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## ETHNO VETERINARY PRACTICES AMONG THE RURAL PEOPLE OF GANJAM DISTRICT (ORISSA) INDIA: A CASE STUDY ON SOME COMMON VETERINARY AILMENTS

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**ABSTRACT**

Animal and plant relationship has been continuing since time immemorial. Ancient man had discovered natural products to satisfy his needs including relief from his personal ailments as well as of his fellow domestic animals. This has been tested through lapse of time and later on these findings were transmitted to the succeeding generation through the words of mouth. Very little of this knowledge (Ethno-veterinary knowledge) has been recorded so far and it seems that these valuable time-tested findings are on the verge of extinction. A part of such knowledge is tried to be retrieved in this project. The present study was made during 2002 – 2007 to collect data regarding this undiscovered field of herbal treatment in the study district. Different locations including the remote rural area were visited, people of different age groups including house-wives and veterinarians were contacted and raw data was collected regarding different common cattle diseases and the practice of the local people to treat these diseases. Later these data were analyzed for on spot treatment of the ailing animals with the locally available herbal preparations and with keen observation these preparations were administered to the ailing animals. Surprisingly it was found that the locally available herbal medicines (ethno-veterinary medicines) were much effective in comparison with their counterparts, the allopathic treatment. Local people prefer these time-tested herbal medicines to treat their ailing cattle.

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## INTRODUCTION

Nature always stands as a landmark to exemplify the incomparable phenomena of symbiosis. Natural products from plant, animal and minerals have been the basis of the treatment of human disease since time immemorial. It is estimated that more than 75% of people in developing countries still rely upon traditional medicine based largely on plants species for their primary health care. Herbal medicines are currently in demand and their popularity is increasing day by day. About 500 plants with medicinal use are mentioned in ancient literature and around 800 plants have been used in indigenous systems of medicine. India is a vast repository of medicinal plants that are used in traditional medical treatments (Chopra *et al.*, 1956). The various indigenous systems such as Siddha, Ayurveda, Unani and Allopathy use several plant species to treat different ailments (Rabe and Staden, 1997). Plant derived drugs came into use in the modern medicine through the uses of plant material as indigenous cure in folklore or traditional systems of medicine.

The possible role of herbal treatment grew in the tribal societies living in the dense forests amidst the natural habitat along with the animals living in the same locality. As tribal human societies grew, the system of domestication of animals began and with the passage of time knowledge of diseases and their treatment developed from the keen observation of the ailing animals and their dietary behaviours. Thus the knowledge over what plants were beneficial for what ailments grew and the person(s) who gathered this information were became the specialists. Later they might have experimented with these plant/plant parts for such ailments. (Fielding, 1998)

In India, the herbalist tradition was Ayurvedic, focusing on the use of metals, herbs and parts of animals generally considered inedible, prepared in solution. These herbs and other compounds are used in varying proportions to remedy specific ills, and may be applied internally as infusions, topically as ointments, inhaled as smoke, or pressed to the body as powders. (Majumdar, 1989)

Ancient records on the traditional herbal treatment in India are found in the Vedas. The Rig-Veda, the oldest document of human knowledge, written between 4500 and 1600 BC mentions the use of medicinal plants in the treatment of man and animals. Ayurveda is an ancient holistic Indian traditional system of medicine originated around 5000 years ago. Ayurveda, means “the Science of life”, which offers rich and comprehensive outlook to a healthy life. The basic concept of Ayurveda is maintaining the balance of life (mind and body) with the environment. Ayurveda gives the account of actual beginning of the ancient medical science of India, which according to Western scholars was written between 2500 to 600 BC. A similar system of medicines and treatment for animals also flourished during that time which was called as the “Pashu Ayurveda” for general animal treatment, Hasti(Gaja)-Ayurveda for treatment of elephants, Aswa-Ayurveda for horse. During the post-Vedic era medicine occupied an honorable position and Charaka and Shusruta Samhitas were followed from about seventh century B.C. At this time there was development of material medica. Nakula Samhita is considered the first treatise dealing with treatment of animals with herbal preparations during the Mahabharata period. Inscriptions of Ashoka’s period indicate the existence of veterinary hospitals which were supported by the king and also the existence of specialists for treatment of various categories of animals like horses, elephants, cows and birds. (Majumdar, 1989)

Subsequently, the modern system of allopathy was introduced in India by the British. For sometime, the rulers in India patronized the traditional system of medicine in pockets, but abolition of the princely states orphaned the science. In the latter part of the 20th century, rejuvenation of the science began in India and now this ancient Indian method of treatment is steadily gaining world-wide recognition.

