



STUDY OF ETHNOMEDICINAL PLANTS TRADITIONALLY USED IN GONDAVALE BK. VILLAGE, TALUKA MAN, DISTRICT SATARA, MAHARASHTRA STATE, INDIA.

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Abstract

Gondavale village is located in Man tehsil of Satara district in Maharashtra, India. Ethno-medico botanical data was collected from 2020 to 2021 from Gondavale Bk. Data collected from practitioners, herbalists and from local communities. The locally found medicinal plants have high medicinal value to cure several diseases. Detail information of some selective plants such as - *Agave americana* L., *Azadirachta indica* Juss., *Emblica officinalis* Gaertn., *Aegle marmelos* (L.) Corr. *Achyranthes aspera* L, *Tinospora cordifolia*(wild). Miers. are documented with respect to scientific name, local names, family, description, distributions, chemical constituents and their medicinal uses. All these species are investigated as ethnomedicinal plants from the Gondavale Bk.

Keywords – Gondavale, Man, Ethnomedicinal, Traditional.

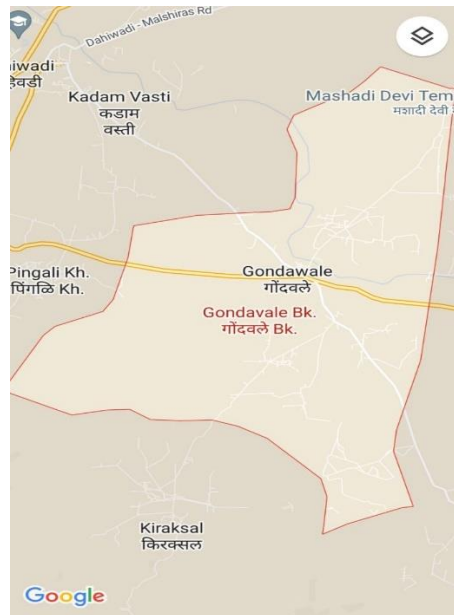
Introduction

Man is not a city name. Dahiwadi taluka is called as Man taluka because land is situated on Man River. Sub division Dahiwadi is in Satara district of Maharashtra in India. It is tehsil place of Man taluka. Man's climate is an inland climate of Maharashtra. The temperature has a relatively high range between 15 °C to 45 °C. Summer is comparatively hot, and dry, compared to neighboring inland cities. Maximum temperatures exceed 40 °C every summer and typically range between 38 and 45 °C. Lows during this season are around 25 °C to 28 °C. It receives very little rainfall from June to September and it is declared as a drought prone place by the government. Gondavale sometimes gets no rainfall during the rainy season.

Gondavale experiences winter from November to February. The winter temperatures are significantly higher compared to other cities in Maharashtra such as Pune and Nashik. Low range from 14 °C to 16 °C while highs are in the range of 29 °C to 32 °C. Humidity is low in this season making weather much more pleasant. Gondavale comes in draught prone area and going towards south and south-west of Man, dry area begins. Water supply to Man for drinking and irrigation is done by water from Adhali Dam on Man River situated on boundary line of taluka. Gondavale village from Man Taluka is famous for Shri Brahmachaitanya Gondavalekar Maharaj Samadhi Mandir. According to Census 2011 information the location code or village code of Gondavale Bk village is 563421. It is situated 5km away from sub-district headquarter Dahiwadi (tehsildar office) and 70km away from district headquarter Satara. The total geographical area of village is 2537 hectares. Gondavale Bk has a total population of 7,440 peoples, out of which male population

is 3,739 while female population is 3,701. Literacy rate of the village is 69.58% out of which 76.04% males and 63.06% females are literate. There are about 1,612 houses in the village.

Medicinal plants play important role in the development of human civilization. Many of the modern medicines are produced indirectly or directly from medicinal plants. In this paper, we have documented some interesting ethno-medicinal observations recorded from Gondavale Bk. of Man taluka, Satara district, Maharashtra, India. Ethnobotanical data was collected from remote and hilly area.



Materials and Methods

The data of ethno-medicinal plants has been collected from field visits and personal interviews and questionnaire. The survey was carried out in Gondavale region from 2020 to 2021. We collected samples of roots, stems, leaves, barks, and flowers of angiosperms medicinal plants. Six plants are described with Botanical name, vernacular name, family, distribution, description. Chemical composition and medicinal uses of each plant part are given. The herbalist's knowledge of plant parts is used for the treatment, in the form of extract, juice, powder and decoction, etc. Specimens are deposited at AHMA (Agharkar Herbarium of Maharashtra Association) Agharkar Research Institute, G.G. Agarkar Road, and Pune-411 004. The data on ethno-medico-botany has been identified and confirmed with the help of regional flora and relevant scientific literature. The specimens were also confirmed by comparing them with authentic specimens of herbaria and regional flora.

