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Ethnoveterinary plants used against foot and mouth disease among tribals of East Nimar Madhya Pradesh

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Abstract
East Nimar is located at Latitude-21.8, Longitude-76.3. It comprises of two district Khandwa and Burhanpur. Bhil, Bhilala, Korku, Gond, Nihal and are dominant tribes inhabiting of the region. The present study was conducted to document the traditional knowledge of ethnoveterinary practices by tribals. Data was collected during ethnoveterinary survey. This study reveals total 30 plants species belongs to 24 Families used against foot and mouth disease.

Keywords: bhil, korku, gond, nihal, ethnoveterinary

Introduction
East nimar is located at latitude -21.8, longitude- 76.3.It comprises of two districts viz, Khandwa and Burhanpur. Khandwa is head quarter of the district. Bhil, Bhilala, Nihal, Korku and Gond are the dominants tribes inhabitant in the region. Tribals are using their traditional knowledge as ethnoveterinary medicines in various ailments of their livestock. Foot and Mouth disease is common disease in cattle and hooves animals. It is highly contagious viral disease. Animal suffer from fever, loss of appetite and often bangs the ground with its legs. It does not masticate and chew. Boils or lesions formed between the hooves and inner surface of the mouth. It is commonly found in rainy season.

Methodology
An ethnoveterinary survey was conducted in different tribal remote villages of the area during 2012-2016.Information about the plants used in foot and mouth disease are gathered from the different resource persons belonged to the age 30-65years. Including Bhagat, Bhumka, Vaidya who have much knowledge on medicinal plants by interviewing and semi-structured questionnaires were prepared. Information was checked by other informants also. Plants are collected with the help of local medicine men and Identified with the help of flora (Hooker 1872-1897; Hains 1924; Jain and Rao 1977, Ray 1984; Verma, *et al.*, 1993; Mudgal *et al.*, 1997; Singh *et al.*, 2001) [2, 11, 10] and available literature.

Ethnoveterinary information included with the local name of the plants, parts utilized, veterinary uses, methods of preparation and administration.

Observations

Table 1

S. No.	Botanical name	Family	Local name	Plant part used	Ethnoveterinary uses
1.	*Acacia catechu* (L. f.)	Leguminosae	Khair	Bark	Bark is boiled, cooled and used in washing oral cavity and hooves.
2.	*Accacia leucophloea* (Roxb.)	Leguminosae	Safed babool	Insect gall	Insect gall of tree is powdered and applied on wounds in foot and mouth disease.
3.	*Acacia nilotica* (L.)	Leguminosae	Desi babool	Bark	Decoction of bark is applied over the hooves.
4.	*Anisomeles indica* (L.)	Lamiaceae	Ram tulsi	Whole plant	Plant twigs are spread over the floor of cattle shed to cure foot and mouth disease.
5.	*Annona squamosa* (L.)	Annonaceae	Sitaphal	Leaves	Leaf paste mixed with lime is applied on hooves.
6.	*Aristolochia bracteolata* (Lam.)	Aristolochiaceae	Girdhan	Whole plant	Plant powder is applied on wounds in foot and mouth disease.
7.	*Azadirachta indica* A.Juss.	Meliaceae	Neemdo	Leaves and seeds	Seed oil or decoction of leaves is applied on hooves of cattle.
8.	*Blumea lacera* (Burm.)	Compositae	Kakronda	Whole plant	100ml.plant decoction with oil of *Riccinus communis* (Arandi) is given twice a day in foot and mouth disease.
9.	*Calotropis procera* (Aiton)	Apocynaceae	Aakda	Leaves	100ml.of leaf juice with black salt,*Piper nigrum* (Kali mirch) and *Trachyspermum ammi* (Ajwain) are mixed with *Brassica campestris* (Sarson) oil applied on mouth ulcer and hooves in foot and mouth disease.
10.	*Capsicum annuum* L.	Solanaceae	Lal mirch	Fruit	Dried fruit powder with *Brassica campestris* (Sarson) oil is applied locally to cure foot rot disease.

