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Ethnoveterinary practice followed by Santhal tribes to treat foot and mouth diseases of livestock in Ghatshila Block, Jharkhand, India

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ABSTRACT

An ethnoveterinary study was conducted among the Santhal tribes residing in Ghatshila block of East Singhbhum district in Jharkhand state to document the ethno-medicinal plants, those are used to treat the foot and mouth diseases of livestock. The ethnoveterinary knowledge was documented from the traditional healthcare practitioners in eight villages of the block. The study has resulted use of four plant species belonging to 4 different families to treat foot and mouth diseases among livestock. Out of the four plant species, three are trees and one is shrub. The paper describes the plants used for ethno-veterinary practices to treat food and mouth diseases of livestock with botanical names, family, local names, english name, parts used, mode of preparation and administration of herbal drugs.

Keywords: Ethno-veterinary; plants; tribes; foot and mouth diseases; livestock

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INTRODUCTION

Ethnoveterinary medicine, deals with traditional animal health care which encompasses the knowledge, skills, methods, practices and beliefs about animal health care. A broader survey has shown that more than 80% of the tribal populations are still depend on traditional medicines for their animal health practices; of which 95% are of plant origin [1]. In spite of the clinical agents developed by the pharmaceutical industry, traditional indigenous phototherapy is still practiced in many rural areas for human and livestock ailments, using strictly guarded treatments handed from generation to generation [2]. India has a long history in the use of herbal medicine for animal treatment [3]. The tribal are as for themselves never depend on the distant government veterinary hospitals for the obvious economic reasons or the limitation of resources, and lean to the traditional herbal remedial measures for animals. [4].

The ethnoveterinary medicine is easily available, cheap and effective, cures many diseases and causes no side effects. Besides, no complicated technology is required for its preparation. The tribal people have been using this traditional system for a very long time. They have acquired this valuable knowledge from experience, trial and error methods. This knowledge has

passed down from one generation to next generation by word of mouth [5].

The best reasons for using traditional methods of treating veterinary diseases are: (a) cost effectiveness of the developed technology (b) no side effects noted (c) lack of accessibility to modern veterinary facilities and treatments. These reasons offer an inclined response over the field of ethnoveterinary research and development [6]. It also has now been fully realized that “many of traditional systems are sustainable, time tested and are in harmony with nature” Therefore, a serious attempt to revisit the significance of Veterinary Ayurveda is a recent development for livestock healthcare, in India and world over [7].

Jharkhand is a tribal dominated state of India. The Santhal tribe is one of the most dominant tribes of the state. Traditional method of veterinary treatment using plants are predominant in tribal and rural areas of Jharkhand state. Santhal tribes are more social and they live in rural areas along with other castes besides their preferred habitats near forests. They have their own age-old material culture and have a clear understanding of the forest and forest resources. They use a number of wild plant species not only to meet their daily needs but also for primary healthcare of human and livestock [8].

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This paper is an account of such herbal practices in animal health care system followed up by Santhal tribe of Ghatshila block in East Singhbhum district of Jharkhand state, India (Figure-1)

MATERIALS & METHODS

The study was conducted in eight villages under three Gram Panchayats of Ghatshila block, East-Singhbhum district of Jharkhand state. The villages were selected based on the dominance of Santhal tribe population. Four-day field visits were conducted to villages with the help of staff members of RDA (NGO) located in Ghatshila. Interviews were organised with the traditional healthcare practitioners, locally known as Ojha, through a structured questionnaire to document the ethnoveterinary practices. Plant species were collected from forest located near to the villages. The method of preparation of herbal drugs and the process involved in administration to livestock were also documented. These plant species were identified at Regional Plant Resource Centre, Bhubaneswar, Odisha for proper botanical name and their family with the help of renowned plant taxonomist. Photographs of each of the plant species were taken and digital herbariums were prepared to describe the plant species in detail. Herbariums of each plant species was prepared adopting the standard herbarium

techniques and are kept in safe custody at RDA office, Ghatshila for future reference. Focus group discussions were conducted with age old men and women to validate the information documented.

