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Indigenous Technical Knowledge Used In Animal Medicine In the Valley of Kashmir

Zubair Ahmad Akhoon, Khursheed Ahmad Sofi , Muzaffar Shaheen, Tasneem Mubarak and Syed Ashaq Hussain

Division of Veterinary Medicine, FVSc and A.H, Shuhama, SKUAST Kashmir. E-mail: drzubair7866@gmail.com

Abstract: Livestock rearing is an important pursuit in Jammu & Kashmir and it plays an important role in the economy of livestock farmers. The People of Himalayan region have developed their own ways for keeping their livestock healthy and productive. Documentation of indigenous technical knowledge and ethno veterinary medicine in hilly areas of Kashmir has till date not been done appropriately. Thus, there is an apprehension of losing this precious knowledge. A survey was conducted in the different areas of Kulgam Kashmir regarding the indigenous Technical Knowledge and ethno veterinary practices used in Veterinary Medicine. The information was collected from farmers, shepherds, animal owners and village elderly through local languages and the information and knowledge collected was documented.

Keywords: Ethno veterinary Practices, Himalayan region, Indigenous Technical Knowledge, Livestock.

INTRODUCTION

Ethno veterinary medicine refers to people's knowledge, practice and beliefs for keeping their animals healthy and productive and its role in livestock development is of great importance (Ahmed et al., 2016). Livestock rearing is an important pursuit in Jammu & Kashmir and it plays an important role in the economy of livestock farmers. The People of Himalayan region have developed their own ways for keeping their livestock healthy and productive. The livestock keeper's prepare medicines from the plant available in their local environment and use them for preventing and treating various diseases of animals (Khateeb et al., 2017). However, traditional medical practices were increasingly replaced and overlooked with the development of modern medicine especially after the Second World War. Traditional medical practices were regarded ineffective and useless, in contrast to the modern medicine; thought to solve all health problems of humans and animals. But, this over-estimation of the benefits of modern medicine are declining in the course of the 'green wave' particularly in industrialized countries. The reconsideration of traditional medicinal systems in the industrialized world and the fact that modern medicine was too expensive for many developing countries, the World Health Organization (WHO) in 1970's decided to promote traditional medicinal systems by scientifically assessing the efficacy of the plants and identifying the principles responsible for their genuine therapeutic effects (Bizimana, 1997). Jammu & Kashmir has rich heritage of indigenous technical knowledge, but concrete steps have not been undertaken to document them. Due to the geographical remoteness of the area and socioeconomic condition of the local populace, the ethno-veterinary medicine is still used here especially in mountainous areas of Kashmir (Khateeb *et al*., 2017). Documentation of indigenous technical knowledge in hilly areas of Kashmir has till date not been done appropriately. Thus, there is a apprehension of losing this precious knowledge as most of these practices are transferred to next generation by verbal means only. Further, based

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on personal communication with the livestock owners, there are various traditional practices reported with good efficacy for the management of various livestock diseases. However, we the professionals are generally unaware of these practices. It is therefore imperative to collect and document the details of these practices followed in the hilly areas of Kashmir, so that this knowledge could subsequently be made available for use in animal health care.

MATERIAL AND METHODS

A survey was conducted in the different areas of District Kulgam falling under the jurisdiction of KVK Kulgam SKUAST Kashmir regarding the indigenous Technical Knowledge used in Veterinary Medicine in the Year 2016. The information was collected from farmers, shepherds, animal owners and village elderly through local languages and the information and knowledge collected was documented in an extension book.

