



National Institute of Food and Agriculture
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Department of Agriculture National Institute of Food and Agriculture



INVESTING IN SCIENCE | SECURING OUR FUTURE



Institute of Bioenergy, Climate, and Environment

- Ensuring energy independence through clean, biobased energy systems
- Ensuring sustainable and adaptive agro-ecosystems in response to climate change
 - Frank Boteler, *Assistant Director*
 - Vacant, *Principal Scientist*
- ***Division of Bioenergy***
 - Mark Poth, *Division Director*
- ***Division of Global Climate Change***
 - Luis Tupas, *Division Director*
- ***Division of Environmental Systems***
 - Ali Mohamed, *Division Director*



Energy Strategy

- **Growing America's Fuel: An Innovation Approach to Achieving the President's Biofuel Target**
 - Supply chain systems approach
 - Cooperation of government agencies across supply chain
 - Focus on advanced biofuels: butanol, gasoline, diesel, jet fuel
 - Regional systems for biomass production and conversion
 - Establish 5 USDA Regional Biomass Research Centers
 - Environmental, economic, social issues must be addressed up front = sustainability



Biomass Research and Development Initiative

- Focus on advanced biofuels (no corn ethanol)
- Interest in small scale processing
- Interest in rural-based processing and manufacturing
- Interest in biobased industrial products
- Required integration of:
 - feedstock development/production
 - feedstock logistics,
 - feedstock conversion
 - system analysis, e.g. life cycle analysis, impacts on food/feed supply



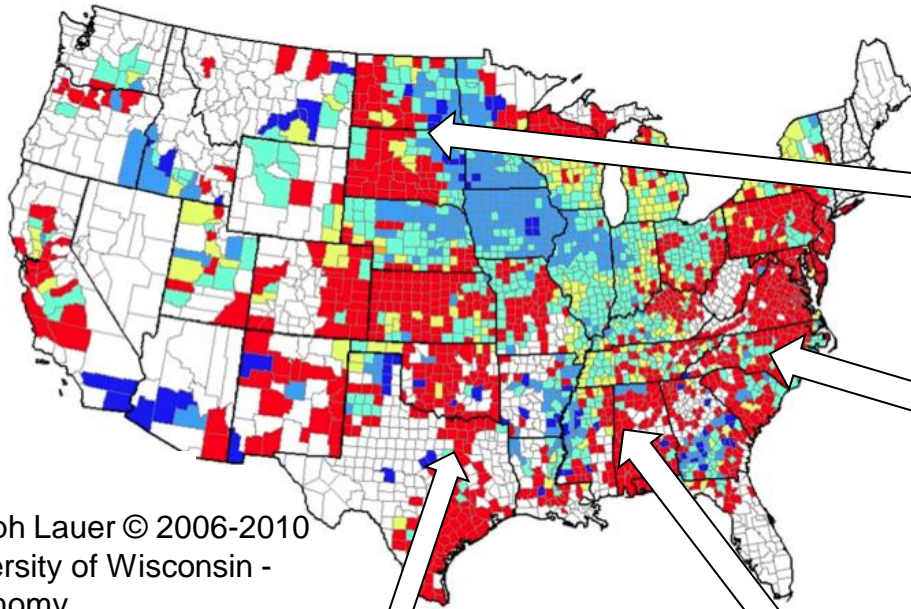
Agriculture and Food Research Initiative

