

Ethno Veterinary Practices of Repeat Breeding and Anoestrous with their Extent of Use Followed By Livestock Owners in Western Zone of Rajasthan

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ABSTRACT

*Ethno veterinary medicine (EVM) covers people's knowledge, skills, methods, practices and belief about the care of their animal. People have easy access to modern veterinary facilities but still traditional remedies and traditional healers are their first choice. Ethno veterinary users (animal owners) and ethno veterinary practitioners have a strong perception over the effectiveness of these remedies. Moreover, they reported that allopathic treatment is expensive and sometimes associated with side effects. The present study was conducted in Bikaner and Jodhpur districts of Rajasthan in order to document the ethno veterinary practices followed by livestock owners. A total of 120 livestock owners were selected as respondent from 12 selected villages of 4 tehsils of the districts. Inventories of 11 ethno veterinary practices were documented for treatment of repeat breeding. The results revealed that using ajwain (*Trachyspermum ammi*) with water was found most frequently using practices for treatment of repeat breeding having highest ethno veterinary Medicine Use Index 82 and ranked first. Inventories of 6 ethno veterinary practices were documented for treatment of anoestrus. The results indicated that using bajra (*Penisetum typhoidis*) with water was found most frequently used practice for treatment of anoestrus having highest Ethnoveterinary Medicine Use Index 123 and ranked first.*

Key words: Ethno veterinary; Inventory; Anoestrus; Repeat breeding; Veterinary practitioners;

The majority of the rural population uses traditional medical solutions and approach local healers and medicine men. Some of the reasons that local people prefer to use traditional medicine are the traditional system is time tested, local people have faith in the traditional system and the medicines are easily available, at a low cost (*Dwivedi, 1998*). These treatises focus on the potential of plants and herbs to cure human ailments and diseases. Scientists are now documenting various ethnoveterinary practices based on plant drugs. About 70 percent of livestock being owned by landless, marginal & small farmers, so their reach to veterinary doctor and allopathic medicine is limited. Therefore, traditional knowledge for first aid and treatment of animals being very important for growth of Indian livestock sector from farmers point of view (*Singh et al., 2011*).

Ethno preparations are powders, poultice, ointment, decoction, infusion, cold ware extract, tincture

fumigation. The use of indigenous veterinary medicine is a cost effective treatment option for livestock, especially in primary health care in remote areas (*Punnamurthy, 2010*). Therefore, we are obliged to consider recognizing and protecting the role of pastoralists and conferring certain rights that will support their livelihoods and community conservation of biodiversity. These days, anthropogenic activities such as industrialization, deforestation, habitat destruction, urbanization, etc. pose a serious threat to the species diversity. It is, therefore, very necessary to document the useful ethnobotanical/ethnoveterinary (*Ahmad et al., 2016*).

There has been neglect of traditional systems and knowledge to the extent that many of us are unaware of ancient literature and some are skeptical about it (*Rangnekar, 1983*).

Access to and within the rural area is extremely difficult during certain periods of the year making

evacuation for medicinal treatment an unrealistic alternative. Therefore, rural people almost solely depend on traditional medicine. The traditional use of plants as herbal remedies has further declined due to scarcity of such plants, which is caused by multifarious human activity coupled with natural calamities like droughts, thus threatening the diversity of herbal medicines. Therefore, an urgent need was felt to study and document this precious knowledge for posterity's (Nag *et al.*, 2007).

METHODOLOGY

The Ex-Post Facto research design was used. The present study was conducted in Bikaner and Jodhpur districts of Rajasthan in order to document the ethno veterinary practices followed by livestock owners. Both the districts were selected purposively on the basis of good proportion of livestock. Two tehsils Nokha and Lunkaransar were purposively selected out of the 8 tehsils from Bikaner district on basis of good proportion of livestock population. Two tehsils Phlodi and Bhopalgarh were purposively selected out of the 13 tehsils from Jodhpur district on basis of good proportion of livestock population. Three villages were randomly selected from each tehsil and a total of twelve villages were selected from these four tehsils for the purpose of study.

The 10 livestock owners from each of the twelve selected villages including the available traditional healers were identified randomly who have adopted animal husbandry occupation. Thus, the total sample size was constituted 120 livestock owners.

An interview schedule was developed keeping in view the objectives and variables of study. Background information of the study area was obtained through personal observation, consultation with officials and available reports. Before the actual data collection, several visits were made to build rapport with the respondents of the selected villages and officials. Quantitative and qualitative data were collected through observation, interaction and dialogue, detail discussion with key informants, aged person, housewives and traditional healers. Departmental documents, records, reports, books, newspapers and other available literature were also consulted to collect secondary data on different parameters. The data were collected, compiled, tabulated and analysed using appropriate statistical tools for descriptive writing.

