



Evaluation of Dip'N Grow Rooting Potential on Bare Root Plants

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Nature of Work: Dip'N Grow is widely used as a liquid rooting hormone that is successful in rooting all types of cuttings. Nursery producers have inquired as to its effectiveness in producing roots on recently potted bare root roses and bare root deciduous trees. The purpose of this study is to determine if the use of Dip'N Grow can hasten the development of new roots and can improve the rate of establishment in containers.

Three rose cultivars and three trees were selected. The roses were #1 grade and included Double Delight, Mr. Lincoln and Peace. The tree selections included seedling pin oak (6-8'), Brandywine red maple (5-6') and White Princess flowering dogwood (3-4'). One hundred and sixty plants of each selection were treated and potted. Ten replicates for each treatment were planted for each crop.

Dip'N Grow treatments included:

- 1) 0 ppm IBA from water dip
- 2) 200 ppm IBA from Dip'N Grow
- 3) 500 ppm IBA from Dip'N Grow
- 4) 1000 ppm IBA from Dip'N Grow

The bare root roses and trees were dipped for three seconds into treatment solutions. Dipped plants were immediately potted into #3 containers (roses and dogwoods), #7 containers (red maples) or #15 containers (pin oaks). The potting substrate (6:1 pine bark:sand) was amended with 6 pounds of dolomitic lime, 2 pounds of Talstar, and a medium rate of a three-month controlled release fertilizer with minor elements. Potted plants were placed on a gravel pad in full sun under irrigation and maintained under normal nursery conditions.

One replication of each treatment for each crop was removed from their pots at four intervals two weeks apart. Rose roots were examined after 3 weeks, 5 weeks, 7 weeks and 9 weeks after potting. Tree roots were examined after 6 weeks, 8 weeks, 10 weeks and 12 weeks. The trees were treated on February 8-9, 2006 while the roses were treated February 16-17, 2006. The ten replicates for each treatment at each interval and each crop were evaluated and then removed from the study. The root systems were evaluated based on new root density rating, the new root length, and in a few cases, root surface area.

Double Delight Rose Summary: With Double Delight rose the 200, 500 and 1000 ppm treatments produced increased early root mass development at three and five weeks. The 500 and 1000 ppm treatment produced greater root mass at seven weeks than the 0 ppm treatment. At nine weeks all treatments were not different.

Mr. Lincoln Rose Summary: The initial slow start up growth of Mr. Lincoln is illustrated by the lack of treatment differences at three and five weeks. The 200 ppm treatment improved the root rating only at the seventh week. The 500 and 1000 ppm treatment improved the root ratings at seven and nine weeks.

Peace Rose Summary: At three and seven weeks the 200, 500 and 1000 ppm root rating treatments were greater than the 0 ppm treatment. There was no difference at five and nine weeks. At seven weeks the root lengths the 200, 500 and 1000 ppm treatments were greater than the 0 ppm treatment. At five weeks no treatments for root length were greater than the 0 ppm treatment, and at nine weeks none of the root area treatments were greater than the 0 ppm treatment. The three and seven week data show improvement over the 0 ppm treatment while the five and nine week data does not show improvement.

Pin Oak Summary: The 500 and 1000 ppm treatment produced higher root ratings at six, eight, 10 and 12 weeks over the 0 ppm treatment. The 200 ppm treatment only produced higher root ratings at 10 weeks. The 500 ppm treatment produced greater root lengths at six, eight and 12 weeks over the 0 ppm treatment. The 500 ppm treatment would be most effective and economical.

Red Maple Summary: The 500 ppm treatment produced greater root ratings at six, eight and 10 weeks over the 0 ppm treatment. The 1000 ppm treatment produced greater root ratings at six and 8 weeks over the 0 ppm treatment. There was no difference between the 500 and 1000 ppm treatments at six, eight, 10 and 12 weeks. At 12 weeks there were no differences between treatments.

Dogwood Summary: There was very little rooting response on any of the dogwood plants. The 200 ppm treatment improved the root rating at eight and 12 weeks. The 500 ppm treatment improved the root length at six, eight and 12 weeks.

Significance to the Industry: Early rooting of the rose cultivars tested indicates an improvement with the 200 ppm IBA treatment. The 500 and 1000 ppm IBA treatment seemed to continue to improve longer. The 0 ppm IBA treatment appears to catch up with the other treatments by the 9th week. The 500 ppm IBA treatment appears to be the most beneficial.

The rooting of the trees was dependent upon individual species. The pin oak seedlings responded well to the 500 and 1000 ppm IBA treatment. Rooting was initiated earlier and more roots were produced over time. At twelve weeks these treatments were still significantly better than the 0 ppm treatment. The 500 ppm IBA treatment would be most economical. The red maple responded best to the 500 ppm IBA treatment. At 12 weeks there was no longer any difference between treatments.

Overall, the grower interested in using Dip'N Grow as a quick dip on bare root woody plants should trial the 500 ppm IBA rate. Generally, they should get earlier rooting and earlier root mass development.