

## STUDIES ON THE ETHNOVETERINARY MEDICINAL PLANTS AMONG THE FARMERS OF DHARAPURAM TALUK, TIRUPUR DISTRICT, TAMIL NADU

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### ABSTRACT

The indigenous knowledge and practice based on locally available bioresources are effective to cure diseases. In this way, ethnoveterinary medicinal plants were used by the farmers of Dharapuram taluk, Tirupur district to cure various diseases of their cattles. The present study results in the collection of 42 plant species belonging to 22 families. The medicinal importance of these plants used by the farmers as traditional medicine for their cattle is enumerated in this study.

**Keywords:** Bio resources, Dharapuram taluk, traditional medicines.

### 1. INTRODUCTION

India is having a vast reservoir of cattle genetic resources not only in terms of population but also in genetic diversity represented by 30 recognized cattle breeds. In Tamil Nadu the total cattle population is 30.8 million (2012). The Indian subcontinent has rich ethnoveterinary health traditions that are the products of decades of experience. Ethnoveterinary research and development is a holistic inter disciplinary study of indigenous knowledge and associated skills, practices, beliefs and social structures pertaining to the healthcare and husbandry of income producing animals has emerged as a fertile field for generation and transfer appropriate and sustainable veterinary alternatives to the stock raisers. In Indian agriculture livestock plays a key role in the farmer's life. They provide farm power, rural transport, manure, fuel, milk and meat but also play a major role in the rural economy by providing income and employment to the small hold farmers and other weaker sections of the society. Ethnoveterinary science in India has a documented history of around 5000 years. In most rural areas people prefer to treat their animals with indigenous drugs. At present over 35,000 plants are known to have healing properties (Jain and Saklani, 1991). All parts of the plants including leaves, bark, fruits, flowers, seeds are used in medicinal preparations (Mc Corkle *et al.*, 1996). Ethno veterinary practices are often cheap, safe, tested time and based on local resources and strengths. These can provide useful alternatives to the conventional animal health care (Kumar, 2002). The Indian council of agricultural research in 2008 collected and recorded 595 veterinary traditions

from different sources (Swarup and Patra, 2005). Ethnoveterinary medicines are the reduction in the cost of healthcare for milk animals of dairy farmers, reduction in antibiotic and hormone residues in milk and other animal products by using safe, effective and standardized products based on time tested local traditions and contribution to the economy of local producers.

The importance of the traditional knowledge ethnoveterinary practices by specialists (Vaidhiyars) and local healers who are knowledgeable and experienced in traditional system of treatment, but their knowledge is not documented and is dwindling fast (Jain and Saklani, 1991). As the local healers did not document their knowledge and experience and did not pass it on to others readily, there was danger of extinction of that knowledge (Mathias and Anjaric, 1998). Thus ethnoveterinary medicine is mostly present by villagers as this system of approach dealing with the folk beliefs, knowledge, skills, methods and practices pertaining to the healthcare of animal by tradition. Hence the present study was conducted to document the ethno veterinary medicinal plants used to treat the livestock by villagers of Dharapuram taluk, Tirupur district, Tamil Nadu.

### 2. METHODOLOGY

#### 2.1. Study area

The Dharapuram taluk is a wide agricultural taluk in the Tirupur District. The study area is spread over an area of 5186.34 sq. km and is bounded on the west by Udumalpet taluk, south by Madathukulam taluk North by Palladam taluk and East by Palani taluk. It has an average elevation of

245 m above MSL (Fig.-1). The mean maximum and minimum temperature during winter and summer varies from 32.4°C to 20° C. The major rivers flowing through the taluk are Amaravathi and Uppaar. Amaravathi Dam is the prime source of irrigation. According to 2011 census, Dharapuram taluk had a population of 65,007. Most of the communities doing agriculture practices. Apart from agriculture they also domesticated cattle for their use in agricultural works. Most of the formers treat their cattle using medicinal plants themselves.

Fig. 1. Map showing the study area of Dharapuram taluk

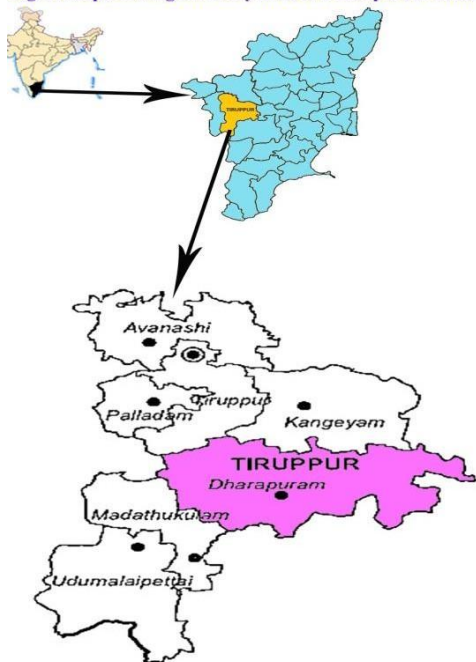


Fig.1. Map showing the study area of Dharapuram taluk, Tiruppur district.

