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Research article

ETHNOVETERINARY SURVEY OF HERBAL THERAPY FOR TREATING LIVESTOCKS OF MELGHAT REGION (MAHARASHTRA)

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ABSTRACT: The study describes detail ethnoveterinary uses of plants from Melghat region of Amravati district situated in Maharashtra. The tribal population of region predominantly includes *Korku, Gond, Nihal, Gawali* and *Gawlan*. A field data were collected with structural interviews and open discussion from few villages of Melghat. Knowledge of ethnoveterinary medicine was found to be orally preserved and there were no documentation occurred. Survey revealed that this knowledge was more with the elderly persons than younger generation. In the present investigation, each plant species have been provided with scientific name, local name, flowering and fruiting time followed by parts used and some mode of preparations. The doses of medicines found to be varying according to animals and their weight. Total 49 plant species distributed in 32 families were recorded to be used by traditional healer of region to treat animals. It represents intensely valuable data that provide base line information for commercial exploitation of biological resources. Such documentation may helpful in further scientific research which can lead to develop chipper and more efficious ethnoveterinary medicine. Folk ethnoveterinary practices largely remain neglected and little has been done to document this precious wealth hence there is urgent need to document it on scientific line.

Key words: Ethnoveterinary survey, livestock, Melghat, Amravati

INTRODUCTION

The traditional knowledge plays a crucial role in establishing sustainable relationship between man and nature. Ethnobotany records the age old knowledge of different traditions which opens miraculous world of properties of diverse plant species. India has great heritage of medicinal plants. India is basically agricultural country; domesticated livestocks are backbone of farmers. To maintain these livestocks there is phenomenal increase in the demand of herbal traditional medicine in developing country like India. Ethnoveterinary practices cover the knowledge, skill, methods and belief about animal health care found among the members of community. In the past, great importance was given to the use of indigenous medicines for treatment of animal ailments. Ancient records on animal health care are found in *Vedas, Puranas* like *Ashwapuran, Garudpuranan* and *Hastipuranan* which devoted to animal husbandry [5]. Modern medicine does recognized the value plant as a source of active principles with curative properties, the reason behind it is the enormous side effect of modern drugs. It's market cost also makes them out of rich to the poor people. Back to nature movement is a gaining to momentum which reflect demand of medicinal plant and herbal preparation for animal healthcare. Ethnoveterinary medicine are low cost medicines and without side effect than modern allopathic medicines and less expensive. May be therefore the dependence of rural mass on the plant based medicines for treating animal is observed which has forced the scientific community to search some promising answers in this direction. [6].

On February 5, 2000, the district rehabilitation committee was set up by the Amravati collector to implement the resettlement programme. Between 2001 and 2003, the three villages situated on the boundary of the Gugamal National Park in the Melghat Tiger Reserve were relocated. Total 21 villages plan to shifted soon. Due to such displacement of the communities the information pool will be lost and ultimately with time this knowledge will be vanished completely. Therefore, it is urgent need to document this knowledge on scientific line which facing threat of rapid erosion.

MATERIAL AND METHODS

Study area

The Amravati district is situated in the centre of the northern border of Maharashtra state (India) lies between $20^0$32 and $21^0$46 north latitude and $76^0$37 and $78^0$27 east longitude occupies an area of 12,449.7 sq. km. The main mountainous rerion of it are Gawilgarh hills and the major portion of it is known as Melghat means 'meeting places of ghats'. Melghat is sub-division of Amravati district come under tribal sub-plan area. There are 314 villages having about 80% population of tribal [4]. The main tribal communities in Melghat comprise the Korkus, Gonds and Balais a pastoral community like the Gawalis who are dominant in a few villages have always been dependent on livestock and therefore the forest for fodder. Gawli community settled in the forest about 50 years ago.

Climate

The climatic features of the hilly tracts of Chikaldara and Dharni tehsils and of the plains are quite different because of the totally different topography of the two regions. Therefore they are treated separately. Chikhaldara is situated on this range and receives average rainfall of 1784 mm and Dharni is 1300mm. the air temperature ranges from 35^0 C to 23^0C in summer and 22^0C to 13^0C in winter season.

