

RECENT ADVANCES IN ENERGY CROPS: SHORT-ROTATION WOODY CROPS

T. Rials and J. McCord, The University of Tennessee, Center for Renewable Carbon,
2506 Jacob Drive, Knoxville, TN 37996-4570

A portfolio of bioenergy crops is essential to the successful broad-scale deployment of the biorefinery industry in the United States. The University of Tennessee is currently involved in two significant programs developing the potential of energy crops to provide high-quality feedstock. The Sun Grant Initiative, in partnership with the Department of Energy's Bioenergy Technology Office, is working to advance short-rotation woody crops (SRWC's) as a source of performance engineered biomass. The Regional Feedstock Partnership's program targets two distinct woody crop systems: *hybrid poplar and willow*. The project has created unique research capacity with a national network of coordinated field trials to baseline growth and yield increases afforded with new genetic material. This structured approach has also provided valuable data used to calibrate new yield models that inform ongoing assessments of biomass availability. More recently, The IBSS Partnership (sponsored by USDA – NIFA) has worked to adapt this intensive management system to the Southeast, focusing on both hybrid poplar and eucalyptus as preferred species in the region. Field trials in Tennessee and Alabama are providing more yield data for the region, where information on short-rotation woody crops is limited. Additionally, a commercial-scale site in Mississippi will provide new insight on production costs and environmental attributes. This presentation will highlight recent performance improvements for both poplar and willow systems, and discuss progress introducing SRWC's as a supplemental source of woody biomass for advanced fuels and chemicals.