Cattle wounds and ethnoveterinary medicine: A study in Polasara block, Ganjam district, Orissa, India

Dibakar Mishra*
Department of Zoology, Polasara Science College, Polasara-761105, Dist. Ganjam, Odisha, India
E-mails: drdkm@hotmail.com; drdkm01@gmail.com

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The study examined the information seeking behavior of traditional medical practitioners in the treatment of cattle wounds as well as level of acceptance of indigenous systems of medicine in the treatment of the disease. Data were collected using an interviewer-administered, self-constructed, structured-questionnaire. On spot experiment technique was adopted for analysis of accuracy of the preparations. Analysis revealed that traditional medical practice in the study area was with the elderly people. Knowledge of traditional medical practices was revealed to be orally preserved and transmitted by word of mouth from generation to generation and the level of integration with orthodox medicine was found to be very low. The uses of whole plant and/or plant parts along with the mode of administration revealed that 35 plant species were used for treatment of cattle wounds. Modern scientific techniques need to be adopted for validation of the ethnoveterinary medicines at a larger scale.

Keywords: Ethnoveterinary medicine, Traditional Healer, Herbal treatment, Polasara block.

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The use of plants and animals as a source of medicine has been continued since ancient time for curing diseases of man and animals. Cattle are the common livestock in India and occupy a prominent position in agricultural systems and economy of the country. Their products are indispensable in our daily life.

Ethno-veterinary medicine (EVM) is a system that is dilated on folk beliefs, traditional knowledge, skills, methods and practices used for curing diseases and maintaining health of animals. Traditional veterinary medicine knowledge like all other traditional knowledge systems is handed down orally from generation to generation and it may disappear because of galloping socioeconomic, environmental, technological changes and as an upshoot the loss of cultural heritage under the guise of civilization.

India is a repository of medicinal plants that are beneficial for better-health condition of man and animals. Many of them are yet to be fully known by general people, though they were used from ancient times in Ayurveda. By experiment down the ages men have found certain plants would relieve their ache and pain. In ancient times men strived out different plants for observable recording the potential to cure certain diseases. They probably watched the plants the animals ate, especially when they are sick. Over the ages, men came to use thousands of plants as remedies for their illness. Many medicinal plants discovered by ethnic people are still in use today. Quinine, from the bark of the South American Cinchona tree was long used to combat malaria.

In India, the references to the curative properties of some herbs in the Rigveda seem to be the earliest records of use of plants in medicine. But references to plants in the Rigveda are very brief. More detailed account is available in the Atharva-veda. The period of Rigveda is estimated to be between 3500 and 1800 BC. After the Vedas, there is no information on the development of this Science in India for a period of about 1000 years. Charak-Samhita (1000 BC), one of the earliest treatises on Indian Medicine, records the use of over 340 drugs of plant origin; some of these drugs were not indigenous to India.

India recognizes more than 2500 plant species as having medicinal value, Sri Lanka about 1400 and Nepal around 700. In Ayurveda about 2000 plant species are deemed to have medicinal value. Indian Pharmacopoeia recognized 85 plants used in
commercial drug preparation whose ingredients are used in pharmaceutical preparations.

Although the use of plants in the medical care of livestock is even less well documented than in human use, much is known to the farmers and Traditional healers (TH). This treasure trove of untapped indigenous knowledge likely holds considerable benefit in the vast areas of the developing world where the average farmer can seldom obtain or afford veterinary drugs.

Today about 80% of people in developing countries still rely on traditional medicine based largely on species of plants and animals for their primary healthcare. India is a vast repository of medicinal plants that are used in traditional medical treatments 4.

Traditional healers in most of the countries, use ethno-medical treatment to treat cuts, wounds, skin infection, swelling, asthma, diabetes, jaundice, scabies, eczema, venereal diseases, snakebite and gastric ulcer, provide instructions to local people as how to prepare medicine from herbs.

An attempt was made to record the indigenous knowledge of local people on medicinal plants used for curing veterinary diseases like wounds in cattle in Polasara block, Ganjam district of Orissa state, India.

Methodology

The present study was planned with the following objectives: To record the scattered knowledge of ethno-veterinary practices used for maintaining the health and curing diseases of livestock in rural areas as well as to assess the present status of ethno-veterinary knowledge in Polasara block.

