

# Regional Feedstock Partnership: Herbaceous Energy Crops Working Group

26-27 February  
Washington, DC

# Overall Objectives

- Identification of species for various regions with greatest potential for large scale production of biomass. This will be based primarily on an inventory of current biomass research at the small-plot scale.
- Establish and perform replicated field trials of dedicated energy crops and CRP land to gather biomass production and sustainability data to provide the data needed to assess the potential for expanding biomass resources and to document yield differences among species and locations.

# Practical Objectives

- Inventory existing energy crops research
- Identify crops/species for expanded field trials (test plots to be managed using production-scale equipment) within regions
- Develop research strategy and experimental design
- Provide data to GIS-Feedstock Atlas task group
- Plant and manage field plots in 2008

# 2007-2008 DOE Milestones

## Non-Woody Energy Crops Group

Quarter	Date	Milestone
1	12/31/07	Regionally-based biomass resource supply estimate
2	3/31/08	Inventory of existing/previous field trials and select model crops and agronomic systems; identify locations for field trials
3	6/30/08	Establish replicated field trials with selected energy crops with the purpose of extending range and yield using genetically improved varieties
3	9/28/08	Conduct replicated field trials (including genetic evaluations) across regions to develop energy crops within a geographical region.

# 2007-2008 DOE Joule Milestone Measures for the Non-Woody Energy Crops Group

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Regionally-based Biomass resource supply estimates	<b>Inventory previous field trials and select model crops and agronomic systems; identify locations for field trials across regions</b>	<b>Establish replicated field trials with model energy crops across all regions with the purpose of extending range and yield using genetically improved varieties;</b> in conjunction with USDA, develop a corn stover residue removal tool and begin field validation process	<b>Conduct replicated field trials across regions</b> to determine the impact of residue removal on grain yield (in subsequent years); <b>field trials (including genetic evaluations) to develop energy crops within a geographical region;</b> resource assessments to determine regional feedstock supply curves (variable costs of feedstock across various sites); and economic studies that identify the best site conditions and general locations for biorefineries within a region, all of which can <b>demonstrably contribute to the goal of producing feedstocks at \$35 per dry ton by 2012.</b>

Evidence -- reports plus in some cases actual deliverable such as field trials and analysis will be provided

Regionally-based Biomass resource supply estimates supplied by ORNL	<b>Inventory that covers each region, and includes suggestions for locating field trials</b> (ORNL/Sun Grant Team)	<b>Crops planted;</b> tool produced; stover trials established (SGI, ORNL, and USDA)	Projected improvements in energy crops demonstrably move toward 2012 feedstock cost goal [comparison of baseline data (quarter 2 deliverable) with <b>yield projections based on the new variety trials</b> (quarter 3 deliverable) (ORNL and Sun Grants)]; Beta version of "Atlas"(ORNL); Plan for future plantings (ORNL); Biorefinery siting tool developed (UC Davis/USDA/ORNL)
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# Results to Date

- Inventory
  - Legumes, Grasses
  - Annuals, perennials
  - Completed but...

# Results to Date

- Feedstocks selected for field trials
  - Miscanthus
  - Sorghum
  - Energycane
  - Switchgrass
  - CRP land
  - Possible future expansion

# Results to Date

- Locations and collaborators identified
  - **Miscanthus**
    - Illinois (Tom Voigt, Species Lead)
    - Indiana
    - Kentucky
    - Nebraska
    - New Jersey
  - **Sorghum**
    - Texas (Bill Rooney, Species Lead)
    - Iowa
    - Kansas
    - Kentucky
    - Mississippi
    - North Carolina



