

Bush nutmeg

Nutmeg is an important spice that originated in Moluccas (The Banda Islands of East Indonesia) and was introduced to India. This article discusses the feasibility of growing nutmeg in pots, called 'Bush nutmeg' for ornamental purposes.

NUTMEG (*Myristica fragrans* Houtt.) is an evergreen tree of the family Myristicaceae. Seedlings start flowering from 4 to 7 years and the population consists of males and females with a low proportion of bisexual trees. The tree exhibits orthotropic and plagiotropic growth pattern, capable of growing up to 20 m or more, and are long-lived even more than 200 years. Only the female and the bisexual trees bear fruits but trees are obligatory cross-pollinated and hence male trees are essential. Only female trees give good yields.

A 15-year-old good tree is projected to yield around 2,000 fruits. The nutmeg seed has outer, red arils called 'mace' and an inner brown kernel called 'nutmeg', and both are used as a spice. Nutmeg rind can be used for making Squash, Jam, Candy, Pickle, and Powder. During 2019-20, 2,900 tonnes of nutmeg and mace were exported from India at the value of ₹13,280 Lakhs. The same figures estimated for 2020-21 were 3,812.23 tonnes and ₹19,115.33 Lakhs, respectively. India also imported 1,645 tonnes of nutmeg during 2019, to the value of ₹5,545.07 Lakhs in addition to 1,910 tonnes of mace for ₹21,136.88 Lakhs. Thus, there is a scope to augment the nutmeg production to reduce the import bill.

Climate and soil

Nutmeg thrives well in warm humid conditions with an annual rainfall of 150 cm to 250 cm. It grows from sea level up to about 1300 above MSL. Clay loam, sandy loam, and laterite soils are ideal for their growth. A dry climate or waterlogged conditions are not suitable for

its cultivation. Riverbanks and sheltered valleys are best suitable for this crop. It is a shade-loving crop under warm situations, whereas it can thrive well without shade at higher elevations. In India, it is cultivated in an area of 23,478 ha with a production of 15,076 tonnes, in the states of Goa, Karnataka, Kerala, Maharashtra, Tamil Nadu, and Andaman & Nicobar.

Propagation

The nutmeg is propagated both by seeds and vegetatively by grafting or budding. Nutmeg crop is a dioecious plant and seed propagation is not in vogue. Fully

ripe, tree-burst fruits are to be used for raising nurseries. For grafting nutmeg, seedlings can be used as rootstock. For raising seedlings for planting or as rootstocks, naturally split healthy fruits are harvested during June-July and the seeds are extracted and sown immediately. Since the orthotropic and plagiotropic shoots can be used for grafting, the resultant plants have a different growth

pattern. Orthotropic shoots give rise to erect growing plants whereas plagiotropic (lateral) shoots give rise to bushy spreading plants. However orthotropic shoots can be induced by bending above 90 degrees.

In the field, nutmeg seedlings are planted at a spacing of 9 m × 9 m and bush / lateral grafts are planted at 5 m × 5 m. The grafted nutmeg can be grown as a *Bush nutmeg* in pots or containers like bush pepper. This could be achieved by periodical pruning and training the grafts. The advantages are many; it can be grown in backyards, verandas, and terraces and is suitable for intercropping or high-density planting.



Nutmeg tree with fruit and mace



Field view of Bush nutmeg



IISR Viswasree



Keralasree



Bush nutmeg kept in pot at ICAR-IISR premises

Study

An observational trial was conducted to study the feasibility of growing grafted nutmeg in pots at ICAR – Indian Institute of Spices Research, Kozhikode. Six-month-old epicotyl graft of nutmeg was planted in pots of 60 cm × 45 cm filled $\frac{3}{4}$ th with a mixture of soil, sand, farmyard manure, and coir pith (ratio 2:1:1:0.5). Irrigation was provided to the plants as and when required. Vermicompost (250 g) was applied at tri-monthly intervals. Fertilizer @ 20:18:50 g NPK/plant was given during the first year and the dose was doubled in the second year and gradually increased. Nutmeg special micronutrients were sprayed @ 5 g/L at trimonthly intervals. To assure pollination, either a monoecious type has to be used as a potted plant, or a male scion can be grafted on one of the branches to the potted plant. It was noted that 10-20 fruits can be harvested from a single bush from the third year onwards. Periodical pruning is essential to maintain the canopy structure and pruned shoots/branches can be used as a scion for grafting.

This study indicated the feasibility of growing nutmeg in pots. The yield levels of field-grown nutmeg trees are

higher and it should not be compared with the yield of bush nutmeg. Bush nutmeg in pot/container is a new way of growing and is suitable for terraces, verandas, homestead gardens, and porticos and there is scope to popularise this bush type with appropriate production technology for ornamental purposes.

Advantages

The bush nutmeg will meet the household fresh nutmeg and mace need and also add aesthetic value to the premises. This bush type is also suitable for high-density field planting at 2 m × 2 m spacing. The yield of bush nutmeg in the field varied between 100 and 150/tree/year. In addition, we could harvest 100 scion shoots for grafting in a year from a single bush.

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