



United States  
Department of  
Agriculture

National Institute  
of Food  
and Agriculture

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# NIFA Helps Advance Sustainable Bioenergy and Bioproducts

The use of non-renewable energy sources contributes to climate variability. One way to mitigate the effects of climate change is to produce bioenergy and biobased products, which also helps the nation create new jobs and promote rural prosperity. USDA's National Institute of Food and Agriculture (NIFA) brings together researchers, landowners, communities, and private industry from various regions to advance a thriving bioeconomy that is economically, socially, and environmentally sustainable.

## NIFA INVESTS IN THE BIOECONOMY

NIFA provides oversight to more than:



NIFA's programs help advance sustainable bioenergy and bioproducts in such areas as:

- **SUPPORT** for sustainable regional biomass supply chains
- **DEVELOPMENT** of new biomass crops
- **MANAGEMENT** of emerging pests and diseases that threaten energy crops
- **EVALUATION** of long-term effects of biomass production on soil
- **IMPROVEMENT** of handling and processing biobased products
- **PRODUCTION** of advanced biofuels compatible with existing fuel infrastructure

# 36B

The goal amount of gallons of biofuels produced per year by 2022 as established by America's Energy Independence and Security Act of 2007.

NIFA's top five funded renewable bioenergy sources are:

- |   |                           |                       |                    |                |
|---|---------------------------|-----------------------|--------------------|----------------|
| <b>1</b>  | <b>2</b>                  | <b>3</b>              | <b>4</b>           | <b>5</b>       |
| <b>WOODY BIOMASS</b>  | <b>PERENNIAL GRASSES</b>  | <b>OIL SEED CROPS</b> | <b>ENERGY CANE</b> | <b>SORGHUM</b> |
| harvest residuals<br>short-rotation plantations<br>pre-commercial thinnings | switchgrass<br>miscanthus | camelina<br>soybean   |                    |                |

## COORDINATED AGRICULTURAL PROJECTS (CAPs)

The following NIFA CAPs fund regional bioenergy efforts:

- |          |   |          |  |
|----------|---|----------|--|
| <b>1</b> | FY2010   \$40M<br>UNIVERSITY OF WASHINGTON<br>Advanced Hardwood Biofuels                | <b>5</b> | FY2010   \$15M<br>UNIVERSITY OF TENNESSEE<br>Southeast Partnership for Integrated Biomass Supply Systems |
| <b>2</b> | FY2010   \$40M<br>WASHINGTON STATE UNIVERSITY<br>Northwest Advanced Renewables Alliance | <b>6</b> | FY2011   \$10M<br>PENNSYLVANIA STATE UNIVERSITY<br>Northeast Woody/Warm-Season Biomass Consortium        |
| <b>3</b> | FY2010   \$25M<br>IOWA STATE UNIVERSITY<br>CenUSA Bioenergy                             | <b>7</b> | FY2012   \$10M<br>COLORADO STATE UNIVERSITY<br>Bioenergy Alliance Network of the Rockies                 |
| <b>4</b> | FY2010   \$17M<br>LOUISIANA STATE UNIVERSITY<br>Sustainable Bioproducts Initiative      |          |  |



## FROM WOOD WASTE TO JET FUEL: RENEWABLE BIOFUEL SET TO TAKE FLIGHT

Sustainable biofuels are critical in helping the airline industry reduce its carbon footprint and break dependence on fossil fuels. The Northwest Advanced Renewables Alliance (NARA) is one of seven regional bioenergy NIFA-funded CAPs. NARA researchers are working with 22 organizations to convert logging industry wood waste to renewable aviation fuel. Once it receives certification, 1,000 gallons of the alternative biofuel will be used to fly a demonstration Alaska Airlines flight in 2016.