



ETHNO-VETERINARY PRACTICES OF GOAT FARMERS IN TARAI REGION OF UTTARAKHAND

B.S. Khadda*, Brijesh Singh, D.V. Singh, J.L. Singh, S.K. Singh and C.B. Singh

Department of Livestock Production Management

College of Veterinary and Animal Sciences

G. B. Pant University of Agriculture and Technology, Pantnagar- 263 145, Uttarakhand

**E-mail address: khadda74@gmail.com*

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ABSTRACT

A survey was carried out on 645 goat farmers in Udham Singh Nagar and Nainital districts of Uttarakhand from April, 2015 to March, 2017. The information on the common symptoms or ailments inflicting losses to the goats along with the use of local plants and other traditional healthcare practices followed by them were collected through personal interview using a well-structured questionnaire. It was found that ethno-veterinary practices used by the farmers for diarrhoea / dysentery, pneumonia, anoestrus, bloat, retention of placenta, gastrointestinal helminthiasis, external parasites, constipation, indigestion, wounds and plant poisonings are common ailments in goats. Different types of plant species and their parts viz., roots, leaves, twigs, bark powder, fruits, seeds, oils etc. are used for the treatment of these ailments. Ethno-veterinary practices like bolus made from pigeon droppings and sprouted *Triticum* for aneostrous goats, feeding cotton seeds for enhancing growth, oral administration of a mixture of asafoetida, *Chirayata swertia*, *Trachyspermum ammi* and black salt for bloat, feeding a paste of *Curcuma longa*, *Trachyspermum ammi* and black salt for fever and pneumonia, feeding castor (*Ricinus communis*) seeds for constipation were evaluated.

Key words:: Diseases, Ethno-veterinary, Goat, Healthcare practices

Farmers in Uttarakhand have built up a large network of traditional knowledge of goat healthcare and management (Bisht et al. 2004; Tiwari and Pande, 2010) using a wide variety of indigenous plants. Traditional knowledge is a record of human accomplishment in comprehending the complexities of life and survival in adverse environments. The practices and remedies used by the people based on knowledge gained through the experiences and observations of the previous generations are considered as ethno-veterinary approach (Kumar, 2002). A study was conducted to document the common symptoms or ailments inflicting losses to the goats along with the use of local plants, plant parts and other traditional healthcare practices followed by the goat farmers in Tarai region of Uttarakhand.

MATERIALS AND METHODS

A bench mark survey was conducted to collect the base line information from the Pantja goat farmers regarding their goat production systems, common ailments occurring in the goats and use of local plants, plant parts and other traditional healthcare practices in treating these diseases during April, 2015 and March, 2017. A total of 113 villages from four clusters (Bhimtal, Tilpuri, Bara and Kunda) were selected from two districts (Udham Singh Nagar and Nainital) of Uttarakhand for the survey. Selected respondents (645) were interviewed. Out of these the desired information related to ethno-veterinary practices were collected from 138 goat keepers through personal interview using a well-structured questionnaire. Live

specimens of some medicinal plants that are used in the treatment of goats were collected and identified. The validity of ethno-veterinary practices was performed by a group of investigators for its relevance to scientific authenticity. The selected indigenous technologies used by majority of the goat farmers were scrutinized. These technologies were circulated to 20 scientists for their responses on a three point validity scale and were scored 5, 3 and 1 for valid, considerable and not valid, respectively. Hence, one indigenous traditional knowledge could get a highest score of a hundred and minimal of 20.

RESULTS AND DISCUSSION

It was found that diarrhoea / dysentery, pneumonia, anoestrus, bloat, retention of placenta, gastrointestinal helminthiasis, external parasites,

constipation, indigestion, wounds and plant poisonings are common ailments in goats for which ethno-veterinary practices are being used in the area. Various plants and ingredients used by the goat farmers to treat their goats in the study area with the score 10 and more obtained by the individual entity are presented in Table 1. Ethno-veterinary practices like bolus made from pigeon droppings and sprouted *Triticum* for induction of heat in anoestrous does, feeding cotton seeds to enhance growth, oral administration of a mixture of *asafoetida*, *Chirayata swertia*, *Trachyspermum ammi* and black salt for bloat, feeding a paste of *Curcuma longa*, *Trachyspermum ammi* and black salt for fever and pneumonia, feeding castor (*Ricinus communis*) seeds for constipation, presented the highest score.

Table 1. Goat diseases / disorders and ethno-veterinary practices used by the goat farmers and its validity scores assigned by scientists (n=20)

Disease / Disorder	Ethno-veterinary practice	Validation			Validity Score
		Valid	Considerable	Not valid	
Diarrhoea	Powders of internal bark of jamun (<i>Syzygium jambos</i> (L.) Alston) / mango (<i>Mangifera indica</i> L.) / falsa (<i>Grewia asiatica</i>) @ 2 tea spoons per day for 2 days	12	7	1	82
	Paste prepared from banana (<i>Musa paradisiaca</i> L.) flowers and turmeric (<i>Curcuma longa</i>) powder (10-15 g), twice a day	14	5	1	86
Dysentery	Cooked rice water as drench for 3-5 days	14	6	0	88
Pneumonia, fever and cold	Paste prepared from turmeric - 10 g, ajwain (<i>Trachyspermum ammi</i> (L.) Sprague) 10 g and black salt 10-15g, twice a day for 2-3 days	15	5	0	90
	Tulsi (<i>Ocimum sanctum</i> L.) leaves, fed twice a day for 2-3 days	13	7	0	86
	Decoction of chirayita (<i>Swertia chirata</i> Buch.-Ham. ex Wall.) leaves and pepper (<i>Piper longum</i>), drenched twice a day	13	7	0	86
	Turmeric powder (10 g) mixed with jaggery, for 3 days	16	3	1	90
Anoestrus / induction of heat	Bolus made from pigeon droppings and jaggery, once a day for 5-6 days	14	4	2	84
	Sprouted wheat (<i>Triticum aestivum</i> L.) @ 200 g for 5-6 days	16	4	0	92
Bloat	A mixture prepared by asafoetida (2-3 g), chirayata (10 g), ajwain (10-15 g) and black salt (10-15 g) in lukewarm water	17	3	0	94
	Drenching of linseed (<i>Linum usitatissimum</i> L.) oil (100 ml), dry powder of ginger (<i>Zingiber officinale</i> Roscoe) (5 g) and asafoetida (2.5 g) as a mixture	17	2	1	92
	Common salt (40-50 g) and ajwain (10 g) mixed together, given orally	17	3	0	94

