Rhizome	Horn cancer	Pure mustard oil with rhizome paste of <i>Curcuma longa</i> is applied on the mischief parts of cattle horn.
20	<i>Bridelia retusa</i> (L.) Spreng. Anemu	Euphorbiaceae	Stem bark	Abortion	Paste of stem bark is orally given to cattle to prevent abortion.
21	<i>Butea monosperma</i> (Lamk.) Taub. Moduga	Fabaceae	Root	Tympany	Roots of plants crushed and mixed with fodder are given to goats for curing tympany.
22	<i>Cajanus cajan</i> L. Kandulu	Fabaceae	Pod	Dysentery	A green pod crushed and mixed with cold water is administered twice daily.
23	<i>Calotropis gigantea</i> R. Br. Jilledu	Asclepiadaceae	Root and bud	Wounds and dysentery	Roots burnt and made into a paste with sesame oil are applied to the affected shoulder to heal wounds. Seven vegetative buds are rapped in one castor leaf, baked and fed to cow, ox or buffalo suffering from dysentery.
24	<i>C. procera</i> (Ait.) R. Br. Tella jilledu	Asclepiadaceae	Latex	Wounds	Latex is applied externally for wound healing.
25	<i>Cannabis sativa</i> L. Ganjayi	Cannabinaceae	Leaf	Dysentery	Fresh leaves are given along with butter to cure dysentery in goats.
26	<i>Canthium parviflorum</i> Lam. Balusa	Rubiaceae	Leaf	Fractures	Leaf paste is mixed with coconut oil, is applied on fractured portion.
27	<i>Caralluma adscendens</i> R. Br. Kundatikommalu	Euphorbiaceae	Leaf	Bloat	Leaf paste dissolved in 5 liters of water, administered twice daily for 3 days.
28	<i>Cardiospermum halicacabum</i> L. Madapaku	Sapindaceae	Leaf and root	Filariasis and diarrhoea	Leaf paste is given once in a day for seven days to cow or oxen for treating filariasis. Root paste is given to cure diarrhoea.
29	<i>Cassia fistula</i> L. Rela	Caesalpiniaceae	Pod	Asthma/pneumonia	Dried pod powder is given orally to animal for curing asthma and pneumonia.

Table 1: (Continued)

S. No	Name of the species / Local names	Family	Part(s) used	Ailment	Mode of administration
30	<i>Cassytha filiformis</i> L. Paachi teega	Lauraceae	Whole plant	Fracture	It is pounded in human urine and banded over the affected part of the bone.
31	<i>Cissus quadrangularis</i> L. Nalleru	Vitaceae	Whole plant	Fractures	Extract of whole plant is given orally in bone fracture.
32	<i>Citrus aurantifolia</i> (Christm.) Sw. Nimma	Rutaceae	Fruit	Bronchitis and renderpest	Pickle of the fruits made by adding salt and pounded turmeric is given to animal along with bread of jawar to cure bronchitis. Crushed leaves mixed with and are orally given to animal.
33	<i>Coccinia indica</i> Wt. and Arn. Kakidonda	Cucurbitaceae	Leaf	Cold and cough	Warm leaf juice with amount of the juice of ginger and garlic is given twice daily till cure against cold and cough of cow or buffalo.
34	<i>Cocculus hirsutus</i> (L.) Diels. Patala bheri	Menispermaceae	Leaf	Diarrhoea	Leaf paste is given twice daily for three days to cattle for treating diarrhoea.
35	<i>Curcuma caesia</i> Roxb. Nalla pasupu	Zingiberaceae	Rhizome	Gout/Inflammation and dysentery	Fresh rhizome juice mixed with mustard oil is given once daily on empty stomach for two-three days in dysentery. It is also applied to cure to gout disease.
36	<i>C. longa</i> L. Pasupu	Zingiberaceae	Rhizome and leaf	Blood dysentery	Paste of rhizome of the plant, equal amount of seeds of black gram and bamboo leaves is given to the affected cattle.
37	<i>Cuscuta reflexa</i> Roxb. Bangaru teega	Cuscutaceae	Whole plant	Bone fracture	Whole plant is given orally twice for week to cure bone fracture.
38	<i>Cynodon dactylon</i> L. Garika	Poaceae	Leaf	Mastitis	Fresh and pointed grass and <i>Oryza sativa</i> is used to open the blocked pore of the udder (Mastitis).
39	<i>Dalbergia sisso</i> Roxb. Iridi	Fabaceae	Leaf	Diarrhoea	Leaf paste with little amount of salt is given twice daily for three days to cure diarrhoea.
40	<i>Datura metel</i> L. Ummetta	Solanaceae	Fruit, seed and leaf	Diarrhoea, dysentery, skin disease & insect bite	Paste of roasted unripe fruit in one dose is given against diarrhea/dysentery. Second may be given. Seed powder is used in skin diseases and crushed leaf is applied on insect bite.