The term Ethnoveterinary was introduced by Dr. Constance M. McCorkle. It was first used in her article “An introduction to Ethnoveterinary research and development” that mentioned it to be based on indigenous knowledge that is passed on from generation to generation through verbal verdicts. Ethnoveterinary medicine (EVM) is a holistic comprehension of the indigenous systems of animal health, their interpretation through western medicine and the development of effective and appropriate technologies (McCorkle, 1986). According to Mathias-Mundy and McCorkle (1989) Ethnoveterinary medicine (EVM) deals with the folk beliefs,

knowledge, skills, methods and practices pertaining to the health care of animals. EVM is in practice by majority of the farmers in one or the other form and have been found more useful where modern veterinary techniques are unavailable, or too expensive or difficult for the farmers to access (Wanyama, 1997a,b). Some time EVM has been misunderstood to be linked to the use of only herbs, however it has more to offer regarding information, practices, tools, technologies, believes, breeds and Human resources (Mathias-Mundy and McCorkle 1989, Martin *et al.*, 2001).

Basing upon these backgrounds an attempt was made to find out the hidden knowledge of this branch of science, the EVM among the inhabitants of Ganjam District, Orissa. The present study was made during 2002 – 2007 to collect data regarding this undiscovered field of herbal treatment in the area.

### Study Area

On the basis of area Orissa occupies the 9<sup>th</sup> largest state in India. Ganjam district (Fig.1) extends from 19.4°N to 20.17°NL and 84.7°E to 85.12°EL spreading over a geographical area of 8070.60km<sup>2</sup> having a total of 22 blocks, 475 gram panchayats, 3212 villages, 18 urban bodies and 13 assembly constituencies. The district has a population of 31, 60,635 (as per 2001 census) with a population density of 385 persons/km<sup>2</sup>. The district is characterized by equable temperature throughout the year, particularly in the coastal regions and by high humidity. Normal rainfall of this district is 1444mms. The recorded forest area is 58136km<sup>2</sup>. which is 37.34% of the states geographical area. Agriculture and animal husbandry are the most important economic sectors of the district. Total livestock population of the district is 1334000 (as per 2003 livestock census).

The district has 37 veterinary hospitals/ dispensaries and 246 livestock aid centres. The density of livestock population/ km<sup>2</sup> is 163. Most of the inhabitants live in rural and semi-urban areas and they chiefly depend upon the above two sectors to earn their livelihood. Disease is the most common factor that affects greatly to these two sectors. Common people generally depend upon the traditional methods of treatment of their animals.

## MATERIALS AND METHOD

Four most common cattle diseases occurring in this district which affects the socio-economy of the inhabitants to a large extent were chosen for the present study. The method adopted include -



Figure 1: Study Area

Selected areas were frequently visited to collect data regarding the:  
 common cattle diseases and their symptoms  
 traditional healers (THs), persons with knowledge of traditional method of treatment in the areas  
 traditional method of treatment with their method of preparation, dose and administration  
 plants and plant parts used for the treatment  
 results of such treatment *i.e.* effectiveness of EVM  
 comparison between EVM and modern veterinary treatment etc.

After an interval of six months the same areas were revisited to collect the same data to have a concurrent data regarding the study. Several meetings/ group discussions were also made with the local livestock holders, their wives, traditional healers (THs/ Pashu Vaidyas) and local veterinarians to have a detailed knowledge about the system of traditional treatment. The plant samples were collected for identification and confirmation in the Department of Botany, Berhampur University. The data so collected was screened for future reference. Regular methods of such treatment were identified and searched from published data for confirmation. Some common and most frequently used preparations were listed for the on spot examination with the ailing cattle at latter stage. Results thus obtained from the on-spot examination were recorded and accordingly a statistics was prepared regarding the gradation of cure with the traditional medicines like: fully cured, symptomatically cured, less effective and non-effective. Only preparations those produced results for fully cured and symptomatically cured were taken into account and documented according to their effectiveness.

