

# ARS Rangeland, Pasture, Forages Systems

Bioenergy Workshop

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U.S. Department of Agriculture



# NP215 Profile

- 124 Scientists
- 25 laboratories
- \$44 M budget (FY06)
  - \$18M rangelands
  - \$13M pasture & hay
  - \$11M plant improvement
- Other ARS locations do related work



# Why Cow Feed & Bioenergy?



- Both need affordable high-quality forages for energy through fermentation
- Large existing forage-livestock capacity that can be adapted to bioenergy



# Components of ARS Rangeland, Pasture and Forages Research



- Plant improvement
- Forage management (harvested forages)
- Grazing management: livestock production and the environment
- Integrated management of weeds & pests
- Sustainable Ecosystems



# Plant Improvement

Grasses and Forage Legumes for Livestock, Turf,  
Bioenergy, & Conservation

- Basic research in plant physiology, pathology, ecology and genetics
- Collecting & evaluating genetic material
- Improving plant performance for multiple uses



# Plant Improvement for Bioenergy

- Lincoln (grasses)
- Tifton (grasses)
- St Paul (alfalfa)
- Madison (alfalfa & grasses)
- Others (Beltsville, College Station, Corvallis, El Reno, Lexington, Logan, Woodward)



# Forage Management

- **Improving profitability and reducing risk**
  - Extend grazing season
  - Improve harvesting & storage
  - Improve forage evaluation tools
  - Improve quality of livestock products



# Harvested Forages

- 200M tons of hay & silage harvested annually
- 73M acres (24% of cropland)
- \$16 billion in value
- Half goes to dairy





# Grazing Management

- Economic sustainability (nutrient management)
- Environmentally sound (water quality)
- Conserve the land for agricultural production (rotation systems)



# Biofeedstock Production

- Corvallis
- El Reno
- Mandan
- Madison
- St Paul
- University Park
- Beaver
- Booneville
- Lexington
- Raleigh
- Tifton
- Woodward



# Integrated Management of Weeds and Other Pests



- Invasive weeds
- Insects
- Toxic plants
  - Fescue toxicosis
  - Poisonous plants



# Sustainable Management of Grassland Ecosystems

- Climatic risk
- Global change
- Wildlife habitat
- Fire Management
- Biodiversity
- Ecosystem conservation and restoration



# Communicating With Our Customers

- National Workshops
- National meetings
- Producer outreach
- Partnerships
- Interaction with other federal and state agencies



# Expanding Scope of Forage Research Needs

- Forage-livestock
- Bioenergy & co-products
- Turf
- Global change & carbon sequestration
- Biodiversity conservation
- Human nutrition & food safety

