

Southern Region Bioenergy

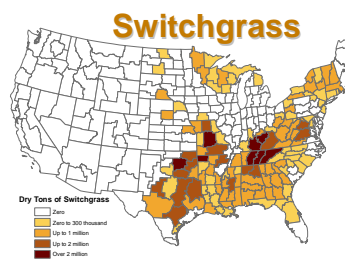
- A New Agricultural Industry Paradigm



Under current market conditions technology has been developed and adopted to economically produce large quantities of ethanol from corn. Growth in ethanol production over the last few years has transformed agriculture from a food, feed and fiber industry to a food, feed, fiber, and fuel industry. This is a fundamental paradigm shift for agriculture. Impacts of this transformation are creating arguably the largest set of forces for change ever experienced by the United States agricultural sector.

The projected demand for feedstocks for energy production will result in tremendous acreage shifts into feedstock production. A significant portion of this production will come from dedicated energy feedstocks for cellulosic conversion to fuels; such as switchgrass, hybrid poplar, sorghum, sugarcane bagasse, sycamore, or miscanthus; and agricultural or forest harvesting wastes. Due to its climate and agricultural and forestry infrastructure, the Southern region is well positioned to be a major supplier of cellulosic feedstocks.

The Southern region Land Grant Universities' goal is to vitalize the agricultural industry and rural communities as well as enhance the nation's energy security by assisting in the establishment of a sustainable regional bioenergy industry. Significant teaching, research, and extension expertise will be necessary for development of the agricultural infrastructure to accommodate energy production, as well as food, feed and fiber.



Integrated research & extension focus areas:

- Feedstock selection and genetic improvement; production, harvest, and handling best practices
- Conversion engineering for bioenergy production; i.e. ethanol, biodiesel, bioelectricity, biogas, etc.
- Economic analysis of changing cropland use, farming practices and marketing techniques
- Optimum bioenergy plant locations & sizes; implications for displaced processing & input industries; and incorporation into communities
- Policy issues associated with unintended social & economic consequences
- Evaluation and mitigation of environmental consequences
- Energy efficiency through conservation by consumers, agricultural producers, industries, communities, and others

High priority needs where Land Grant Universities' capacity is most limiting:

- Economic Dimensions
 - Economics of bioenergy production from agricultural and forestry sources
 - Implications of feedstock production for land use, cropping patterns and rotations
 - Impacts of changes in processing, supply & input industries and in storage & transportation needs
 - Shifts in food, feed and fiber markets
- Social Dimensions
 - Minimizing negative impacts from unintended consequences and optimizing benefits
 - Information needed for fact-based policies
 - Addressing public issues & perception, and supporting community leadership
 - Business organizations, partnerships and co-ops

These are challenges that Land Grant University programs have addressed before, and can address again. However, the scope of change leading to these challenges, and hence the scope of the challenges, appears to be unprecedented as agriculture shifts to a new paradigm of food, feed, fiber and fuel production.

The **Southern Region Bioenergy Research and Extension Coordinating Committee** was formed in April 2007 with the goal of coordinating regional programs in research and extension related to bioenergy. For information on regional bioenergy efforts contact:

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