ETHNOVETERINARY MEDICINE: IN PRESENT PERSPECTIVE

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In India, ethno-veterinary practices were in vogue since time immemorial. Ethnoveterinary medicine deals with people’s knowledge, skills, methods, practices and beliefs about the care of their animals. In recent years, interests in ethno-veterinary investigations have been increased enormously on national and international level. Ancient ethnoveterinary literature suggests that the tribal, non-tribal and rural population has been using wild ethnoflora since long ago for curing various diseases and disorders in the pet/domesticated animals. All these plants should be screened scientifically in order to investigate newer sources of ethno-veterinary drugs and medicines. The ethnomedicinal plants need further intensive investigation for their pharmacological activity and proper documentation of the same for the betterment of animal health in the future.

Keywords: Ethnoveterinary medicine, Traditional drugs, Herbal plants, Ethnobotany

INTRODUCTION

Millions of people around the world have an intimate relationship with their livestock. Many people depend on their livestock: animals provide them with food, clothing, labour, fertilizers and cash, and act as a store of wealth and a medium of exchange. Animals are a vital part of culture and in many societies are regarded as equal to humans.

To keep animals healthy, traditional healing practices have been applied for centuries and have been passed down orally from generation to generation. Before the introduction of western medicine, all livestock keepers relied on these traditional practices. According to the World Health Organization, at the moment, at least 80% of people in developing countries depend largely on these practices for the control and treatment of various diseases that affect both animals and humans. These traditional healing practices w.r.t. animal health are called 'ethnoveterinary medicine'.

Ethnoveterinary medicine deals with people’s knowledge, skills, methods, practices and beliefs about the care of their animals (McCorkle, 1986).

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Ethnoveterinary medicine often provides cheaper options than comparable western drugs, and the products are locally available and more easily accessible. In the face of these and other factors there is increasing interest in the field of ethnoveterinary research and development (Zschocke et al., 2000; Masika et al., 2000; Tabuti et al., 2003; Masika and Afolayan, 2003; Yineger et al., 2007; and Kone and Atindehou, 2008).

Historic Evidence of Ethnoveterinary Medicine: In India, ethno-veterinary practices were in vogue since time immemorial. In ancient India, the Vedic literature, particularly Atharvaveda is a repository of traditional medicine including prescriptions for treatment of animal diseases. Scriptures such as Skanda Purana, Devi Purana, Matsya Purana, Agni Purana, Garuda Purana, Linga Purana, and books written by Charaka, Susruta, Palakapya (1000 BC), and Shalihotra (2350 BC) documented treatment of animal diseases using medicinal plants. Vedic texts also describe divine healing powers. Yajurveda cites importance of growth and development of medicinal plants and Atharvaveda mentions about the value of medicines in curing the diseases. Shalihotra undoubtedly appears to be the first veterinarian of pre-historic times (Somwanshi, 2002).

In India the history of traditional veterinary science dates back to the period of Mahabharat. During the battle of mahabharat thousands of animals got hurt and also suffered from various diseases which were then treated with medicinal plants. Prince Nakula and Prince Sahadeva were the Physicians of Horses and Cows respectively. Indian medical treatises like Charaka, Sushruta and Harita samhita contain references of care of animals. The greatest and most revered teacher of veterinary science was Salihotra, the father of veterinary science followed by Palkapya and Atreye. Almost all aspects of surgery and medicine including veterinary ethics were dealt-in ancient medical veterinary treatises.

Elements of Ethnoveterinary Medicine: Worldwide interest in documenting and validating ethnoveterinary practices arose in the early 1980s, as people started to realize that ethnovet knowledge was disappearing. Elderly community members with this knowledge were dying and the introduction of modern practices made it difficult for the younger generations to appreciate and use the beliefs and practices of their ancestors. 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: Medicinal plants and by-products such as:

**Plants**

Plants are the most commonly used ingredients in the preparation of ethnovet medicines. All parts of the plants, including leaves, bark, fruits, flowers, seeds are used in medicinal preparations. At present over 35,000 plants are known to have healing properties.

**Edible Earth and Minerals**

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

**Parts and Products of Animals**

Parts and products of animals, such as skin and hides, bones, milk, butter and even urine and dung are ingredients of ethnovet medicines.


