Ethno – veterinary Plants of Nadurbar district of Maharashtra, India

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Received : 10-10-2004  Accepted : 12-12-2004

ABSTRACT:

A survey of medicinal plants of Nandurbar district of Maharashtra, India in regard to their veterinary uses, has been done. While collecting the data, special emphasis is given to the foot and Mouth disease, Haemorrhagic Septicaemia, Maggotted Wounds, Retention of Placenta, Timpany and Worms, which are the most common animal ailment in the district. After short listing, about 29 plant species are found to be in regular use by various tribal veterinary doctors in the district.

Key Words: Ethno-veterinary medicinal plants; Nandurbar Districts; Maharashtra; India.

STUDY AREA

Nandurbar District, a part of the Deccan plateau is situated in the northern part of the Maharashtra state, with an area of 4933 Km.2 between 21o N to 21.32o N latitudes and 73.34o E to 74.31o E longitudes (Fig.1) it lies in the valley of Tapi and Satpuda mountains. The district can be divided into hilly tracts and undulating pain areas. The hillocks of Satpuda are flat-topped and plain. Highest elevation is recorded at Toranmal hills rising up to 3373 ft. with a lake on its top. Very small part of Narmada basin is towards the west.

The district is made by deccan trape. Tapi River and its tributaries pass alluvial soil, while southern part posses mountainous gravelly soils. Black cotton soil is very common through out the district. Climate on the whole is dry except during South – west monsoons which begins in June and lasts till about September – October. The average rainfall of the area is 1201.8 mm. the temperature rises in the later part of February, May being the hottest month of the year. The highest temperature recorded is 47o C in May. Relative humidity in monsoon period is 70% and 25-30% in other months.

POPULATION

Nabdurbar district is one tribal district of Maharashtra state. The Bhils, Gamits, Gavits, Kokanis, Mavachis, Pasvis, Pawaras, Tadavi, Valvis and vasaves are the various ethnic group have their own dialect viz Pavari, Mavchi, Bhili, Kokani etc. The tribal population is about 661,000 making 62.18% of the total population (1991).

Many areas are inaccessible and devoid of modern facilities. Modernization has very little effect on their socio-economic aspects.
They have their own peculiar tradition, festivals, ceremonies, music, dresses and ornaments.

**AIM OF THE STUDY**

The knowledge about the plants is normally an inherited property of these tribal doctors. These plant medicines indeed to be brought into lime light as they are the cheapest and readily available remedies for the common ailment of the animals. Animal health-care has been an integral part of Indian tradition and indigenous knowledge. There are many ancient treatises on upkeep of domestic animals; there is also rich oral tradition among the folk.

Our survey has revealed that there is an urgent need for a very detailed survey, for two reasons: 1. Due to lack of recording of the knowledge, there is a danger of it’s being lost in course of time as it is only orally transmitted form father to child of rarely from a teacher to disciple:2. The plants identity and preservation pose another problem as many plants are only seasonally available. On the other hand, due to gradual dwindling of the forest, once extensively used plants are now becoming a rare commodity and perhaps might become extinct if not conserved in time.

**PREVIOUS KNOWLEDGE ON LOCAL FOLK MEDICINE**

As such the work on plant medicines in Veterinary uses is meager except a few reports 1-16. To the best of our knowledge, there is no report regarding plant medicines used for common ailment in this tribal district. The present endeavor was therefore aimed to survey the most useful plants used by the tribal of Nandurbar district to cure the common ailments of the animals such as foot and Mouth disease, Haemorrhagic Septicaemia, Maggotted wounds, Retention of Placenta, Timpany and worms. So, 29 plants have been recorded to be in regular use.

