

Propagating *Betula nigra* Shiloh Splash PPAF River Birch[®]

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INTRODUCTION

Shiloh Splash PPAF river birch (*Betula nigra* Shiloh Splash PPAF river birch) is a new, variegated cultivar of river birch that was discovered by Mr. John Allen at Shiloh Nursery in Harmony, North Carolina. This cultivar is distinct with its attractive leaf variegation (an ivory-yellow margin and green center) and smaller size and growth rate compared to typical river birch. Shiloh Splash PPAF river birch can be used as a shrub, hedge, or small tree. The purpose of this project was to develop propagation protocols to optimize rooting of stem cuttings.

MATERIALS AND METHODS

Terminal, softwood, cuttings were collected on 13 July 2004. Cuttings were pruned to approximately 13 cm (5 inches) with the lower leaves removed. The basal 2.5 cm (1 inch) of the stems were dipped for 5 sec in treatment solutions ranging from 0 to 10,000 ppm auxin formulated as either indole butyric acid (IBA) dissolved in 50% isopropyl alcohol or the potassium salt of indole butyric acid (K-IBA) dissolved in water. Cuttings were stuck in a medium of 1 peat : 1 perlite (v/v) and placed under intermittent mist in a shaded (\approx 50%) glass-covered greenhouse. Cuttings were arranged in a completely randomized design with 15 replications. Data were analyzed using regression analyses.

RESULTS AND DISCUSSION

There was no influence of auxin concentration on percent rooting for either IBA or K-IBA (Fig. 1A and 1B); cuttings rooted between 70% and 100% regardless of treatment. However, root number was influenced by auxin concentration. Root number followed a cubic trend in response to IBA concentration with the highest root number between 2,000 and 4,000 ppm (Fig. 1B). Root number increased in response to K-IBA, but there was no significant trend in root number between 2,000 and 10,000 ppm K-IBA (Fig. 2B).

SUMMARY

Propagation studies found that terminal, softwood, stem cuttings of Shiloh Splash river birch PPAF, taken in mid July, rooted readily. Basal auxin dips, applied as either K-IBA in water or IBA in 50% isopropyl alcohol did not affect rooting percentage. However, root numbers per cutting were maximized with approximately 2,000 to 4,000 ppm of either formulation.

