Determining the Effects of Felling Method and Season of Year on Coppice Regeneration

Daniel de Souza[1], Tom Gallagher[2], Dana Mitchell[3], Mathew Smidt[4], Tim McDonald[5]

There is increasing interest in plantations with the objective of producing biomass for energy and fuel. These types of plantations are called Short Rotation Woody Crops (SRWC). Popular SRWC species are Eucalypt (Eucalyptus spp.), Cottonwood (Populus deltoides) and Black Willow (Salix spp.). These species have in common strong growth rates, the ability to coppice and rotations of 2-10 years. SRWC have generated interest for many forest products companies and timber producers and although they might help with the supply for the expected growth on the bioenergy and biofuels market, there are still several concerns about the best way to harvest them maximizing their ability to coppice. SRWC have elevated establishment and maintenance costs if compared to other type of plantations, but due the coppicing ability, the same plantation may be harvested up to 5 times without the need of establishing a new one. Study plots were installed at several locations in Florida, Mississippi and Arkansas, and were cut with a chainsaw and a shear head during summer and winter, to determine the effects of felling method and season on coppice regeneration. Thus, plots were divided in 4 treatments: shear-winter, saw-winter, shear-summer, saw-summer. Harvesting eucalypt and cottonwood trees during winter resulted in better survival rates than harvesting during summer; however, there was no effect of felling method on coppice regeneration. Finally, no statistically significant difference was found on coppice regeneration of black willow when harvesting during winter or summer with a chainsaw or a shear head.

[1] MS of Forestry, Auburn University School of Forestry and Wildlife Sc., 334-740-2910, dzp0026@auburn.edu
[2] Associate Professor, Auburn University School of Forestry and Wildlife Sc., 334-332-0019, gallatv@auburn.edu
[3] Project Leader, US Forest Service, Auburn, AL, 334-826-8700, danamitchell@fs.fed.us
[4] Associate Professor, Auburn University School of Forestry and Wildlife Sc., 334-844-1038, smidtmf@auburn.edu
[5] Associate Professor, Auburn University Biosystems Engineering, 334-844-3545, mcdontp@auburn.edu