RESULTS AND DISCUSSION

Disease/Disorder/ Condition	*Plant/Ingredients/Technique used*	*Method/Dose of ingredient*	*Species/Animal*	*Duration of treatment/ Time of recovery/ Reliability*
Bloat/Tympany alongwith anorexia	(i) Common name: Local name: Bradeh gasseh Scientific name: (ii) Common name: Large cardamom Local name:Budeh aeleh Scientific name: (iii) Common name: Local name: Gawzaban Scientific name: Arnebia bethami, Glacerria glabara	Grinding of bradeh gasseh, budeh aeleh (large cardamom) and Gawzaban and adding tea extract (1 litre) to the mixture. The mixture is then drenched to the ailing animal.	Cattle and Sheep	Drenching once, twice or more depending on the severity of condition.
	Common name: Mustard Local name: Tilgagool Scientific name: Brassica campestris Sodium bicarbonate	Drenching of mustard oil one cup (about 200 ml) after adding a pinch of sodium bicarbonate.	Cattle and Sheep	Drenching once or twice depending on the severity of condition.
	Ear incision with a sharp object.	Ear incision is given in acute cases. This may be done to prevent haemoconcentration.	Cattle and sheep	30-60 ml of blood drained at once from the ear vein on an emergency basis.
Wound, injury, strains, sprains	Incineration or burning	Incineration or burning at the affected site with a red hot iron rod.	Cattle, sheep, buffaloes, goats	Burning once
	Common name: Local name:Pambachallan Scientific name: Rheum emodi	Grinding of pambachallan and pasting on the affected site.	Cattle, sheep, buffaloes, goats	

Disease/Disorder/ Condition	*Plant/Ingredients/Technique used*	*Method/Dose of ingredient*	*Species/Animal*	*Duration of treatment/ Time of recovery/ Reliability*
Luxations, subluxations, sprains, dislocations or swellings	(a) Hanging method	Tying the horns with a rope and hanging from a tree for some time.	Method tried in nearly all animals except poultry.	Once or twice depending on the result.
	(b) Turmeric	Grinding of turmeric (50 grams) and pasting it on the affected site.	Used in nearly all animals except poultry	Pasting the ointment once or twice daily for one week or 10 days.
	(c) Sand and muddy hot bricks	Fomentations with warm sand and muddy hot bricks at the affected site are believed to be helpful.	Cattle, sheep, goats, buffaloes	One to two times daily for about seven to ten days.
Worm infestation (mostly gastrointestinal worms)	Red Chillies , Common salt	Boiling the red chillies and then giving the extract to the animal after adding some common salt to it. The extract (one glass in large ruminants and half glass in small ruminants) has to be drenched early in the morning and can be repeated for one or more days.	Used in cattle, sheep and goats	Drenching once and may be repeated weekly as per the need.
	Common name: Local name: Tethwan Scientific name: Artemesia	Feeding of tethwan extract (Artemesia) about 1 litre early in the morning.	Cattle, sheep, goats	Used once a day for two to three successive days.
Indigestion	Tea extract, Sodium bicarbonate	Administering one to two litres strong tea extract after adding a pinch of sodium bicarbonate.	Cattle and sheep	Used immediately 2 to three times per day up to monitoring of recovery.
For increased health and milk production particularly after parturition (delivering calf).	Common name: Leek Local name: Pran Scientific name:	Leek about ten cloves after frying is then ground and is then fed to the animal as boluses.	Cattle, sheep and goats	Can be repeated after every few days for one or two months or as desired
	Common name: Dandelion Local name: Haend Scientific name:	Dandelion (200 gram daily) is boiled and then after adding a teaspoonful of salt and turmeric is fed to the animal.	Cattle, sheep and goats	Can be fed continuously for days or as desired.
	Zag rice, cowpea, wheat	Mixture of zag rice, cowpea and wheat (ratioof 2:1:2) is ground and is then fed to the animal.	Cattle and sheep	Can be fed continuously for days or as desired.
	Carrots and turnips	Cuttings of carrots and turnips (Half Kg each) into suitable pieces and then feeding to the animals.	Cattle and sheep	Feeding as per the body weight and health condition upto weeks or as desired.
	Jaggery, colostrums, Dalchin, beans (rajmash) and Gawzaban (Arnebia bethami).	The mentioned ingredients are ground, boiled and then mixed with colostrums of animal after the parturition.	Cattle and sheep	Feeding to the animal for at least seven days.

