

## **Biofuels for North Carolina**

**The Need:** Rising energy prices, heavy dependence on foreign oil and growing concern for the environment have resulted in increasingly aggressive nationwide research into alternative fuels. North Carolina is uniquely positioned to be a major player in biofuel production because of its abundant biomass resources and workforce capacity. In fact, the Environmental Review Commission of the North Carolina General Assembly recently released a strategic plan with this goal: By 2017, 10 percent of liquid fuels sold in North Carolina will come from biofuels grown and produced within the state. Increased production of biofuels derived from the state's agricultural crops and byproducts also could result in significant economic gain for North Carolina.

**Serving the Need:** Using everything from switchgrass and sweet potatoes to agricultural byproducts such as animal waste, scientists in the N.C. State College of Agriculture and Life Sciences are developing ways to convert biomass into clean-burning alternative fuels. A number of innovative projects are underway in the College:

- In the Department of Biological and Agricultural Engineering, researchers are working to produce biofuels from agricultural and food processing residues, agricultural feedstocks and waste management byproducts.
- Several of the College's crop scientists are researching ways to convert switchgrass, canola and hullless barley into ethanol. The second Canola Field Day, co-sponsored by the College, was held April 19.
- Researchers in the departments of Poultry Science and Animal Science are exploring ways to use animal waste byproducts as a source for biofuels.
- In the Department of Horticultural Science, faculty are working to genetically engineer sweet potatoes to contain a starch-degrading enzyme that accelerates conversion into ethanol.
- The College will play a central role in developing a Golden LEAF-funded pilot plant at the Lake Wheeler Road Field Laboratory that will convert feedstocks into ethanol. Plant construction is expected to begin in summer 2007.
- College Dean Johnny Wynne is actively involved in the development of the Environmental Review Commission's report, "Fueling North Carolina's Future: North Carolina's Strategic Plan for Biofuels Leadership." Wynne also is advocating for the establishment of a field laboratory in Duplin County that would expand the university's biofuels research.

**Impact beyond North Carolina:** The College's work in developing biofuels could generate breakthroughs that result in greater energy independence, a cleaner environment and a stronger economy for North Carolina and beyond.

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