Operationalisation of variables:

Documentation of ethnoveterinary practices: In the

present study, ethnoveterinary practices were operationalised as the study of knowledge and practices of animal husbandry with regards to treatment of different diseases of animals by using different locally available resources as shrubs/herbs and other practices etc. ethnoveterinary practices were documented through open ended questions from available traditional healer and livestock owners for different ailments and affections related to livestock.

Ascertain the extent of use of ethnoveterinary medicines: The ethnoveterinary medicines (EVMs) used by the farmers of a selected area in Rajasthan were identified and determined the extent to which the identified EVMs were used by the farmers. Current study of extent of use of Ethnoveterinary medicines was decide on the basis of EVMUI (Ethnoveterinary Medicine Use Indices) score. The following formula was used to calculate the EVMUI scores. The procedures for operationalization of the independent variables are presented on a four-point continuum scale with the scoring order of 3, 2, 1 and 0 for 'frequently used,' 'occasionally used,' 'rarely used' and 'not at all used' respectively was employed to measure the dependent variables. (Islam and Kashem, 1999)

$$EVMUI = N1 \times 3 + N2 \times 2 + N3 \times 1 + N4 \times 0$$

Where, EVMUI = Ethnoveterinary Medicine Use Index

N1 = Number of farmers who used the EVM frequently

N2 = Number of farmers who used the EVM occasionally

N3 = Number of farmers who used the EVM rarely

N4 = Number of farmers who did not use the EVM

RESULTS AND DISCUSSION

Repeat breeding:

- i. For treatment of repeat breeding some livestock owners fed 250 gm overnight soaked ajwain (*Trachyspermum ammi*) to animal for five days.
- ii. For treatment of repeat breeding livestock owners prepared a mixture with 1 kg crushed lod (*Symplocos racemose*) and 1 kg desi sugar both mixed well divided into four equal portion and one part mix in water and fed to animal all four portion fed to animal continuous for four days.
- iii. Livestock owners fed 250 gm saunf (*Foeniculum vulgare*) after mixed with water and fed to animal for four days.

- iv. Livestock owners fed 1 kg moth (*Vigna aconitifolia*) continuous for five days.
- v. For treatment of repeat breeding some traditional healers fed 50 gm haldi powder (*Curcuma longa*) with 100 ml til oil in 10 equal doses.
- vi. Traditional healers also provided khejri (*Prosopis cineraria*) leaves after soaked in whey (butter milk) for 10 days.
- vii. Some livestock owners also reported that they fed 20 gm fitkari (Alum) for 3 days for treatment of repeat breeding.
- viii. For treatment of repeat breeding they prepared decoction of 5 kg root of ber (*Zizipus maurtiana*) with 10 litres water. This decoction provided to suffering animal for continuous ten days.
- ix. Livestock owners fed 300 ml desi ghee per day for continuous ten days.
- x. Livestock owners offered cow milk to treatment of repeat breeding in animals.
- xi. Traditional healer provided preserved palar pani (rain water) after mixed with few drop of til (*Seasamum indicum*) oil to suffering animals
- Anoestrus:**
- i. For treatment of anoestrus 10 gm seed of kayfal (*Myrica nagi*) fed to animal for continuous three days.
- ii. Livestock owners fed 500 gm germinated wheat (*Triticum aestivum*) grains for 10 days. Livestock owners perceived that germinated wheat grains provide warmth and strength to body that will help to induce heat in animals.
- iii. In an interesting practice, livestock owners fed 150 gm bhilawa seed (*Semecarpus anacardium*) to animal. According to them, this practice was very effective for inducing the heat in anoestrus animals. Scientifically also, bhilawa seed have antioxidant, antimicrobial and CNS stimulants properties.
- iv. Livestock owners fed crushed 20 gm harde (*Terminalia chebua*) seed for treatment of anoestrus.
- v. Livestock owners fed cooked bajra (*Penisetum typhoids*) one kg twice in a day for ten days for treatment of anoestrus. They felt bajra give warm and strength to body which help in induction of heat in anestrus animal.
- vi. Some of the traditional healers also reported that they fed ground seed of datura (*Datura stromonium*) to anoestrus animals for inducing heat. Medicinally, the ingredients of datura seed have act as CNS stimulants.

