



PHYTOCHEMICAL COMPOSITION & GC-MS ANALYSIS AND ESSENTIAL OIL PROPERTIES OF ANISOMELES INDICA

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ABSTRACT:

Wild edible plants, leaves, fruits and seeds play an important role in supplementing the diet of tribal people. It provides many essential nutrients, secondary metabolites, and bioactive compounds for the improvement of physical and mental health. Tribal people use these fruits as a basic need of food and also sold in the rural market to generate income. Special attention should be given to maintain this valuable source of food supplement. Wild fruit plants are important constituents of biodiversity. Greater recognition of wild fruits may support household subsistence through income generation and also help us to understand the intricate relationship between the diversity of fruit plants and the socio-economic status of those who use these plants. Edible fruit plants can be considered for cultivation, consumption, and utilization. Assessment of these resources will serve as a database for future prospects. Therefore, an attempt has been made to assess the wild edible fruit resources of Warud tahsil. In all 41 wild fruit plants have been reported from the study area. Also, the medicinal uses of all the wild fruit plant species are mentioned herewith.

Keywords :- Wild Edible Fruits; Medicinal value; Warud; Amravati; Maharashtra.

INTRODUCTION :

The plant *Anisomelis indica* commonly known as “Gopoli” belongs to the family Lamiaceae and is an ethonobotanically important medicinal plant. Almost all parts of this plant are being used in traditional medicines to treat various diseases. Medicinally it has been proven to possess various pharmacological activities like antioxidant, antimicrobial, etc; our knowledge of the intimate relationship between early man and plants has come to us mainly through tradition. (Chatterjee et al; 1997). *Anisomelis indica* (Lamiaceae) is a camphor-scented perennial woody shrub. It is found growing wild along borders of settled areas at low and medium altitudes. It is used in folk medicine in the treatment of diverse conditions such as inflammatory skin diseases, liver protection, intestinal infections, abdominal pain and immune system deficiencies. Aerial parts of the

plant are valued as stimulant, expectorant, diaphoretic and insecticide. Leaves are considered useful in chronic rheumatism, psoriasis and other chronic skin eruption. Bruised leaves are applied locally in snake bites. (Chopra et al; 1956) (Kirtikar & Basu 1999). As per World Health Organization (WHO) estimates almost 80% of the population of developing countries relies on traditional medicine mostly plant drugs for their primary health care needs. Ethnomedicinal plants have been identified as one of the thrust areas by the Ministry and different programmes have been initiated for conservation of medicinal plants found in forest and protected areas as well as cultivation of these plants in the degraded forest areas. Usually the dried parts of the medicinal plant leaves, flower, fruit, seed, stem, wood, bark, roots, and whole plant etc. are used as raw materials for the production, traditional

remedies of Ayurveda, Siddha, Unani, Homeopathy and other system of medicine, Including the folk, ethno or tribal medicine.

Material and Methods

Sample collection and preparation:

Fresh plant *Anisomelis indica* was collected from the fields located in Gorevada forest and PKV Forest in Nagpur region. The collected plant was taxonomically identified by Dr. A.U. Pachekhede, Ex Head and Professor in Botany, Shree Brijlal Biyani Science College, Amravati. After identification, the fresh leaves were spread thinly on paper-lined wooden trays and subjected to shade drying at ambient temperature to prevent the loss of volatile aroma compounds and also photooxidation for five days according to method reported by Killedar et al. Then they were ground into coarse powder and subjected to extraction. The method of using solvents such as chloroform, ethyl alcohol and acetone, were used for or the extraction and this work was processed at GC-MS study at IIT Pavai, Mumbai.

Figure 1: Fresh, dried and powder *Anisomelis indica* Leaves.

Preliminary screening - The shade dried leaf material was powdered using mortar and pestle.

Phytochemical Analysis –

Successive solvent extraction: about 50 gm of the dry powder of the leaves were successively was extracted with the different solvents in a “Solvent Extractor” with the help of Soxhlet Apparatus.

Detection of Alkaloids, tannins, Carotenoids, saponins and polyuronoids was carried out.

Result and Discussion

The present investigation was carried out on plant *Anisomeles indica* of family Lamiaceae. As

seen in the table- 1 shows different compounds were determined from the leaves of *Anisomeles indica*. The present investigations concluded that the leaf of *Anisomeles indica* contains chemical compounds. These chemicals are widely used in Ayurvedic traditional medicines as well as cosmetics industry and herbal ingredients, and it has been said that 70-80% of the world’s population relies on some form of non-conventional medicine and around 25-40% of all prescription drugs contain active ingredients derived from plants in the United States.

A) Phytochemical Analysis of *Anisomeles indica*

Preliminary chemical examination of *Anisomelis indica* revealed presence of alkaloid in leaves of plant. Alkaloid were found High concentration, while tannin shows moderate concentration and saponins and polyuronoids shows negative test, Carotenoids shows low concentration, for leaf.

CONCLUSION:

The present investigation was carried out on *Anisomelis indica* plant of Lamiaceae family to study the presence of medicinally active phytochemicals and chemical constituent like Tetracosapentaene, 2, 6, 10, 15, 19, 23-hexamethyl, 22-Stigmasten-3-one in the leaves. The chemical composition of the essential compounds from the leaves *Anisomelis indica* of collected from Gorewada forest and PDKV forest which experienced different climatic and geographic circumstances, were determined. The present investigations concluded that the leaf *Anisomelis indica* of contains ethnomedicinal properties. These properties are widely used in Ayurvedic traditional medicines. This study concludes and recommends further advanced study of these plants, so that it will help in preserving our traditional knowledge. The present GC-MS screening may serve as pavements for the researcher to select a group of

plants having similar chemical constituents of particular class to isolate biologically active principles and future studies on family Lamiaceae.

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Table No. - 1 Phytochemical Test Analysis of *Anisomeles indica*

Sr.No	Test	High concentration	Moderate concentration	Low Concentration
1	Alkaloids	(+++)		
2	Tannin		(++)	
3	Saponins			Negative test
4	Polyuronoids			Negative test
5	Carotenoids			(+)

Table No. 2: The chemical Composition *Anisomelis indica* (wild) Linn.

S. N.	R.T	Name of compound	Molecular formula	Mol. Weight	Peak Area
1	19.9	Tetracosapentaene,2,6,10,15,19,23-hexamethyl-	C ₃₀ H ₅₂	412	57689
2	19.9	22-Stigmasten-3-one	C ₂₉ H ₄₈ O	412	57689

Table No. 3: Analysis of Oil Percentage in Leaves of *Anisomeles indica* plant

No. Plant	Plant Sample Name	Empty flask weight	Empty flask oil weight	Oil percentage of leaf
1	<i>Anisomeles indica</i>	138.680 gm	138.870 gm	6.33 %

Figure 1 : View of *Anisomeles indica* plant.



Figure 1: Fresh, dried and powder *Anisomelis indica* Leaves.



Fig. No. - 2: GC-MS Chromatogram of *Anisomelis indica* Plant

