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Original Research Article

Ethnobotany for better Folk Medicine

Traditional Knowledge Of Some Medicinal Plants Used For Curing Veterinary Diseases In Parinche Valley Of Pune District, Maharashtra, India

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Abstract: The present paper seeks attention to the traditional knowledge of some medicinal plants used to cure veterinary diseases by the tribal communities in Parinche valley, Pune district, Maharashtra. The valley consist of 43 villages and hamlets occurring in the total area of about 132 sq. km. Parinche is the biggest village and a nodal place in the valley. In the valley, three tribal communities namely Mahadeo-Koli, Dhangar and Ramoshi are found dominant; they are inhabited in remote villages of the valley. These communities are forest dwellers and well acquainted with medicinal properties of plants that occur in their surroundings. The medicinal plant specimens were collected in triplicate form for identification and authentication. Tribal communities are conscious about the health of their cattle and livestock. They are much depending on their domestic animals to substantiate their livelihood. Because of inaccessibility to other places, large cattle population are most dependent on the forest for various remedies; they are rich in the traditional knowledge about the veterinary medicine to cure cattle. Present study provides a detailed ethno-veterinary medicines, representing 24 plant species from 17 families; Among these plants, members of Fabaceae were dominating and mostly used in the traditional veterinary medicines for the bone fracture, wounds, indigestion, scorpion-sting, snakebite, foot and mouth disease, etc. Out of total recipes only one recipe had combination of two plant species while others were alone. To treat various diseases, plant parts such as leaves, seeds and root bark are used. It can be concluded that because of unhygienic conditions and lack of education, the tribal communities are facing veterinary health problems but they overcome it by using local and easily available plants by trial and error methods.

Keywords: Traditional knowledge, tribal communities, veterinary diseases, cattle population, Parinche valley, Maharashtra.

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1. INTRODUCTION

From ancient times, India is the leading country in dairy products. Our traditional knowledge of cattle remedies is transferred from generation to generation. In Maharashtra, some communities, for example *Dhangar*, are totally dependent on cattle for their livelihood. For cattle grazing, this community is migrating from one place to another. Because of migration, these people are getting more exposure to new plants in different regions and simultaneously through trial and error they become rich in knowledge about new plants. There are many information available on veterinary medicine in India[1-14]. Preliminary information of ethno veterinary prescription are studied in North Bihar. The traditional uses of these plant species were compared with those given in various research papers and books published by different workers from various parts of the country.

1.1 Study Area

The valley of Parinche is situated in Pune district of Maharashtra state between $73^0$10' – $74^0$10' latitude and $18^0$10'-$18^0$55' longitude. The Parinche valley region comprises of the inaccessible rear part of the Purandar fort and its surrounding area is situated about 53 kms to the South East of Pune City and 18 kms from Saswad town. The total area of the valley region is about 132 sq. km. Parinche is the biggest village and a nodal place in the valley and can be reached through Pune-Baramati state highway via Dive Ghat – Saswad- Pangare road. Depending on various parameters such as rainfall, drainage pattern and vegetation, the study area is divided into four zones. These are Kaldari (Zone-I), Shindewadi (Zone-II), Parinche (Zone-III) and Pangare (Zone-IV) (Fig.1).

