

Miscellany

Increase in fruit and seed size, and seeds per fruit in allspice (*Pimenta dioica* L. Merr.) by hormonal application

Allspice (*Pimenta dioica* L. Merr.) is indigenous to West Indies and tropical America and the spice of commerce is the dried fully mature unripe fruits. Jamaica is a major producer of allspice in the world. In India, the crop is grown in parts of Kerala, Tamil Nadu and Maharashtra. At the Experimental Farm of Indian Institute of Spices Research (IISR), Peruvannamuzhi (Kerala State, India), 135 lines of allspice are being maintained in the germplasm.

Allspice flowers in 3 to 5 years after planting, at higher elevations. Drenching the tree basins of 12 year old trees with 1 g ai of paclobutrazol during October induced profuse flowering during the next flowering season and subsequent years at the Experimental Farm of IISR, Peruvannamuzhi. However the fruit set was very poor and immature fruits were also shed from the trees.

A preliminary trial was hence undertaken to study the effect of spraying indole acetic acid (IAA) and benzyl amino purine (BAP) in various combinations on increasing fruitset in allspice. The combinations tried were : 1) 50 ppm IAA + 5 ppm BAP 2) 20 ppm IAA + 1 ppm BAP 3) 10 ppm IAA + 0.5 ppm BAP and 4) Combination of 1, 2 and 3. A control with water spray was also maintained. The sprayings were undertaken during February 1995 on 5 panicles per tree containing 20 day old flower buds. Each treatment was replicated on two trees.

In one of the trees sprayed with IAA 50 ppm + BAP 5 ppm, 10 unusually large sized berries that developed to full maturity could be harvested. The salient features of these berries and those from unsprayed panicles are given in Table 1.

Table 1. Salient features of allspice berries developed from hormone sprayed and unsprayed panicles

| Character | Sprayed | Unsprayed |
|-----------------------------|------------|------------|
| Fruit diameter (cm) | 1.5 to 2.0 | 0.5 to 0.7 |
| Mean fresh berry weight (g) | 0.500 | 0.025 |
| Mean seeds per fruit | 10.8 | 2.0 |
| Seed size | Bold | Very small |

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The number of seeds per berry varied from 4 to 20 in sprayed panicles as against 2 in control. The viability of seeds of the large sized berries was 78 per cent. The seeds germinated in 20-30 days and the seedlings are healthy and vigorous.

Though innumerable reports are available on increase in fruit and seed size, and number of seeds per fruit due to

hormonal application in various horticultural crops, this is the first such report in allspice opening up new vistas for future research on this important spice crop.

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