Ethno-veterinary practices in Uttarakhand

Retention of placenta	Decoction prepared from 40-50 g dry ginger powder, 40-50 g ajwain, 40-50 g green leaves of bamboo (<i>Bambusa vulgaris</i> Schrad.) and 200 g molasses, drenching of decoction thrice a day	13	7	0	86
General weakness / growth promoter	Feeding of leaves of subabul (<i>Leucaena leucocephala</i> (Lam.) de Wit), neem (<i>Azadirachta indica</i> A. Juss.), pipal (<i>Ficus religiosa</i> L.), banyan (<i>Ficus benghalensis</i> L.), gular (<i>Ficus glomerata</i> Roxb.)	15	4	1	88
	Feeding of cotton seeds (<i>Gossypium herbaceum</i> L.) in winter season to male goats	16	4	0	92
Internal parasites	Juice derived from leaves and bark of bakain (<i>Melia azedarach</i> L.), drenched (20 ml) for 3-4 days	14	5	1	86
	Root and stem bark powder of pomegranate (<i>Punica granatum</i>) for 3 days	11	9	2	80
	Decoction of leaves, flower and bark of neem (<i>Azadirachta indica</i> A. Juss.), for 3 days	15	5		80
	Dry leaves of gular (<i>Ficus glomerata</i> Roxb.) and Banyan tree @ 200- 250 g for 5-7 day	11	8	1	80
External parasites	Tobacco (<i>Nicotiana tabacum</i> L.) leaves (40-50 g) soaked in one litre of water in evening time and mixing with mustard oil and salt in next morning, apply on the skin	11	8	1	80
Constipation	Ground castor (<i>Ricinus communis</i>) seeds (50-60 g) mixed with water as a drench	17	3	0	94
Open wound/ Injury	Boiling of neem leaves in water and washing of wound after cooling	20	0	0	100
	Application of paste prepared from neem leaves after roasting in a pan and mixed with mustard oil	19	1	0	98
	Deodar (<i>Cedrus deodara</i>) oil for foul ulcers and wounds	17	2	1	92
	Sprinkling of Katha (<i>Acacia katechu</i>) powder on injured horn to check bleeding	17	3	0	94
Burn injuries	Application of heena (<i>Lawsonia inermis</i> L.) paste on burnt area, twice daily	16	4	0	92
Urinary disorders/ Haematuria	Leaves of kasani (<i>Cichorium intybus</i>) crushed with water, Orally, once in the morning for 5-7 days	12	7	1	82
Indigestion	Crushed leaves and inflorescence of bhang (<i>Cannabis indica</i> Lam.) for 2 days	12	4	4	76
	Feeding of a paste prepared from powder of methi (<i>Trigonella foenum-graecum</i>) seeds, garlic clove (<i>Allium sativum</i>), neem leaves, black salt and jaggery, twice a day for 3-4 days	16	4	0	92
	Asafoetida (2.5 g), black salt (50 g) and ajwain (50 g), orally	19	1	0	98
Plant poisoning	Lassi (Butter milk) and leaf paste of Dhania (<i>Coriandrum sativum</i>), thrice a day	10	9	1	78
	Drenching of sour lassi mixed with mustard oil and aonla (<i>Emblica officinalis</i> Gaertn.) water				

Foot and mouth disease	Washing of hooves with neem leaves (boiled in water and cooled) for 3-4 days	15	5	0	90
	Application of turpentine oil and camphor mixture on affected part after washing with luke warm water and drying	16	3	1	84
	Washing of oral cavity with solution of potassium permanganate, 2-3 times a day	19	1	0	98
Fracture	Fixation of fractured bone with bamboo (<i>Bambusa vulgaris</i> Schrad.) sticks	16	3	1	90

Arun et al. (2013) also reported the same plants and plant parts used for treatment of various ailments in Garhwal Himalayan region. The use of well known plants and their plant parts as ethno-veterinary treatment of livestock have been reported in Rajasthan (Singh et al., 2014), Gujarat (Bhatt et al., 2001) and Himachal Pradesh (Singh and Mishri, 2006). It was found that out of the total entities/methods considered in the study, as many as 58 formulations were imparted scores of 70 and above. This was an indicator of the widespread use and applicability of that particular entity in the field of ethno-veterinary practices. This sort of validation by means of scientific trials will help in identification of new herbal combinations of medicinal drugs for effective remedy of quite a lot of ailments in goats as well as in other livestock. The study provides the base line information for the commercial exploitation of bio-resources by botanists, pharmacologists and pharmaceutical industry. However, scientific management of goats and combination of modern and local remedies are the best solution for goat health problems in rural areas.

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