Combined Proceedings IPPS 73: 450-452. 2023.

The Effects of IBA Treatment and Surfactant on Root Development during Vegetative Propagation of *Hibiscus grandiflorus*

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Keywords: cuttings, swamp rose mallow

Summary

Preliminary rooting trails were conducted in Swamp rose mallow (*Hibiscus grandiflorus* Michx.). Cuttings were treated with K-IBA with or without a surfactant. There is no significant impact of the rooting hormone or surfactant on rooting success or plant survival.

INTRODUCTION

Swamp rose mallow (*Hibiscus grandiflorus* Michx.) is a beautiful plant that has unique traits within the genus yet is as approachable to the public as the popular species *H. moscheutos. H. grandiflorus* has a pinwheel flower silhouette and a luscious velvet leaf that adds foliar interest throughout the growing season (**Fig. 1**). The species has flowers of variable color, from almost pure white on some plants to soft pink petals and a magenta throat on others. Culturally, *H. moscheutos* and *H. grandiflorus* are very similar, both preferring to be grown in partial to full sun with moist to wet soils. This plant could be sold at garden centers as an Eastern United States native

and as a rain-garden plant. Breeding programs can incorporate the unique floral shape and foliar textures into *Hibiscus moscheutos* genetics, as demonstrated by the F1 hybrid *Hibiscus* 'Moy Grande' (Yu et al., 2016). Key objectives of this project were to identify effective propagation techniques, introduce an under-represented species to the region, and share this research with the horticultural community.

Figure 1. Flower and leaf characterization in swamp rose mallow.

MATERIALS AND METHODS

Softwood cuttings were collected on June 30th. A large cooler was lined with ice. Sharpened Felco #2 pruners were used to cut 24" lengths of stem from established *Hibiscus grandiflorus* plants at Boone County Arboretum. The cuttings were placed in a damp plastic bag and secured in the prepared cooler with frequent misting as they were transported to the propagation location. Stems were cut into two node cuttings and re-bagged to keep the cuttings cool, as well as to randomize the cuttings for the sticking process.

Media was constructed of 50% Fafard Professional Potting Mix and 50% perlite. Four treatments with 23 specimens per treatment were tested: hormone/surfactant, no hormone/surfactant, hormone/no surfactant, and no hormone/no surfactant. Cuttings were selected at random and given one of the four treatments. The hormone treatment consisted of a three-second quick-dip in Dip'N Grow liquid hormone at a 10x concentration. The surfactant was a spray bottle foliar application of Liquid Harvest Non-Ionic Surfactant three times on a seven-day interval with the first application at the time of sticking. Water and Peters Professional 20-20-20 General Purpose Fertilizer were applied as needed.

RESULTS and DISCUSSION

Plants were evaluated after 30 days using a 0-4 method with 0 being dead, 1 being alive with no callus, 2 having callus but no roots, 3 having young roots, and 4 with vigorous root development (**Fig. 2**).

Figure 2. Rooting rating system for evaluating cutting success.

The highest percentage of cuttings that were fully rooted was seen in the IBA alone treatment (56%, but there is no significant need for either rooting hormone or surfactant (**Fig. 3**). This plant is not able to be purchased readily via seed or from Eastern nurseries, so large-scale propagation of desired plant material was not possible. The specimens generated from this experiment can be used to run a larger scale experiment and generate plant material for future propagation.

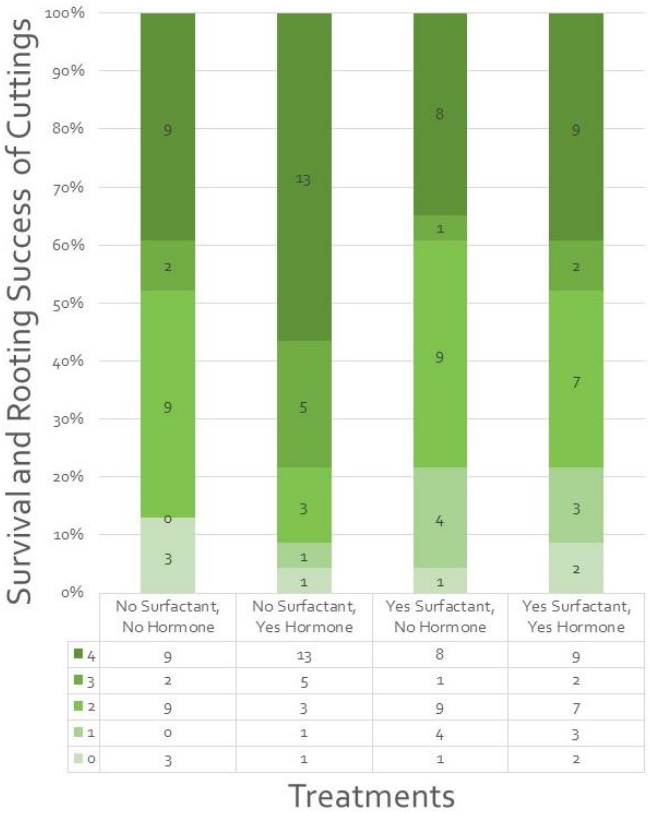

Figure 3. Survival and rooting success in swamp rose mallow cuttings.

LITERATURE CITED

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