**METHODOLOGY**

The study was performed during 1999-2002 covering 442 villages in the forest area under 6 Tahasils viz Akkalkuwa, Dhadgaon, Nandurbar, Navapur, Shahada and Taloda of the district. The information was collected during field trips on basis of interviews with the tribal doctors. In every 2-3 village, there is a prominent tribal doctor, who treats the cattle in and around his village. Total 74 tribal doctors have been visited. Upon repeated enquires, changing the pattern of questioning like showing the plant collected form one tribal doctor to another of a distant locality and asking him for its use as medicine in skin diseases and vice-versa, it is found that their knowledge about indigenous plant medicines is astonishingly same, indicating their positive validity which is gained over time and trial and error basis, perhaps. All the collections are housed in the herbarium of the G.T.P College, Nandurbar-425412, and Maharashtra, India.

**RESULT**

Reported in a Table, the list of plants (in an alphabetical order) with their botanical name followed by family name, voucher number, vernacular names, in English, (wherever possible), Marathi Tribal languages and plant parts used, ailment treated preparations, mode of use and number of citation with percentage.

**CONCLUSION**

Our extensive field survey on medicinal plants of Nandurbar district resulted in the
identification of 29 most potential plant species belonging to 23 different angiosperm families used in curing 6 common ailments of animals viz. Foot and Mouth disease, Haemorrhagic Septicaemia, Maggotted wounds, Retention of Placenta, Timpany and Worms (Dr. G. N. Dange, Principal, Livestock supervisor’s Training centre, Dondaicha, Dhulia district, Maharashtra, India).

Our survey indicates that there is an urgent need to conduct a detailed survey and also to promote measures for conservation of both the traditional knowledge and plant species. Some of the plant viz. *Boswellia serrata* (S.Sharma; 1983), *Hemidesmus indicus* (V.D. Vartak; 1983), *Semicarpus anacardium* (G.L.Shah; 1983), *Tragia heldebraandtii*, and *Trichodesma indicum* are under severe threat and are likely to become extinct at least from this part of the country.