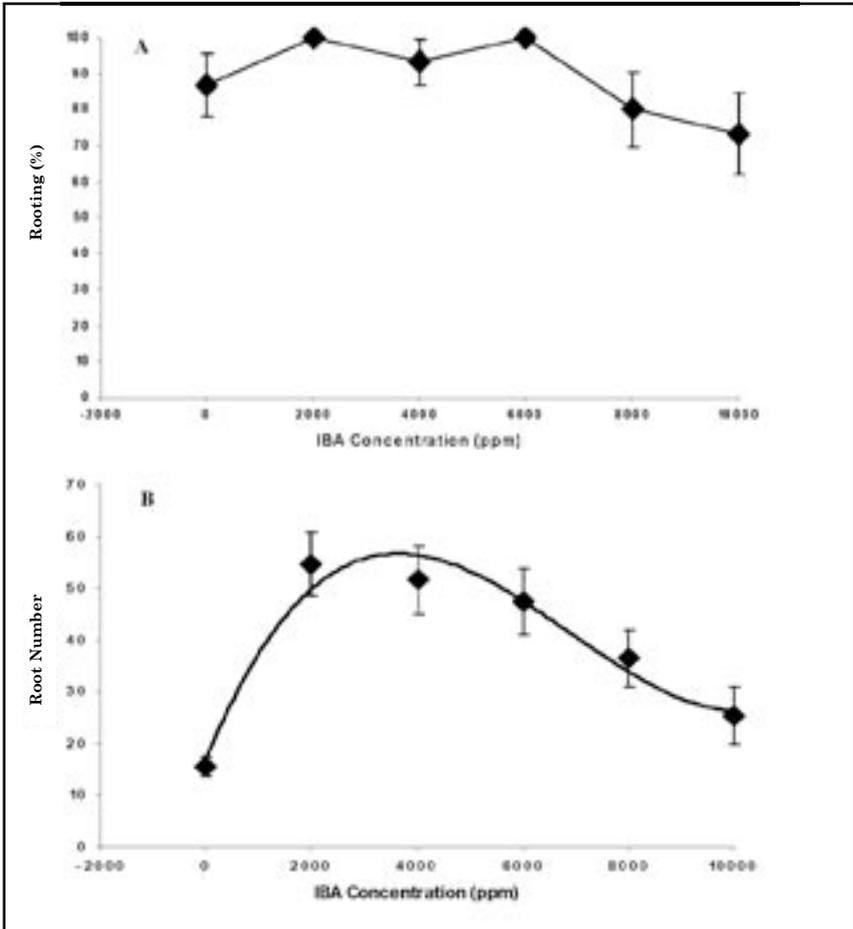


Figure 1. Rooting percent (A) and root number (B) in response to a range of IBA (in 50% isopropyl alcohol) treatments applied as a liquid, basal dip. Symbols represent means ($n=15$) \pm 1 SEM.

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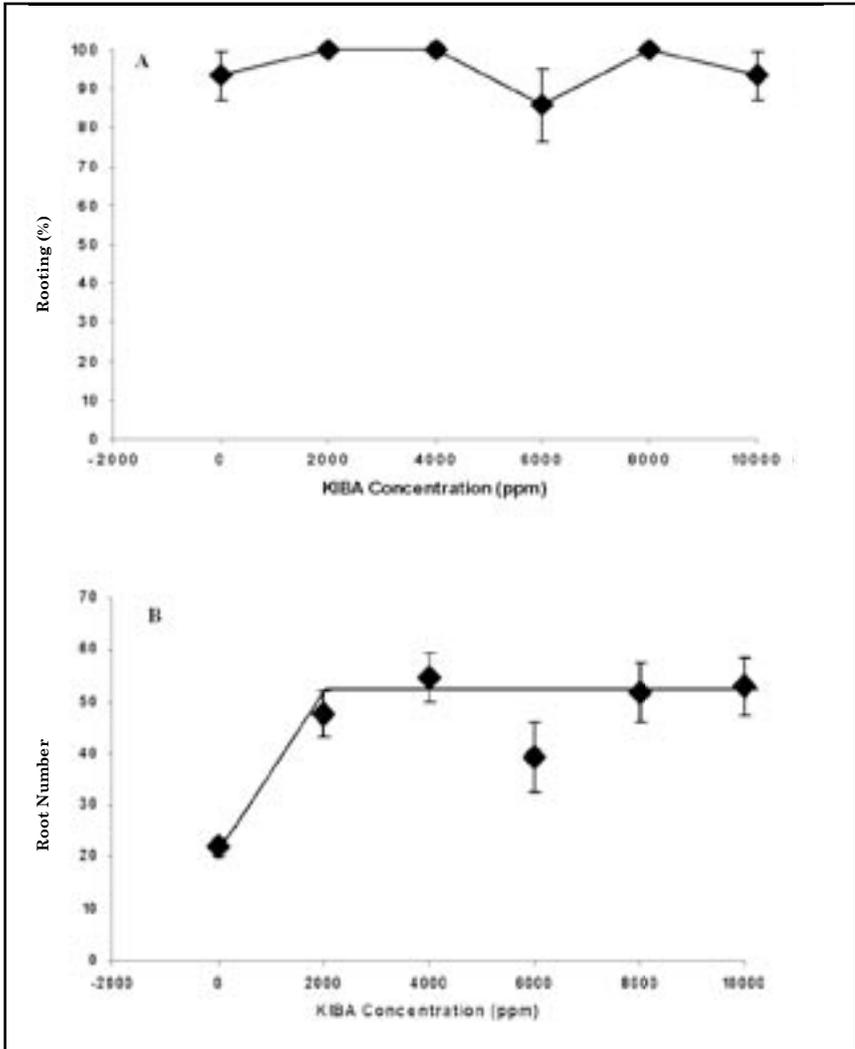


Figure 2. Rooting percent (A) and root number (B) in response to a range of KIBA (potassium salt in water) treatments applied as a liquid, basal dip. Symbols represent means (n~15) +/- 1 SEM.