Study Area

Ghatshila is a community development block located in East Singhbhum district of Jharkhand state in India. It is located between 22.60° N Latitude and 86.40° E Longitude with an average elevation of 103 metre. The block was established during the year 1962. The block is situated in the riverbank of Subemarekha river with a distance of 45 Km of the district headquarter. Ghatshila block consist of 176 villages and 25-gram *panchayats*. The total population of the block is 129,905 as per 2011 census of India. The sex ratio of Ghatshila block is 971. Of the total population, 31.3 % lives in urban areas whereas 68.7% population lives in rural areas. The total Schedule Tribe population is 54,663, which constitutes about 42.07% of the total population. The literacy rate of the block is 70.72%. The major tribes found in this region are Santhal, Munda, Oraon, Sabar and Bhumij. Out of the total geographical area of the block, nearly 22% are under forest cover and the forest type found in this region is mostly mixed dry deciduous.

RESULTS & DISCUSSION

Due to the poor public services for healthcare maintenance for livestock in remote areas of the Ghatshila block, the tribal people have adopted traditional way of treating their livestock through plant-based medicines usually prepared by local Ojha's (ethno-veterinarian) based on their traditional knowledge. Their herbal drugs were very effective to treat common diseases like diarrhoea, skin diseases, and foot and mouth disease.

The study documented four plant species those are being used to treat food and mouth diseases of the livestock. The list of plant species documented during the study are presented in Table-1 and the photographs of the documented plant species are presented in Figure-2.

Out of the four plants, three are tree species, where as one is shrub. All these four genera are belonging to four different families. The families are Anacardiaceae, Bignoniaceae, Caesalpiniaceae and Rubiaceae. In most of the cases the fruit and seeds are being is used but in one case the bark is used (Table-2).

The method of preparation of the herbal drug and its administration to treat the food and mouth diseases through the use of the above mentioned four plants are as follows. Three seeds of *Semecarpus anacardium*, 100-gram bark of *Oroxylum indicum*, one fruit of *Benkara malabarica*, 100-gram seed coat of *Cassia fistula* and one whole piece of garlic were grinded together to make powder. This powder will be mixed with 5-gram salt and 20 ml of honey to make a paste. This paste has to be applied in the affected areas three times in a day and one small portion has to be orally administered one time in a day.

