

(089) Effect of IBA on Rooting *Rhododendron carolinianum* Rehd. Cuttings

Fang Geng*, Central South Univ. of Forestry and Technology, Changsha, HN, csfugf@163.com

Donglin Zhang*, Univ. of Maine, Orono, ME, donglin@maine.edu

Jianmin Fu, Chinese Academy of Forestry, Zhengzhou, HA, fjm371@163.com

Xun Chen, Guizhou Academy of Science, Guiyang, chenxunke1956@163.com

Lanying Du, Chinese Academy of Forestry, Zhengzhou, HA, fjm371@163.com

Rhododendron carolinianum Rehd. is a beautiful evergreen shrub. It is native to Eastern US coast and tolerates for $-33\text{ }^{\circ}\text{C}$. The plant and its cultivars are not common in the landscapes because of their vegetative propagation difficulty. Hardwood cuttings of Carolina Rhododendron were collected in October and treated with IBA powder and potassium salt. All cuttings were placed under mist benches equipped with $24\text{ }^{\circ}\text{C}$ bottom heat. IBA rooting hormones significantly affected rooting of *Rhododendron carolinianum* hardwood cuttings. Plants with hormone treatment were rooted from 25.0 to 84.4%. No root was observed from cuttings without IBA application. IBA concentration played an important role on rooting of cuttings. The highest rooting percentage (84.4%) was obtained from the double-dip treatment of $8000\text{ mg}\cdot\text{L}^{-1}$ KIBA quick dip, then $8000\text{ mg}\cdot\text{L}^{-1}$ IBA powder. IBA concentrations at $8000\text{ mg}\cdot\text{L}^{-1}$ or lower resulted 43.8% or lower rooting rates. Liquid $16,000\text{ mg}\cdot\text{L}^{-1}$ KIBA alone was too higher for the plants and stem burn were noted from many dead cuttings. Cuttings soaked for 24 h at 200 and $400\text{ mg}\cdot\text{L}^{-1}$ KIBA generated 31.3% and 37.5% of rooting, respectively. Root quality, as indicated by root ball volume of rooted cuttings, significantly affected by hormone concentrations and application methods. The biggest root ball, 38.9 cm, was found under double dips of $16,000\text{ mg}\cdot\text{L}^{-1}$ IBA. The treatment with 24-h soaking at $200\text{ mg}\cdot\text{L}^{-1}$ KIBA yielded the smallest root ball of 12.1 cm. Rooted cuttings were moved to the cooler for 6 weeks and vernalized for the next spring's flash growth.

Note: Donglin Zhang is also a guest professor at Central South University of Forestry and Technology, Changsha, Hunan, China.