# RESPONSE OF YOUNG ASH TREES TO CULTURAL TREATMENTS NOT ALL POSITIVE

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Calcium cyanamide ($CaN_2$), an alkaline nitrogenous fertilizer containing about 22 percent N and 20 percent lime, was evaluated as a fertilizer for young white ash (*Fraxinus americana* L.). Neither height nor diameter of 4-year-old ash trees treated with three annual applications of $CaN_2$ at rates of 448, 672, 896, and 1,120 kg/ha was significantly different from the unfertilized control trees. Following two applications of $CaN_2$ at the rates applied to younger trees, 7-year-old white ash were taller and larger in diameter than the unfertilized control trees, but differences were not significant.

The effects of tree shelters on the performance and leaf nutrient concentrations of planted green ash (*F. pennsylvanica)* were investigated at age 3. Mean survival of trees with shelters was 92 percent compared to 62 percent without shelters. Sheltered trees had significantly more stem and root biomass than trees without shelters. Foliar phosphorus, calcium, and magnesium levels were significantly higher and potassium was significantly lower in green ash leaves from trees with shelters than in green ash leaves without shelters.

Annual height measurements taken for green ash in another planting, grown with and without tree shelters, indicated considerable dieback after year 5, and measurements were terminated after year 8. Mean survival was not different between tree shelter treatments, but it declined from 88 percent after 1 year to 55 percent by year 8. Green ash trees with shelters were taller than those without shelters after the first growing season. But by year 5, height differences between treatments disappeared. The exact cause of the dieback and eventual mortality is not known, and there was no difference in the amount of dieback between tree shelter treatments. The author speculated that insects were responsible for the decline.