Inventory data Collection

Ethnoveterinary medicinal survey of the area was conducted with extensive field work. Data collected through informal discussions, interviews and village walk with informants, medicine men were held to enhance understanding and gather information about different species of medicinal plant available around the villages. The various villages were first visited in view of knowing the geography, people, language, occupation forest cover, seasons etc. knowledgeable information were particularly noted from different categories such as elder healers (39-75 years of age), farmers, local people, livestock holders. Traditional healers in the *Korku* tribes are known as *Bhumka's* and *Parihar*. People are still dependant on the medicinal plants for the primary healthcare and treatment of various diseases of animals. The data include occurrence, symptoms, frequency, mode of treatment, dose administration etc. Data was screened to list various diseases, treatments, plants used for treatments. Plant samples were collected and identified with the help of state, regional and district floras by Cooke [1] V.N. Naik [7] and M.A. Dhore [2].

RESULTS AND DISCUSSION

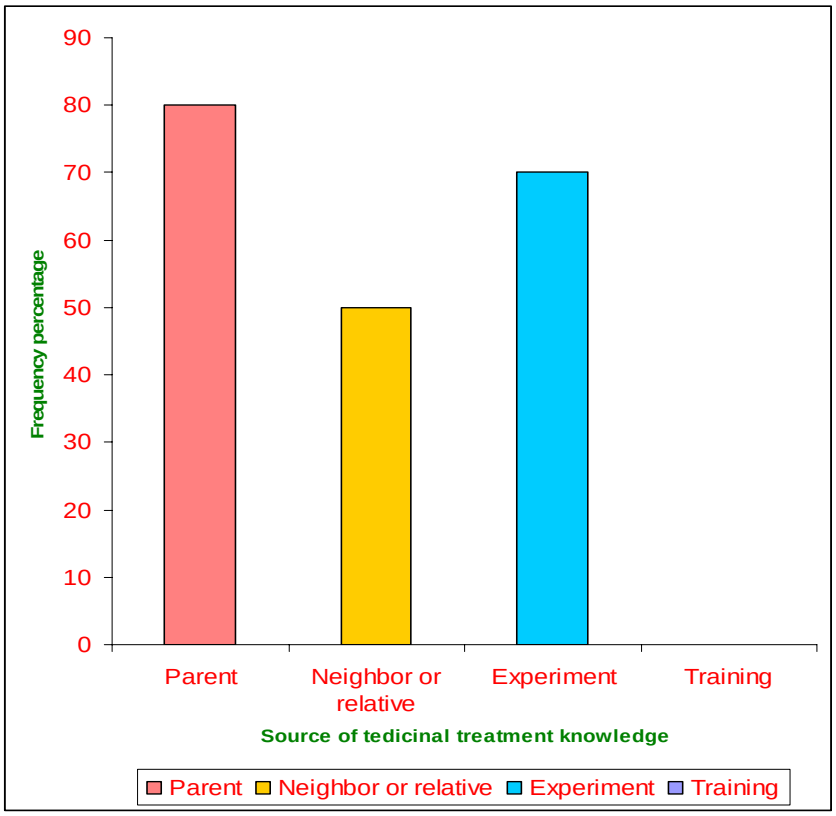
Present study revealed that 49 plant species belonging to 32 families having ethnoveterinary values were found to be use by traditional healer of the region. The plants were used to treat 14 diseases like diarrhoea, wound, fracture, foot and mouth diseases, gynic disorders, fever etc. (Table-3.1). Mode of treatment varies with type of animal and its diseases. Diseases can be treated either with whole plant, plant parts or in combination of different plants. The various plant parts used included leaf, stem, root, bark, seed, fruit and even flower. Leaves constituted major portion of plant part used. Majority of earlier work on ethnoveterinary medicine recorded that leaves were major portion used in various treatments [8]. Plant mostly used for oral administration the result was corroborated with earlier record of Eswaran et al. [3]. In preparation of the material use of salt, calcium carbonate, jaggery, sugar, coconut oil was found to be common way of treatment. Some plant are use to more than one disease while other as use as mixture. Most of the plants commonly used for treatment of human are also being used for similar condition affecting animal. eg. *Cissus quadrangular* L. uses to cure bone fracture in both human being and animal. Farmers have rich knowledge of ethnoveterinary practices, livestock owners were found to be capable of treating animals by their own experiences or by getting information from either parents or neighbor. No one was observed technically trained from any authority (Graph-1). Elderly people are found to be great physicians. Women mostly prescribed remedies from kitchen and surrounding areas like turmeric, asafoetida, jaggery etc. which were easily available to them. There were no coordination found between the treatment of two healers they may used same plant but different type of ingredients in making the formulations.