## 2.2. Data collection and local peoples

The present study was conducted during June 2014 to February 2015. Local traditional healers (Mattu vaidhiyar) having practical knowledge of ethnoveterinary medicinal plants were interviewed in remote villages of Dharapuram taluk. The ethnoveterinary information regarding the local name of the plant, plant part used and herbal remedies to cure their cattle suffering from different diseases are recorded. The collected plants were identified with the help of Flora of the Presidency of Madras (Gamble and Fischer, 1915-1936), *The Flora of British India* (Hooker, 1872-1897) and the Flora of Tamil Nadu Carnatic (Matthew, 1987). The entire herbarium specimens were deposited at the Herbarium of Kongunadu Arts and Science College (KASCH).

## 2.3. Enumeration of plants

The Ethnoveterinary information of 42 plant species was collected and enumerated in alphabetical order. For each species listed botanical names followed by family name, vernacular name (VN), medicinal uses and mode of preparation.

***Acalypha indica*** L. (Euphorbiaceae); VN-(Kuppaimeni)

Leaves ground with bulb of *Allium sativum* and *Piper nigrum* seeds are applied on the mouth. To cure mouth disease.

***Albizia lebeck*** (L.) (Fabaceae); VN- Vagai maram

Leaf extract mixed with salt and applied on the eye lid of the cattles to cure corneal opacity.

***Aloe vera*** L. ( Liliaceae); VN- Chotthu katthaalai

Leaf gel fed to cattles along with small amount of salt to cure enteritis (kalichal).

***Allium cepa*** L. (Liliaceae); VN- Chinna vengayam

Paste made by grounding the bulb with *Cuminum cyminum* seeds and *Indigofera linnaei* leaves. Paste is dilute with butter milk and fed orally to cattle's once a day to cure enteritis (kalichal).

***Allium sativum*** L. (Liliaceae); VN- Vellai poondu

Bulb grounded and the paste is fed orally with warm water to cure enteritis (kalichal).

***Aristolochia bracteolata*** Lam. (Aristolochiaceae); VN- Aduthinna palai

Paste prepared by grounding leaves with *Corallocarpus epigaeus* rhizome and *Andrographis paniculata* leaves. It is mixed with neem oil and applied externally for 4-5 days to cure scabies.

***Aristolochia indica*** L. (Aristolochiaceae); VN- Urikkal chedi

Leaves boiled with neem oil and applied on the affected part for horn ablation.

***Azadirachta indica*** Adr. Juss. ( Meliaceae); VN- Veppamaram

Seed oil is mixed with egg albumin and given orally to improve fertility.

***Azima tetracantha*** Lam. (Salvadoraceae); VN- Sangamul chedi

Leaves mixed with *Pergularia daemia* and *Croton sparsiflorus* is fed to cattle with grass for 3 days to cure Snake bite (pambu kadi).

***Cadaba fruticosa*** (L.) (Capparidaceae); VN- Velichedi

Leaves ground with *Cuminum cyminum* seeds and *Allium cepa* bulb and fed orally to cattle for diarrhea.

***Calotropis gigantea*** (L.) (Asclepiadaceae); VN- Yerukku

Paste made by grounding flower bud and root bark with *Piper nigrum* seeds, dried rhizome of *Zingiber officinalis*, *Piper cubeba* seeds and *Allium sativum* bulb. Paste diluted with water and fed orally to cattles to cure bronchitis.

***Cardiospermum halicacabum*** L. (Sapindaceae); VN- Mudakkathan

Leaf juice mixed with *Ferula asafoetida* and lime water and fed orally for 2 days to cow to cure indigestion problem (seriyamai).

***Cassia auriculata*** (L.) (Fabaceae); VN- Avaram chedi

Leaves ground with water and given orally once or twice a day to the cattle for diarrhea.

***Canthium rheedii*** DC. (Rubiaceae); VN- Karaichedi

Leaves boiled with water and the decoction is mixed and boiled with rice flour and fed orally to cattle for general weakness.

