



**CONGRESSIONAL BUDGET OFFICE
COST ESTIMATE**

November 4, 1997

**H.R. 2534
Agricultural Research, Extension, and Education
Reauthorization Act of 1997**

As ordered reported by the House Committee on Agriculture on October 29, 1997

SUMMARY

This legislation would reauthorize, reform, or eliminate certain agricultural research, extension, and education programs, and would authorize appropriations for several new research programs over fiscal years 1998 through 2002. Assuming appropriation of the authorized or estimated amounts, implementing the bill would require about \$14.7 billion in discretionary spending authority over the 1998-2002 period. Of that total, appropriations totaling \$1.7 billion for 1998 have recently been cleared by the Congress (in H.R. 2160, the Agriculture, Rural Development, Food and Drug Administration and Related Agencies Appropriations Act, 1998).

The bill also would require the Secretary of Agriculture to spend funds currently being held in special Treasury accounts for authorized research and education activities at the National Arboretum and the Agricultural Research Service Patent Culture Collection. Because the bill would affect direct spending, pay-as-you-go procedures would apply. However, CBO estimates that the increase in direct spending would be only about \$115,000 per year.

H.R. 2534 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act of 1995 (UMRA). A large part of the funds authorized by this bill would be spent on grants to state and tribal institutions, mostly colleges and universities. The bill would give grantees some new flexibility but it also would establish new grant conditions. It would impose no other costs on state, local or tribal governments.

DESCRIPTION OF THE BILL'S MAJOR PROVISIONS

The bill consists of five titles. Title I would establish priorities and coordination, planning, and review procedures for agricultural research, extension, and education activities conducted by and for the Department of Agriculture.

Title II would reform existing research, extension, and education authorities. The bill would establish consistent requirements for matching funds across relevant legislative authorities. Those requirements would be phased in for “1890 institutions” and Tuskegee University (the historically black colleges and universities) beginning in fiscal year 2000, but would not be required for “1994 institutions” (the historically Indian colleges).

Title III would extend most of the authorizations for appropriations for agricultural research, extension, and education programs through fiscal year 2002, and repeal certain agricultural research programs.

Title IV would establish or reauthorize several research, extension, and education initiatives, including:

- partnerships for research on agricultural products with high value (such as processed products and specialty crops);
- precision agriculture (defined as integrated information- and production-based farming systems designed to increase productivity and profitability while minimizing unintended effects on wildlife and the environment);
- organic agriculture;
- joint agricultural research between the United States and Mexico;
- continuation of the food animal residue avoidance database program (FARAD);
- development and commercialization of new biobased industrial products;
- the Thomas Jefferson initiative for crop diversification; and
- 31 other high-priority research and extension initiatives.

Title V contains miscellaneous provisions. This title would:

- declare the Secretary of Agriculture to be the principal executive branch official to coordinate food and agricultural sciences research, education, and extension;
- establish two new offices in the Department of Agriculture (the Office of Pest Management Policy and the Food Safety Research Information Office);
- require the Secretary to update nutrient composition data periodically; and
- make funds received or collected by the National Arboretum and the Agricultural Research Service Patent Culture Collection available to the respective entities.

ESTIMATED COST TO THE FEDERAL GOVERNMENT

For the purposes of this estimate, CBO assumes that all amounts authorized or estimated to be authorized will be appropriated for each fiscal year. Amounts totaling \$1.7 billion have recently been appropriated for 1998 for many of the authorized programs. CBO estimates that additional appropriations, totaling almost \$13.1 billion over the 1998-2000 period, would be required to implement H.R. 2534. The estimated budgetary impact of the bill is shown in Table 1. Most of the costs of this legislation fall within budget function 350 (agriculture).