Table.1: Various plants documented to treat animal diseases are –

Sr.	Botanical Name	Family	Local Name	Uses
1.	*Achyranthues aspera* L.	Amaranthaceae	Aghada	The root is hold at time of delivery for easy to discharge of embryonic envelop.
2.	*Ageratum conyzoides* L.	Asteraceae	Bhutakuli	The leaf paste applied on the wound.
3.	*Allium cepa* L.	Liliaceae	Kanda	The bulbs crushed with water and gives in fever
4.	*Annona squamosa* L	*Annonaceae*	Sitaphal	The leaf paste applied on the wound. Used as antiseptic.
5.	*Asphodelus tenufolius* L.	Liliaceae	Jangali kanda	The bulbs crushed with water gives to domestic cattle after delivery to retention of placenta.
6.	*Azadirachta indica* Juss.	Meliaceae	Neem	The leaf paste applied on the wound. This is use to treat animal wounds with worms in it.
7.	*Balanites aegyptiacaI* (L.) Del.	Balanitaceae	Hingbel	The fruit extract with sufficient quantity of milk and black pepper gives in flatus.
8.	*Calotropis procera* R.Br.	Asclepiadaceae	Rau	The latex collected from the branch is directly given to cattle. Leaves stick applied to treat wound and heal.
9.	*Canna indica* L.	Cannaceae	Kardali	The leaves extract gives in dysentery or diarrhea 2-3 time in one day.
10.	*Cassia fistula* L.	Caesalpiniaceae	Bana-ka-bhungdu	The fruits are heated and applied on the swelling body part of the domestic animal.
11.	*Cayratia auriculata* (Roxb.)	Vitaceae	Kumbhela	The root extract gives as tonic.
12.	*Cissus quadrangular* L.	Vitaceae	Arjul	The stem paste is applied on fractured organ of the animal using wooden sticks during bone fracture.
13.	*Clerodendron serratum* (L.).	Verbenaceae	Bharangi	The leaves paste is applied on fracture .
14.	*Crotalaria juncea* L.	Papilioniaceae	Sutali	The seed extract mixed with sufficient quantity of salt and mahuwa gives to domestic cattle after delivery to retention of placenta.
15.	*Cucumis callosus* (Rottl.)	Cucurbitaceae	Dor kakadi	The crushed roots are applied to cure bone fracture
16.	*Cuscuta chinensis* Lam.	Cuscutaceae	Amarvel	The stem mixed with fodder to increase the milk production and crushed plant hold near uterus to treat prolapsed uterus

17.	*Datura metal* L.	Solanaceae	Dhotra	The leaf paste applied on the wound
18.	*Ficus benghalensis* L.	Moraceae	Wad, Wora	The leaves gives as fodder to increase the calcium.
19.	*Ficus racemosa* L.	Moraceae	Umbar, Lava	The leaves gives as fodder to increase the calcium.
20	*Ficus religiosa* L.	Moraceae	Pipal, Pipri	The leaves gives as fodder to increase the calcium or give in fever. The plant gum is applied when a domestic animal bitten by a snake.
21.	*Hibiscus cannabinus* L.	Malvaceae	Ambadi	Leaves dried or fresh fed domestic cattle after delivery for easy discharge of embryonic envelope.
22.	*Hibiscus rosa-sinensis* L.	Malvaceae	Jaswand	The leaves of plants mixed with green gram, jiggery crushed in butter milk give to domestic cattle in diarrhea.
23.	*Holoptelea integrifolia* (Roxb.)	Ulmaceae	Kilaku	The paste of leaves is applied on maggot infection wound of cattle to kill the worm and to heal the wound
24.	*Ipomoea aquatica* Forsk.	Conolvulaceae	Haranvel	The leaves mixed with fodder to increase the milk production.
25.	*Ipomoea fistulosa* Mart.	Conolvulaceae	Beshrum	The leaves are wormed and applied the wormed leaves are useful for curing swelling at any place of the body
26.	*Leptadenia reticulate* (Retz.)	Asclepiadaceae	Dudh-kadi	The leaves mixed with fodder to increase the milk production.
27.	*Leucana latisiliqua* (L.)	Mimosaceae	Subabhul	The leaves give in dysentery or diarrhea.
28.	*Litsea glutinosa* (Lour.)	Lauraceae	Lenja	The leaves give in dysentery or diarrhea.
29.	*Madhuca indica* J.F.Gmel.	Spotaceae	Mu, Mahuwa	The dried flower mixed with jaggery and gives to domestic cattle after delivery to retention of placenta.
30.	*Mangifera indica* L.	Anaeardiaceae	Amba	The stem bark is put overnight in water and gives in diarrhea
31.	*Mimosa pudica* L.	Mimosaceae	Lajalu	The crushed root extract gives to domestic cattle in prolapsed of uterus
32.	*Momordica dioica* Roxb.	Cucurbitaceae	Katulich	Root crushed with water gives to domestic cattle after delivery to retention of placenta.