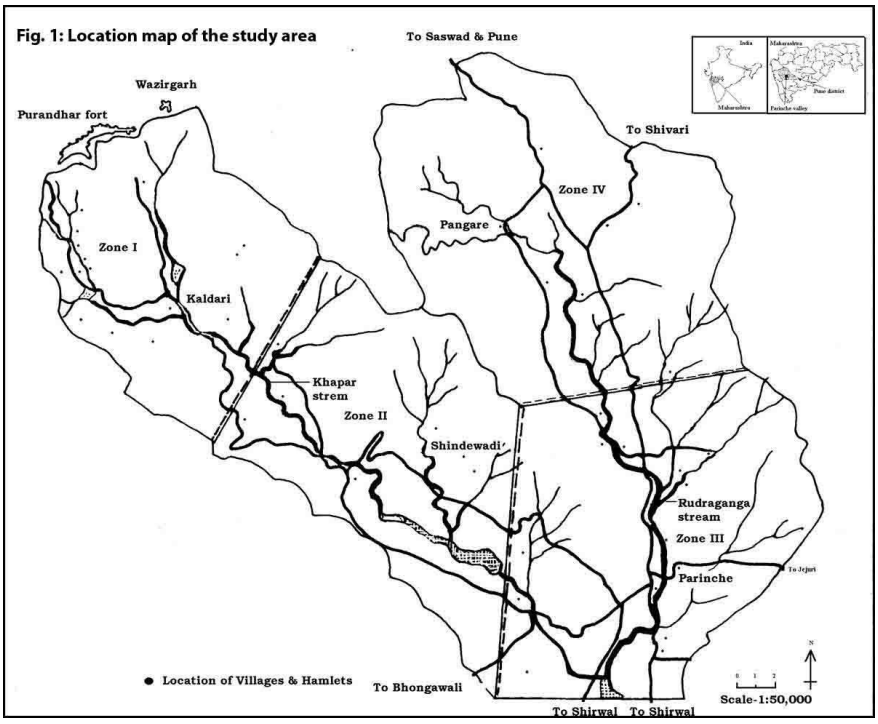

Fig 1. Location map of the study area

2. MATERIALS AND METHODS

Traditional information of the veterinary medicinal plants was gathered between the period of October 2002-June 2010. For survey, two different methods were followed which are discussed below:

In the first method we targeted single individuals who have considerable reputation in the valley as medicine men or herbal veterinary doctors (*vaidus*). This was done with the help of local communicators. The medicine men were taken to forests during the interviews. The plant specimens were collected in triplicate to confirm the identity of the species. The plant specimens were dried, pressed and poisoned after confirmation and mounted on herbarium sheets. The voucher specimens were deposited in the Botanical survey of India, Western circle, Pune, India Very common plants are not deposited.

In the second method, a number of surveys were conducted randomly at family level in the villages, with the preliminary information received from the ground level workers of The Foundation for Research in Community Health, Parinche who were usually involved in rural health programs. In this type of interviews, elder members of the families were preferred than younger ones. Most of this information revealed during interviews was general information. Interviews were conducted at home or in the forest depending upon the interest and health of the interviewed persons.

The traditional information was noted down on a data sheet specially prepared for this purpose. The interviews were simultaneously tape-recorded and also video was recorded for better analysis on their permission. The information in relation to various cattle diseases was collected from all relevant sources without any discrimination. During the survey we tried to interact with as many people as possible. However, more emphasis was given to collect traditional information from tribal communities. This was done through frequent stays in tribal dominated villages and also making a good rapport with them through other organizations involved in social activities. The traditional data is recorded following the standard procedures suggested[1, 2].

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3. RESULTS AND DISCUSSION

3.1 Enumeration of Plants

A brief account of collected plants were arranged alphabetically based on botanical name followed by local name (in italics), family in bracket, frequency of quote ethno-botanical uses (plant part, preparation, administration and dosage details), precautions if any and informants name in brackets.

3.2 *Annona squamosa* Linn. *Sitaphal* (Annonaceae) 1.378

Use: Wound with maggot; Mature leaves. Juice of leaves along with the leaves of *Parthenium hysterophorus*in equal proportion (10 gm each) is applied on the wounds three times a week (Mrs. Sulochana Mahurkar, Mr. Dhondiba Dhagare).

3.3 *Azadirachta indica* A.Juss.*Neem* (Meliaceae) 3.476

Use: Scorpion-sting; Leaves. For sheep: chew 3-4 fresh leaves and blow on the scorpion bite and opposite to this in the ear. Apply the juice on it (Mr. MahadeoMisal, Mr. Shripati Kondake, Mr. Babasaheb Amarale)

3.4 *Carisa conjesta* Linn.*Karvand* (Apocynaceae) 1.378

Use: Snakebite; Roots. For single dose, make juice of roots (100 gm) in 100 ml of water and, administer internally one time for three days (Mr. Raghuji Dhagare).

3.5 *Cassia fistula* Linn.*Bahava* (Fabaceae) 0.869

Use: Simple indigestion; Pod and seed. Add 2-3 tablespoonful powder of pods or seeds in the water (200-250ml), administered internally one time for a week. (Mr. Sanjay Humbhe, Mr. RamchandraHumbhe, and Mr. BabasahebAmrale).

3.6 *Capparis zeylanica* Linn.*Waghati* (Capparidaceae) 1.378

Use: Bone fracture; Leaves. Crushed leaves along with *Tribulusterrestris* in equal proportion and add one egg, 15 gm vermilion. Apply on the fracture with the help of bamboo strips. Make a bandage twice within a month. (Mr. Sanjay Humbhe).

