

Morphotaxonomic Authentication of Ethno-medicinal plants from Gautala and Pitalkhora of Kannad, District Aurangabad Maharashtra

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ABSTRACT

The ethno medicinal plant occupies a key position among the plant wealth as they form main ingredients of drugs formulation among the tribal population. The experienced local practitioners have developed their own way of treatment by acquiring the knowledge from their predecessors. In the present paper, the herbal medicinal plants have been studied in details for their morphotaxonomic features along with their ethno medicinal plants can be included in the traditional system of medicine and can also form a part of alternative bioresources for pharmaceutical industries.

Key words: Ethno medicinal plants, Gautala, Pitalkhora forest.

INTRODUCTION

From dawn of life, plants have influenced the human civilization. The science of medicine dates back to aborigines who used plants for healing the wounds and common ailments. Till today the plant and plant parts are practiced among tribal people for their day to day ailments. There are persons in the tribal village who acquired the knowledge of medicinal plants and their used from their ancestor. They have perfected the knowledge through their own experience and experimenting among the tribal.

There is a great diversity of biological material in India. It is noteworthy that 47000 of wild species of plants have been recorded in India. Many of the wild species are utilized by different practitioners for various diseases. Not only are these diverse life forms in different geographical region utilized for treating the patients. The knowledge spread among these people is likely to be lost if it is not described systematically and documented properly in the specific literature. Moreover, there is a revival of interest among common man of using the herbal medicines. This is because, for the last so many years, the quick relief of synthetic drugs has caused the side effects. In addition to this there are some ailments which are not caused by synthetic medicines. On the contrary, these typical ailments are cured by herbal drugs. Borin (1987), [1] also

emphasized the revival of traditional herbal medicines in India due to several reasons like easy availability and accessibility of local herbs, low cost and above all it fits into the culture of Indian people.

Farnsworth (1985), [2] Director WHO, collaborating centre for traditional medicine stressed the need that all those plants used by the primitive folk healers should be scientifically investigated for some valuable chemicals because there are evidences that several drugs of modern medicine e.g. Atropine, Reserpine, Digitoxin, Quinine, Morphine etc.

Another important aspect of the study is that the wild plants are named differently and varies according to the geographical locations and local dialect. It is most essential that this rich haul of plant wealth be identified correctly along with their medicinal properties as enumerated by the local practitioners. This is also important to further enhance the studies by phytochemical analysis and know the chemical substances that are responsible for their therapeutic properties.

Zutshi (1988), [3] brought forth the entirely new activities of few indigenous herbs hitherto unknown to modern medicine. *Abitulon indicum* traditionally known for its aphrodisiac and diuretic effects has recently been shown to be active inflammatory agent. *Tylophora indica* known for its traditional use in Asthma, bronchitis has been shown to possess immunopotentive activity.

The preliminary survey of the tribal villages at the Pitalkhora and Gautala was undertaken. The tribal population of this region comprises remote villages they are dominated by Thakar, Bhil tribes, Some Banjara community.

The Gautala forest is situated 8 km away from Kannad Taluka. The forest is famous for woody plants, shrubs, medium size trees, huge trees, lianas and climbers etc. It is also famous for pilgrims of Gautam Rushi. The forest has spread upon Sahyadri hill ranges of Western Ghats. The forest acquires about 260 sq.km area on boundary of Marathwada and Khandesh. The forest are confined to the Ajanta Satmala ranges in Kannad and Sillod taluka. Geographically it is situated 74°-55° and 75°-15° east longitude and 20°-15° and 20°-30° north latitude, Naik V.N 1998, [4].

Pitalkhora is also situated 15-20 km away from kannad. It is a part of forest. Many plants are grows naturally on the hills. The place is famous for old caves. Many more medicinally important plants are growing in this area. The annual rainfall is near about 550 to 600 mm. The temperature goes high up to 45°C in summer and falls down to 8°C in winter season.

MATERIALS AND METHODS

A good report was established with the local practitioners by giving frequent visits to the tribal villages namely Thakarwadi, Hiwarkheda, Rampurwadi Gautala, Ambatanda, Pitalkhora Satkund etc. The ethno medicinal information about the plant species was confirmed through various sources in order to avoid the confusion. The morphotaxonomic observations were made followed by confirmation through the floras.

RESULTS AND DISCUSSION**Observation and ethno medicinal significance****1) *Psoralea corylifolia* L.**

Family: Fabaceae

Plate: 1, Fig: 1

Ver. Name: Bavachi

Locality: Gautala

Habitat: A common plant net with in gravelly areas.

