

Ethno-veterinary practices by tribals of Banswara district of Rajasthan

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The people of far-flung rural areas still depend to a large extent upon plants and household remedies for curing veterinary ailments. The folk knowledge of ethno-veterinary medicine and its significance has been identified by the traditional communities through a process of experience over hundreds of years. The present paper documented ethno-veterinary practices of tribals related to different medicinal problems in their livestock. The study was conducted in purposively selected Banswara district of Rajasthan. A total of 120 tribal families were selected from 8 selected villages of 2 tehsils. Data were collected through interview and detailed discussion with traditional healers and family members, known about indigenous traditional knowledge. A total of 31 practices were documented in 12 different ailments.

Keywords: Banswara, Ethno-veterinary practices, Rajasthan, Traditional healers, Tribals.

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Introduction

Ethno-veterinary medicine deals with people's knowledge, skills, methods, practices and beliefs about the care of their animals¹. The modern practices have replaced the traditional practices in some parts of the developed world². Nevertheless, ethno-veterinary practices (EVPs) still have significant contributions to animal health and are regarded as sustainable veterinary medicine in the new era³. The ultimate consideration for EVPs is due to its greater accessibility, lower cost and apparent effectiveness⁴. The absence of adequate allopathic conventional health care systems forces remote communities throughout the world to rely on traditional medicines for their primary health care⁵ and veterinary care^{6,7}. In addition to this, ethno-veterinary medicines have almost no side effects. Moreover, with the studies the modern medicines are becoming less effective in treatment and controlling of veterinary diseases, it is becoming more and more important to rediscover our traditional wealth of ethno-veterinary practices⁸. The tribals of remote areas of southern Rajasthan are totally dependent on herbs for healthcare of owns and for their animals. The tribals dominated southern part of Rajasthan harbours

vast diversity of vegetation. The surrounding plants for these people form an integral part of their culture and the information about plants gets passed on from generation to generation only through oral folklore, although many times kept secret. The knowledge of tribals in ethno-veterinary medicine can be used elsewhere to cure common diseases of livestock. Use of medicinal plants for treating animal diseases has been a well-recognized practice and documented⁹.

Materials and Methods

The present study has been carried out in Banswara districts of Rajasthan. District was selected on the basis of highest tribal population in the state. Out of total five tehsils in the district, Bagidora and Kushalgarh were selected due to the existence of large number as is predominantly inhabited by tribals mainly *Bhils*, *Bhil*, *Meenas*, *Damor*, *Charpotas*, *Ninamas* and others. A total of eight villages have been selected from two identified selected tehsils of district after preparing village wise list of number of tribal families residing in different villages. Fifteen tribal families were selected randomly from each village. Final data were collected from 120 tribal families from eight selected villages through personal observation, interaction with family members, traditional healers and aged persons having ethno knowledge and engaged in animal treatment.

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Results and Discussion

An inventory of 31 practices was prepared in 12 different ailments. The maximum number of indigenous practices was documented in deworming followed by Foot and Mouth Diseases (FMD). Most of the herbal medicines/preparations were made by them from locally available materials from their own villages. Sometimes dried herbs and plant parts were obtained from tribal people who collect medicinal plants to make their livings or purchase from tiny shops who sell herbal preparation. Tribals rarely consult the veterinary doctors, if their animal is suffering from common ailments. In more severe cases, they contact *vaidyas* or local traditional healers, who are available in all villages. They also feel more comfortable with *vaidyas*/traditional healers than academically trained vets and consult them at higher level. Probably to the fact, that they come from the same social system, caste, speak same language, common value system and thus culturally compatible. The study highlighted that most of the tribal livestock owners preferred to make use of ethno-veterinary practices for the treatment of common ailments found in animals. Some of the ethno-veterinary treatments for the different ailments are given below.

Deworming

(i) Tribals prepare a mixture of copper sulphate (*Nila thotha*) with water in 1:9 ratio and drench to the animals to kill the internal parasites. The anthelmintic property of copper sulphate kills the endo-parasites of the body.

(ii) Tribals prepare fermented product (alcohol) of *Mahua* (*Madhuca indica* J.F.Gmel.) seed and drench to affected animals for removal of endoparasites. Tribals feel that wine of the *Mahua* seed destroy the internal parasites of the body. Medicinally also, *Mahua* seeds have antiseptic and laxative nature which helps in removal of the endoparasites.

(iii) For removal of endoparasites in new born calves, they prepare a mixture from crushed leaves and fruits of Custard apple (*Annona squamosa* L.) with *chaach* (whey) and sweet oil and fed to calf. This practice perceived highly effective by the tribals. Medicinally, insecticidal property of Custard apple and laxative nature of whey helps in removal of endoparasites.