### **Ethno veterinary treatments**

#### **Coli-Bacillosis / Septisemic Coli-Bacillosis**

Dry ginger (Sonth) 50 g, cumin seeds 25g, salt as per requirement ground together and mixed with luke-warm water (about 100-150mL.) given to the animal to drink or given with the help of a pipe or bottle twice or thrice as per the condition of the calf with an interval of 4 - 6 hr.

*Cymbopogon ciratus* leaves 10-12 ground with rice-water and salt given to the infected calf thrice daily for 2 - 3 days. 50 g. turmeric powder 200g molasses, 100g fresh soft *Cyanodon dactylon* mixed together and given to the animal as feed. If the calf is unable to eat then the same may be ground in water and administered orally twice daily.

Rice water, salt and cumin seeds 25gms ground finely and given to the calf as syrup twice daily for 3 - 5 days.

#### **Retention of placenta**

Seven brinjal flowers (*Solanum melongena* L.), a piece of *Alangium salviifolium* root and seven rice grains (*Oriza sativa*) are ground together with little amount of water and administered orally. [ It is also said that if all the above materials are tied together with the rope of the cow the placenta is discharged] 5 - 10 g (as per the weight of the cow) of *Achyranthes aspera* L. root are boiled with 1/2 glass of water to be reduced to half and administered orally to the animal.

10 g each of *Anethum graveolens* and dry ginger (Sonth) boiled in 1 cup of water. It was cooled and strained. The filtrate if mixed with 40 - 50 g of molasses and administered orally.

Paraboiled rice pudding in luke-warm condition is fed to the animal.

3 to 4 pieces of *Abutilon indicum* root of 3-4 inches ground with water and administered orally.

Whole plant of *Cissus quadrangularis* L. is crushed into paste and given orally to facilitate removal of placenta. Seed paste of *Tribulus terrestris* is given orally facilitate early and easy removal of placenta.

#### **Post-parturation**

The animal is fed with pepper powder with ghee (lukewarm) 3-4 times daily.

Boiled rice-pudding mixed with ginger paste are given regularly for effective result.

Whole plant of *Barleria prionites* ground with 2-3 g of pepper are given twice daily.

Rice water mixed with salt, *Cuminum cyminum* and Asafoetida (hing) (5g each) powder in luke-warm

condition given twice daily.

Fresh rice mixed with ghee and *Nigella sativa* powder given regularly.

Complete hygienic condition of the cow and its shed is maintained for early recovery. In most of the cases the cow recovers within 7-10 days after treatment. Proper care of the cow and calf is required.

### **Hump sore**

Neem leaves are boiled with water. This water is used for cleaning of the infected parts.

Sal resin powder, camphor powder mixed with freshly prepared coconut oil to prepare an ointment for external use over the affected parts.

Catechu powder, leaf extract of *Barleria prionites*, leaf extract of neem, milk butter are mixed together and applied externally over the infected part.

Sap extracted from leaves and stem of *Scirpus grossus* is mixed with *Allium sativum* and applied topically.

Turmeric powder *Curcuma domestica* applied topically.

Extracts of *Tegetes erecta* leaves applied topically.

Extracts of *Tridax procumbens* L. leaves is applied over the affected part.

Seeds of *Anona squamosa* is ground to powder and applied over the worm-infected parts.

Root and bark of *Syzygium jambolanum* are ground with little water to make a paste and applied topically.

Roots of *Strychnos nux-vomica*, roots of *Hellianthus annuus* is mixed with petals of *Butea monosperma* and mustard oil (*Brassica campestris* L.) are mixed to form an ointment and applied topically over the wound.

Latex of *Calotropis gigantea* is applied topically.

Leaf paste of *Luffa acutangula* is applied to the neck region of the infected cattle.

## **RESULTS AND DISCUSSION**

The present study on some common veterinary ailments and their treatment with herbal folk-medicines in Ganjam district has made a remarkable achievement in gaining the knowledge about most common herbal preparations used by the local people. During the study it was observed that-

Older persons (50-70years) are knowledgeable about EVM.