Extent of use about EVMs of Repeat breeding with their EVMUIs and rank : An inventory of 11 ethnoveterinary practices were documented for treatment of repeat breeding. The data in the Table 1 revealed that using ajwain (*Trachyspermum ammi*) with water was found most frequently using practices for treatment of repeat breeding having highest Ethnoveterinary Medicine Use Index 82 and ranked first. Another most frequently utilized practices were, cow milk, saunf (*Foeniculum vulgare*) with water, lod (*Symplocos racemose*) with desi sugar and water EVMUIs 71, 70, 62 and occupied ranked II, III and IV, respectively. However, practice of using haldi (*Curcuma*

Table 1. Distribution of respondents according to extent of use about EVMs of Repeat breeding with their EVMUIs and rank (N=120)

| EVM practices | No. | Occasionally, | Rarely | Never | EVM - Uls | Rank |
|---|-----|---------------|--------|-------|-----------|------|
| Ajwain (<i>Trachyspermum ammi</i>) + water | 20 | 09 | 04 | 87 | 82 | I |
| Lod (<i>Symplocos racemose</i>) + desi sugar + water | 19 | 02 | 01 | 98 | 62 | IV |
| Saunf (<i>Foeniculum vulgare</i>) + water | 20 | 04 | 02 | 94 | 70 | III |
| Moth (<i>Vigna aconitifolia</i>) | 14 | 03 | 00 | 103 | 48 | V |
| Cow milk | 20 | 04 | 03 | 93 | 71 | II |
| Fitkari (Alum) + water | 03 | 00 | 02 | 115 | 11 | IX |
| Desi ghee | 13 | 00 | 00 | 107 | 39 | VII |
| Haldi (<i>Curcuma longa</i>) + til (<i>Seasamum indicum</i>)oil | 11 | 03 | 01 | 108 | 40 | VI |
| Khejadi(<i>Prosopis cineraria</i>) leaves + whey | 00 | 00 | 05 | 115 | 05 | XI |
| Rain water + til (<i>Seasamum indicum</i>)oil | 00 | 16 | 03 | 101 | 35 | VIII |
| Ber (<i>zizipus maurtiana</i>) root + water | 00 | 00 | 06 | 114 | 06 | X |

Table 2. Distribution of respondents according to extent of use about EVMs of Anoestrus with their EVMUIs and rank (N=120)

| EVM practices | No. | Occasionally | Rarely | Never | EVM- Uls | Rank |
|---|-----|--------------|--------|-------|----------|------|
| Harde (<i>Terminalia chebua</i>) | 17 | 04 | 02 | 97 | 61 | IV |
| Kayfal (<i>Myrica nagi</i>) + water | 13 | 06 | 02 | 99 | 53 | V |
| Bajara (<i>Penisetum typhoidis</i>) + water | 30 | 16 | 01 | 73 | 123 | I |
| Bhilawa (<i>Semecarpus anacardium</i>)Seed | 20 | 06 | 02 | 92 | 74 | III |
| Wheat (<i>Triticum astivum</i>) + water | 27 | 12 | 01 | 80 | 106 | II |
| Datura (<i>Datura stramonium</i>) seeds + water | 13 | 04 | 02 | 101 | 49 | VI |

longa) with water moderately utilized with EVMUI 40 and ranked sixth. Practices of using fitkari with water, ber (*Zizipus mauritiana*) root with water, khejadi (*Prosopis cineraria*) leaves with whey were found rarely utilized with EVMUIs 11, 6, 5 and ranked IX, X and XI, respectively.

Extent of use about EVMs of anoestrus with their EVMUIs and rank : An inventory of 6 ethnoveterinary practices were documented for treatment of anoestrus. A perusal of Table 2 indicated that using bajra (*Penisetum typhoidis*) with water was found most frequently used practice for treatment of anestrus having highest Ethnoveterinary Medicine Use Index 123 and ranked first. Another most frequently utilized practice was wheat (*Triticum astivum*) with water with EVMUI 106 and having rank second. Practices of using kayfal (*Myrica nagi*) with water, datura (*Datura stramonium*) seeds with water were found rarely utilized with EVMUIs 53, 49 and ranked V, VI, respectively.

CONCLUSION

The results revealed that using ajwain

(*Trachyspermum ammi*) with water was found most frequently using practices for treatment of repeat breeding. Other most frequently utilized practices were cow milk, saunf (*Foeniculum vuilgare*) with water, lod (*Symplocos racemose*) with desi sugar and water in case of repeat breeding. The study indicated that using bajra (*Penisetum typhoidis*) with water was found most frequently used practice for treatment of anoestrus. Another most frequently utilized practice was wheat (*Triticum astivum*) with water. Livestock owners were using a variety of medicinal plants, local herbs, shrubs, minerals and available household spices as resources for treatment of diseases. Livestock owners were found highly satisfied with available ethnoveterinary treatment due to their available services in own village, cost effectiveness of treatment and timely availability of services. It was concluded that even though livestock owners were satisfied with ethno treatment but they facing many challenges i.e. lack of availability of all medicinal plant in local area, availability of some of plants only in particular season, extinction of some of the ethno treatment due to non-practice by younger generation.

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