Sustainable Bioenergy Challenge

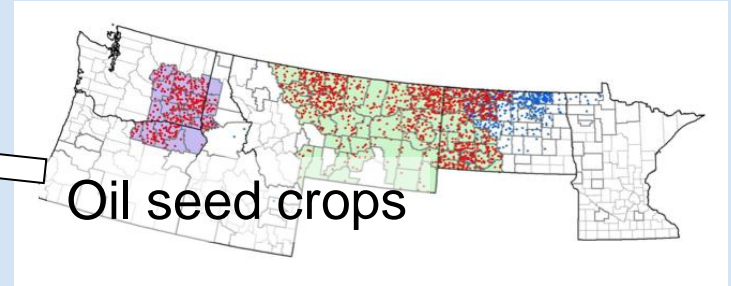
- Regional Approaches to Sustainable Bioenergy
 - Large awards to stimulate biofuels production in a multi-state region
 - Perennial grasses, sorghum, woody biomass, energycane, oil seed crops, algae
- Standard research grants
 - Co-products, crop protection, carbon sequestration, impacts of policy, scalable conversion technologies, impacts on pollinators and wildlife, land-use changes, socioeconomic impacts, feedstock logistics
- Stimulating a New Era of Students and Faculty in Bioenergy
- National Loblolly Pine Genome Sequencing



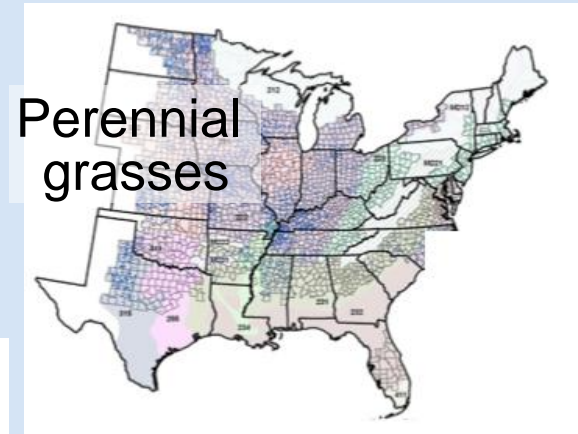
Regional Biomass Research Centers



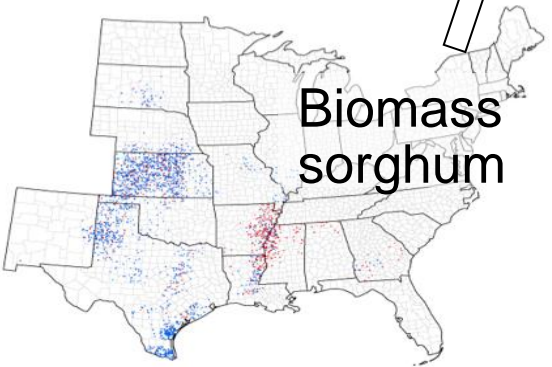
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Agronomy



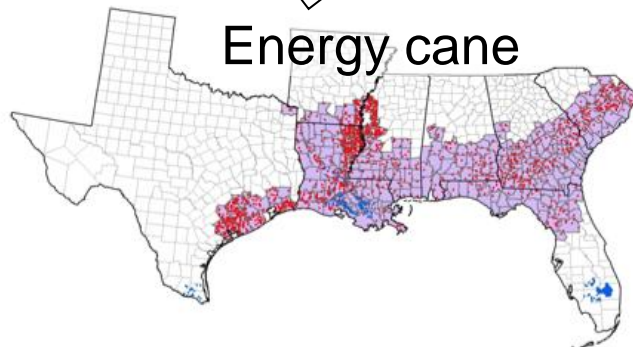
Oil seed crops



Perennial
grasses



Biomass
sorghum



Energy cane

**Integrating
Feedstocks into
Existing Systems**



Biomass Crop Assistance Program

- Support the establishment and production of eligible crops for conversion to bioenergy in selected areas
- Eligible materials are strictly defined
 - Forestry byproducts of preventive treatments
 - Would not otherwise be used for high-value products
 - Harvested in accordance with law and land management plans
 - Agricultural resources
 - Specified commodities, e.g. sorghum varieties
 - Waste materials, e.g. crop residues
 - Herbaceous resources
 - Specified plant materials, e.g. grasses
 - Vegetative waste material
- Ineligible materials e.g. animal waste, algae