

RESEARCH NOTE

VARIABILITY AND ASSOCIATION IN NUTMEG

Nutmeg (*Myristica fragrans* van Houtten) is an important tree spice of India. Systematic crop improvement work in this tree spice is yet to gain momentum. A knowledge of variability for fruit number and its inter-relationship with other fruit and tree characters will help to formulate a sound breeding programme. The available literature on variability in nutmeg is limited to few studies on growth rate, productivity, size and shape of leaf, flower size and shape and size of fruit and nut (Flach and Cruickshank, 1969; Shanmugavelu and Rao, 1977; Sriram, 1977). The present note deals with variability and inter character association for fruit number, fruit weight, seed plus mace weight, seed weight and mace weight in nutmeg.

Observations were recorded from twenty eight 14 years old nutmeg trees planted at CPCRI Research Centre, Kannara, Trichur District, Kerala for 3 years (1981-83), on the above traits. The trees have been raised with normal spacing (9m × 9m) and other standard cultural practices. All the trees were uniform in growth. Variability and association were worked out from the mean data of the 5 characters over 3 years. Mean, range, variance as well as inter-character association of the different fruit characters are presented in Tables 1 and 2, respectively.

Table 1—Mean, range and variance for fruit characters in nutmeg

Sl. No.	Characters	Mean	Range	Variance
1.	Fruit number	116.55	8.67—559.0	17103.4
2.	Fruit weight (g)	53.24	39.18—77.16	86.3
3.	Seed plus mace wt. (g)	10.12	8.48—13.42	1.64
4.	Seed weight (g)	8.5	7.03—11.34	1.1
5.	Mace weight (g)	1.63	1.24—2.28	0.10

Table 2—Correlation of fruit characters in nutmeg

Fruit number	Fruit weight	Seed plus mace wt.	Seed weight	Mace weight
Fruit number	0.004	-0.28	0.20	-0.47*
Fruit weight		0.63	0.64**	0.42*
Seed plus mace wt.			0.98**	0.78**
Seed wt.				0.65**
Mace wt.				

**Significant at 1% level *Significant at 5% level.

Maximum variance was observed for fruit number per tree, followed by fruit weight. The range and variance for other characters were negligible. Fruit number/tree had a significant negative correlation with mean mace weight. The association of fruit number with seed plus mace weight and seed weight was also negative, albeit nonsignificant. Fruit number and fruit weight had no appreciable association. The negative association observed might be due to the competition for nutrients among the large number of growing fruits. Fruit weight had significant positive association with its most important components, viz., seed plus mace weight, seed weight and mace weight. Seed weight recorded a highly significant positive association with mace weight. This is particularly significant since selection for high seed weight would bring in high mace yield as well. Seed and mace are the two most important components of commercial importance in nutmeg.

Thus it can be concluded that selection will be effective in improving fruit number in nutmeg. However, since this character had a negative association with mace and seed weight, selecting trees with high fruit number may not be ultimately remunerative. The

variance estimate indicates some amount of variability for fruit weight also in nutmeg. It would be therefore more useful to select trees having optimum fruit number and moderately good seed weight and to propagate them.

SUMMARY

Variability and inter character association for fruit number, fruit weight, seed plus mace weight, seed weight and mace weight in nutmeg were studied. The study indicated maximum variance for fruit number per tree followed by fruit weight. Fruit number per tree had a significant negative correlation with mace weight. Seed weight also had a very high positive significant association with mace weight. Selection will be effective in improving fruit number in nutmeg and selecting nutmeg trees with optimum fruit number and moderately good seed weight will be remunerative.

B. KRISHNAMOORTHY¹, B. SASIKUMAR²,

J. REMA³, A. A. M. SAYED⁴ &

JOSE ABRAHAM⁵

1, 2, 3 & 5 National Research
Centre for Spices,
Marikkunnu Post,
Calicut-673 012, Kerala.

4. Central Plantation Crops Res.
Institute Research Centre,
Kannara Post-680 652, Trichur.
Kerala.

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NURSERY RAISING

The rooting medium should be in the proportion of 1:1:1 coir dust/saw dust/sieved compost:sieved soil:powdered cattle manure. Care should be taken to see that the soil is well sieved and free from pebbles and stones and the cattle manure well powdered.

As the vines start growing, bamboo splits should be gradually filled with rooting medium and the vines should be tied carefully to the support to ensure that newly produced node is in immediate contact with the rooting medium. The banana fibre used for tying must be treated with a fungicide like copper oxychloride solution prepared by adding 2 g chemical in one litre of water.

For rapid growth of the vines nutrient solution made of one kg urea, one kg single superphosphate, 0.5 kg muriate of potash and 0.25 kg magnesium sulphate in 250 litres of water may be drenched at the rate of one litre per vine at 15-20 days interval.

When the vines grow to the top of the support the tip is nipped off and the base of the vine is crushed above third node from the ground to activate the buds. Seven to ten days after this treatment the vines should be cut at the crushed point and removed carefully from the support with the roots intact. The separated vines are then made into single noded cutting and planted in the polythene sleeves/bags filled with potting mixture prepared in the ratio of 3:1:1 soil:cattle manure:sand.

Polythene sleeves of size 30 × 12 cm and 300 gauge thickness to hold about 1.5 kg of potting mixture is recommended. When polythene bags are used sufficient number of holes should be made to drain off excess water. The nursery requires daily watering by perfo-spray or by a rose can. When the new sprouts emerge the cuttings are to be shifted to the area where filtered light is available for rapid and vigorous growth.