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ETHNOVETERINARY MEDICINE: A BOON FOR ANIMAL HEALTH

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Abstract: Ethnoveterinary medicine (EVM) is a traditional practices for treat the animals from various disease conditions. In India especially tribal, rural and semi urban areas were followed these practices for more than 100 decades and it is very popular one before arising of western medicine culture. Before the introduction of western medicine, all livestock keepers relied on these traditional practices. Plant materials have several medicinal properties that identified and used for treating the animals. In this paper have few herbal combinations/ preparations, which useful for treatment or prevention of disease occurrence that will improve the animal's health.

Keywords: livestock, ethnoveterinary medicine, herbal mixture preparation.

Introduction

India has large livestock population and it is the major income source of tribal, rural and semi urban peoples. Livestock rearing in rural and tribal areas is quite different than urban areas due to their economical status, at the same time to keep their animals healthy, traditional healing practices have been applied for centuries and passed down orally from generation to generation (Balaji and Chakravarthi, 2010; Kaur *et al*, 2015). Before the introduction of western medicine, all livestock keepers relied on these traditional practices. This method serves better as alternative to synthetic and modern concept of treatments (Pandey *et al*., 2007). According to the World Health Organization, at least 80% of people in developing countries depend largely on indigenous practices for the control and treatment of various diseases affecting both human beings and their animals. "Ethno veterinary medicine" (EVM) is the knowledge developed by local livestock holders and contrast the allopathic veterinary medicine taught in veterinary colleges/universities. EVM is developed by farmers and barns rather than in scientific lab. It is less systematic, less formalized and usually transferred by word of mouth rather than writing (Phondani *et al*., 2010). The traditional healing practices with respect to animal health are called "ETHNOVETERINARY MEDICINE". Livestock owners use a variety of plants and their products to form traditional medicines for primary health care treatment and maintaining animals productive.

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Elements of ethnoveterinary medicine:

The three basic elements of EVM are:

1. Application of natural products
2. Appeal to spiritual forces
3. Manipulation and surgery

Application of natural products

a. **Plants**

Plants are the most commonly used ingredients for the preparation of ethno vet medicines. All parts of the plants including leaves, bark, fruits, flowers, seeds are used in medicinal preparation. At present over 35000 plants are known to have healing properties.

b. **Edible earth and minerals**

Edible earth especially from termite and ant hills, is commonly used in ethno vet preparations. Limestone is a commonly used edible type of earth used in decoctions and concoctions.

c. **Parts and products of animals**

Such as skin and hides, bones, milk, butter and even urine and dung are the ingredients of ethno vet medicines.

d. **Other ingredients**

Honey, vegetable oils and butters and salts are used for their healing and preservative properties.

Uses of plant materials in ethnoveterinary medicine practices

Various plants materials and their extracts have anti-microbial, antiviral or antifungal activities, which are identified and to treat animals from various disease conditions. Some of the important herbs that can be used for curing ailments and economically important diseases of cattle are listed in Table 1. Some herbal mixture preparation is given below for few animal diseases (Puniyamoorthy and Ranganathan, 2016).

Herbal mixture for Mastitis

Aloe vera (200g), Slaked lime (10g) and Turmeric powder (50g). Grind the ingredients and make it a paste. Apply it 10 times a day for 4 days over the udder. Prepare the paste freshly every morning.

Herbal mixture for Diarrhoea: (for 1 cow/4 goat)

Mixture 1: Cumin seeds (20g), Poppy seeds (20g), Fenugreek (20g), Pepper (5 nos), Turmeric (5g) and Asafoetida (5g). Roast the ingredients and make it powder.

Mixture 2: Onion (10 nos), Garlic (6 nos), Tamarind (200g) and Palm jiggery (250g). Grind the above ingredients. Make the mixture 1 and 2 into small bolus. Coat the bolus with salt (100g). Administer all bolus to the animal orally.