33.	*Oroxylum indicum* (L.)	Bignoniaceae	Tetu	The crushed stem gives in diarrhea and dysentery to domestic cattle.
34.	*Ougeinia oojeinensis* (Roxb.)	Papilioniaceae	Ruthu	The stem bark is put overnight in water and gives in diarrhea.
35.	*Phyllanthus emblica* L.	Ephorbiaceae	Awla	The leaf paste applied on the wound. Used as antiseptic.
36.	*Plumbago zeylanica* L.	Plumbaginaceae	Chotor	The paste of root is applied on maggot infected wound of cattle to kill the worm and to heal the wound
37.	*Psoralea corylifia* L.	Papilioniaceae	Bawchi	The seed oil mixed with sugar calcium applied on the wound.
38.	*Puearia tuberose* (Roxb)	Apocynaceae	Ghorbel	The root use as tonic and also fed to cattle.
39.	*Radermachera xylocarpa* (Roxb)	Bignoniaceae	Tetu	The crushed seed is applied when a cattle is bitten by a snake.
40.	*Solanum melongena* L	Solanaceae	Wangi	The fruits gives as fodder to cure foot and mouth diseases.
41.	*Sorghum vulgaris* Moech.	Poaceae	Jawari, Jondhara	The shade dried seed is burnt into ash; Ash paste mixed with coconut oil is applied on wound.
42.	*Soymida febrifuge* (Roxb)	Meliaceae	Rohan	Stem bark commonly used for gastric disorders of domestic cattle
43.	*Syzygium heyneanum* (Duthie)	Myrtaceae	Gambu	The stem bark is put overnight in water and gives in diarrhea.
44.	*Tamarinbus indica* L.	Caesalpiniaceae	Chincha	The shade dried seed is burnt into ash; Ash paste mixed with coconut oil is applied on wound.
45.	*Terminalia chebula* Retz.	Combretaceae	Hirda	The dries fruits powder mixed with water gives in cough
46.	*Tridax procumbens* L.	Asteraceae	Takali zara	The paste applied on the wound.
47.	*Wrightia tinctoria* R.Br.	Apocynaceae	Dudh-hari	The stem mixed with fodder to increase the milk production
48.	*Zea mays* L.	Poaceae	Mekae, Maka	The stem mixed with fodder to increase the milk production.
49.	*Zizyphus rugosa* L.	Rhamnaceae	Churni	The leaves extract gives in dysentery or diarrhea.



Graph-1

CONCLUSION

Live stocks play an important role in tribal culture and livelihood. India has glorious traditional background in the field of ethnoveterinary medicinal practices, but in the process of modernization, this knowledge is vanishing very rapidly. This information survived by being passed from word of mouth but now a day's young generation does not take interest in such practices. Some of the plant species were commonly used in more or less proportion in throughout the world but during exploitation it our prime duty to protect and conserved these plant in proper way. From the above study Leaves 42.85%, seed 8.16% stem 22.44% root 14.28% fruit 8.16% bulb 4.08% found to have ethnoveterinary uses from the region. Globalization and increasing communication facilities rapidly changing the rural life in India this scenario is causing immediately threat to traditional ethnoveterinary knowledge. Therefore it is necessary to record such type of valuable verbal information before it get lost forever. In future, detailed chemical and pharmacological investigations of these traditional formulations and medicinal plants will be very helpful for developing the new veterinary drugs.

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