Flowers: Aug-Dec. Oblong turgid, 3-5 seeded, turn at seeds white usually scarlet with a white spot.

Fruits: Aug-Dec.

Description: An erect woody annual herb with horizontally spreading branches covered by pubescent hairs. Leaves broadly ovate, gland dotted glabrous, flowers pedunculate axillary raceme, purple, pedicel short, calyx hairy corolla papilionaceous bluish ovary monocarpellary, unicellular. Pods ovoid indehiscent black subglobose, gland dotted seeds, one or two black smooth.**Ethno botanical significance:** The seed powder of the plant are mixed with sesamum oil and applied on affected part of leucoderma and other skin diseases. The seed oil has also been extracted and found to have antimicrobial and antifungal activities. Prokasch, p.Wary, v.et.al.2004 [18].**2) *Tinospora cordifolia* (wild) Mires.**

Family: Menispermaceae

Plate 1, Fig: 2

Ver.Name: Gulvel, Gudvel

Locality: Hiverkheda, Gautala

Habitat: Grown as climber on trees

Flowers: July-Oct.

Fruits: Oct-Dec.

Description: An extensive glabrous climber with succulent croky stem, stem bark lenticellate, branches long pendulus. It shows aerial roots. Leaves simple, exstipulate, petiolate, cordate, rounded at the base, glabrous, petiole short, slightly twisted, flowers in fascicles sepals 6 in two whorls, outer three are smaller inner three are larger, elliptical, petals 6, equal clawed spatulate. Stamens 6, filament free, female flowers solitary, sepals green, petals flat, staminodes six gynoeceum tricarpellary, fruit drupe seed ovoid, Jain S.K.1981,[5], M.Rajalakshmi et.al 2009,[6]**Ethno medicinal Significance:** Mature stem of this plant is the medicinally significant part. Tribals and other herbal practitioners use it against all kinds of fever and urinary diseases specially to promote urination and for the treatment of dyspepsia and flatulence. They also prescribed it in the treatment of general debility and jaundice. Chaudhari.s and Mukundan U.2001 [16].**3) *Santalum album* L.**

Family: Santalaceae

Plate: 1, Fig: 3

Ver.name:Chandan

Locality:Gautala,Pitalkhora.

Habitat: Common in forest, also planted in gardens.

Flowers:Sept-Dec. also in March.

Fruits:March-April also in Nov.

Description: A glabrous perennial,evergreen small trees with drooping branches bark smooth aromatic, leaves simple ,alternate ,lanceolate ,acute entire ,petiolate shining . Flowers small in axillary pedunculate cyme, greenish crimson in odorous perianth companulate with 4 valvate segments, disc lobed and thick. Stamens 4 polyandrous exerted fruit drupe, globose, purple black.

Ethno medicinal Significance: Leaf extract of this plant used against dysentery by the local tribes wood-ground up with water into paste applied on forehead in headache, fever and local inflammation also in skin diseases. Wood also used in bilious fever. Wood applied in headache Chopra et al. (1996) [7],Nandkarni.K.M.[19]

4) *Abrus precatorius* L.

Family: Fabaceae

Plate: 1, Fig: 4

Ver.name: Gunj

Locality:Gautala,Thakarwadi.

Habitat: Common in hedges near villages and also in forest tracts.

Flowers: Aug-Oct.

Fruits: Oct-Dec.

Description: A perennial wild climber,branches numerous,slender,silky racemose herbaceous internodes long, leaves alternates, petiolate, unipinnate paripinnate in 10-20 opposite pairs of leaflet oblong ,membranous ,glabrous. Flowers in raceme crowded ,complete, bisexual zygomorphic calyx teeth short, silky corolla papillionaceous white with a pink tinge stamens 10,diaadelphous stigma capitates, monocarpellary ovary many ovule pod[8].

Ethno Medicinal Significance: Dried root powder mixed in cow's milk is given against scorpion sting by local tribes. Raw seeds are poisonous but boiled seeds are used as tonic and effective as aphrodisiac. The seeds in parte form are applied locally in saiatia, stiffness of shoulder joints and paralysis. Seeds are abortifacient. The leaf juice is sweet in taste and used to tract hoarseness. Significance of the plant has been well supported by the earlier reports enumerates by Chopra et al. (1956) [9], Srivastava, 1989[10], Bhattacharjee, 1998[11].