Herbal mixture for Deworming

Mixture 1: Cumin seeds (10g), Mustard (10g), Pepper (10 nos), Turmeric (5g) and Garlic (5g).

Mixture 2: Leucas leaves (50g), Neem leaves (50g), Banana stem (100g), Bitter gourd (50g) and Palm jaggery (100g)**.** Grind the cumin seeds, mustard, pepper and then mix the remaining ingredients with palm jaggery and make it into a paste. Make the paste into small balls. Coat the balls with salt (100g). Put the balls into the mouth of the animal. Give it to animal once in a month.

Table 1: Plants used for treatment of diseases, ailments and infections (Raikwar and Maurya, 2015)

English name	Latin name	Veterinary use	Useful part
Neem, Margosa tree	*Azadiracta indica*	Wound healing, lice killing, skin diseases	Leaves
Turmeric	*Curcuma longa*	Wound healing	Rhizome
Tulsi, Holi basil	*Ocimum sanctum*	Wound healing, anxiolytic, immunomodulator, adaptogen (antistressor), cures cold, constipation.	Leaves
Aloe	*Aloe vera*	Wound healing, gastritis	Leaf pulp
Drum stick tree	*Moringa oleifera*	Wound healing, anti-inflammatory, antipyretic	Seeds
Custard apple	*Annona squamosa*	Wound healing, Foot and mouth diseases	Leaves
Garlic	*Allium sativum*	Wound healing	Tuber
Indian gooseberry, Amla	*Emblica officinale*	Antiflatulence, appetizer, digestant, immunomodulator	Fruit pulp
Ginger	*Zingiber officinale*	Food poisoning, tympany, sterility, FMD, skin infection, stomach-ache, arthritis, internal parasites and rheumatism.	Rhizome
Onion	*Allium cepa*	Food poisoning, skin diseases, hoof diseases, internal parasites, diarrhoea, FMD, dysentery and loss of appetite.	Bulb
Rice	*Oryza sativa*	Retention of placenta, skin diseases, strength, wounds, neck sore, post partum complaints and cough.	
Finger millet	*Eleusine coracana*	Sterility ,bone fracture, dysentery and skin diseases.	Seed
Asafoetida	*Ferula foetida*	Relieves gastroenteritis, neck sore, paralysis, tympany, internal parasites.	Exudate
Winter cherry	*Withania somnifera*	Immunomodulator, antistresser, weight gain	Roots
Forest flame, Bastard tree	*Butea monosperma*	Fracture healing	Bark
Indian acalypha, Indian nettle	*Acalypha indica*	Leaf paste is mixed with common salt and applied externally to heal wounds to cow, goat, chicken	Leaf
Gigantic swallow wort, Madar	*Calotropis gigantea*	Root is kept in nostrils for few minutes to get relief from running nose to cow, goat	Root
Balloon plant, love in a puff	*Cardiospermum halicacabum*	Leaves are ground with pepper and garlic, made into paste and given to cure fever to cow, goat	Leaves
Tanners cassia	*Cassia auriculata*	Tender shoot tips are ground with buttermilk and jiggery and given to cure dysentery to cow	Shoot tips
Indian ash tree	*Lannea*	Stem bark is ground with ginger and garlic and the paste is given to cure	Stem bark

	coromandelica	fever in pigs	
Veldt grape	*Cissus quadrangularis*	Leaves are ground with pepper and garlic and made into decoction. The decoction is given to cure fever to goat. Leaves are also grinded and kept before cervix to dilate it and relieve dystochia.	Leaves
Coriander leaves	*Coriandrum sativum*	Fruits are powdered and given after immediate pregnancy for 3-4 times to facilitate conception	Fruits
Shy/bashful/shrinking plant	*Mimosa pudica*	Leaf is ground with pepper, onion, saffron and fed to barren cows during fever.	Leaf
Coconut	*Cocus nucifera*	Fruit is used to treat diarrhoea, skin problems and antihelmintic.	Fruit
Banana	*Musa paradisiaca*	Galactogogue, tympany, diarrhoea, haematuria, prolapse of uterus, heat-stroke, sterility, dysentery, loss of appetite, indigestion, mastitis, food poisoning and post partum complaints.	

