Effects of Indole-3-Butyric Acid (IBA) and rooting media on rooting and survival of air layered wax apple (*Syzygium samarangense*) CV Jambu Madu

ABSTRACT

The wax apple or *jambu madu*, is a non-climacteric tropical fruit from Myrtaceae family and widely cultivated in South East Asia. The limited availability of good quality seedlings of wax apple is the main problem to development of flourish it's market share in the current fruit industry. Therefore, in order to produce good quality planting materials, a study aimed at optimizing propagation and adventitious rooting technique and survivability of wax apple air layer was conducted. In this study, four different levels of Indole-3-Butyric Acid (IBA) concentration (0, 1000, 1500 and 2000 mg L^{-1}) and three rooting media (sphagnum moss, vermicompost and garden soil) were applied after removal of bark (phloem) on the shoot to determine the effect on rooting and survivability of the wax apple air layer under field conditions. The results showed that the wax apple shoots treated with 2000 mg L^{-1} IBA produced the significantly higher number of roots, increased length of root, diameter of branch, length of branch, number of leaf and leaf area of air layers. In addition, the highest chlorophyll content and stomatal aperture were recorded in 2000 mg L^{-1} IBA treatment compared to other treatments including control. Vermicompost medium was better than garden soil and sphagnum moss in respect of rooting and survivability of air layers. The results showed that the combination of 2000 mg L^{-1} IBA and vermicompost as rooting media give the best combination to root initiation, root number, root length and survival rate (100%) of wax apple air layers. From this study, it can be concluded that 2000 mg L^{-1} IBA and vermicompost treatment enhance the root initiation, early establishment and survivability of wax apple air layered under field conditions.