Ethnoveterinary Practices and use of herbal medicines for treatment of skin diseases in cattle : A study in Polsara Block, Ganjam District, Orissa, India

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Abstract

This study records indigenous medicinal plant utilization in treating skin diseases of cattle population. The study was carried out in Polasara Block, Ganjam District between January 2004 and December 2005. Ethnoveterinary data were collected using pre-structured questionnaires, interviews and field observations with elderly persons, cattle owners, traditional healers and house wives. A total of 12 ethnoveterinary preparations were studied in which 24 plant species belonging to 20 families were documented in the area. The most frequently used plant parts were leaves (33.33%), followed by oils (29.17%) and rhizomes (25.0%). Most of the medicinal species were collected from the nearby areas of the locality. The principal threatening factors reported were deforestation and agricultural expansion. Documenting the medicinal plants and associated indigenous knowledge can be used as a basis for developing management plans for conservation and sustainable use of medicinal plants in the area and for validation of these plant preparations for veterinary treatment. The low cost and almost no side effects of these preparations make them adaptable by the local community.

Keywords: Ethnoveterinary medicines, Traditional healers, skin diseases, Polasara

Introduction

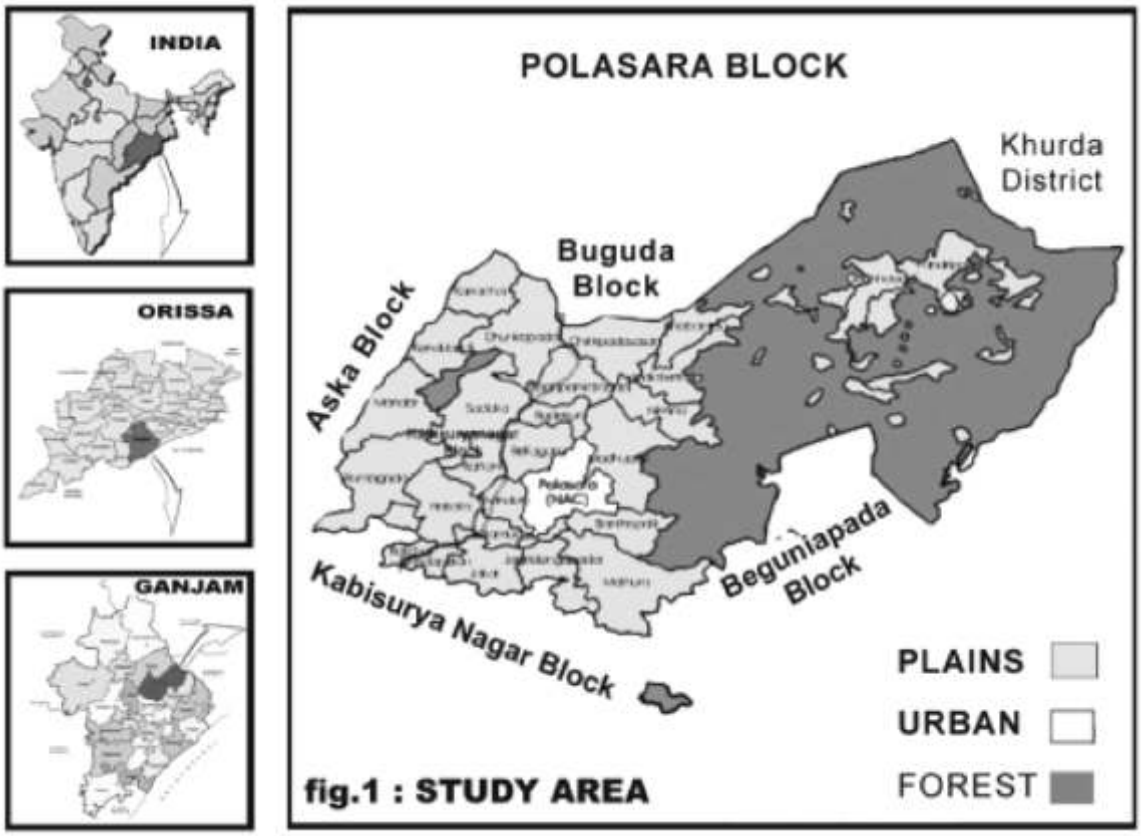
In India the veterinary medical system is generally codified traditional and folk medicine and no such comprehensive record are available. Some literature is available in the local languages, the Vedas and other ancient Indian scriptures. This branch of science that simply continued from generation to generation through the words of mouth without any written record, with time-tested reality, available only with the age-old people in the rural and tribal belts throughout the world got the term "Ethnoveterinary science" or "Ethnoveterinary Treatment" needs to be recorded, to be scientifically validated, to be positioned equally with its counterpart, the modern chemical treatment.