BASIS OF ESTIMATE

Spending Subject to Appropriation

The bill would reauthorize appropriations for agricultural research, extension, and education activities—most of the previous authorizations expired at the end of fiscal year 1997—and would authorize appropriations for several new activities over fiscal years 1998 through 2002. In addition to the amounts already provided for 1998, and assuming appropriation of the specified or estimated amounts for all programs, implementing the bill would result in about \$13.1 billion in additional discretionary spending authority and \$10.7 billion in additional discretionary outlays over the 1998-2002 period.

Table 1. Estimated Impact on Federal Spending

	By Fiscal Year, in Millions of Dollars					
	1997	1998	1999	2000	2001	2002
Spending Subject to Appropriation						
Spending Under Current Law						
Budget Authority ^a	1,698	1,680	0	0	0	0
Estimated Outlays	1,656	1,706	642	186	31	0
Proposed Changes						
Estimated Authorization Level	0	1,266	2,945	2,945	2,950	2,950
Estimated Outlays	0	513	1,900	2,539	2,815	2,950
Spending Under H.R. 2534 ^a						
Estimated Authorization Level	1,698	2,946	2,945	2,945	2,950	2,950
Estimated Outlays	1,656	2,219	2,542	2,725	2,846	2,950
Changes in Direct Spending						
Estimated Budget Authority	0	b	b	b	b	b
Estimated Outlays	0	b	b	b	b	b

a. The 1997 and 1998 levels are the amounts appropriated for those years. They include spending for the Agricultural Research Service, the Cooperative State Research Education and Extension Service, and associated buildings and facilities accounts.

b. Less than \$500,000 a year.

Programs with Specific Authorized Appropriations. The bill would authorize the appropriation of specific amounts for each fiscal year from 1998 through 2002 for a number of programs and research areas. Table 2 shows the specified amounts. The bill contains specific authorizations totaling \$2.5 billion a year, for a five-year total of \$12.4 billion. (About \$1.4 billion of those amounts has already been appropriated for 1998.)

Estimated Authorizations. The bill also would either authorize the appropriation, or would imply an authorization, of such sums as necessary to carry out certain programs. We estimate that implementing these programs would require funding of about \$2.3 billion over the 1998-2002 period. CBO's basis for estimating that sum is provided below. Except where noted, CBO's estimate is based on information obtained from the U.S. Department of Agriculture (USDA) or the appropriation for fiscal year 1998. CBO's estimate of the total cost of each program over fiscal years 1998-2002 appears in brackets after each description.

Table 2. Specified Annual Authorizations of Appropriations for 1998 Through 2002

	<u>Authorized Annual Amount, In Millions of Dollars</u>
National Agricultural Weather Information System	15
Assistive technology for farmers with disabilities	6
Grants and fellowships for food and agriculture education	60
Grants for production and marketing of alcohol fuels and industrial hydrocarbons	20
Expanded food and nutrition education	83
Grants to upgrade agricultural research facilities at 1890 schools, including Tuskegee University	15
National research and training centennial centers	2
Education grants for Hispanic-serving institutions	20
Existing and certain new agricultural research programs	850
Agriculture experiment stations	310
Extension education	460
Aquaculture assistance program	8
National Rural Information Clearing House	1
Competitive, Special, and Facilities Research Grant Act	500
1994 schools ^a	5
National Aquaculture Act of 1980	3
Agricultural telecommunications program	12
Pilot research program to combine medical and agricultural research	10
Animal health and disease research	25
Research on national and regional problems	35
Rangeland Research	10
Precision agriculture	40

a. For 2001 and 2002 only.

Partnerships for High-Value Agricultural Product Quality Research. The bill would authorize the Secretary of Agriculture to make competitive grants to establish partnerships to coordinate and manage research to enhance the quality of high-value agricultural products. Research would focus on such areas as effective and environmentally responsible pest management alternatives, genetic research, refinement of field production practices, processing and packaging technology, and diversification of value-added enterprises in rural areas. The bill would authorize such sums as necessary for the 1998-2002 period. [\$45 million over fiscal years 1998 through 2002.]