(iv) Some traditional healers feed 50-100 g crushed leaves of Neem (*Azadirachta indica* A.Juss.) with either jaggery or wheat (*Triticum aestivum* L.) flour for easy removal of endoparasites. Medicinally, Neem leaves have anthelmintic, antiseptic and purgative nature that helps to kill and remove endoparasites of the body.

(v) Traditional healers also provide 2-3 raw fruits of *Timru* (*Zanthoxylum armatum* DC.) plant for removal of endoparasites. Medicinally also, fruit and seed of the *Timru* plant have carminative, anthelmintics (effective in expelling round worms), antiseptic and disinfectant properties that help in removal of endoparasites.

(vi) Tribals also feed fruits of *Tendu* (*Diospyros melanoxylon* Roxb.) plant to affected animals in 2-3 doses at 12 h interval for removal of endoparasites. Medicinal point of view, the *Tendu* fruit used as anthelmintic (hook worms and tapeworms), carminative and laxative. The leaf extract of Custard apple is also effective in removal of parasites from animal body¹⁰.

Foot and Mouth Disease (*Khat*)

(i) Tribals prepare a paste by mixing of 50 g *Haldi* (*Curcuma longa* L.) powder, 50 g common salt with 100 mL Soya bean [*Glycine max* (L.) Merr.] oil. After proper mixing, they apply paste on affected portion of tongue and hooves for 4-5 times. According to them, *Haldi* helps in quick healing of wounds of Foot and Mouth disease (FMD). Scientifically, the active principle curcumin acts as potent anti-inflammatory, antioxidant, antiseptic and boost immunity of the animal body. *Haldi* is also useful as an external antibiotic in preventing bacterial infection in wounds.

(ii) Traditional healers also reported that animals affected from FMD are forced to walk on hot sand for healing of their wounds. Hot sand is also rubbed on the affected external parts of body to cure the FMD lesions. They reported that hot sand destroy all germs present in FMD lesions.

(iii) Traditional healers prepare a paste of *Haldi* mixed with linseed (*Linum usitatissimum* L.) oil and apply on ulcers of FMD. Mixture was found effective for the quick and complete healing of FMD vesicles of tongue and hooves by the tribals. Medicinally, anti-inflammatory, antiseptic and antibacterial property of *Haldi* checks the bacterial infection in ulcers of FMD.

(iv) Some tribals also apply desi ghee on tongue and hooves of FMD affected animals at 6 h interval. They reported that, it helps in relief from pain and quick healing of ruptured vesicles. This practice was found common and effective by the respondents. Medicinally also, germicidal property of ghee prevent the bacterial infection.

(v) Some of the tribals, force the affected animal to walk in mud water to get relief from pain. They reported that mud forms a layer on FMD vesicles and aid recovery. *Haldi* is also used to cure FMD wounds¹⁰.

Tympany

(i) A mixture of extract juice of 1 kg crushed leaves and stems of *Giloy* [*Tinospora cordifolia* (Willd.) Miers ex Hook.f. & Thoms.] plant, 200 g *Haldi* powder, 200 g grounded black salt, 150 g grounded *Ajwain* [*Trachyspermum ammi* (L.) Sprague] and 10 g grounded *Hing* (*Ferula assafoetida* L.) along with 200 mL Mustard (*Brassica campestris* L.) oil is given to the suffering animal twice at 6 h interval. This practice is considered effective and economical also. Well known carminative property of *Ajwain* and *Hing* along with non irritant and anti-foaming action of mustard oil provide quick relief to suffering animal from tympany. Medicinally, soothing effect of *Giloy* plant protects the mucous membrane of gastro-intestinal tract by increasing the production of mucin.

(ii) A mixture of 50 g grounded ginger, 50 g *Haldi* powder and 20 g *Hing* powder along with 500 mL linseed oil fed to affected animals for quick relief. According to them, these ingredients check gas formation. Antiseptic and carminative properties of *Hing* and Ginger were found very effective in curing the animal suffering from tympany.

(iii) A mixture of crushed fruits of *Tumba* [*Citrullus colocynthis* (L.) Schrad.] along with 2-3 L *chaach* (whey) drench to the animal at 6 h interval in 2 doses. Tribals reported that, this is very effective for quick eruption of gases in animals suffering from tympany. Medicinally, bitterness and purgative properties of *Tumba* fruit help to reduce problem of constipation and gas formation. The fruits of *Tumba* are fed to cure stomach disorders and to increase lactation in animals¹¹ whereas *Ajwain* and *Hing* is used to cure the gas problems in animals¹¹. *Hing* is also fed in constipation and flatulence in the animals¹⁰. The linseed oil is also fed to relieve gas problems in animals¹⁰. The decoction of *Tumba* root is used to cure constipation problems in animals¹².

