The Center for Agroforestry at the University of Missouri has recognized since its inception the need for research on biofuel as the country works to limit its dependence on fossil fuels. In 1998, cottonwood clonal trial studies began at HARC to evaluate growth response and biomass production. The study aims to determine if cottonwood could work in agroforestry plantings such as buffers, while concurrently creating a biomass industry.

This research was certainly timely and now, with numerous biomass power generation facilities under construction or consideration across the state – including an upgrade of the MU Power Plant to handle greater use of renewable fuels such as biomass – UMCA is pleased to be expanding its efforts in research and collaboration in the bioenergy field.

Work with Dr. Hank Stelzer, MU Extension Forester, gauges the resources already available in the state through biomass spatial analysis. Sweet sorghum is another promising biofuel crop that can be grown on drier sites not suitable for corn production and, UMCA researchers hope, on sites prone to periodic flooding or waterlogging. Collaborative research with the Dale Bumpers Small Farms Research Center, Boonville, Ark., looks to see if sugarcane can be selected for cold tolerance north of its presumed range limit. Finally, research supervised by Francisco Aguilar, UMCA collaborator, looks at the economic feasibility of woody biomass harvesting.

UMCA is committed to the future of biomass research. The Center has filled a postdoctoral research associate position in Biomass Feedstock Production Systems, welcoming Sougata Bardhan to UMCA. The Center is working to create a world-class network of universities, federal/state agencies, agribusiness and farmer co-ops, non-profit organizations and corporate partners across the state and nation.

The Center and MU’s efforts have been recognized recently with articles in Biomass Magazine, July issue, “University Sees Biomass as Future for Energy Generation”; Columbia Daily Tribune, June 23, “MU noted for energy efficiency: EPA honors schools for renewable use”; and on the CAFNR Web site, “The Cottonwood Solution.”

Whether aiming to make the most of biomass opportunities already in place in the region, or forging ahead researching the best possible crops to turn marginal or multi-use agricultural fields into dedicated energy plantations, UMCA is proud to be directly addressing an area of such importance to the future of agriculture and U.S. energy independence.
**RESEARCH**


The potential of veterinary antibiotics (VAs) to impact human and environmental health requires the development and evaluation of land management practices that mitigate VA loss from manure-treated agroecosystems. Vegetative buffer strips (VBS) are postulated to be one management tool that can reduce VA transport to surface water resources. Study results indicated oxytetracycline was strongly adsorbed by all soils and the VA was not readily extractable. Adsorption of both antibiotics was significantly greater for soils planted to VBS relative to grain crops. This work suggests agroforestry and grass buffer strips may effectively mitigate antibiotic loss from agroecosystems, in part, due to enhanced antibiotic sorption properties.

**IMPACT**

Students supported by UMCA research projects have been very successful:

* Sandeep Kumar (“Agroforestry and grass buffers for improving soil hydraulic properties and reducing runoff and sediment losses from grazed pastures”) was offered a Post-Doctoral position at The Ohio State University with Dr. Rattan Lal in the Carbon Management and Sequestration Center. He is currently working on a research project to predict soil carbon pool sizes for the Midwestern U.S.

**OUTREACH**

Larry Godsey, Andy Thomas and Pat Byers presented at the Comprehensive Elderberry Workshop and Farm Tour 2010 held June 17-18 at Carver Research Farm, Lincoln University, Jefferson City; and Eridu Farms, Hartsburg, Mo. The event was sponsored by River Hills Harvest. In addition, The Center for Agroforestry sponsored an information booth.