

**RECOMMENDATIONS FOR TREE ESTABLISHMENT IN TALL FESCUE
BASED SILVOPASTURE**

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ABSTRACT

Silvopasture offers Midwest landowners the opportunity to plant trees in their pastures without significant loss of forage production. However, much of the pasture in the Midwest is dominated by tall fescue (*Schedonorus phoenix* (Scop.) Holub.). Researchers are unsure why, but tall fescue is known to inhibit tree growth. It may be competition for moisture and nutrients, or possibly allelopathy.

To improve the adoption of silvopasture, this research was conducted to delineate factors that may affect tall fescue's competitiveness and to create recommendations that minimize the effects of these factors on tree growth. Black walnut, red oak, and black locust growth was reduced up to 90 % when grown with grass competition compared to that in vegetation-free controls. while pitch x loblolly pine growth was similar in grasses and in vegetation-free plots. Neither dry matter yield of grasses nor tall fescue's endophyte association affected tree growth. Results suggest that weed control should extend a minimum of 1.21 m from black walnut seedlings in tall fescue pastures to maximize height and diameter growth.

bare-root and containerized seedlings transplanted well and were larger than seeded seedlings after two years in the field. Producers wishing to plant improved black walnut varieties may be limited to containerized stock because improved bare-root seedlings are not often available. Mycorrhizae inoculants had no effect on the establishment of any stock type.