

Propagating Ornamental Plant Cuttings with Foliar-Applied Auxin

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Abstract

In the propagation of many plant species, the basal end of cuttings is dipped in auxin powder diluted with talc to promote rooting. While the talc dip method has provided satisfactory results for many years, it is labor intensive and requires significant employee training and personal protective equipment.

Foliar application of auxin in aqueous solution could reduce employee exposure to auxin, since the treatment may be performed by a few workers for large numbers of cuttings after they are stuck. However, the foliar spray method has not been tested for most plant species. In this study, we tested the effects of auxin applied as a talc dip or a foliar spray at 0, 500, or 1000 ppm indole-3-butyric acid (IBA) to cuttings of cape mallow [*Anisodontea capensis* (L.) D.M. Bates], Chinese fringe flower (*Loropetalum chinense* R. Br.), and glossy abelia [*Abelia ×grandiflora* (André) Rehd.], and at 0, 1000, or 3000 ppm IBA to cuttings of bush daisy [*Euryops pectinatus* L. (Cass)], crimson-spot rockrose (*Cistus ladanifer* L.), mirror plant (*Coprosma ×kirkii* Cheeseman), ‘Terra Seca’ black sage (*Salvia mellifera* E. Greene ‘Terra Seca’), and wall germander (*Teucrium chamaedrys* L.).

Root growth was assessed by two-dimensional root area, root dry weight, manually outlined root area, and rooting index. Chinese fringe flower and rockrose cuttings exhibited no difference in root growth in response to auxin treatment regardless of application method. ‘Terra Seca’ black sage root areas were generally not affected by auxin application, but root numbers were greater with auxin treatment (either 1000 or 3000 ppm) and with a talc dip versus a foliar spray.

Bush daisy and mirror plant exhibited increased rooting in response to auxin treatment, with generally similar root response whether applied by foliar spray or talc dip. Glossy abelia, cape mallow, and wall germander exhibited increased rooting in response to auxin treatment, with superior root response to foliar spray versus talc dip application. Our results suggest that auxin may not aid propagation of Chinese fringe flower and rockrose cuttings taken in late spring and early fall, respectively, while the talc dip method may be superior to the foliar spray method for propagating cuttings of ‘Terra

Seca’ black sage. The foliar spray method resulted in equal or superior root growth compared to the talc dip method for bush daisy, cape mallow, glossy abelia, mirror plant, and wall germander cuttings.

Due to the potential for cost savings, improved employee comfort, and simplification of workplace safety compliance, we recommend that nurseries adopt the foliar spray method for propagating bush daisy, cape mallow, glossy abelia, mirror plant, and wall germander cuttings and conduct trials with additional species.