SIX-YEAR GROWTH RESPONSE OF GREEN ASH TO RELEASE AND FERTILIZATION TREATMENTS

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One major obstacle in the forestry profession is public resistance to traditional silvicultural practices. Non-industrial private forests are expected to be the major source of hardwoods in the future. Because of the increased demands on these forests, it is important to provide landowners with an attractive alternative for managing to retain forest productivity. Crop tree enhancement promotes stand growth and quality while also providing an opportunity to maintain wildlife habitat and aesthetics of hardwood forests. This study examines a bottomland hardwood site at Ames Plantation near Grand Junction, Tennessee. The site was clearcut in 1980, and a significant component of green ash emerged. Other species on the site include black willow, elm, cottonwood, box elder, river birch, cherrybark oak, yellow-poplar, red maple, and sweetgum. Green ash was designated as the crop tree species with the greatest potential value in the future. The goal of crop tree enhancement at this site is to examine which treatments will retain green ash as a significant component of the stand. Crop tree enhancement treatments included release, release with fertilization, and control, and were replicated 5 times. In 1996, 25 crop trees in each treatment plot were selected and initial measurements of total height, height to green crown, dbh, and crown spread in 2 directions were obtained. All of the trees included in a 10-factor prism sweep around each crop tree were designated as competitors. Total height, height to green crown, dbh, crown projection, azimuth, and distance from the crop tree was recorded for each competitor tree. The site was remeasured during the winter of 2002-03. Preliminary results indicate differences among crop tree enhancement treatments in height and diameter growth in the first 6 years after treatment. The differences will be examined with respect to several distance-independent and distance-dependent expressions of competition, live crown ratio, crown width, and soil factors.

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