They have sufficient information about the diseases, their symptoms, method of preparation and administration of herbal medicines prepared from the plants/plant parts available around them.

They prefer EVM for treatment of their cattle as their first choice. However in severe cases they visit the local veterinarians.

Economic condition of these people suits their need of EVM.

The local people have acquired the knowledge of EVM from their forefathers and have strong belief on this method of treatment.

In most of cases these herbal preparations have no side effects and are with miraculous effects in treating the diseases.

The present study has opened a gate to find out the almost lost branch of medicinal science. The socio-economic condition of the local people, their strong belief, easily availability of herbal medicines, past experience with these preparations help them to adopt EVM as their first choice. Some of these preparations were previously identified by different workers and their efficacy was proved. On-field tests revealed that the above common ailments were cured fully in all the cases excepting a few negligible percentages of cases. Further there were no side effects. On repetition of these experiments during later years similar data were recorded. The cost and easy availability of these herbal preparations made them more adoptable. As majority of the inhabitants of the district solely depend on agriculture and animal husbandry sectors *i.e.* directly or indirectly upon their domestic animals and they are busy throughout the year with their practice of earning their livelihood from these sectors, they rarely find sufficient time to visit the veterinary hospitals. Their poor economic condition does not permit them to meet the cost of the allopathic medicines. Hence they strongly believe and rely upon their age-old traditional herbal medicines.

However, the phyto-chemical and pharmacological screening, biological assay of the drugs/preparations are

to be carried out to display the active principles present in these plants. Standardization of the drugs with their dosage has to be made and above all the medicinal plants are to be protected and preserved systematically with Government and private sector initiatives. EVM has to be credited equal importance with its counterpart, the MVM. During the course of the present study it was observed that:

This method of treatment is very effective in cases of common ailments like cold and cough, fever, skin diseases, worms, wounds, reproductive disorders, nutritional deficiencies, intestinal problems including diarrhea and dysentery. EVM is a low cost and easily available. The medicinal plants are readily identified by the local people with their local naming. Many such medicinal plants are culturally associated with the lifestyles of the local people. There are no side-effects and after-effects of the EVM. People have very strong belief on this treatment.

Further EVM also has certain limitations. The efficacy of all medicinal formulae adopted by the local people and the THs are not well documented and ascertained in the laboratory. Although some work in this regard have been undertaken at different places of the world, yet a lot more have to be worked out to establish the importance of the use of EVM. Due to rapid urbanization and industrialization forest cover area has decreased a lot and as such availability of the medicinal plants has become scarce. Many of them are on the verge of extinction.

There is no authentic record to refer. People simply learn the system from their forefathers, seniors and THs by hearing. Hence, a standard database in this regard has to be developed which should be easily accepted by all concerned. The efficacy of all medicinal formulas mentioned in the treatment methods is not yet ascertained. But the collection of pharmacognosical data from this study can provide a basis for the integration of folk uses in the conventional veterinary medicine. This is to say that traditional medicine can be a real source for insights into material from which the discovery of new compounds of medicinal values may be made. (Wanzala *et al.*, 2005). For this, phytochemical screening and biological assays of plant drugs must be carried out to display the active principles. The efficacy of some plant extracts in terms of their phytochemical and pharmacological aspects *e.g.* antibacterial, anti-venomous, anthelmintic, ascaricidal, anti-parasitic, anti-inflammatory, antipyretic, digestive are proved in case of human beings and in certain animals. Some substances, such as alkaloids, tannins, lignans, saponins, quinones, phenols, phytoecdysons and various glycosides have been isolated and pointed out as substances which are endowed with biological activities.

An important potential long-term output of this study, and of other studies like it, could be the development of eco-sustainable projects with the primary goals of re-evaluating traditional knowledge on folk-herbal treatment for veterinary ailments and sustaining traditional agricultural and animal breeding systems. This could also permit the controlled use, perhaps supervised by local veterinary services, of suitable phytotherapeutics and plant extracts derived from plants that could add value to the present day's requirements of well-being of men and animals.

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