**Other Ingredients**

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

**Growing Importance of Ethnoveterinary Medicine in Contemporary Times**

Animal husbandry sub-system is well developed in tribal communities moreover they do not have reach to modern medical facilities as well as the extent of reach of modern medicine still eludes them due to various reasons. The indigenous knowledge and practice based on locally available bioresources are effective to cure diseases and are easily administrable as seems from the practices that have been carried out. Human involvement in development in depletion of the plant resources of the nature and rapid modernization of creative systems have gradually replaced the ancient but effective system of tribal medicine. Due to various social, economic and political factors this tradition is facing the threat of rapid erosion. The ethnomedicinal plants need further intensive investigation for their pharmacological activity on the basis of which ethnotherapeutics being practiced by the tribals. This will lead to development of new drugs of herbal origin (Rao, 2011).

The importance of ethnoveterinary medicine is gradually being realized in the current times. Now with a stable government at the centre after 2014 elections, it has been a welcome step that the Central government is taking an active interest in promoting the long neglected indigenous systems of medicine in the form of AYUSH. With an eye on reviving indigenous and traditional medicine, Prime Minister Narendra Modi earmarked a Minister of State (Independent Charge) to look after Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha & Homeopathy (AYUSH). Shripad Yesso Naik has been made Minister of State (Independent Charge) for Ayush, said a communiqué issued by Rashtrapati Bhavan. The Ayurveda, Yoga and Naturopathy, Unani, Siddha & Homeopathy (AYUSH) industry represents the traditional form of Indian medicine, and has been part of India’s socio-cultural heritage. The need of the hour is that Ministry of Health and Family Welfare, Ministry of HRD, Ministry of Agriculture and Ministry of Science and Technology along with Civic Bodies come together to join hands with each other to focus on the promotion of Indian system of medicine along with R&D in the field as well.

In recent years, interests in ethno-veterinary investigations have been increased enormously on national and international level. Ancient ethnobotanical literature suggests that the tribal, non-tribal and rural populace has been using wild ethnoflora since long ago for curing various diseases and disorders in the pet/domesticated animals. All these plants should be screened scientifically in order to investigate newer sources of ethno-veterinary drugs and medicines. Fortunately, since last three to four decades considerable progress has been made in the ethno-veterinary sciences due to recent ethnobotanical and ethnomedicinal explorations (Salave et al., 2011).

**Herbal Plants Used for the Treatment of Diseases, Ailments and Infections:** Number of plants, plant extracts and constituents have been identified as having anti-microbial, antiviral or antifungal activities and are often considered as immune enhancing (Rios and Recio, 2005).

