



## Research Paper

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# Evaluation of different organic media and water holding materials with IBA on rooting and survival of air layering in guava (*Psidium guajava* L.) cv. ALLAHABAD SAFEDA

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**Abstract :** An experiment on evaluation of different organic media and water holding materials with IBA on rooting and survival of air layering in guava (*Psidium guajava* L.) cv. ALLAHABAD SAFEDA was carried out at Horticultural Research Farm, Department of Horticulture, B. A. College of Agriculture Anand during *Kharif* season in the year 2010-11. The treatments comprised the combinations of media *i.e.* soil, organic media (Vermi compost/Poultry manure) and water holding materials (Sphagnum moss/Coco peat) in the ratio of 40:20:5 g along with various IBA levels (4000, 5000 and 6000 mgL<sup>-1</sup>) and compared with soil alone (control). The experiment was laid out in Completely Randomized Design with 3 replications. The air layers made with soil + poultry manure + sphagnum moss + 6000 mgL<sup>-1</sup> IBA showed early root initiation (16.33 days), highest number of primary roots (17.49), secondary roots (47.73), maximum root length (10.20 cm), fresh root weight (3.31 g) and dry root weight (0.68 g) as compared to control and rest of the treatments. It also recorded maximum survival percentage (90.67), length of shoots (7.93 cm) and number of leaves (18.33) at 60 days of air layers in the poly bag after transferring with highest economics (Net CBR 1 : 3.59).

**Key words :** Air layering, Organic media, Water holding materials, IBA, Sphagnum moss, Coco peat, Guava

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**G**uava (*Psidium guajava* L.), a native of Tropical America (from Mexico to Peru), belongs to family Myrtaceae is quite popular fruit crop of India, due to its delightful taste, flavour and its availability for a longer period during the year with moderate price. It was cultivated in India since early 17th century and known as 'poor man's fruit' or 'apple of tropics'. Guava is the fourth most important fruit crop after mango, banana and citrus. It is hardy in nature. Guava occupies nearly 2.20 lakh ha with production 25.72 lakh MT in India (Anonymous, 2010). Guava fruit contains 2–5 times more vitamin C than orange and good source of calcium, phosphorus, and iron. Traditionally, different parts of plants *i.e.*, fruits, leaves, roots, and bark are used in the treatment of gastroenteritis, diarrhea, and dysentery (Jaiswal and Amin, 1992). Besides this, fruits are very good for preparing jam and jelly because of its high pectin content.

Preponderance of seedling progeny appears to be the main constraint in the popularization of guava (*Psidium guajava* L.). It is mostly propagated from seed. However, plants raised from seeds are not true to type and evidently take longer time to reach to bearing stage as compared to vegetative propagated materials. Air layering reported to have yielded good results. Air layering with the help of growth substances stimulating root primordial in air layers of fruit plants (Tyagi and Patel, 2004).

Guava is propagated by both, sexual (seeds) and asexual (vegetative parts) method of propagation. Plants propagated through seeds do not perpetuate the exact characters of a particular superior selection in comparison to vegetatively propagated fruit trees. Asexually guava can be successfully propagated by cutting, layering, grafting and budding. Among all the methods of propagation, air layering is one of the oldest