3.7 *Cissus woodrowii* Santapau, *Girnul* (Vitaceae) 5.214

Use: Wound; Stem bark. Paste and juice of bark is applied on the wounds three times for three days. (Mr. Babasaheb Amrale, Mr. ShripatiKondake).

3.8 *Clematis heynei* M.A. Rau. *Morvel* (Ranunculaceae) 0.869

Use: Wounds; Mature and fresh leaves. Crush 5- 6 leaves and apply the juice on the wounds for five to six days. (Mr. Sanjay Humbhe, Mr. BabanKokare)

3.9 *Calotropis procera* R. Br. *Rui* (Asclepiadaceae) 0.869

Use: Foot and mouth disease; milky latex. A branch is plucked on Saturday and a drop of latex is applied on the eyebrows. (Mr. Mahadeo Misal, Mr. RaghujiDhagare).

3.10 *Dalbergia sissoo* Linn.*Shisavi* (Fabaceae) 0.869

Use: Diarrhea; Mature leaves. Leaves crushed in 200ml of water (For single dose; small cattle 10-15 & mature cattle 20-25 leaves), is administered internally one time for three days. (Mrs. Sulochana Mahurkar).

3.11 *Dedgia volubilis* Benth.ex. Hook. f. *Hirandodi* (Asclepiadaceae) 2.607

Use: Wounds to the yoke-rest of a bullock; Leaves. Juice of fresh leaves is applied on the wound four times for three days (Mr. BabanKokare).

3.12 *Euphorbia aqualis* Linn. *Khirkanda* (Euphorbiaceae) 0.869

Use: Eye problems; Rhizome sap. One spot of sap is applied on the upper side of eyebrows, only single time. *Note-Don't touch the sap to eye, since it is harmful to eye (Mr. SayajiShinde, Mr. AnandraoChavan).

3.13 *Eleodendron glaucum* Pers. *Bhutya* (Celastraceae) 2.607

Use: Three days sickness; Leaves & wood. Crushed leaves along with *Dalbergiasissoo*in equal proportion is taken and one egg is added to it. Smoke of the mixture is made and applied externally till water drops comes from eyes, for one time (Mr. Baban Kokare, Mr. Raghuji Dhagare). To cast a spell: Collect wood from forest and to drive a peg into the cowshed. The cows are tied to the peg (Mr. BabanKokare).

3.14 *Grewia tilialifolia* Vahl.*Dhaman* (Tiliaceae) 2.607

Use: Foot and Mouth disease; mature leaves. Crushed 50 gm leaves in the 100 ml of water is administered internally one time. Chew 2-3 leaves and blow in the ear (Mr. BabasahebAmarale).

3.15 *Lasiosiphon eriocephalus* Linn. *Ramatha* (Thymelaeaceae) 5.214

Use: For Swelling; Sap. The sap is used to treat swelling of an udder to sell cows or buffalo's in the market for better price (Mr. BabanKokare, Mr. Mahadeo Misal).

3.16 *Asparagus racemosus* Linn.var. *javanica* Baker, *Shatavari*. (Liliaceae) 3.476

Use: General sickness; Roots. 100 gm of powder is added in the water (500ml) or in the feed and administered internally, one time for 15 days (Mr. DhondibaDhagare, Mr. MadaheoKhengare).

3.17 *Pterocarpus marsupium* Roxb. *Ragtroda* (Fabaceae) 5.214

Use: Bone fractures, Wound and swelling, Bark. 50 gm fresh

bark is boiled along with 10 gm seeds of *Udid*in the water for an hour. The paste is applied on the fracture and tied with the help of strips of bamboo. Bandage three times within one and a half month. The paste is also used for the wounds and swellings (Mr. Ashok Sukal, Mr. Sanjay Humbhe, Mrs. Narmadabai Sukal, Mr. VitthalSukal).

3.18 *Sesbania aegyptiaca* Poir.*Shevari* (Fabaceae) 5.214

Use: Simple indigestion; Leaves or roots. 25 gm leaves / roots are crushed in the 50 ml of water, administered internally three times a day (Mr. Mahadeo Khengare).

3.19 *Syzygium rubicundum* Wight & Arn.*Lendi-Jambhul* (Myrtaceae) 2.607

Use: Diarrhea; Inner bark of stem. Inner bark is crushed along with *Mangifera indica* in equal proportion in cow's milk and (for sheep and small cattle 250 ml and mature cattle 500 ml), administered one time for three days (Mr. Mahadeo Misal).