**ACKNOWLEDGEMENTS**

Both of us, MBP and PVR, are thankful to the UGC., New Delhi for financial supports rendered to us separately in the form of Minor research Projects. We are also thankful to all those tribal doctors who have readily helped in the collection of the data.
| Sr. No. | Botanical Name, Family and Voucher specimen number | Local Name | Part used | Uses/Ailments treated | Preparations | Mode of use | Citation |
|---------|--------------------------------------------------|------------|-----------|-----------------------|--------------|-------------|----------|
| 1       | Abrus precatorius L. Fabaceae, MBP-27           | Crab’s eye Gunj, Tingali | Seed      | Retention of placenta | 5-6 seeds made into paste | Given orally once | 68       |
| 2       | Acacia Arabica Auct. Mimosae, MBP-8             | Indian gum Arabic Tree, Babil, Babal. | Pod       | Foot and Mouth disease | Paste with warm ground nut oil | Applied externally in the gaps of hooves | 62       |
| 3       | Aegle marmelos (L) Corr. Rutaceae, MBP-8        | Bengal Quince, Bel, Bili | Bark      | Haemorrhagic septicaemia | Barks of this plant and sissoo burnt. | The animal is made to inhale the smoke | 58       |
| 4       | Ailanthus excelsa Roxb. Simaroubaceae, AVM-19   | Tree of heaven, Maharukh, Vorulo. | Leaf      | Worms                 | One litre leaf extract. | Given orally once | 70       |
| 5       | Allium cepa L. Liliaceae, MBP-83                | Onion, Kanda, Kando | Bulb      | Worms                 | Bulb used along with garlic | Orally once a day | 65       |
| 6       | Allium sativa L. Liliaceae, MBP-89              | Gar, oc, Lasun, Gondalo | Flakes of garlic | Worms                 | Flakes of garlic, cumin seeds, onion, asafetida and chilli powder made into paste | Given orally once | 66       |
| 7       | Aristolochia bracteolata Lam. Aristolochiaceae, AVM-16 | Worm killer, Kidamari giden. | Leaf      | Maggotted Wounds      | Leaf Juice. | Applied externally | 62       |
| 8       | A. bracteolata Lam. Aristolochiaceae, AVM-16   | Worm killer, Kidamari giden. | Fruites   | Timpany               | 1-2 fruits crushed in water | Given orally. | 65       |
| 9       | A. bracteolata Lam. Aristolochiaceae, AVM-16   | Worm killer, Kidamari giden. | Leaf      | Worms                 | Leaf Juice. | Given orally once in a day, for 2-3 days | 59       |
| 10      | Boswellia serrala Roxb. Burseraceae, AVM-9      | Indian olibanum tree, Salai, Gungulo | Bark      | Timpany               | 250 grams of fresh bark ground in half to 1 litre of water and filtered with cloth. | Given orally once | 59       |
| 11      | Caesalpinia bonducella (L) Flem Caesalpiniaeae, AVM-9 | Fever nut tree, Gaja, Sagargota | Leaf      | Timpany               | 1. one litre Leaf Juice 2. one seed roasted, powdered and mixed in 1 litre of water | Given orally once | 62       |
| 12      | C. bonducella(L) Flem Caesalpiniaeae, AVM-9     | Fever nut tree, Gaja, Sagargota | Leaf      | Worms                 | one litre Leaf Juice | Given orally once | 64       |
| No. | Common Name | Family | Parts Used | Disease | Treatment Method | Efficacy (%) |
|-----|-------------|--------|------------|---------|-----------------|--------------|
| 13  | Calotropis gigantea (L) R.Br. | Asclepiadaceae, MBP-60 | Giant milk weed, Rui, Ruvandi | Latex | Foot and Mouth disease | Latex mixed with groundnut oil | Applied externally on a spot where the hairs on the back of the animal show curling in to a circle | 50 | 67.5 |
| 14  | Capsicum annunt L. | Solanaceae, MBP-20 | Giant milk weed Rui, Ruvandi | Chilli | Timpany | Chilli powder taken in a cloth dipped into a water to obtain extract. | Two to three drops dropped into nose | 58 | 78.3 |
| 15  | Cassia fistula L. | Solanaceae, MBP-199 | Indian Laburnum, Bavha, kervalo | Pulp of fruit | Worms | Pulp of fruit crushed in water | Given orally | 60 | 80 |
| 16  | Coriandrum satvum L. | Apiaceae, PVR-50 | Coriander, Kothimbir, Kothambro | Whole Plant | Foot and Mouth disease | Whole plant | Given along with fodder | 72 | 97.2 |
| 17  | Cuminum trigonus Roxb. | Cucurbitaceae, PVR - 47 | Kateri, Halacjrp | Root | Worms | Root paste | Given orally once | 65 | 87.8 |
| 18  | Cuminum cyminum L. | Apiaceae, MRP - 210 | Cumin seeds, Jira, Jiru | Seed | Worms | Seeds used along with garlic onion, asafetida, chilli powder made into paste. | Given orally once | 70 | 94.5 |
| 19  | Curcuma longaL. | Zingiberaceae, MBP-290 | Turmeric, Halad, Edo | Rhizome | Haemorrhagic Septicaemia | Rhizomes | Applied externally when warm. | 65 | 87.8 |
| 20  | Dolichandrone falcate Se em. | Bignomiaceae, AVM-51 | Medhshingi, Menhingi | Bark | Timpany | Handful of bark ground and put into one litre bottle of water | Given orally, half bottle in the morning and half in the evening. | 50 | 67.5 |
| 21  | Enicostemma littorale Bl. | Gentianaceae, PVR – 22 | Kadvinai, Kodvinai | Leaf | Timpany | Leaf juice along with water. | Given orally | 68 | 91.8 |
| 22  | E. littorale Bl. | Gentianaceae, PVR –22 | Kadvinai, Kodvinai | Leaf | Worms | Leaf juice along with water. | Given orally | 62 | 83.7 |
| 23  | Euphorbia neriifolia L. | Euphorbiaceas, PVR-5 | Spurge cactus, Sabar, Nivdung | Latex | Haemorrhagic Septicaemia | Latex and groundnut oil mixed with black cotton soil | Applied externally | 65 | 87.8 |
| 24  | Hemidesmus indicus(L) Suchult | Periplocaceae, PVR-57 | Indian Sarsaparilla, Upalsari, Aadudi. | Root | Retention of placents | Handful of roots along with grass | Fed orally | 51 | 68.9 |
| No. | Common Name                     | Family            | Plant Part | Preparation/Use                                                                 | Preparation Details                                                                 | Dosage | Effect |