***Cissus quadrangularis*** L. Mant. (Vitaceae); VN- Pirandai

Stem juice half a liter of given orally 3 times per day. Stem juice mixed with *Tamarindus indica* juice and applied on the affected area for swelling (Veekkam).

***Coccinia grandis*** (L.) (Cucurbitaceae); VN- Kovai chedi

Leaf juice prepared from equal amount of *Coccinia indica* and *Pergularia daemia* and applied externally on both nostrils of cattle for tongue disease (Nakku pun).

***Corallocarpus epigaeus*** (Rottl. & Willd.) (Cucurbitaceae); VN- Kizhi mookku kizhangu

Tuber of ground with leaves of *Pergularia daemia*, *Tinospora cordifolia* and root of *Tribulus terrestris* and the paste is applied around the ears of cattles to cure bronchitis, asthma.

***Cordia monoica*** Roxb. (Cordiaceae); VN- Narivizhi maram

Stem bark ground with water and administered orally to cattle for general weakness.

***Cyperus rotundus*** L. (Cyperaceae); VN- Korai kizhangu

Rhizome ground with *Acorus calamus* rhizome, *Nicotiana tobaccum* leaves and *Piper cubeba* seeds and the paste mixed with cow's milk and fed orally to cattles to cure lung emphysema (muchadaippu).

***Datura fastuosa*** auct. (Solanaceae); VN- Karu-oomathai

Leaves ground with onion and the paste in applied on wound of cows to cure Mastitis (Madi Veekam).

***Desmodium recurvatum*** (Roxb.) (Fabaceae); VN- Aadatti

Leaves fried with salt and applied externally on tongue to cure wounds in lips and tongue.

***Dichrostachys cinerea*** (L.) (Fabaceae); VN- Vedathalan thazhai

Paste prepared by grounding the leaves with *Cuminum cyminum* seeds and *Allium cepa* bulb and given orally to cattles to cured Enteritis.

***Eichhornia crassipes*** (C.Martius) (Pontederiaceae); VN- Agayathamara

Leaves ground with onion and the paste is mix with lemon juice and butter milk and fed orally three times per day for azhari.

***Euphorbia antiquorum*** L. (Euphorbiaceae); VN- Sadhurakkalli

*Euphorbia antiquorum* latex is mixed with *Ficus benghalensis* latex and applied on fracture area and tied with bamboo stick to cure bone fracture.

***Ficus benghalensis*** L. (Moraceae); VN- Alamaram

Young prop root ground with *Cocos nucifera* flower and fed orally with cow's milk to the cattle to cure hematuria (Ratha kalichal).

***Justicia adhatoda*** L. (Acanthaceae); VN- Aduthinna palai

Leaves ground with *Corallocarpus epigaeus* rhizome and fed orally with neem leaf juice to cattle for two days to cure hematuria (Rattha kalichal).

**Lagenaria vulgaris** Ser. (Cucurbitaceae); VN- Surai

Fruit skin ground with *Piper nigrum* seeds and *Brassica juncea* seeds and mix with rice flour and fed orally to cattle to cure Anthrax (Adaippam).

**Leucas aspera** Willd. (Lamiaceae); VN- Thumbai

Leaves ground with *Ocimum sanctum* and *Melothria maderaspatana* leaves and the paste is fed orally for 2 days for constipation.

**Mimosa pudica** L. (Fabaceae); VN- Thottal sinungi

Leaves ground with cow's milk and fed orally to cattle to improve lactation.

**Momordica charantia** L. (Cucurbitaceae); VN- Pakalkai

Leaf juice applied externally and given orally to cure poisonous bite in cattle.

**Nicotiana tabacum** L. (Solanaceae); VN- Pugaiyilai (Tobacco)

Leaves chewed with *Piper betal* leaf and spit forcibly into the eyes of the cattle to cure conjunctivitis (Kan purai).

**Pergularia daemia** (Forsskal.) (Asclepiadaceae); VN- Paruthalan chedi

Leaves ground with *Ocimum sanctum*, *Cynodon dactylon* leaves and *Piper nigrum* seeds and the juice applied on nostrils of affected animals for bloat.

**Phyllanthus amarus** Schum. & Thonn. (Euphorbiaceae); VN- Kizhanelli

Whole plant ground with leaves of *Ocimum sanctum*, *Leucas aspera* and *Piper nigrum* seeds. Paste diluted with goat urine and fed orally for cows and buffaloes to cure indigestion problems.

