

## **Component 2: Feedstock Production**

The Action Plan Component *Feedstock Production* addresses the need agriculture producers, government agencies, energy companies, and policy makers have to know how to produce significant amounts of dedicated energy crops and biomass, and what would be the likely impacts of such production on whole-farm economic return and natural resource quality in different regions of the country. Research contributions to Feedstock Production are made by projects in NP101-Food Animal Productions, NP-212, Soil Resource Management, NP-215, Range, Pasture, and Forage Land Systems, NP-216, Agricultural System Competitiveness and Sustainability, and NP-305, Crop Production.

**Problem 2A.** The kinds, amounts, and quality of feedstocks that can be produced for different regions are unknown.

**Objective 2A1.** Identify current amounts, reliability, and distribution of regionally specific feedstocks to provide the biomass that can be sustainably produced.

**Objective 2A2.** Develop regionally appropriate management systems to maximize sustainable bioenergy feedstock production.

**Objective 2A3.** Quantify the production economics on whole farm and regional feedstock production.

**Objective 2A4.** Utilize residues from bio-based energy conversion technologies.

**Problem 2B.** The environmental and economic impacts of bioenergy feedstock production are not well understood.

**Objective 2B1.** Determine the impacts of bioenergy feedstock production on the soil and water resources.

**Objective 2B2.** Determine the ability to use bioenergy feedstocks to reduce greenhouse gas emission, including carbon sequestration.

**Problem 3B.** The harvesting, storage, pre-processing, and handling logistics for biomass feedstock are underdeveloped.

**Objective 3B1.** Develop methods for harvesting and on-farm storage of biomass feedstocks.

This area was identified as an important component by the stakeholders and needs substantial new dollars to be addressed.

## **Anticipated Products**

1. Tools for NRCS and University Extension to use for outreach programs on feedstock development – including tools that will measure potential biomass and energy levels.
2. Maps that show regions of feedstock potential that are conserving the soil and water resources as well as being the most economically feasible for the biorefinery and producer.
3. Analytical tools to identify optimal economic strategies to incorporate bio-based energy production that does not disrupt food and feed integrity from farms or compromise natural resources quality.

4. Management guidelines for sustainable strategies to increase the amounts of biomass and energy crops produced from agricultural lands.
5. Informational packets that identify on-farm use of bio-based energy conversion technology by-products.

*Contributing Research Locations: Ames, IA, Auburn, AL, Beltsville, MD, Brookings, SD, Corvallis, OR, Dawson, GA, El Reno, OK, Ft. Collins, CO, Lane, OK, Lincoln NE, Madison, WI; Mandan, ND, Morris, MN, Orono, ME, Pendleton, OR, Prosser, WA, Pullman, WA, St. Paul, MN, Sidney, MT, University Park, PA, Watkinsville, GA, W. Lafayette, IN;*

*Links to other National Programs: ARS REAP project in NP-212 – Soil Resource Management; ARS ESAFE project in NP-216 – Agricultural System Competitiveness and Sustainability; GRACEnet projects in NP-212 Soil Resource Management, NP-215 – Range, Pasture, and Forage Land Systems, and NP-216 – Agricultural System Competitiveness and Sustainability, and research in NP-305 – Crop Production; NP-216 – Agricultural System Competitiveness and Sustainability; NP-101 – Food Animal Production; NP-211 – Watershed and Water Resource Management; NP-212 – Soil Resource Management; NP-215 – Range, Pasture, and Forage Land Systems; NP-216 – Agricultural System Competitiveness and Sustainability*

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#### Writing Team

Rob Mitchell (Team Leader)  
Peter Vadas  
Brad Venuto  
Paul Adler  
Kris Nichols

#### Feedstock Production Team

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|---------------|--|
| Kris Nichols  | <a href="mailto:Kristine.nichols@ars.usda.gov">Kristine.nichols@ars.usda.gov</a> |
| Dave Archer   | <a href="mailto:david.archer@ars.usda.gov">david.archer@ars.usda.gov</a>         |
| Wally Wilhelm | <a href="mailto:wally.wilhelm@ars.usda.gov">wally.wilhelm@ars.usda.gov</a>       |
| Doug Karlen   | <a href="mailto:doug.karlen@ars.usda.gov">doug.karlen@ars.usda.gov</a>           |
| Hans Jung     | <a href="mailto:hans.jung@ars.usda.gov">hans.jung@ars.usda.gov</a>               |
| Peter Vadas   | <a href="mailto:peter.vadas@ars.usda.gov">peter.vadas@ars.usda.gov</a>           |
| Brad Venuto   | <a href="mailto:brad.venuto@ars.usda.gov">brad.venuto@ars.usda.gov</a>           |
| Rob Mitchell  | <a href="mailto:rob.mitchell@ars.usda.gov">rob.mitchell@ars.usda.gov</a>         |