Disease/Disorder/ Condition	*Plant/Ingredients/Technique used*	*Method/Dose of ingredient*	*Species/Animal*	*Duration of treatment/ Time of recovery/ Reliability*
Common cold	Common name: Local name: Javaind Scientific name: Trachyspermum ammi	Feeding javaind to the affected animal alongwith the feed.	Cattle, sheep and goat	Feeding daily for few days until recovery is noted.
For repelling of mosquitoes, flies and insects	Common name: Mustard Local name: Tilgagul Scientific name: Brassica campestris	Residues of mustard plants are burnt in animal sheds to avoid the nuisance of mosquitoes, flies and other insects.	Cattle , sheep, sheeps and horses	Practice done as per the need.
Foot and mouth Disease	Common name:Garlic Local name: Rohen Scientific name: Allium sativa	Crushing of garlic about five cloves and then rubbing on the oral cavity both for prophylactic as well as curative reasons.	Cattle and sheep	Done for few days during periods of outbreak once or twice daily.
Yolk galls (Abscesses due to ploughing)	Incineration and burning	Incineration or burning at the affected site.	Cattle	Done once.
Skin chaps, cuts and abrasions	White grubs	White grubs are placed at the site below the bandage. Dead extracts of white grubs are believed to help in the cure.	Cattle, buffaloes, sheep	The process is repeated every few days.
Haemorrhagic septicemia (gala gotu)	Brown soil, milk whey, common salt	Adding brown soil and common salt (few teaspoonfuls) on the neck of the affected animal after boiling the mixture.	Cattle and buffaloes	Pasting the mixture daily on the neck of animal and affected parts for few days until symptoms of recovery are noted.
Abscesses, cysts	Onion, grape leaves	Grinding onions (One onion per day) and grape leaves. The mixture is then boiled. Afterwards the mixture is pasted on and around the cyst or abscess.	Cattle, sheep, goats and buffaloes	Pasting the ointment daily on cysts and abscesses for few days until the contents of the lesion get absorbed.
Mastitis	Steam from brine (salt water) solution or milk	Fomentation with brine steam or steam from boiling milk(after adding a pinch of salt).	Cattle, sheep and buffaloes	Doing the practice daily for few days two times daily.
Maggot infestation	Kerosene oil Common name: Local name: Tethwan Scientific name: Artemesia	Pouring of Kerone oil or tethwan (Artemesia) on the affected wound. The maggots become unconscious after few minutes and are then picked and removed using forceps.	Cattle, sheep, buffaloes and goats	Once or repeated for few days.
Diarrhoea	Jaggery Common name: Local name: Javaind Scientific name: Trachyspermum	Adminestering of jaggery and javaind (Kashmiri) to the affected animal.	Cattle, buffaloes and sheep	Once a day or few times as per the severity of disease and frequency of diarrheic bowels.
	Strong tea extract and sodium bicarbonate	Strong tea extract (one to two litres) after adding a pinch of sodium bicarbonate is drenched to the affected animal.	Cattle, sheep, goats, buffaloes	Once a day or few times as per the severity of disease and frequency of diarrhoeic bowels.
	Common name: Large Cardamom Local name: Budehaileh Scientific name:	Large cardamom (5 no) (Budehaileh in kashmiri) after grinding them are also conventionally used by some farmers against diarrrhoea.	Cattle, sheep, buffaloes, goats	Once a day or repeated for few days as per the severity of disease and frequency of diarrhoeic bowels.