5) *Mucuna prureins* (L) DC.

Family:Fabaceae

Plate: 2 Fig. 1

Vern.Name: Kachkuyari, Khajkhuyali.

Locality: Gautala forest

Habitat: Commonly occurs as a twiner in moist places and along riverbanks.

Flowers: Sept-Dec.

Fruits: Dec-Feb.

Description: Perennial twiners, leaves trifoliate grey, silky terminal leaflet ovate, base cuneate lateral with truncate base. Flowers purple clothed with brown persistent intensely irritating bristle Seeds 5-6.

Ethno botanical Significance: Seeds of this plant are used as aphrodisiac. Bristles of pods mixed with solidified sugarcane juice made into pills to kill stomach worms in kids. Roots are effective against dysentery. Roots are also practiced by the tribals in the form of smoke to accelerate delivery and to reduce pains. Leaf juice is used against headache, James 1986, [12]

6) *Mimosa pudica* L.

Family: Mimosaceae

Plate: 2 Fig: 2

Vern.Name: Lajwanti (Lajalu)

Locality: Gautala forest, Kannad.

Habitat: Rare, cultivated in gardens..

Flowers: Aug- Oct.

Fruits: Nov-Dec.

Description: Diffused, prostrate, herbs, covered with long bristles. Leaves bipinnately compound, sensitive to the touch. Pinnae 1-2 paired, leaflets 12-20 pairs obliquely narrow, green, leaf bases slightly pulvinous Inflorescence axillary head, globose, purplish flower sessile, bracteates, complete, bisexual, actinomorphic, gambosepalous, gammopetalous, valvate. Corolla tubular stamens indefinite, polyandrous, exerted, gynoecium monocarpellary, unilocular marginal fruit lomentum, seeds small, and black.

Ethno botanical Significance: Leaves crushed into paste from and applied against hydrocoel, glandular swelling and sores by local tribes. Root and leaf paste is also recommended against piles and fistule.okwn DE, Morah FNI ,2007[17]

7) *Withania somnifera* L.

Family: Solanaceae

Plate: 2 Fig: 3

Vern.Name: Ashwagandha

Locality: Gautala forest, Kannad, Pitalkhora.

Habitat: A common weed at waste places, road sides ,noted through the area.

Flowers: Sept-April.

Fruits: Sept-April.

Description: A small erect shrub with branched stem showing hairs. Leaves simple oblong, alternate, pubescent on both the surfaces, cuneate at the base, flowers greenish in axillary cymose clusters, flowers small, complete, bisexual actinomorphic hypogynous fruit turn red when ripe covered by green calyx. Seeds subreniform, brown wrinkled.

Ethno botanical Significance: This plant constitutes a well established source material for ayurvedic formulation, especially against general debility and used as an aphrodisiac. The tribals particularly prefer the root powder with milk to promote growth in children. It is also possess the property to retard the aging process in adults, Pushpagadan P et.al, 2005, [13].

8) *Vitex negundo* L.

Family: Verbenaceae

Plate: 2 Fig: 4

Vern.Name:Nirgudi

Locality:Gautala forest ,Pitalkhora.

Habitat: Occasionally found along the roads,gregarious along river banks.

Flowers: June-Jan.

Fruits: cold season.

Description: A large wild perennial shrub with glandular stem. Leaves trifoliate alternate,petiole long ,leaflet lanceolate flowers bluish in cymose terminal panicle,complete bisexual bracteates ,zygomorphic,zygomorphy is due to unequal lobing of corolla tube. Calyx white tomentose corolla tomentose, billiped, spreading filaments hairy fruits drupe, black when ripe seeds minute,Tayade S.K et.al, 2006, [14].

Ethno botanical Significance: Local tribe use root extract of this plant internally to cure asthma, bathing with warm water medicated by decoction of plant relieves the arthritic pains. Root decoction used against worms, also employed against dysentery and piles. Flowers used in diarrhea, fever and liver complaints. Tribal's claimed leaves are an effective against backache. H.sh.A.Hanif, Agrawal et.al.2010 [15].



Fig: 1. Psoralea corylifolia



Fig: 2.Tinospora cordifolia



Fig: 3.Santalum album



Fig: 4.Abrus precatorius

FIGURE PLATE: 1



Fig: 1.Mucuna pruriens



Fig: 2.Mimosa pudica



Fig: 3.Withania somnifera



Fig: 4.Vitex negundo

FIGURE PLATE: 2

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