National Agricultural Genome Initiative. Section 1671 of the Food, Agriculture, Conservation, and Trade Act of 1990 directs the Secretary of Agriculture to conduct a research program through competitive grants to support basic and applied research and technology development in the area of plant genome structure and function. The 1990 act authorized the appropriation of such sums as necessary for fiscal years 1996 and 1997. This bill would amend the 1990 act to require the Secretary to carry out a National Agricultural Genome Initiative to study and map agriculturally significant genes to achieve sustainable and secure agricultural production and for other purposes. It would authorize the Secretary to enter into or make contracts, grants, or cooperative agreements. One-to-one matching funds or in-kind support would be required for any grant that benefits a specific commodity. [\$150 million in total for fiscal years 1998 through 2002.]

Organic Agricultural Research and Extension Initiative. Section 422 of the bill would authorize the Secretary, in consultation with the National Agricultural Research, Extension, Education, and Economics Advisory Board, to make competitive specialized research and extension grants for organic activities. The recipient would have to provide matching, nonfederal funds, unless the match were to be waived by the Secretary because of the broad applicability of the potential results or for certain other reasons. [\$6 million over the 1998-2002 period.]

United States-Mexico Joint Agricultural Research. The bill would establish a new authorization for the Secretary to establish an agricultural research and development program with the United States/Mexico Foundation for Science. The foundation would award competitive grants, with a matching funds requirement, to focus on binational problems facing agricultural producers and consumers. [\$5 million over the 1998-2002 period.]

Competitive Grants for International Agricultural Science and Education Programs. The bill would authorize the Secretary to award competitive grants to colleges and universities to strengthen U.S. economic competitiveness and promote international market development. Grants would be awarded for research, extension, and teaching activities that enhance the international content of curricula or other activities that would assist in the

dissemination of research conducted outside of the United States. [\$10 million over the 1998-2002 period.]

Food Animal Residue Avoidance Database (FARAD) Program. Section 425 of the bill would require the Secretary to continue operation of the FARAD program, which is designed to maintain up-to-date information on such items as approved drugs for animals, disseminate such information to the public, and engage in other activities that would promote food safety. [\$3 million over the 1998-2002 period.]

Thomas Jefferson Initiative for Crop Diversification. The bill would establish an initiative for the purpose of conducting research and development on the production and marketing of new and nontraditional crops. The Secretary would be required to arrange to fund and coordinate the initiative through a centrally located nonprofit center. One-half of the available funding would be used for regional efforts centered at land-grant institutions, with the remaining funds awarded to colleges, universities, nonprofit organizations, or public agencies in five-year competitive grants. Recipients would have to contribute matching nonfederal funds. [\$8 million over the 1998-2002 period.]

Integrated Research, Education, and Extension Competitive Grants Program. The bill would authorize the Secretary to award competitive grants to colleges and universities for integrated research, education, and extension projects that would address priorities of U.S. agriculture. The bill would require that recipients provide matching funds unless the likely results of the grants would have general benefits to agriculture or certain other conditions are met. [\$20 million over the 1998-2002 period.]

Research Grants under Equity in Education Land-Grant States Act of 1994. The bill would authorize the Secretary to make competitive grants to 1994 institutions to conduct agricultural research that addresses high-priority concerns of tribal, national, and multistate significance. Research would be conducted under cooperative agreements with land-grant colleges and universities. [\$10 million over the 1998-2002 period.]

Office of Pest Management Policy. The bill would require the Secretary to establish a new office that would be responsible for developing and coordinating USDA policy on pest management and pesticides and in assisting the department in fulfilling its responsibilities related to pest management under applicable laws. CBO's estimate is based on information from USDA regarding expenditures for other similar offices and the cost of current related activities. [\$8 million over the 1998-2002 period.]