Herbal mixture for FMD: (For 1cow/2calf/4goat/sheep):

Oral administration: Cumin seeds (10g), Fenugreek (10g), Pepper (10g), Turmeric powder (10g), Garlic (4 nos), Jaggery (100g) and Grinded coconut (1 no). Soak the cumin seeds, fenugreek and pepper for 1 hour and grind it. Then add turmeric powder and garlic and again grind and make it into paste. Add grinded coconut and mix well. Give it in 3 times/ day for 5 days orally.

Topical application: Garlic (10 nos), Turmeric powder (10g), Holy basil/tulsi leaves (10 nos), Indian acalypha leaves (10 nos), Henna leaves (10 nos), Neem leaves (10 nos), Gingelly oil (1 litre). Grind all the ingredients and boil it in gingelly oil and cool it. Then apply over the wound in legs.

Herbal mixture for Ranikhet disease: (For 10 birds)

Cumin seeds (10g), Pepper (5g), Turmeric powder (5g), Gale of the wind/stonebreaker leaf (50 g), Onion (5 nos) and Garlic (5 nos). Grind the ingredients and make into mixture. Mix the mixture with concentrate or broken rice and give it to the birds. If the birds are severely affected make the mixture into small balls give it for 3 days orally.

Herbal mixture for External Parasites Removal: (For 1 cow)

Mixture 1: *Aloe vera* (200g), Leucas leaves (50g), Holy basil/tulsi (50g), Indian acalypha/Indian nettle (50g) and Lantana (50g)

Mixture 2: Calamus (25g), Pepper (10 nos), Turmeric (10g) and Ajwain leaves (5 nos). Grind the above ingredients. Mix both the mixtures and boil in 4 litres of water until the contents become 1 litre. Then take 100mL of the boiled mixture and add 1 litre of water and spray it over the animal body in sunny days.

NOTE: In 1 litre of limewater add 100g of turmeric powder and 100g of calamus powder. Mix well the contents and paint it over the walls of the shed.

Herbal mixture for Fever: (For 1 cow)

Cumin seeds (10 g), Pepper (10g), Coriander seeds (10g), Turmeric (10g), Small onion (5 nos), Betel leaves (5 leaves), Drumstick leaves (50g), Veldt grape (50g), Holy basil/tulsi (50g), Green chirayta/Indian Echinacea (50g) and Jaggery – sufficient amount.

Soak the cumin seeds, pepper and coriander seeds in water for 1 hour and drain the water and grind it. Mix the remaining ingredients with the grinded mixture. Administer all the contents to the animal orally by coating with salt.

Advantages or Strength of EVM:

1. Useful for cold, skin diseases, worms, wounds, reproductive disorders, nutritional deficiencies and mild diarrhoea
2. Cheap and readily available
3. No residue problem

Disadvantages /limitations of EVM:

1. Some remedies are inconvenient to prepare and use.
2. Availability of plant is seasonal.

3. Some practices are harmful.
4. Dosages are uncertain and remedies are not standard (based on empirical basis).
5. The diagnosis may be inadequate (as it is based on symptoms)rather than underlying the cause of
6. Ethnomedicines are not fast acting and potent and less suitable to treat epidemic and endemic infectious diseases. Eg. suitable for digestive disorders.

Conclusion

Advancement of modern medicines by commercial pharmaceuticals, socioeconomic and cultural changes in rural/tribal communities, ethno veterinary medicine practice is almost vanished. But it is still persistence due to high costs, inaccessibility and other factors linked with the modern veterinary system. In-depth studies are needed to determine how the economic potential ethno veterinary medicine can be best utilized.

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