**Piper nigrum** L. (Piperaceae); VN- Milagu

Seed powder mixed with cow ghee and fed orally to cattle to cure lung emphysema (Muchadaippu).

**Pongamia glabra** Vent. (Fabaceae); VN- Pungam

Fruit is ground with hot water and applied for tongue disease.

**Solanum nigrum** L. (Solanaceae); VN- Manathakkali

Leaves ground with a fruit of *Cuminum cyminum* and the paste is fed to the cattle for 2 days to cure ephemeral fever.

**Tephrosia purpurea** (L.) (Fabaceae); VN- Kozhingi

Leaves ground with *Coccinia indica* leaves and applied externally to cure warts.

**Trianthema portulacastrum** L. (Aizoaceae); VN- Neisaranai

Leaves ground with *Pergularia daemia* and *Leucas aspera* leaves and fed orally with water for 2 days to cure mouth disease (Komari).

**Trichosanthes cucumerina** L. (Cucurbitaceae); VN- Pei pudal

Leaves ground with *Tamarindus indica* leaves and the paste is dilute with butter milk and fed orally to cure indigestion.

**Vigna mungo** Hepper, (Fabaceae); VN- Uzhunthu

Seed flour mix with egg albumin and applied on the fracture and tied with bamboo stick.

**Vitex negundo** L. (Verbinaceae); VN- Notchi

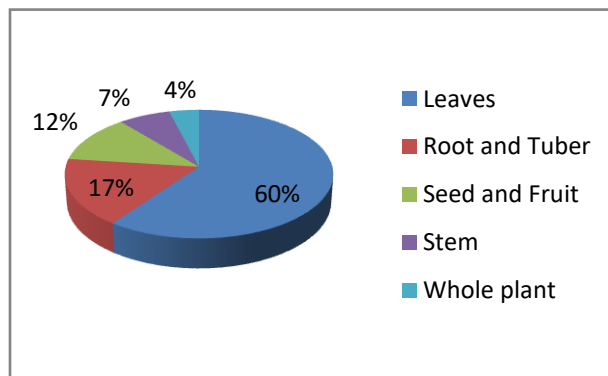
Paste prepared by grounding the equal amount of leaves with *Leucas aspera* leaves and *Allium cepa* bulb and applied on the nose of the cattles to cure bronchitis.

**Withania somnifera** L. (Solanaceae); VN- Amukkirachedi

Paste made by grounding rhizome with *Allium cepa* bulb, *Datura metal* root and *Acorus calamus* rhizome and given orally for three days to cure bloat.

### 3. RESULT AND DISCUSSION

The present study results in the documentation of 42 plant species belonging to 22 families. The data shows that eight species of Fabaceae, five species of Cucurbitaceae, four species of Solanaceae and three species each of Euphorbiaceae and Liliaceae were largely employed for preparation of herbal remedies for curing cattle disease. Among the plant parts used, leaf was the mostly used (60%) to treat a particular animal disease followed by root and tuber (17%) seed and fruit (12%) and stem (7%). The whole plant was the least used part in ethno veterinary medicine (4%) (Fig.-2). Among the 42 plant species which are used as ethno veterinary medicine by farmers of study area, 17 species (40%) were herbs from the main source of medicines followed by shrubs and climbers 10 species each (24%) and 5 trees (12%).



**Fig. 2. Number of prescriptions of different plant parts used in the treatment.**

Generally, fresh parts of the plants were used for the preparation of medicine for livestock illness. It was recorded that oral administration of herbal preparation (decoction, juice, solid extract etc.,) was found as mostly followed mode (62%) to treat the illness followed by raw feeding. The plant extracts were prepared and also applied as paste externally to cure wounds, mastitis, foot and mouth disease, swelling, bone fracture etc. The medicines are administered to the animals with the help of a special apparatus known as kottam (a simple mature hollow stem of Bamboo, which is pointed at one end) Decoctions, plant extracts or other liquid medicines are administered to animals through it.

#### 4. CONCLUSION

The Folk health practices largely remain undocumented and are passed on from one generation to the other by word of mouth. Mostly ethnoveterinary treatment is done with the help of locally available herbs. The emerging problems, continuous loss of biodiversity and other natural resources compelled to developed sustainable economically viable and eco friendly system of animal husbandry. The study results in the collection of 42 plant species belonging to 22 families. The plenty use of leaves in the preparation of remedies is

common because they available in mostly throughout the year. Combination of plant species and use of water, cow milk, lime water and rice flower for diluting or mixing various ingredients formulations have been practical during the period of treatment.

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