Food Safety Research Information Office and National Conference. The bill would require the Secretary to establish a Food Safety Research Information Office at the National Agricultural Library. This new office would provide information to the research community and the general public on publicly funded food safety research initiatives. The bill would also require the Secretary to sponsor, within 120 days of enactment, a national conference on food safety research for the purpose of beginning the task of establishing priorities for research on food safety. Additional workshops would be required in each subsequent year to update and adjust priorities. CBO's estimate is based on information from USDA regarding expenditures for other similar offices, conferences, and workshops. [\$4 million over the 1998-2002 period.]

Nutrient Composition Data. The bill would require the Secretary to update, on a periodic basis, nutrient composition data, and to report to the Congress within 180 days on the methodology, quality assurance criteria, and timing for making the updates. [\$10 million over the 1998-2002 period.]

Other Programs. The bill would continue several existing programs and authorize such sums as necessary for the 1998-2002 period. For the purposes of this estimate, CBO assumes that the necessary appropriations for policy research centers, health promotion research, the national genetic research program, activities under the Critical Agricultural Materials Act, water quality research, and the planning, construction, acquisition, and repair of buildings would be equivalent to the 1998 appropriation for these programs and activities. [Estimated funding totals \$1.2 billion for the 1998-2002 period.]

High-Priority Research and Extension Initiatives. The bill would authorize such sums as necessary for fiscal years 1998 through 2002 for 31 designated high-priority research and extension initiatives. Based on information from USDA and taking into account appropriated amounts for some of the initiatives for fiscal year 1998, CBO estimates that the total cost of these 31 initiatives would be about \$860 million over the 1998-2002 period. Table 3 lists the initiatives and the estimated annual funding level for each initiative.

Table 3. Estimated Annual Authorizations for 1998 through 2002 for High-Priority Research and Extension Activities

	Authorized Annual Amount, <u>In Millions of Dollars</u>
Brown citrus aphid and citrus tristeza virus research and extension	3
Ethanol research	20
Aflatoxin research	a
Mesquite research and extension	a
Prickly pear research and extension	a
Deer tick ecology research and extension	a
Red meat safety research and extension	3
Grain sorghum ergot research and extension	a
Animal waste and odor management research and extension	5
Fire ant research and extension	6
Wheat scab research and extension	a
Peanut market enhancement research and extension	a
Dairy financial risk management research and extension	a
Cotton research and extension	a
Methyl bromide research and extension	15
Water quality and aquatic ecosystems research and extension	2
Potato research and extension	1
Wood utilization research and extension	4
Low-bush blueberry research and extension	a
Formosan termite eradication research and extension	10
Swine waste management and odor control research and extension	a
Wetlands utilization research and extension	5
Wild pampas grass control and eradication research and extension	a
Pathogen detection and limitation research and extension	55
Financial risk management research and extension	a
Ornamental tropical fish research and extension	a
Sheep scrapie research and extension	2
Animal waste management at rural/urban interface	a
Gypsy moth research and extension	4
Dairy efficiency, profitability, and competitiveness research and extension	28
Animal feed research and extension	2

a. Less than \$500,000.

Direct Spending

The bill also would require the Secretary of Agriculture to spend funds currently being held by the Treasury for authorized research and education activities at the National Arboretum and the Agricultural Research Service Patent Culture Collection.

National Arboretum. The Federal Agriculture Improvement and Reform Act of 1996 (Public Law 104-127) gave the National Arboretum authority to negotiate agreements granting concessions at the arboretum to nonprofit scientific or educational organizations, except that the net proceeds from the concessions would be used exclusively for research and education work for the benefit of the National Arboretum. Any funds received or collected by the arboretum as a result of such activities were to be retained in a special fund in the Treasury for the use and benefit of the National Arboretum as the Secretary considered appropriate. The Agricultural Research Service (ARS) estimates that the funds currently held by Treasury total about \$11,000. The Office of Management and Budget determined that the Department of Agriculture could not spend these funds under current law. The bill would require the Secretary of Agriculture to spend these funds for authorized activities at the arboretum. Requiring the expenditure of funds that currently are not being spent would increase direct spending. CBO estimates that this provision would cost less than \$15,000 per year.