3.20 *Tridax procumbens* Linn.*Kurmudi* (Asteraceae) 5.214

Use: Conjunctivitis. Juice of fresh leaves is applied internally in the eye three times for three days (Mr. RaghujiDhagare, Mr. Ashok Sukal, Mr. BabanKokare).

3.21 *Vitex negundo* var. *incisor, Katri-nirgudi* (Verbenaceae) 3.476

Use: Snake bite; Leaves. Crush 20-30 fresh leaves in the 50-ml of water, administered internally one time for three days (Mr. Babasaheb Amarale).

3.22 *Wrightia tinctoria* R. Br. *Kala-Kuda* (Apocynaceae) 5.214

Use: Snake bite; Leaves and/or seeds. Crushed leaves / seeds in the water, three to four drops are put in the eyes and two to three drops put in the nose. At the same time some leaves are chewed and to blow in the ear (Mr. Sanjay Humbhe, Mr. Ramchandra Humbhe). The valley comprises a total number of 43 villages & hamlets. Mahadeo-koli, Dhangar and Ramoshi are the important tribal communities. Out of the total 14929 population of the Valley according to the 2001 census (Tahsil office, Saswad), about 1440 (9.65%) are tribal. Tribal hamlets are concentrated mostly near Purandar fort of the first zone, which is also popularly known as *GheraPurandhar*. In the Parinche valley, total number of cattle is 17313 and zone wise number of cattle (Table 1). In the table cows, buffaloes and others including sheep, horses etc. are given. According to the census (1991), forest areas is 2041.22 hectares (21-sq. km.) excluding the wasteland, cultivable land and as well as follow land. Density of the cattle population in area is 131 per sq. km. Dependence of the cattle population in the forest is more.

Table-1: Zone wise distribution and number of cattle in the Parinche valley.

Zone	Cows	Buffalos	Others	Total
Zone I	1679	535	1024	3238
Zone II	2266	801	1540	4607
Zone III	2749	393	4077	7219
Zone IV	1331	212	706	2249
Total	8025	1941	7347	17313

(Source: Panchayat Samiti, Saswad).

Although tribal population is high in the Zone I, but cattle population is higher in Zone III because of civilization. In all the zones, population of cows and buffaloes are less than sheep, horses, etc. The tribes inhabiting the remote villages of the region are conscious about the health of their livestock. They are much depending on their domestic animals to substantiate their livelihood. Present communication provides a detailed ethno-veterinary preparations of 24 plant species used in the traditional veterinary medicines for the bone fracture, wounds, indigestion, scorpion-sting, snakebite, foot and mouth disease, etc. For the various diseases, plant parts used are leaves, seeds and root bark. In the tribal region *Lantana camara, Jasminum malbaricum* and *Pavetta indica* are used as a fodder especially in the scarcity. The practice of traditional health care of cattle are effective and safe. The application of knowledge of herbal drugs is declining at a faster rate because of developed urban culture, negligence of tribal and rural community knowledge, forest habitat destruction and the tendency to use allopathic medicines. Though the practice of traditional health care of cattle population is effective, safe but the application of such wisdom on herbal drugs is declining at a faster rate due to developed urban culture, negligence of tribal and rural community, forest habitat destruction and the tendency to use allopathic medicines. Thus, there is an imperative need to explore such valuables taxa not only for documentation of traditional knowledge but also for the conservation of plant genetic resources. These claims may also offer scope for potential herbal drug species for their intensive phytochemical screening and pharmacological actions to ensure their sustainable utilization.

4. CONCLUSION

The current work has revealed the details of 27 species of traditional medicinal plants used by tribal population to treat various diseases and ailments of cattle and/or livestock population. From the survey, it was clear that water borne diseases are frequent, indicates water pollution or presence of microbes. The plants used for treatments were, Syzygium *rubicundum, Grewia tiliaefolia, Dalbergia sissoo, Calotropis procera* etc. Moreover, scorpion sting is the very frequently occurring problem in grazing animal. Based on the study it is understood that to treat snake bite and scorpion sting are *Carisa conjesta* and *Azadirachta indica*; are more common. While *Capparis zeylanica*, used for bone fracture. The present study brought in to limelight the unknown uses of some of the medicinal plants to treat cattle. It is concluded that because of unhygienic conditions and lack of education, the tribal people facing such problems and they overcome it by

using local and easily available plants by trial and error methods.

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6. CONFLICT OF INTEREST

Conflict of interest declared none

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