Skin is the largest organ of the body which protects animals from the external environment. Skin serves as a "mirror" reflecting the functional integrity of internal organ systems. Change in local resistance leads to the proliferation of opportunistic pathogens on skin resulting in bacterial, parasitic, fungal and non-specific dermatitis. Skin diseases in animals comprise scabies bacterial and fungal infections, ulcers, bruises and sprains, inflammation, burns, sore feet, ringworm, eczema, skin eruptions and infestation of tick, mite, lice and maggots. Apart from these infections there are various allergic conditions which attack the skin. These include eczema of various kinds, scabies etc, which not only compromise the health of the animal but also are of the zoonotic importance. (Sharma M C and Joshi Chinmay (2004).

An attempt has been made to record the ethnoveterinary data available with the rural folk of Ganjam District as there had been no such work done in this area. Out of different common veterinary ailments occurring in this area skin disease is given much importance because it badly affects the economic condition of the local people. In this study 16 most common but effective preparations are selected and observed in the on-field experiments. Plants/parts used, their family, drug preparations, dose, duration, cost-effectiveness etc. are studied.

Materials and Methods

Out of 22 Blocks of Ganjam District Polasara Block is present in the North-east direction with co-ordinates 19°42'23"N & 84°49'10"E. Total area of the block is 280.07sq.km. which includes 25 Gram Panchayats and 125 revenue villages and one NAC. Population of the block is 119754 (as per 2001 census). Out of the total area 43.9% is covered by forest. The natives of the forest areas are mainly tribal belonging to Kond and Saura (Sabar) tribes.



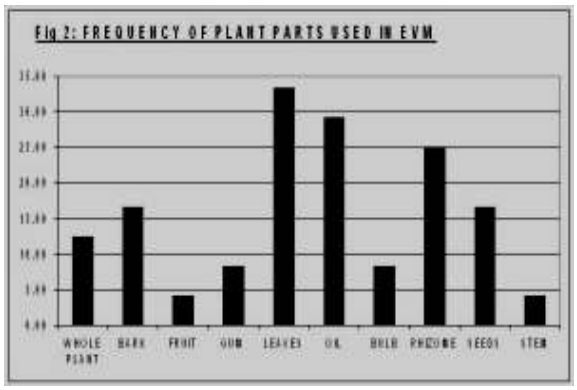
The ethnoveterinary uses of the plants were collected by field survey, based on the interviews from the local communities. An intensive survey of the selected area was undertaken during 2004-05 with the help of pre-structured questionnaire. Information on common skin diseases in cattle, their causes, symptoms, herbal treatment methods, medicinal plants/parts used for different purposes were recorded. Field interviews were conducted with local animal-keepers, traditional healers (THs) and farmers. Persons of different age groups ranging from 20 to 70 and both sexes were contacted for collection of data.

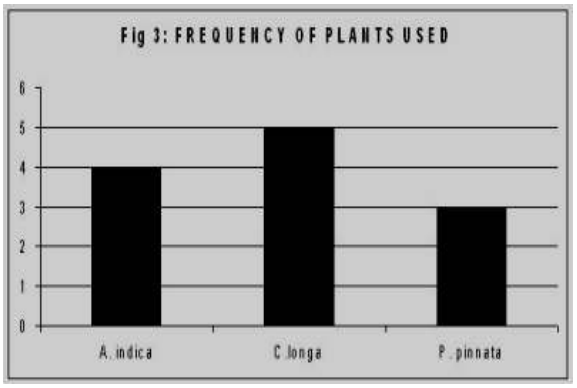
Plant specimens were collected, pressed, dried and identified with the Post Graduate Department of Botany, Berhampur University, Odisha. The indigenous knowledge about the use of medicinal plants were arranged in alphabetical order of botanical names followed by family, english name, vernacular name, part used, Pharmacognosical properties and number of times used in traditional herbal preparations are recorded in tabular form for future use.

Results

During research work, the indigenous knowledge of 31 plants belonging to 24 families were collected and related to medicinal uses of plants. Ethnoveterinary data of different plants/parts used by the local people in the study area with the method of preparation of the ethnoveterinary medicines (EVM) are described below.

1. The most common, immediate and preferred treatment for any type of skin infections is leaves of neem (*Azadirchta indica* A. Juss.) 100gms. and turmeric (*Curcuma longa* L.) 100gms. are ground to make a paste with a little amount of water. It is made luke-warm and applied topically for 5 – 7 days.
2. Thoroughly washed leaves and stem of *Scirpus grossus L.f. (100-150gms) with a little amount of water* crushed with hand/ locally available stone mortar for extraction of the sap with the help of a clean fine cloth and mixed with 20–25grams of ground garlic (*Allium sativum L.)* paste is applied topically.
3. 20-25 seeds of *Anona squamosa L.* are powdered and applied topically over the infected area.
4. Powdered gum of *Acacia nilotica* (L) Willd. 15gms. mixed with egg white of an egg to form a





paste which is applied over the affected skin.

