

## **Biobased Products: US Department of Agriculture and the Cooperative State Research, Education and Extension Service**

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Biobased industrial products made from renewable agricultural and forestry materials are an area of priority for the US Department of Agriculture (USDA). Research, development, and commercialization of these new uses products can lead to new and expanded markets, thereby calling for increased, sustainable farm production of the raw materials. The intended outcome is diversification and expansion of the agricultural economy, frequently resulting in substituting for imports of critical and strategic materials such as petroleum. USDA funding for biobased industrial (nonfood and fuels) products was \$76 million in each of fiscal years 1997 and 1998, compared to about \$50 million for new/improved food products. (Table 1)

Leadership for USDA is vested in the Biobased Products Coordination Council, chaired by the Under Secretary for Research, Education and Economics, and including ten agencies: Alternative Agricultural Research and Commercialization Corporation (AARCC); Agricultural Marketing Service; Agricultural Research Service (ARS); Cooperative State Research, Education, and Extension Service (CSREES); Foreign Agricultural Service; Forest Service (FS); Natural Resources Conservation Service; Office of the Assistant Secretary of Administration; Office of Energy and New Uses; and Rural Business-Cooperative Service.

AARCC, ARS, CSREES, and FS are major agencies either conducting or sponsoring new uses research, development, and commercialization. AARCC and FS work only on nonfood industrial products, while ARS and CSREES work on both food and nonfood products. ARS and FS conduct fundamental and applied research in USDA laboratories and facilities. CSREES supports mainly fundamental and applied research through its university partners in the land grant system. AARCC makes equity investments in businesses to commercialize biobased industrial products.

While ARS (\$82 million) and CSREES (\$26 million) dominate the funding and support for new uses (Table 2), it is the combination of all agencies and their various functions that characterize biobased products in USDA. There exists a capability to work with a promising new or improved material or process from its discovery in the laboratory, through product design and specification, to a precommercial technology demonstration project, and finally venture equity funding for market entry. Each stage is linked to the next and, as a new/improved product a process moves closer to being marketable and bankable, the involvement and interest of the private sector heightens.

The CSREES partnership with the land grant college and university system for new uses comes in three main forms: competitive programs, formula fund programs and noncompetitive special grants. Referring to Table 3, in fiscal year 1998 the competitive programs (NRI, SBIR, and SARE) accounted for \$18.6 million of the CSREES \$26 million total. Noncompetitive or directed special research grants added \$3 million. The remaining approximately \$4 million of the total comes from Hatch (research) and Smith-Lever (extension) funds distributed to the States and territories by formula.

For further information about biobased industrial products/new uses, access the USDA Homepage (<http://www.usda.gov>) for individual agencies. For biobased products information in CSREES, contact Carmela Bailey at USDA-CSREES, Mail Stop 2220, Washington, DC, 20250-2220.

**Table 1.** Funding by category for new uses for agricultural commodities, US Department of Agriculture.

Category	Funding (\$ million)	
	FY 1997	FY 1998
Food	50	49
Nonfood	68	67
Fuels	8	9
Total	126	125

**Table 2.** Funding by agencies for new uses for agricultural commodities, US Department of Agriculture.

Agency	Funding (\$ million)	
	FY 1997	FY 1998
Agricultural Research Service (ARS)	82	82
Cooperative State, Research, Education, and Extension Service (CSREES)	26	26
Forest Service (FS)	8	9
Alternative Agricultural Research and Commercialization Corporation (AARC)	8	7

**Table 3.** Funding by program for new uses for agricultural commodities.

CSREES program	FY 1998 funding (\$ million)
National Research Initiative (NRI)	2 (Nonfood) 2 (Wood)
Small Business Innovation Research (SBIR)	1.6
Sustainable Agriculture Research and Education (SARE)	13
Hatch Act, Smith-Lever (HA, S-L)	formula
Special Research Grants (KYC)	3