11.	*Careya arborea* Roxb.	Lecythidaceae	Kumbhi	bark	Stem bark and leaves of *Annona squamosa* are crushed and spread on the floor of the cattle shed and also between hooves of cattle is covered.
12.	*Cayratia trifolia* (L.)	Vitaceae	Ambalwel	Tuber	Tuber paste mixed with turmeric powder is given to cattle.
13.	*Cleodendrum phlomidis* L.*f.*	Lamiaceae	Arni	Leaves.	Leaf paste is applied on wounds in foot and mouth diseases
14.	*Cocculus hirsutus* (L.)	Menispermaceae	Jaljamni	Leaves	Leaf paste mixed in water is given to cattle.
15.	*Curculigo orchioides* Gaertn.	Hypoxidaceae	Kali musli	Tuber	A paste of tuber along with *Triticum aestivum* (Wheat) chapatti is fed to cure foot and mouth disease in cattle
16.	*Cuscuta reflexa* Roxb.	Convolvulaceae	Amarbel	Whole plant	Powder of entire plant with leaves of *Syzygium cumini* and bark of *Alangium salvifolium* in equal amount are crushed together. The mixture is used to cover the hooves of the cattle for 5 days.
17.	*Gardenia latifolia* Ait.	Rubiaceae	Bandarladdu	Seed	Seed oil is given orally and cotton plug soaked in it is placed on wounds in foot and mouth disease.
18.	*Gloriosa superba* L.	Colchicaceae	Kaliharikand	Tuber	Tubers are crushed and paste is applied over the hooves.
19.	*Gymnosporia montana* (Roth)	Celastraceae	Bekal	Leaves	Leaves are grounded to make juice in 1 litre water and drenched to cattle.
20.	*Lagerstroemia parviflora* Roxb.	Lythraceae	Bakli	Tender twigs and fruits	Tender twigs and fruits are powdered mixed with bark powder of *Ailanthus excelsa* is applied on the hooves of cattle.
21.	*Lawsonia inermis* L.	Lythraceae	Mehandi	Leaves	Leaf paste is applied locally on wounds to cure foot and mouth diseases
22.	*Madhuca longifolia* (J.Koeing)	Sapotaceae	Mahua	Stem	Decoction of stem bark is applied on hooves and bandaged.
23.	*Mangifera indica* L.	Anacardaceae.	Aam	Bark	Stem bark is crushed boiled in water poured on hooves of cattle for 5 days.
24.	*Musa paradisiaca* L.	Musaceae	Kela	Fruit	Ripe banana are homogenized in 1litre of water are drenched to animal daily till cure in foot and mouth disease.
25.	*Nicotiana tabacum* L.	Solanaceae	Tambakhu	Leaves	Leaf paste applied on hooves to kill maggots in foot and mouth disease
26.	*Pueraria tuberosa* (Roxb. Ex Willd.)	Leguminosae	Bhui kola	Tuber	Tuber powder mixed with water given twice daily.
27.	*Semecarpus anacardium* L.*f.*	Anacardiaceae	Bhilawa	Seeds	Two seeds are crushed and homogenized with butter. It is given twice a day to cure foot and mouth disease.
28.	*Sesamum indicum* L.	Pedialaceae	Til	Seeds	200 gm. seed oil is given orally to domestic animals.
29.	*Soymida febrifuga* (Roxb.)	Meliaceae	Rohani	Bark	Paste of stem bark is applied on sores of foot in foot mouth disease.
30.	*Ziziphus nummularia* (Burm. f.)	Rhamnaceae	Chinya bor	Root	Decoction of root is applied on hooves and oral cavity in foot and mouth disease of cattle.

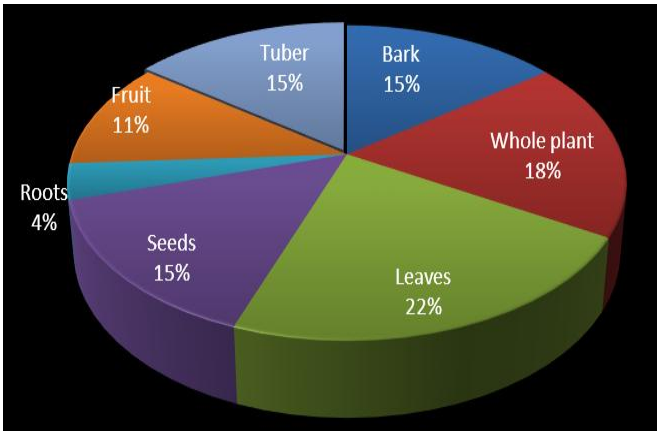

Fig 1: Plants parts used for treatment of Foot and Mouth disease of Cattle.

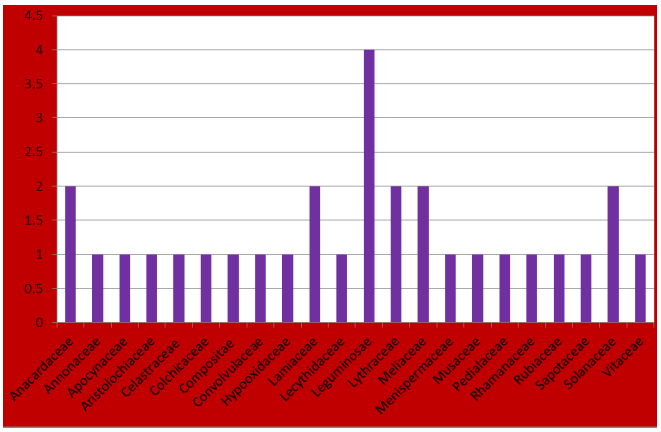

Fig 2: Dominant families in Foot and Mouth disease of Cattle.

Results and Discussion

In the study total 30 plants species belonging to 28 genera and 24families were used in treatment of Foot and Mouth disease. Leguminosae family is the largest used in the disease followed by, Lamiaceae, Lytharaceae and others. In most of cases combination with other plants are used. Modes of 9 plants are used as orally while other plants mode as applied on affected parts. These methods can helps veterinarians, pharmacologists and pharmaceutical companies for inventing new drugs and further study.

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