(Continued)

Table 1: (Continued)

S. No	Name of the species / Local names	Family	Part(s) used	Ailment	Mode of administration
41	<i>Dendrocalamus strictus</i> Roxb. Sanva veduru	Poaceae	Stem	Fracture	It is using splints as bandaged on fractured portion. Infusion of tender stem is given once in a day for 3 days for early cure of fractured bone.
42	<i>Dichrostachys cinerea</i> L.Wt. Arn. Veluturu chettu	Mimosaceae	Leaf	Renderpest	Leaves finely crushed along with water or given orally to cattle to cure renderpest.
43	<i>Dillenia pentaphylla</i> Roxb. Kalinga	Dilleniaceae	Stem bark	Anthrax	Stem bark paste is fed to animal daily twice for 3–4 days to relieve anthrax.
44	<i>Dodonaea viscosa</i> L. Jacq. Bandaru	Sapindaceae	Leaf	Bone fracture	Leaf paste is used as to cure bone fracture – one tea spoon of black stone powder mixed with water.
45	<i>Dolichandrone atrovirens</i> Roth. Neeruddi	Bignoniaceae	Stem bark	Ephemeral fever	Stem bark extract with <i>Anogeissus latifolia</i> is administered 3–4 times daily for 2 days to cure ephemeral fever.
46	<i>Euphorbia antiquorum</i> L. Burre jemudu	Euphorbiaceae	Latex	Fracture	Latex is applied locally and banded over with fine sand.
47	<i>Ficus benghalensis</i> L. Marri	Moraceae	Root	Diarrhoea and dysentery	Paste of prop root of the plant along with honey is given calves once a day for three days.
48	<i>F. religiosa</i> L. Raavi	Moraceae	Stem bark	Constipation, foot and mouth disease and bronchitis	Stem bark paste is given against constipation. Bark boiled in water for 30 minutes and the luke warm leachate is applied on the effected hoofs during foot and mouth diseases. Shade dried leaves are powdered and fed two times a day for seven days to cure bronchitis.
49	<i>Jatropha curcas</i> L. Adavi amudam	Euphorbiaceae	Twig and root	Tympany and external parasite	Few twigs with fodder are common remedy for tympany. Roots are tagged to the tail of goats and sheep for removing external parasite.
50	<i>Justicia adhatoda</i> L. Addasaram	Acanthaceae	Leaf	Bronchitis	Leaf paste is prescribed for bronchitis.
51	<i>Lawsonia inermis</i> L. Gorintaku	Lythraceae	Leaf	Foot and mouth disease	Leaf paste applied on a body of cattle is believed to cure foot and mouth diseases.

Table 1: (Continued)

S. No	Name of the species / Local names	Family	Part(s) used	Ailment	Mode of administration
52	<i>Lycopersicum esculentum</i> L. Tamata	Solanaceae	Fruit and leaf	Eye problem	Fruit and leaf juice is administered twice daily for 3 days against eye problem
53	<i>Mangifera indica</i> L. Mamidi	Anacardiaceae	Fruit	Constipation	Three old pickled fruit are given to cattle suffering from constipation.
54	<i>Morus alba</i> L. Resmi	Moraceae	Fruit and leaf	Mastitis	Decoction of fruit and leaf is administered once daily for three days against mastitis.
55	<i>Musa paradisiaca</i> L. Arati	Musaceae	Fruit and leaf	Mastitis	Paste of crushed fresh fruit and leaf administered once daily for four days to cure mastitis.
56	<i>Ocimum basilicum</i> L. Bhu tulasi	Lamiaceae	Leaf	Snake bite	Leaves are mixed with <i>Aristolochia indica</i> is given orally to cattle for three days against snake bite.
57	<i>O. tenuiflorum</i> L. Krishna tulasi	Lamiaceae	Leaf	Constipation	Leaf paste is applied on wounds and it is also used to cure constipation.
58	<i>Phaseolus mungo</i> Roxb. Minapa	Papilionaceae	Seed, Rhizome and oil	Skin disease	Seeds soaked in water with equal amount of <i>C.</i> <i>angustifolia</i> rhizome made into poultice and mixed with mustard oil are applied to cattle for skin disease.
59	<i>Phyllanthus emblica</i> L. Usiri	Euphorbiaceae	Fruit and leaf	Anthrax	Fruits are powdered with <i>Ocimum basilicum</i> leaves and given orally with honey for three or four days to cure anthrax.
60	<i>Piper longam</i> L. Pippallu	Piperaceae	Fruit	Foot and mouth disease	Fruit powder mixed with juice onion is applied on the affected hoof during foot and mouth diseases.
61	<i>P. nigrum</i> L. Miriyalu	Piperaceae	Fruit	Insect bite	Powder of dried fruits with water is applied immediately to relieve pain of insect bite.
62	<i>Plumbago zeylanica</i> L. Chitra mulamu	Plumbaginaceae	Root	Inflammation	Root paste is externally applied on local inflammation caused by injury.
63	<i>Plumeria rubra</i> L. Deva ganeeru	Apocynaceae	Pods and seeds	Snake bite	Pods broken into pieces are boiled in buffalo or cow milk; seeds are given as antidote for snake bite.