Accordingly the study was conducted chiefly in the rural areas of the block during 2006-2009. The area was visited frequently with some identified contact persons, mainly the local teachers and traditional healers. Data regarding the traditional herbal treatment (ethnoveterinary treatment) was collected through pre-structured questionnaires from the elderly persons, housewives, local traditional healers, farmers and livestock holders. This include different common veterinary ailments, their occurrence, symptoms, regular modes of treatment including herbal ones, plants and plant parts used for treatment, their method of preparation, dose and administration, etc. Data thus collected was later screened to shortlist the regular treatments for wounds in cattle usually caused by fights, accidents, over load during farming, etc. Also publications on similar line were searched for confirmation. Plant samples were collected for identification at the Post Graduate Department of Botany, Berhampur University.

During the 2nd term similar visits were made to the areas for collection of data regarding traditional treatment for cattle wounds to confirm the accuracy of data.

Similarly during the 3rd term of visit the screened data regarding the plant preparations for cattle wounds were administered on the ailing cattle for observation and confirmation.

Result and discussion

Wounds are physical injuries that result in an opening or break of the skin. Proper healing of wounds is essential for the restoration of disrupted anatomical continuity and disturbed functional status of the skin. Healing is a complex and intricate process initiated in response to an injury that restores the function and integrity of damaged tissues. Some such herbal preparations found in practice which produced remarkable effects are presented below:

1. Five hundred gm of fresh Moringa oleifera Lam. leaves are ground to make a paste. This is applied as a poultice over the wound.
2. Raw cotton wool (Gossypium herbaceum Mast.) is burnt. Its black mass is collected after the flame is extinguished. The black mass is applied topically.
3. Two to three handfuls of Azadirachta indica A. Juss. (neem) and Ocimum sanctum L. leaves are ground to paste. It is applied as a poultice daily for three to four days.
4. Two parts of neem leaves, one part Ocimum leaves, one part Annona squamosa Linn. leaves are shade-dried and powdered. This powder is mixed with butter or ghee and applied topically. Sometimes til (Sesamum indicum L.) oil is used in place of butter.
5. Fresh leaves of Tagetis erecta L. along with turmeric are powdered to form a paste. This is applied over the wound as poultice till the wound heals.
6. Sap of Aloe vera (L.) Burm. f. is applied topically.
7. Curcuma domestica valeton (turmeric) paste or powder is applied topically.
8. Sap extracted from leaves and stem of Scirpus grossus L.f. is mixed with garlic, Allium sativum Linn. paste and applied topically.
9. Extract of *Tagetes erecta* L. leaves is applied topically.

10. Leaf extract of *Tridax procumbens* L. is applied over the wound.

11. Paste made from root and/or bark of *Syzygium jambolanum* (Linn.) is applied topically.

12. Roots of *Strychnos nux-vomica* L. and roots of *Hellianthus annus* L. are mixed with petals of *Butea monosperma* (Lam.) Taub. and mustard oil.

13. The leaves of *Chiraita* (*Swertia angustifolia* Buch.Ham.ex. D. Don) are collected and with the help of water, a paste is prepared. A piece of clean white cloth is soaked in this paste and applied externally on old wounds as poultice. Usually they get satisfactory result with this preparation.

14. Leaves of *Swertia angustifolia* Buch.Ham.ex. D. Don, *Boerhaavia diffusa* Linn., *Lawsonia alba* Lam., *Ricinus communis* Linn., *Ziziphus mauritiana* Lam., *Azadirachta indica* A. Juss., etc. in equal proportions are boiled in base oil (*Rasi tel*, *Sesamum indicum* L.) in low flame. After evaporation of all the watery contents the oil is collected, filtered with fine clean, dry muslin and stored for future use. The oil is topically applied over the wound. Healers are of the opinion that all the herbs used in this preparation have equal importance and not any one or more herb can be ignored in order to get the best result.

15. The leaves of *Ricinus communis* Linn. and *Lawsonia alba* Lam. are mixed in equal proportion and juice is extracted. This juice is applied externally on wounds.