|-----|--------------------------------|-------------------|------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|--------|
| 25  | Morinda tomentosa Heynes Roth  | Rubiaceae         | Bark       | Timpany                                                                         | Bark infusion                                                                      | 50     | 67.5   |
|     | Indian Mulberry tree, Bar-tondi, Aali |                  |            |                                    |                                                                                     |        |        |
| 26  | Momordica chanantia L.          | Cucurbitaceae     | Leaf       | Foot and Mouth disease                                                          | Leaf Juice along with tobacco powder.                                               | 68     | 91.8   |
|     | Bitter gourd, Karle, Kaa-ale    |                   |            |                                    |                                                                                     |        |        |
| 27  | M. charantia L.                 | Cucurbitaceae     | Fruit      | Maggotted Wounds                                                                | Fruit juice.                                                                         | 60     | 80     |
|     | Bitter gourd, Karle, Kaa-ale    |                   |            |                                    |                                                                                     |        |        |
| 28  | Oryza sativa L. Poaceae, AVM - 18 | Poaceae          | Seed       | Retention of placenta                                                          | 250gms of seeds and 20gms of gingly seeds                                          | 68     | 91.8   |
|     | Rice, tandool, chokha           |                   |            |                                    |                                                                                     |        |        |
| 29  | Semecarpus anacardium L.F.      | Anacardiaceae     | Seed       | Foot and mouth Disease                                                          | Seed powder                                                                          | 58     | 78.3   |
|     | Making nut tree, Bibba, Bhilamo |                   |            |                                    |                                                                                     |        |        |
| 30  | S. anacardium L.F.              | Anacardiaceae     | Seed       | Maggotted Wounds                                                                | Seed powder                                                                          | 61     | 87.8   |
|     | Making nut tree, Bibba, Bhilamo |                   |            |                                    |                                                                                     |        |        |
| 31  | Sesamum indicum L.              | Pedaliaceae       | Seed       | Retention of Placenta                                                          | 20gms of seeds with 250gms of rice seeds.                                           | 68     | 91.8   |
|     | Sesame, Til, Tili               |                   |            |                                    |                                                                                     |        |        |
| 32  | Trachyspermum amami(L.) Sprague.A. | Apiaceae        | Seed       | Timpany                                                                         | Seed roasted, poedered and boiled with water                                         | 50     | 67.5   |
|     | Bishop's weed, Onva, Ajamo      |                   |            |                                    |                                                                                     |        |        |
| 33  | Tragia heldebrandti Muell.Arg.  | Euphorbiaceae     | Root       | Maggotted Wounds                                                                | Handful of roots                                                                     | 60     | 80     |
|     | Kolti, Aagya gavat.             |                   |            |                                    |                                                                                     |        |        |
| 34  | Trichodesma indicum(L) R.Br.    | Boraginaceae      | Twig       | Maggotted Wounds                                                                | One twig                                                                            | 58     | 78.3   |
|     | Chota kolpa,Agaya-khod          |                   |            |                                    |                                                                                     |        |        |
| 35  | T. indicum(L) R.Br.             | Boraginaceae      | Twig       | Maggotted Wounds                                                                | One twig                                                                            | 62     | 83.7   |
|     | Chota kolpa,Agaya-khod          |                   |            |                                    |                                                                                     |        |        |
| 36  | Vernonia antihelmintica(L) Wild |- Asteraceae        | Seed       | Worms                                                                           | Handful of seed boiled in one litre of water till it becomes half                   | 70     | 94.5   |
|     | d asteraeae, PVR-29             |                   |            |                                    |                                                                                     |        |        |
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