

LONGER BLACK WILLOW CUTTINGS RESULT IN BETTER INITIAL HEIGHT AND DIAMETER GROWTH IN BIOMASS PLANTATIONS

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Black willow (*Salix nigra* Marsh.) has the potential to be a viable biomass crop for heavy clay soils throughout the southern United States. The most favorable planting stock for woody biomass plantations is dormant unrooted cuttings, because they are easy to plant and use of clonal material allows for advancing genetic improvement. The objectives of this study were to determine the optimal cutting size and planting depths, characterize rooting ability, and study genetic variation that would enhance survival and growth of black willow. We examined four cutting diameters, three cutting lengths, and three planting depths. There were no significant age-one survival differences among the various factors. Significant age-one total height differences were shown for cutting length, depth of planting, and cutting diameter. Height was greater for those cuttings that were the longest but planted at a shallower depth. While cutting diameter was a significant factor for age-one height it followed no cutting size trend. The high survival of black willow is strongly correlated to its prolific rooting ability. There is genetic variation among region specific stands and clones.