

Gaultheria fragrantissima Wall.— An untapped economic plant species of Meghalaya

Dear editor, through this column I would like to disseminate some information on a commonly found plant which can be used for income generating resource by rural people in Meghalaya. *Gaultheria fragrantissima* Wall. (Ericaceae), known as Indian wintergreen yields essential oil of commercial value. Systematic cultivation and processing at farm level constitutes a promising rural industry with attractive remuneration as it is found growing abundantly in most part of the North east region. Nature, in its generous abundance, had bestowed on Meghalaya a unique array of vegetation, ranging from tropical and sub-tropical to temperate or near temperate. While the importance of medicinal and aromatic plants is widely accepted, there is a serious lack of comprehensive information on the economically important and threatened species. This can be a potential provider of returns to the farmers.

G. fragrantissima Wall. is a much-branched, evergreen, aromatic shrub, 1-3 m height, with orange-brown bark, commonly found in the Central and Eastern Himalayas, Khasi Hills and the hills of Western Ghats at altitudes of above 1500m. Leaves are alternate, oblong-lanceolate to elliptic-rhomboid, serrate, gland-dotted; flowers greenish white in axillary racemes; fruits are capsular, globose enclosed in an enlarged fleshy deep blue calyx. It is also grown as an ornamental plant in the hill areas. The flowers are seen in the months of March-May and the fruits in the months of June to July in the hilly areas. Fresh leaves are observed all over the year. The fruits are eaten by birds since they are sweet to human taste. The species is very hardy and can withstand cold temperature (4°C). Seeds are dispersed by birds and humans only. Regeneration is natural by means of seeds which are treated while passing through the gut of birds. *Gaultheria* species grow best in sandy or peaty, somewhat moist soil and partly shaded situations. Propagation is by seeds, layers or suckers, divisions and cuttings. The species acts as a soil binder in the hilly slopes. Artificial regeneration is best achieved by means of

stem cuttings during summer and coppicing during winter. Insect pests are usually absent but during flowering season Pentatomid and other bugs are seen to be closely associated with this shrub; however, fungal infection is common.

The oil obtained from leaves is identical to the oil of Wintergreen obtained from *G. procumbens* Linn. a native of America. The oil is used as an anti-rheumatic, anti-sciatica, painkiller, stimulant, carminative, antiseptic and vermicide and as ingredient in perfumery, insecticidal repellents, soft drinks and dentifrices. The oil or the chief constituent, methyl salicylate is used in all proprietary balms, liniments and ointments. The fruits of the plant are edible. The locals also use the leaves of the plant for treating rheumatism, arthritis and other joint problems and flu.

Young leaves as well as old ones are used for extracting oil but as soon as they are brought to distillation plant. Indian wintergreen oil is distilled in small scale in the Nilgiris and Assam and the yield is more in the Assam plants which are usually obtained from Khasi Hills. If the leaves are harvested at the right season, about 10kg of leaves can be obtained. The oil yield is approximated at 6ml/kg, therefore, the expected oil yield will be 60ml per shrub. The yield is enhanced by maceration of the material with warm water for sometime before distillation. The oil is colourless and possesses an agreeable odour and flavour.

As far as market potential of the oil is concerned methyl salicylate present in the oil is from natural source hence it is in very high demand in the market as starting material for aspirin and other medicinal compounds. The current market rate of pure methyl salicylate is Rs. 800/100g. Considering the abundance of this plant, which at some areas is considered a weed, the income generated from this source can be quite substantial. Annually net profit per shrub estimated to be approximately Rs. 375/- after paying labour charges for picking and power charges for 10kg leaves distillation.

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