Some of the important herbs that can be used for curing ailments and economically important diseases of cattle are listed in Table 1.
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Sanskrit Name</th>
<th>Latin Name</th>
<th>English Name</th>
<th>Veterinary Use</th>
<th>Hindi Name</th>
<th>Useful Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nimb</td>
<td>Azadiracta indica</td>
<td>Margosa tree</td>
<td>Wound healing; lice killing; skin disease</td>
<td>Neem</td>
<td>Leaves</td>
</tr>
<tr>
<td>2.</td>
<td>Tulsi</td>
<td>Ocimum sanctum</td>
<td>Holi basil</td>
<td>Wound healing; anxiolytic; immuomodulator; adaptogen (antistressor)</td>
<td>Tulsi</td>
<td>Leaves</td>
</tr>
<tr>
<td>3.</td>
<td>Bilva</td>
<td>Aegle marmelos</td>
<td>Bael, Bengal quince</td>
<td>Wound healing; antinflammatory; antipyretic; antidiarrhoeal</td>
<td>Bael</td>
<td>Leaves</td>
</tr>
<tr>
<td>4.</td>
<td>Haridra</td>
<td>Curcma longa</td>
<td>Turmeric</td>
<td>Wound healing</td>
<td>Haldi</td>
<td>Rhizome</td>
</tr>
<tr>
<td>5.</td>
<td>Kumari</td>
<td>Aloe vera</td>
<td>Aloe</td>
<td>Wound healing; gastritis</td>
<td>Guar patha</td>
<td>Leaf pulp</td>
</tr>
<tr>
<td>6.</td>
<td>Shigru</td>
<td>Moringa oleifera</td>
<td>Drum stick tree</td>
<td>Wound healing; anti-inflammatory; antipyretic</td>
<td>Sahjan</td>
<td>seeds</td>
</tr>
<tr>
<td>7.</td>
<td>Vasa</td>
<td>Adhatoda vasica</td>
<td>Malabar nut</td>
<td>Wound healing; pneumonia</td>
<td>Adusa</td>
<td>Leaves and whole plant</td>
</tr>
<tr>
<td>8.</td>
<td>Sitafal</td>
<td>Annona squamosa</td>
<td>Custard apple</td>
<td>Wound healing; foot and mouth diseases</td>
<td>Sitafal</td>
<td>Leaves</td>
</tr>
<tr>
<td>9.</td>
<td>Manduk parni</td>
<td>Centella Asiatica</td>
<td>Indian Penny Wort</td>
<td>Wound healing; anxiolytic; memory enhancer</td>
<td>Brahmi Buti</td>
<td>Whole plant</td>
</tr>
<tr>
<td>10.</td>
<td>Rasona</td>
<td>Allium sativum</td>
<td>Garlic</td>
<td>Wound healing</td>
<td>Lehsun</td>
<td>Tuber</td>
</tr>
<tr>
<td>11.</td>
<td>Pippali</td>
<td>Piper longum</td>
<td>Long pepper</td>
<td>Antiflatulence; appetizer; digestant</td>
<td>Lindi pipper</td>
<td>Fruits</td>
</tr>
<tr>
<td>12.</td>
<td>Gokshura</td>
<td>Tribulus terrestris</td>
<td>Calotrops root</td>
<td>Antiflatulence; appetizer; digestant</td>
<td>Gokhru</td>
<td>Root</td>
</tr>
<tr>
<td>13.</td>
<td>Aamalaki</td>
<td>Emblica officinalis</td>
<td>Indian gooseberry</td>
<td>Antiflatulence; appetizer; digestant Immuno-modulator</td>
<td>Amla</td>
<td>Fruit pulp</td>
</tr>
<tr>
<td>14.</td>
<td>Bibhitaki</td>
<td>Terminalia bellerica</td>
<td>Beleric myrobalan</td>
<td>Antiflatulence; appetizer; digestant</td>
<td>Baheda</td>
<td>Fruit pulp</td>
</tr>
<tr>
<td>15.</td>
<td>Adrak</td>
<td>Zingiber officinale</td>
<td>Ginger</td>
<td>Antiflatulence; appetizer; digestant</td>
<td>Adrak</td>
<td>rhizome</td>
</tr>
<tr>
<td>16.</td>
<td>Guduchi</td>
<td>Tinospora cardifolia</td>
<td>Tinospora</td>
<td>Aphrodisiac; appetizer; digestant</td>
<td>Guduchi</td>
<td>Stem</td>
</tr>
<tr>
<td>17.</td>
<td>Jeerak</td>
<td>Cuminum cyminum</td>
<td>Cumin</td>
<td>Antiflatulence; appetizer; digestant</td>
<td>Jeera</td>
<td>Fruits</td>
</tr>
<tr>
<td>18.</td>
<td>Vidang</td>
<td>Embelia ribs</td>
<td>Babreng</td>
<td>Antiflatulence; appetizer; digestant</td>
<td>Vayvidang</td>
<td>Fruits</td>
</tr>
<tr>
<td>19.</td>
<td>Hingu</td>
<td>Ferula foetida</td>
<td>Asafoetida</td>
<td>Relives gastroenteritis</td>
<td>Heeng</td>
<td>Exduate</td>
</tr>
</tbody>
</table>

Table 1: Herbs Used for Ailments and Economically Important Diseases of Cattle in India
CONCLUSION

The knowledge regarding ethno veterinary medicine is getting lost due to the advancement of modern medicines by commercial pharmaceuticals and many tribal communities changing their professions because of rapid socioeconomic and cultural changes. But ethnoveterinary medicine is still persistence due to some factors which include high costs, inaccessibility and other factors linked with the modern veterinary system.

The information’s regarding the uses of plants for veterinary purpose are transmitted from one generation to another verbally. If there would be proper documentation of this knowledge, then it would be beneficial for the upcoming generation. The wealth of this tribal knowledge of medicinal plants points to a great potential for research and the discovery of new drugs to cure the diseases of animals. So, further scientific assessment of these medicines for phytochemical, biological and preclinical and clinical studies is, however, greatly needed including their protection under IPR regime.

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