Patent Culture Collection. The Agricultural Research Service maintains the Patent Culture Collection at its facility in Peoria, Illinois. ARS collects fees in connection with the acceptance of microorganisms for deposit in, or the distribution of microorganisms from, the Patent Culture Collection. These fees, which ARS estimates average \$50,000 to \$70,000 per year, go directly to the Treasury. ARS does not currently have authority to spend the amount collected. This provision would give ARS authority to use such fees to carry out its responsibilities under law (including international treaties) with respect to the Patent Culture Collection. Granting authority to spend fees which currently go to the Treasury would increase direct spending by less than \$100,000 per year.

PAY-AS-YOU-GO CONSIDERATIONS

The Balanced Budget and Emergency Deficit Control Act of 1985 specifies pay-as-you-go procedures for legislation affecting direct spending or receipts. While H.R. 2534 would affect direct spending, the amounts involved would be insignificant. The bill would not affect governmental receipts.

ESTIMATED IMPACT ON STATE, LOCAL, AND TRIBAL GOVERNMENTS

H.R. 2534 contains no intergovernmental mandates as defined in UMRA. A large part of the funds authorized by this bill would be spent on grants to state and tribal institutions, mostly colleges and universities.

The bill would impose some new conditions on grants. Some of these new conditions involve procedures intended to ensure that agricultural research and extension funds are used for high-priority activities. For example, H.R. 2534 would require that state research and extension plans identify specific agricultural issues to be addressed by these programs. Further, the bill would require that institutions receiving agricultural research or extension funds establish a process for merit review of funded activities. Based on information provided by state officials, CBO estimates that these requirements would not impose significant new costs on grant recipients. These institutions generally follow procedures that would comply with these provisions. They could face additional burdens if the specific requirements imposed by USDA's implementing regulations were to differ significantly from current practice.

Other provisions in the bill would impose additional matching requirements on grant recipients. Specifically, H.R. 2534 would broaden existing requirements that states provide nonfederal funds at least equal to the amount of federal funds received for the basic extension and research formula grant programs. (Most of these programs are already covered by the existing requirement.) Further, it would impose a new matching requirement on formula funds received by 1890 institutions. To the extent that these institutions do not already do so, they would be required to provide increasing levels of matching funds reaching 50 percent of federal funds in fiscal years 2002 and beyond.

ESTIMATED IMPACT ON THE PRIVATE SECTOR

This bill would impose no new private-sector mandates as defined in UMRA.

PREVIOUS CBO ESTIMATES

On September 4, 1997, CBO prepared an estimate of the Agricultural Research, Extension, and Education Reform Act of 1997, as ordered reported by the Senate Committee on Agriculture, Nutrition, and Forestry. That bill—later designated as S. 1150—would authorize appropriations of about \$14 billion for similar purposes, and would also provide

direct spending of about \$1 billion for agricultural research through the Fund for Rural America and the proposed Initiative for the Future of Agriculture and Food Systems. However, savings in administrative costs for the Food Stamp program would offset the direct spending in S. 1150.

The primary difference between the two bills is that H.R. 2534 would neither provide direct spending authority for the Fund for Rural America nor create a new initiative for mandatory research spending. Instead, H.R. 2534 contains only two minor direct spending effects. The two bills would both authorize appropriations of close to \$3 billion a year. While the specific projects differ, both bills would reauthorize most current research, extension, and education initiatives, and authorize several new ones.

ESTIMATE PREPARED BY:

Federal Costs: Jim Langley and Dave Hull

Impact on State, Local, and Tribal Governments: Marjorie Miller

ESTIMATE APPROVED BY:

Robert A. Sunshine

Deputy Assistant Director for Budget Analysis