16. *Abutilon indicum* (Linn.)Sweet, *Albizia lebbeck*, *Thevetia nerifolia* Pers.ex Steud. leaves are ground with water to paste, which is applied as a poultice over the affected part for seven days. The healers also use the *Nymphaea lotus* L. (*Lotus*) and *Banyan* tree (*Ficus bengalensis* Linn.) leaves to prepare special herbal oil. This oil is used in treatment of spreading wounds.

17. Garlic (*Allium sativum* Linn.) juice mixed with 3 or 4 parts of ordinary or distilled water is used as a lotion for washing wounds and foul ulcers.

18. Pale milk of the plant *Argemone mexicana* L. and oil from seeds are applied on chronic ulcerous wounds.

19. Leaf juice of *Phyllanthus niruri* auct. *Non.L.* (*Bhum amala*) is applied to wounds and inflamed areas.

20. Leaf paste of *Ziziphus mauritiana* Lam. is used to cure itch and chronic ulcerous wounds in animals.

**Hump sore**

Due to over burden on the bullocks during agricultural works and cart pulling humps are badly affected causing cracks leading to hump sores. The farmers and the THs prefer to use the local ethnoveterinary medicines for treatment. Some times the wounds are infected with worms. Some of these preparations are:

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

2. *Sal* (*Shorea robusta* Gaertn.f.) resin powder, camphor (*Cinnamomum camphora* (L.)Presl.) powder mixed with freshly prepared coconut oil to prepare an ointment for external use over the affected parts.

3. *Acacia catechu* Willd. powder, leaf extract of *Barleria prionitis* L., leaf extract of neem, milk butter are mixed together and applied externally over the infected part.

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

5. Turmeric (*Curcuma domestica* valeton) powder applied topically.

6. Water or oil extracts of *Tegetes erecta* L. leaves applied topically.

7. Leaf extracts of *Tridax procumbens* L. is applied over the affected part.

8. Seeds of *Anona squamosa* Linn. are ground to powder and applied over the worm infected parts.

9. Root and bark of *Syzygium jambolanum* (Linn.) Skeels are ground with little water to make a paste and applied topically.

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

11. Latex of *Calotropis gigantea* (Linn.) R. Br. is applied topically.

12. Leaf paste of *Luffa acutangula* (L.) Roxb. is applied to the neck region of the infected cattle.

During the course of study, it was observed that most of these preparations are effective to cure the...
wounds of the affected cattle. A total of 35 plant species belonging to 29 families are identified as traditional herbs used as ethnoveterinary medicines for curing wounds. However, some preparations of *Curcuma domestica* valeton, *Azadirachta indica* A. Juss., *Tagetes erecta* L., *Tridax procumbens* L., *Ricinus communis* Linn., etc. are handy and are used as the first preference. Leaves predominate in preparations for wound healing.

Livestock owners are generally capable of identifying and diagnosing disease conditions in their herds. The study revealed that approximately 90% never avail the services of the veterinarians for these ailments. The majority of cattle owners cited the high cost of allopathic drugs. The remaining 10% buy allopathic drugs to treat their animals. Indigenous veterinary remedies are typically made from plant preparations.

Herbal medicines have the ability to affect the body systems. The effects are dependent on the chemical constituents present in the plant. Plants increase stamina, help the nervous system to function correctly, provide a good supply of B vitamin and maintain regular bowel function.

Antiseptic plants (*e.g.* neem) fight infection while vulnerary (wound healing) herbals such as *Tridax* sp. encourage blood clotting and help speed the healing of wounds. Turmeric possesses anti-inflammatory property and the presence of Vitamin A and proteins result in the early synthesis of collagen fibers by initiating fibroblastic activity. The beneficial effect of Neem on wound healing may be due to its antiseptic and fly repellent properties.

**Conclusion**

The trend of curing diseases using traditionally available medicine is decreasing day by day, but still elder people accurately diagnose the disease compared favorably with that of modern veterinary practice. The trends of using traditionally available medicinal plants were found more in upper age class in both genders as compared to younger generation. Indigenous remedies are typically made from plant preparations, some plants are used to treat one disease, while others are used in as mixtures.

Under these circumstances, a way must be found to salvage and record this priceless indigenous knowledge with the view to ascertaining it’s usefulness in the designing and development of a viable and sustainable animal health program with a more developed system of ethnoveterinary medicines.

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**References**