# Results to Date

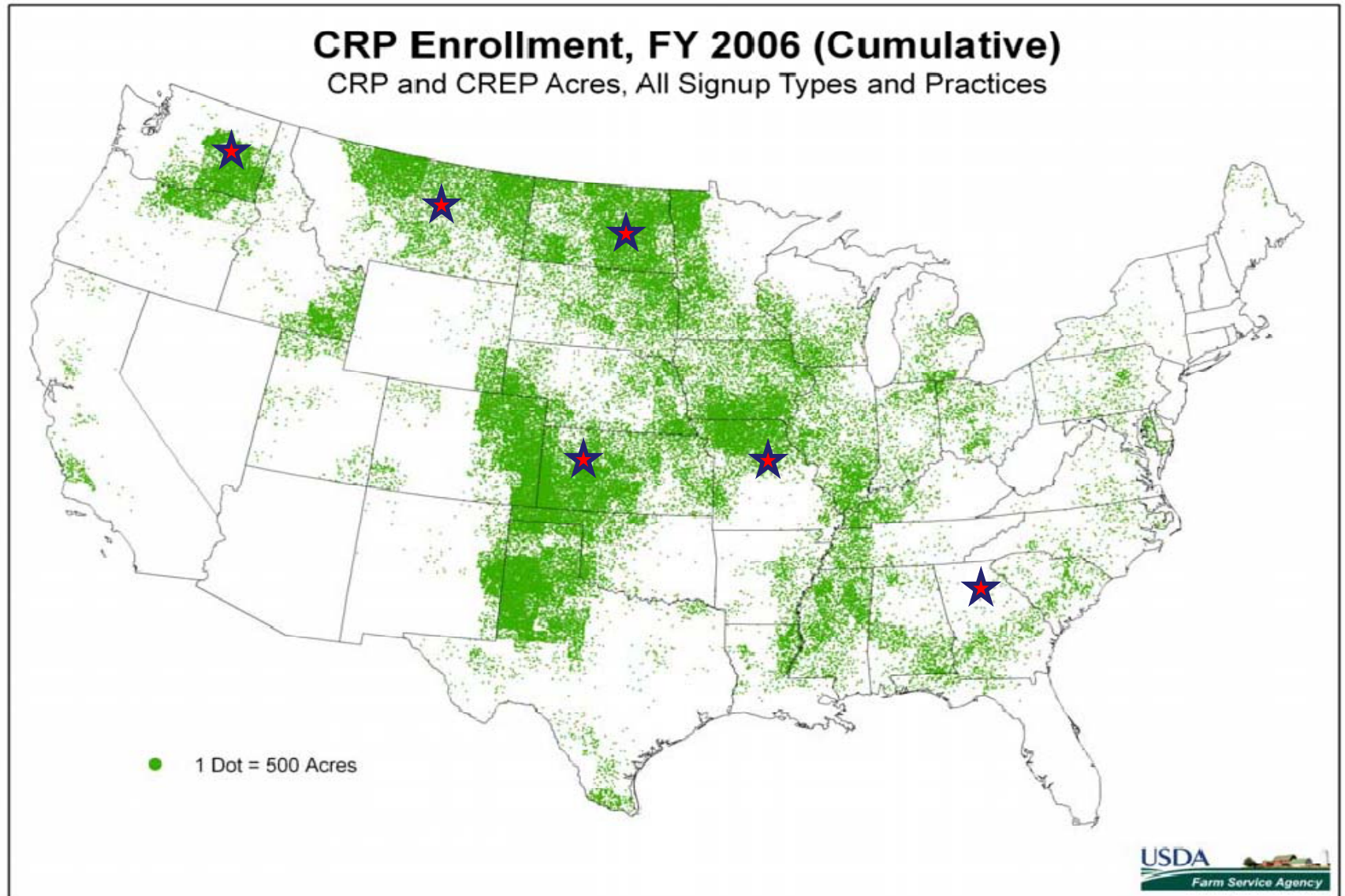
- Locations and collaborators identified
  - **Energycane**
    - Mississippi (Brian Baldwin, Species Lead)
    - Alabama
    - Georgia
    - Hawaii
    - Louisiana
    - Texas
  - **Switchgrass**
    - South Dakota (Vance Owens, Species Lead)
    - Alabama
    - New York
    - Oklahoma
    - Virginia
    - Washington

# Results to Date

- Locations and collaborators identified
  - CRP land
    - North Dakota (DoKyoung Lee, Species Lead)
    - Georgia
    - Kansas
    - Missouri
    - Montana
    - Washington

# CRP sites

**CRP Enrollment, FY 2006 (Cumulative)**  
CRP and CREP Acres, All Signup Types and Practices



# Future Plans

- Complete individual Statements of Work
- Detailed budget
- Complete Environmental checklists (NEPA review)
- Experimental design and arrangement by species
- Establish field trials
- Collect data for GIS group
- Yield projections