Result and Discussion

Following ethno-medicinal plants were recorded from studied area.

1) Ghaypat



Scientific Name - *Agave americana* L.

Family - Agavaceae

Vernacular Name – Ghaypat

Description – It is an undershrub with rosette leaves. Leaves are gray and prickly on edges. Flowers are yellowish green in a bracteate scape or stalk. Fruits are oblong and clavate.

Distribution – Common on roadside

Chemical Constituents – Flowers contain chlorogenin, kaempferol, glucoside and kaempferol-3-rutinoside. The seeds show neotigogenin, hecogenin and kammogenin. Leaves contain steroid glycosides-agavasaponins A, B, C, C and piscidic acid.

Ethnomedicinal Use – Gum from the leaves and roots are applied in treatment of toothaches. Fleshy leaf extract is used to massage in case of rheumatic complaints. Leaf pulp along with sugar is given orally in gonorrhoea.

2)Neem



Scientific name – *Azadirachta indica* Juss.

Vernacular Name - Neem, Kadu-limb

Family - Meliaceae

Description – Neem trees are attractive broad-leaved evergreens that can grow up to 30 m tall and 2.5 m in girth. Their spreading branches form rounded crowns as much as 20 m across. The leaves are bright green in colour.

Distribution - It is native of Burma but grown all over India. In Gondavale, neem is found in large scale in rural and urban places.

Chemical composition - The alkaloids are the main active principles. They are nimbin, nimbinin, nimbidine, nimbosterine and nimbecin etc. fatty acid present in the plant and seed contain 40 to 45 % fixed oil.

Ethnomedicinal Uses - The leaves are applied for boils, chronic ulcers, swelling and wounds. Bark is used for liver complaint, round worms. Gum is stimulant, demulcent tonic and used in debility. The leaves are carminative, expectorant, anthelmintic, diuretic and insecticidal properties. Fresh leaf juice with salt given for intestinal worms, jaundice, skin disease and malarial fever. The tender twigs are chewed to maintain good dental hygiene. Flowers are used in debility. Fruit is effective for urinary diseases and leprosy. Seed oil used for skin diseases like eczema and scabies, preparation soap in industry. The paste of seed used to kill lice. The bark, gum, leaves, and seeds are used in scorpion sting. The dried leaves are used in to protect stored food grain.

3)Avala



Scientific Name –

Family-Euphorbiaceae

Vernacular Name - Avala, Amla

Description – It is a small to medium sized tree with a crooked trunk and spreading branches and grayish-green bark that peels off in flakes.

Distribution –Emblica is native plant of India, Srilanka, Bhutan, Nepal, and China. It is found in farm side of village.

Chemical constituent - The fruit is rich in Vitamin C. Emblicanin, Gallic acid, Tannic acid, Glutamic acid, Proline, Aspartic acid, Ascorbic acid gum, sugar, fat, phyllembin, minerals Fe, P, Ca. Bark contains tannin, and the seeds contain essential oil and citric acid.

Ethnomedicinal Uses - Fresh and dried fruit used for cooling, refrigerant, diuretic, used to kill intestine worms, pulp is used to cure the jaundice, dyspepsia, and scurvy, to regulate blood level in dysentery and diabetes, healing of ulcers. The dried fruit are used in /piles (bleeding), cough. It is used in tuberculosis of the lungs. Fruit juice is used for hair dye, hair nourishment, preparation of hair oils and shampoos. The fruit are also used in mood swing. It also increases white blood cell (WBC) counts with avala tonic. Fresh fruit pulp used to reduce acidity and vomiting. Leave used as a fodder and green manure in agriculture field. Seed are applied on scabies and skin diseases

4)Bel



Scientific Name – *Aegle marmelos* (L.) Corr.

Family – Rutaceae

Vernacular Name – Bel

Description – It is small tree armed with strong straight sharp spines. Leaves are 3-foliolate with leaf-lets lanceolate or elliptic lanceolate. Flowers are greenish white and scented. Fruits are globose, smooth, with gray or yellowish rind and orange pulp.

