

Effects of indole butyric acid on rooting of hardwood cuttings of *Sophora japonica* L.

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Abstract

Sophora japonica is a deciduous tree with fragrant white flowers and panicle inflorescence. This tree has not been used widely in the landscape of central. One of the reasons is lack of enough information about asexual propagation of this plant. In the present experiment, effects of different concentrations of indole butyric acid (IBA) and indole butyric acid-potassium salt (K-IBA) (0, 5000, 10000, 15000 and 20000 mg/L) was evaluated on hardwood cuttings of *Sophora japonica* with/without bottom heat. Results showed that no root formation occurred in the hardwood cuttings without bottom heat, while callus was produced. Bottom heat significantly affected all measured traits. The highest rooting percentage was obtained by 20000 mg/L IBA and K-IBA (56.66% and 53.33%, respectively), 80 days after planting the cuttings. The highest root length at 80th day after planting was obtained with 20000 mg/L K-IBA. Rooting percentage, number of roots, leaf area, roots carbohydrate content of roots and fresh and dry weights of roots, stem and leaves increased with increasing the hormones level. However, with decreasing hormones concentration, the ratio of sprout buds to dormant buds and the amount of carbohydrates in leaves were increased.

Keywords: hardwood cuttings, rooting, indole butyric acid-potassium salt, Bottom heat.

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