Evaluation of Planting Stock Size to Growth Performance for Conservation Plantings

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INTRODUCTION:
Tree plantings for conservation practices have been promoted by the USDA’s Natural Resources Conservation Service through 2008 Farm Bill programs such as Conservation Reserve Program (CRP), Conservation Reserve Enhancement Program (CREP), and Wetland Reserve Program (WRP). Successful tree establishment is fundamental in agroforestry practices including riparian buffer plantings, windbreaks, wildlife habitats and silvopastures. In establishing these practices, landowners are planting trees into pastures, crop fields or old fields that are problematic due to competition from weeds, herbivory, and flooding. This study evaluates planting stock size to determine if this may improve the overall survivorship of conservation plantings, while keeping costs down and success rates high. One-year old RPM® containerized tree seedlings were evaluated against traditionally grown nursery one- and two-year old seedlings.

MATERIALS AND METHODS:
All trees were planted on November 02, 2006, on an Unadilla silt loam soil, located in the Big Flats Plant Materials Center in Corning, New York. The RPM trees were supplied by the Cornell Horticulture facility in Dryden, NY and the 1-yr old bareroot and 2-year old containerized plants were from Octoraro Nursery in Oxford, PA. The field, prior to planting, was a perennial pea production field which was removed in 2004. The field was fallowed the next 2 years and was then disked and roto-tilled before planting.

RESULTS:

CONCLUSIONS:
Using 1 year old bareroot cuttings, protected by tree shelters, provided faster height growth rates for the trees species tested. Even though the caliper growth rates were higher for the RPM and 2-year old containerized trees, when compared statistically, the results were not significant, except for trees that were severely damaged by rodents or deer. Using bareroot cuttings may be more economical than using the more expensive containerized trees, for large scale afforestation plantations.

This site will be further examined for long term survival of each tree species and stock type. Long-lasting success is the main goal for conservation practices, such as CRP, WRP, and CREP, promoted by USDA-NRCS.