5. 2 bulbs of *Allium cepa* Linn. is ground to paste and mixed with 100ml. mustard oil to form an ointment and applied topically over the infected part. It is observed that this preparation is highly effective in skin infections and if applied in lukewarm condition it miraculously reduces inflammatory swellings.
6. Neem bark, leaves of *Mormodica charantia* Linn., *Solanum surattense* Burm. f., *Tinospora cordifolia* (Willd.) Miers ex Hook.f. & and bark *of Adhatoda vasica* Nees are boiled in 5-6 litre of water, till it is reduced to a quarter and then to this solution cow butter and powdered myrobalans (*Terminalia bellerica* (Gaertn.)Roxb.) are added for the preparation. One tablespoonful of this preparation with little hot milk twice daily is drenched to the ailing animal in chronic skin diseases.
7. Sesame oil, *Calotropis gigantea (L.) R.Br.* whole plant juice and turmeric (*Curcuma longa* L.) paste in a ratio of 8:16:1 are boiled and when the water content is reduced it is cooled and preserved in a container. The oil locally called "arakha oil" is applied over the infected skin like eczema and other skin infections.
8. Dried leaves of *Calotropis gigantea (L.) R.Br.*, turmeric (*Curcuma longa* L.) powder and karanj (*Pongamia pinnata* (L) Pierre) oil in a ratio of 5:2:2 are mixed and boiled to form a cream and applied for treatment of eczema and other skin infections.
9. Ointment prepared from 100gms. of camphor, *Cinnamomum camphora* (Linn.) Nees & Eberm and 200ml. coconut/ sesame/ karanj oil is very effective for eczema. It is also a strong insect repellant.
10. A paste of turmeric and pulp of neem leaves in the ratio of 2:1 is used in ringworm infection, itching, eczema and other parasitic diseases of the skin. In chronic skin ailment turmeric, cow butter/ghee, cow milk and sugar are boiled and to it powder made of black pepper, ginger, cinnamon is mixed. The ointment is applied over the affected part twice/thrice daily for ready relief.
11. A common household treatment for skin diseases is from the whole plant of *Mormodica charantia* Linn. with a piece of cinnamon, 5-6 long peppers (*Piper longum* L.), handful of rice (*Oryza sativa* L.) and 4-5 teaspoonful of karanj oil/ neem oil ground together to prepare a cream to be applied for scabies, psoriasis and common skin itches.
12. Another home made preparation for skin diseases is from the holy basil plant (*Ocimum sanctum* L.). Leaf paste (5 tablespoonfuls) with *Piper nigrum* (5gms.) is applied topically. Similarly decoction made from the plant is used for washing the infected parts in lieu of such preparation from neem leaves.

Discussion

The present study revealed that local people, cattle owners and THs prefer plants that are handy and easily available during necessity. They have sufficient knowledge about identification of plants, amount of plant/parts to be used for preparation, dose and method of administration of the preparation and handling of the ailing animals with ease. Collection of plants/ parts is done early in the morning and if it requires drying, they prefer shade drying. Traditional methods are adopted for drug preparation i.e. they use stone mortar and pestle for grinding, dry white cloth for straining, wooden fire for boiling the preparation and earthen pots with lids for storing.

A total of 24 plants belonging to 20 families were documented during the study. The most frequently *a*

used plant parts were leaves (33.33%), followed by oils (29.17%) and rhizomes (25.0%) (Fig.2) and *Curcuma longa* L. was used in 5 preparations followed by *Azadirchta indica A. Juss* 4, with *Pongamia pinnata* (L) Pierre. in 3 preparations (Fig.3).

There are many such examples of EVMs in the area which are to be explored as no such work has been undertaken in this area and there is every possibility of its extinction like many such traditional animal treatments. The most advantage of herbal medicine is the minimal side effects and relatively low cost compared to synthetic medicine. There are innumerable practices in the field of ethno-veterinary knowledge which are to be worked out and established. (Samy R. Perumal and Gopalakrishnakone P. (2007)

The innumerable stock of natural wealth in the form of medicinal herbs/plants in this area should be protected with proper care and legislation. The biochemic, pharmacologic, therapeutic properties of these plants are to be properly recorded to form a database which should be regularly updated. The efficacy of the EVM is to be established technically so that they can get equal weightage along with their counterparts, the MVM.

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