Disease/Disorder/ Condition	*Plant/Ingredients/Technique used*	*Method/Dose of ingredient*	*Species/Animal*	*Duration of treatment/ Time of recovery/ Reliability*
Eye infections or eye injuries	Sindoor	Pouring of sindoor in the affected eye.	Cattle, sheep, buffaloes, goats	Once a day for few days as per the severity of disease.
Anestrus	Common name: Onion Local name: Gandeh Scientific name: Allium cepa Common name: Leek Local name: Pran Scientific name	Frying of mustard seeds (Around 100 grams) or onions (2-3 onions) and leak (5 to 8 Cloves) . The ingredients are then ground and fed to the animal.	Cattle, sheep, buffaloes, goats	Repeatedly fed for few days or given at weekly intervals.
For retention of placenta	Mahua seeds	Boiling of mahua seeds and then feeding to the animal.	Cattle and sheep	Once or repeated depending on the situation and condition
Lice infestation	Mustard oil, Chewable tobacco	Adding chewable tobacco to mustard oil and then smearing of the mixture topically.	Cattle, sheep, goats	Smearing of the ointment daily once or twice for one or two weeks.
Dry cough	Common Name: Raddish Local name: Mujeh Scientific name: Rafanus sativa	Feeding of raddish (Around half to one Kg per day) after cutting into suitable pieces.	Cattle, sheep, goats	Feeding of daily about one kg in large and about half a kg in small ruminants for about 15 days.
Retention of urine	Baidan extract (Soumf).	Feeding of baidan (One to three litres){Soumf} extract.	Cattle, sheep, goats	Drenching of baidan extract about 1 litre or more depending on the condition
Foot rot	Common name: Local name: Tethwan Scientific name: Artemesia	Washing with salt water added with tethwan extract.	Cattle, sheep, goats	Washing daily the feet of diseased or incontact animals with this extract till the outbreak period is over.

The earliest information for caring of animals in India was provided by Vedic religion. About 100 medicinal plants were known to the Vedic Aryan's. The work on ethno veterinary medicines in various parts of India was done by different workers at different times. Pal (1980) recorded 29 plants for the treatment of cattle and birds among tribal communities of Eastern India. Mishra et al (1996) recorded plants in Ethno veterinary practices in Darbhanga district of North Bihar. Reddy et al (1997) studied crude drugs used by tribals of Cuddapah hills in Andhra Pradesh for the treatment of elephant fevers and Anthrax in cattle. Reddy et al (1998) carried out studies on plants used in Ethno veterinary practice in Warangal district, Andhra Pradesh, India. Beigh et al (2004) studied traditional veterinary medicine among the tribes of Kashmir Himalaya and information on plants used for veterinary practices was obtained through interviews of herders, shepherds, and others that work with farm animals during the period of 1997 through 2001. A total of 25 plants within 19 families were identified for treatment of a variety of animal afflictions. Reddy et al (2006) reported Ethno veterinary medicine for treating livestock in Eastern Ghats of Andhra Pradesh, India. Ahmad et al. (2016) reviewed ethno veterinary practices and use of herbal medicine by pastoralists of Himalaya. Khateeb et al. (2017) conducted study in the Doda district of Jammu of J&K state for documentation of unique Indigenous technical knowledge practices used for the treatment of various animal diseases. Thirty six indigenous technical knowledge practices were identified and documented during the study. Twenty two (22) species of plants used for the treatment of 14 different ailments has been reported. The documented practices were for the treatment of maggot infestation, ectoparasites and

endoparasites, retention of placenta, anestrus, mastitis, milk fever, foot and mouth disease, black quarter, poisoning, snake bite and for increasing milk production. Similarly, Ahmad et al. (2017) documented 32 plant species belonging to 19 families that are used as a source of herbal remedies by pastoralists of Jammu and Kashmir.

Muhammad *et al*., (2018) documented the traditional uses of medicinal plants used by indigenous communities for veterinary practices at Bajaur Agency , Pakistan. Similarly Susan and Barbara have authored a book chapter entitled "Veterinary Herbal Medicine: A Systems-Based Approach" part four of which describes Veterinary Clinical Uses of Medicinal Plants.

CONCLUSIONS

Indigenous Technical Knowledge (ITK) used in animal medicine has been a centuries old tradition in Kashmir Valley like in other parts of the World. The above preliminary exercise done in this regard is only an illustrative and not an exhaustive one. The present need is to validate the documented knowledge through research and search the rational basis of indigenous therapy. Furthermore an exhaustive study needs to be done to document the indigenous knowledge used in veterinary practice so that it is preserved for future generations.

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