Switchgrass Influence on shortleaf pine growth in Western Arkansas

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June 2011

Growing switchgrass (*Panicum virgatum* L.) between rows of shortleaf pine (*Pinus echinata* Mill.) for biofuel may have potential as an agroforestry practice for landowners in western Arkansas. However, there is limited information on the growth and production of shortleaf pine from competition of switchgrass interplanted between the rows in subsequent years following tree establishment. Objective of our study is to determine the effect of switchgrass on growth and survival of shortleaf pine. The study is conducted at the USDA-Natural Resources Conservation Service Plant Materials Center in Booneville, Arkansas on a Leadvale silt loam. Shortleaf pine was established in a block (14' x14'), double row (8' x 8') and single row (8' x 24') tree arrangement in January 2006. Length and width of block, double row and single row planting was 154' x 376', 152' x 376' and 120' x 376', respectively, with a 40' alley between arrangements. The stocking rate for block, double row and single row tree arrangement was 222, 227 and 226 trees/acre, respectively. Tree arrangements were planted as a randomized complete block with 3 replications. Switchgrass (cv. Alamo) was interplanted between tree rows at a rate of 5 lb PLS/acre on 13 April 2006. Above average precipitation during the late fall and early spring in 2007-2009 prevented extensive data collection. In November 2010, tree height and diameter measurements revealed the switchgrass did not influence the growth of the shortleaf pine on this site ($P<0.05$). Future studies on this site will be expanded to determine the effects various planting arrangements, canopy development and management schemes will have on switchgrass production.