

ADVANCES IN FERTILIZATION FOR HARDWOOD REGENERATION

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ABSTRACT

Optimizing fertilization programs in the nursery and field may help improve regeneration and restoration of temperate deciduous hardwoods. Our research program has demonstrated the applicability of nutrient loading in fine hardwood systems to promote seedling uptake and storage of nutrients during the nursery phase (Birge et al. 2006, Salifu and Jacobs 2006, Salifu et al. 2006, Schmal et al. 2011). We also have shown the benefits of nutrient loading for subsequent seedling establishment under a wide range of transplant conditions (Salifu et al. 2008; Salifu et al. 2009a, b).

We have reported on how controlled-release fertilizer technologies can stimulate growth of afforestation hardwoods (Jacobs et al. 2005) and are currently investigating how these advanced fertilizers affect nutrient uptake and leaching in mid-rotation black walnut (*Juglans nigra* L.) plantations.

Finally, some of our recent research with intensively managed black walnut plantation systems in Spain has documented very high optimal foliar nitrogen concentrations, as well as limitations in fertilizer use efficiencies at upper fertilizer rates (Goodman et al., in press). Collectively, these current research results have important implications for managing black walnut and other fine hardwoods in the nursery and field.

LITERATURE CITED

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