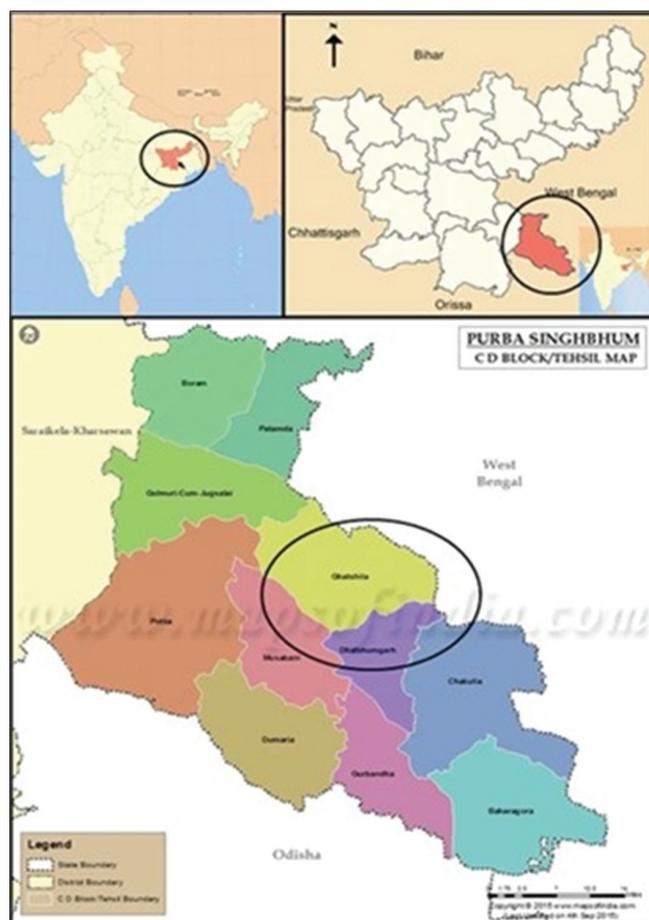


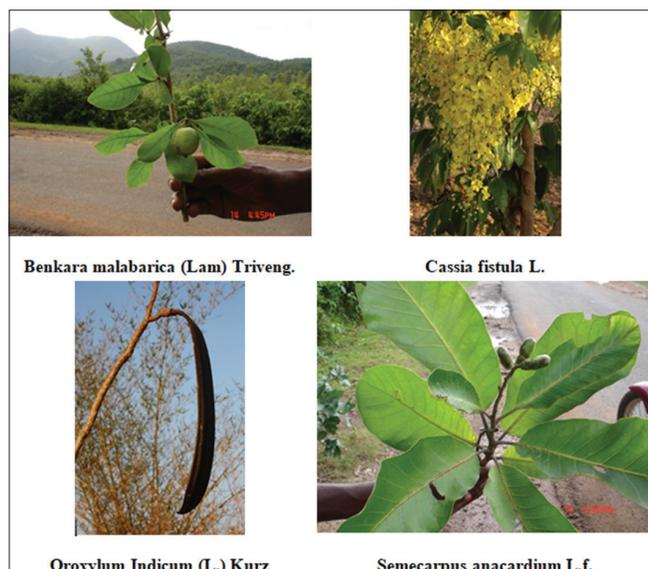
Figure 1: Map of India showing Jharkhand State, East-Singhbhum district and Ghatshila block

Table 1: List of plant species used to treat foot and mouth diseases by the tribal people of Jharkhand

Sl.	Local name	English name	Botanical name	Family	Habit
1.	Gurmohan	-	<i>Benkara malabarica</i> (Lam) Tirveng.	Rubiaceae	Shrub
2.	Amaltas	Golden Shower Tree	<i>Cassia fistula</i> L.	Caesalpiniaceae	Tree
3.	Bhalusakti	Broken Bones Tree	<i>Oroxylum indicum</i> (L.) Kurz	Bignoniaceae	Tree
4.	Bhela	Marking nut	<i>Semecarpus anacardium</i> L.f.	Anacardiaceae	Tree

Table 2: Plant parts used for treating foot & mouth diseases

Sl.	Botanical Name	Parts used
1.	<i>Benkara malabarica</i> (Lam) Tirveng.	Fruit
2.	<i>Cassia fistula</i> L.	Seed Coat
3.	<i>Oroxylum indicum</i> (L.) Kurz	Bark
4.	<i>Semecarpus anacardium</i> L.f.	Fruit

**Figure 2:** Photographs of the plant species documented

Every day, fresh paste has to be prepared. The process has to be continued for a week for complete treatment of the foot and mouth diseases. During the discussion it was found out that the plant *Benkara malabarica* is also used to treat skin diseases.

CONCLUSION

It was observed during the study that most of the traditional healthcare practitioners (Ojha) are reluctant to share the method of preparation of the ethnoveterinary drugs due to their belief that, if they disclose, the efficacy of the practice will go away. They normally pass on this secret information to their children through oral communications. There is a danger of extinction of these traditional knowledge systems due to oral transmission. It is therefore necessary to document these traditional knowledge systems on ethnoveterinary practices, so that the knowledge can be preserved and utilized for further research and use. Currently the younger generations in Santhal community does not have any knowledge and practice of ethnoveterinary care, therefore, it is necessary to build the skill and capacity of these youths on ethno-veterinary practices. There is an urgent need to validate this traditional knowledge on animal

healthcare possess by the tribal people and herbal drugs for veterinary care to be developed in a benefit sharing mechanisms with the tribal people. It is also necessary to recognise and reward the traditional healthcare practitioners prevailing in tribal communities.

Apart from this, conservation and proper management of local vegetation is required for sustainable existence of the tribe in future. According to IUCN red list data, *Oroxylum indicum* is an endangered species [9]. There is an urgent need to conserve and propagate the endangered species namely *Oroxylum indicum* for future use by these tribal communities.

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