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Litsea cubeba Pers.— 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. ***Litsea cubeba* Pers.** syn. *L. citrata* Blume (Lauraceae) is a common deciduous shrub or a small tree found in the Eastern Himalayas, Assam, Meghalaya, Manipur, Nagaland and Mizoram up to an altitude of 2700m. Bark greenish; leaves lanceolate, membranous; flowers in umbels or corymbs; fruit globose. In the higher altitude of Meghalaya, at about 2000m, the tree flowers in the winter season starting from November and fruiting from the month of May onwards. The seed dispersal is by birds. It is fast growing and grows well in shades of larger trees. Berries mature in the months of June to August in the higher altitudes of the Shillong plateau and in the months of July to September in the lower altitudes.

The best method for propagation is through seeds, which are treated and easily raised in nurseries and coppicing during winter. Transplantation of saplings is best achieved in the rainy season. Pollination is carried out by *Hymenopteran* species of bees and bumble bees. The insect *Dorthulla hardwickii* (Homoptera) is seen feeding on young stems and branches during the fruiting season. Although still abundant, the practice of *jhum* cultivation and the *slash* and *burn* method of cultivation prevalent in the hill areas pose a serious threat to this plant species. Random felling of trees for destructive distillation and charcoal production by villagers has greatly reduced the number of this species growing in the wild. In the past 20 years the number of this species has been reduced to approximately one third.

Flowers and fruits are aromatic and yield volatile oils on distillation. The oil has gained importance in China as a source of citral and is reported to be suitable for the production of β-Ionone, an important intermediate for the synthesis of vitamin A. Citral and β-Ionone derived from the oil are known to possess a finer odour than those obtained from *Citronella* and other citral bearing plant species. The fruit is edible and acts as a carminative and is used for headache, dizziness, hysteria, paralysis and loss of memory. The oil is also used as insect repellent, in perfumery industries and as a basic ingredient in toiletries. Pat silkworms are reared on the leaves of this tree in Assam. It is also used for fever and spice, decoction or raw/dried fruit powder is taken for cholera, diarrhoea, constipation, headache, fever, vomiting, food poisoning and suppressing effects of alcohol. Fruit extract is used in treating dizziness, hysteria, hair oils, paralysis and amnesia. The juice extract of the seeds, bark and leaves is used as carminative, blisters, stomach trouble, expectorant and stimulant; paste used as poultice; the whole plant is used as insecticide (smoke kills caterpillars on thatched roofs).

In Meghalaya the tree is found distributed over a wide region starting from Umsning area of Ri-Bhoi district at lower altitude (approx. 850-900 msl) upwards to the slopes of Shillong peak (approx. 2000-2500 msl) and spreading over to Mawryngkneng subdivision and most parts of Jaintia Hills District. The collection is best done between the month of June and July when the oil yield is optimum. The fruits are separated from the twigs by hand and charged into a laboratory scale steam distillation apparatus in 500g lots. Colorless oil is obtained which on analysis showed the presence of 95% citral.

Most parts of the plant are aromatic and yield volatile oils. It has a pleasing aroma suggestive of rose and coriander. The matured fruits, flowers and seeds on distillation yield about 95, 37, and 20% citral, respectively. The leaves and bark also yields volatile oils and two alkaloids namely laurotetanine and methyl laurotetanine. A study done by NEBRC shown that fresh samples collected during May-June produced a higher yield of oil. The current market price of citral is approximately Rs. 6000/- per litre. In a good fruiting season, a matured tree can yield up to 30 kg of fruits. This will work out to approximately 500 g of 95% citral yield per tree. On calculating harvesting and power charges, etc, the net profit from one tree is approximately Rs. 2775/-.

If the extraction of ***L. cubeba*** is over in the summer of a given year, the economy of the growers can be replaced by ***Gaultheria fragrantissima* Wall.** which is another tree found growing in the same area and its oil yield is better if extracted during the winter season. The economic viability for exploring these two natural resources is sound; local entrepreneurs may be motivated for establishing small scale industry. Plantations can easily be raised for both species as an alternative to combat *jhumming* in the hills and to control rampant exploitation of other valuable forest resources. Both species are good coppicers and soil binders hence, they are also prescribed for watershed areas.

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