(Continued)

Table 1: (Continued)

S. No	Name of the species / Local names	Family	Part(s) used	Ailment	Mode of administration
64	<i>Ricinus communis</i> L. Amudam	Euphorbiaceae	Leaf and seed oil	Indigestion, gas trouble & constipation	Leaf juice is given orally to cure indigestion, constipation and gas trouble. Seed oil is given along with fodder to cattle against constipation.
65	<i>Saccharum officinarum</i> L. Cheruku	Poaceae	Leaf	Delivery	Leaves are given to hasten placental discharge of cow following delivery.
66	<i>Saraca asoca</i> (Roxb.) de wilde. Asoka	Caesalpiniaceae	Leaf and stem bark	Fertility	Decoction of leaf and stem bark is administered once daily for ten days against to induced fertility.
67	<i>Sida acuta</i> L. Muttavapulagam	Malvaceae	Leaf and flower	Diarrhoea	Leaf decoction with <i>Musa paradisiaca</i> flowers, administered 4 times daily for 3 days to treat diarrhoea.
68	<i>Tamarindus indica</i> L. Chinta	Caesalpiniaceae	Leaf	Back generator disease	A leaf of the plant mixed with soil of ant hill is applied externally to the backbone or femur bone to cure back generator disease.
69	<i>Tectona grandis</i> L. F. Teku	Verbenaceae	Seed	Tympany	Seed powder infusion is given to animal orally for curing indigestion and tympany.
70	<i>Tephrosia purpurea</i> (L.) pres Vempali	Fabaceae	Leaf	Wounds	Leaf paste is applied on wounds of sheep and goat for the speedy healing.
71	<i>Tinospora cordifolia</i> (Willd.) Hook. f. & Thoms. Tippateega	Menispermaceae	Stem bark and leaf	Fever and immunity	Stem and leaf decoction is administered once daily for 3 days to treat fever and immunity.
72	<i>Trichodesma indicum</i> L. R. Br. Guvva gutti	Boraginaceae	Leaf	Fracture	Leaves are grind with sesame seed oil and banded over the affected part.
73	<i>Triumfetta pentandra</i> A. Chiru sitrika	Tiliaceae	Root	Retained placenta	Root is used in pre mature delivery or abortions against retained placenta.
74	<i>Vigna mungo</i> (L.) Hepper. Minapa	Fabaceae	Seed	Fracture	Seed paste is applied on fractured area.
75	<i>V. radiata</i> (L.) R. Wilczek Pesara	Fabaceae	Seed	Fracture	Seed paste is applied externally on bone fracture.
76	<i>Withania somnifera</i> L. Dunal in Dc. Nalla mandu	Solanaceae	Root and seed oil	Health condition	Mixer of root powder along with seed oil of <i>Madhuca indica</i> is given along with fodder for curing weakness and maintaining health condition.

Table 1: (Continued)

S. No	Name of the species / Local names	Family	Part(s) used	Ailment	Mode of administration
77	<i>Xanthium indicum</i> Koenig. Marulamatangi	Asteraceae	Leaf	Chronic wound	Leaf paste is applied on chronic wound of goat or sheep.
78	<i>Ziziphus jujuba</i> L. Regu	Rhamnaceae	Fruit	Skin disease	Fruit pulp is administered for 10 days to cure skin disease.

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