Distribution – In dry deciduous forests and also planted near temples.

Chemical constituents – Coumarins like ascoparone, scopoletin, umbelliferone and marmesin are present in roots and fruits. Fruits also contain xanthoxol, imperatorin and alloimperatorin. Alkaloids like aegeline and marmeine, beta-sitosterol are also present in the fruits. Root and stem bark contain coumarin-aegelinol. Leaves contain alkaloids like 0-(3-3-dimethylallyl)-halfordinol. N-2-ethoxy-2(4-methoxyphenyl) ethylcinnamide, mermesinin, rutin and beta-sitosterol (Akhtar et al., 1992).

Ethnomedicinal Use – Fruit pulp is given orally in the treatment of dysentery and diarrhea. Tribals believe that leaf juice along with sugar if taken for about one month it increases the hemoglobin. Water boiled with leaves is advised for bathing as it is useful in the treatment of Leukoderma and also to reduce bad body odor. Bark paste is applied on sprains. Fruit and bark decoction is referred orally in the treatment of heart diseases. Fruit pulp along with honey and latex of *Ficus benghalensis* is given orally in diarrhea.

5) Aghada



Scientific Name – *Achyranthes aspera* L.

Vernacular Name - Aghada

Family- Amaranthaceae

Distribution: It is found on road sides, field boundaries and waste places as a weed throughout India South Andaman Islands in Baluchistan, Ceylon, Tropical Asia, Africa, Australia and America. It is found in farms in studied region.

Chemical constituent - Seed- Saponin -A and B- Saponin A was identified as D-Glucuronic Acid and Saponins B was identified as β -Dgalactopyranosyl ester of D Glucuronic Acid. Along with oleanolic acid, amino acids and hentriacontane, aliphatic fatty acid (root), dihydroxy ketones (Shoot), Ecdysterone and Betaine (W.P.), Saponin C (Fruit), Volatile oil

Ethnomedicinal Uses –

Plant is used in asthma and cough, ant phlegmatic, antiperiodic, diuretic, purgative and laxative, oedema, dropsy and piles, boils and eruptions of skin in pneumonia. Leaves Paste of fresh leaves is used for allaying pain from bite of wasps The plant is useful in liver complaints, rheumatism, scabies and other skin diseases Root mild astringent in bowel complaints. A fresh piece of root is used as tooth brush Paste of the roots in water is used in ophthalmia and opacities of the cornea. Bites of poisonous snakes and reptiles, night blindness and cutaneous diseases, snake bites (root paste) improve appetite and types of gastric disorders. Seed used to

reduce obesity, several menstrual problems of women. emetic hydrophobia, carminative, resolve swelling, digestive and expel phlegm. Ash applied externally for ulcers.

6) Gulvel



Scientific Name – *Tinospora cordifolia*(wild). Miers

Vernacular Name – Gulvel

Family – Menispermaceae

Description – An extensive, woody, deciduous twiner with long pedunculous aerial roots. Leaves glabrous.

Distribution – It is distributed in tropical Africa, Madagascar, Asia to Australia and Pacific Islands. In India it is found in Arunachal Pradesh, Bihar, Karnataka, Maharashtra, Uttar Pradesh. Found in farm side, banks of river in studied area.

Chemical Composition –It contains alkaloids, diterpenoids, lactones, glycosides, steroids, sesquiterpenoid, phenolics, aliphatic compounds and polysaccharides.

Ethnomedicinal Uses – The decoction of stem is used to cure chronic fever, dengue. It controls blood sugar level. Leaves juice boosts immunity, improves digestion and reduces stress, anxiety etc.

Conclusion

This paper is based on data collection of common medicinal plants from Gondavale village. The survey was conducted in selected region Gondavale Bk which is nearest to Man area. The study of ethnomedicinal plants is done by field survey, botanical tour, local visits and observation. At the time of survey local people gave valuable information about the medicinal plants. Detail information was collected on the basis of health, social, economic, and cultural aspects of the plants. The data of medicinal plants collected from rural area of Gondavale Bk. Selected 6 plants are frequently occur in Man taluka. This paper presented all detail information of each plant named as Ghaypat, Neem, Avala, Bel, Aghada, Gulvel. In survey of area the numbers of medicinal plant species are found in different locality which are wild species. Only six plant species are taken for the study purpose. The different plant parts like root, bark (scale), wood, stem, leaves, flowers, fruit, and seeds etc. are used for curing different diseases.

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