Diarrhoea

(i) To control the diarrhoea, tribals feed 1-2 kg boiled rice mixed with sour *chaach* (whey) to their animal. They reported that sour *chaach* alleviate diarrhoea immediately.

(ii) Some of the traditional healers drench 50-100 mL fruit and bark extract of *Kumbha* (*Careya arborea* Roxb.) plant to the affected animal in 2-3 doses. They perceived this treatment effective and economical also. Medicinally, juice of bark and fruits is an astringent and demulcent in nature and employed in the treatment of the dysentery.

(iii) They feed crushed root of date palm (*Phoenix dactylifera* L.) plant (250 g) twice a day for 2-3 days.

(iv) 500 g grounded seed of *Imli* (*Tamarindus indica* L.) mixed with 250 mL water is fed to the animals suffering from diarrhoea. This combination is given 2-3 days for good results.

Tuberculosis

(i) For treatment of tuberculosis affected animal, tribals were drench 150 mL oil obtained from *Gohal*/Monitor lizard (*Varanus benglensis* Daudin) for 3 subsequent days. According to them, this treatment is highly effective for early recovery from tuberculosis.

(ii) Some traditional healers also drench 200 mL urine of healthy human being in 2-3 doses for treatment of tuberculosis.

(iii) Traditional healers also apply 'Dam' (hot iron branding) on hump region of affected animal for treatment of tuberculosis.

Mastitis (Jherbaaj)

For the treatment of mastitis, paste of *Datura* (*Datura stramonium* L.) leaves is applied on affected parts of udder 3-4 times. This paste helps in reduction of swelling and check inflammation of udder. Medicinally, *Datura* has potent analgesic and sedative nature.

Haemorrhagic septicaemia

Traditional healers prepare a mixture of *Haldi* powder with common salt and apply it on the tongue of the suffering animal twice a day. This practice is repeated for 2-3 days. Tribals perceived that, this practice provide relief from painful breathing.

Rabies

In case of dog bite, some traditional healers feed 1-2 kg crushed leaves of *Aak* [*Calotropis procera* (Ait.) R. Br.] plant to suffering animal for treatment of rabies.

Mange/dermatitis

(i) Tribals wash the whole animal body with boiled Neem leaves water for 2-3 days. The bitterness, antiseptic and fly repellent properties of Neem helps in removal of ecto-parasites.

(ii) Some traditional healers also apply engine oil 2-3 times on severely affected body parts for removal of external parasites. This practice was found common and effective by the respondents. The most common, immediate and preferred treatment for any type of skin infections is leaves of Neem¹³.

Fever

(i) Tribals prepare a decoction of whole plant of *Navali* [*Pluchea lanceolata* (DC.) C. B. Clarke] and provide 30-50 mL to suffering animal. This practice was repeated 2-3 times. According to them, this treatment is highly effective and economical also. Medicinally also, *Navali* plant extract have potent antipyretic and analgesic properties.

(ii) Some tribals also apply *Haldi* powder on whole body of animal suffering from fever.

Pneumonia

(i) A decoction of 50 g crushed *Haldi* with 10 g grounded *Hing* and 250 mL sweet oil is fed to suffering animal twice a day. This practice was repeated for 2 days. According to them, above combination was highly effective for treatment of pneumonia.

(ii) Some traditional healers apply "Dam" (hot iron branding) in circular manner near the site of lungs of suffering animal. They reported that, this practice gives relief to animal suffering from pneumonia.

Lantana poisoning

Tribals provide 250 g *Gur* (Jaggery) mixed with 200 mL sweet oil to affected animals at 6 h interval for 2-3 days. According to them, *Gur* provide warmth and strength to body while sweet oil helps to prevent the absorption of poison in the body.

Conclusion

The present study reveals that ethno-veterinary practices by tribes are a part of rich traditions of animal care in remote areas of Banswara district in Rajasthan. Although, these traditions are maintained since time immortal, they are depleting at a very high rate with the passage of time and increasing modernization. Tribals were found to be highly skilled in treating their animals through indigenous practices and most of them preferred to consult village traditional healers over the veterinary doctors. It indicates that no doubt, they had rich storehouse of ethno-knowledge for animal health care. They did not keep any record about their practices. This knowledge is passed generation to generation through oral transmission. Therefore, there is an urgent need of a comprehensive analysis and documentation of indigenous knowledge for curing animal ailments in the tribes dominated areas.

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