

Boll Weevil Eradication

Q. What is the Boll Weevil Eradication Program?

A. This program is a cooperative effort in which the U.S. Department of Agriculture (USDA) and State officials work with cotton growers to eradicate the boll weevil, in incremental stages, from the United States. Since 1892, when it first entered this country, the boll weevil (*Anthonomus grandis* Boheman) has plagued U.S. cotton farmers. Boll weevil eradication began with a successful trial program in North Carolina and southern Virginia in 1978–80. Since then, this program has expanded to include cotton acreage in Alabama, Arizona, Arkansas, California, Florida, Georgia, Kansas, Louisiana, Mississippi, Missouri, New Mexico, Oklahoma, South Carolina, Tennessee, Texas, and parts of northern Mexico near the U.S. border. All of the 15 million acres of U.S. cotton are involved in the program, and the weevil has been eradicated from more than 87 percent of that production area.

Q. How does the program work?

A. Authorization to operate the program locally is usually established through State legislation and grower-approved referendums. Most States have a boll weevil eradication foundation with cotton-producer members, either elected or appointed, along with State agricultural officials. USDA cooperates by providing technical support and limited funding. Initially, in each new State, program managers implement an eradication phase to eliminate the boll weevil and then a post-eradication phase to prevent reinfestation.

Q. Where is the program active?

A. The program is currently working to eradicate the boll weevil in Arkansas, Louisiana, Mississippi, Missouri, Oklahoma, Tennessee, and Texas. Alabama, Arizona, California, Florida, Georgia, Kansas, New Mexico, North Carolina, South Carolina, and Virginia have all successfully eradicated the boll weevil, along with large portions of the other States listed above.

Q. How is the boll weevil eradicated?

A. Three main techniques are employed over a

4- to 5-year period: pheromone traps for detection, cultural practices to reduce the weevil's food supply, and chemical treatments for control. In most areas, in addition to the cultural controls, the program begins with a series of treatments in the fall. In subsequent years, traps are placed around all cotton fields in the spring as cotton is planted. Control operations begin about 5 or 6 weeks later and are based on trap captures. Continuous, season-long trapping pinpoints areas of infestation and triggers necessary treatments until all weevils are gone. This process usually takes about 4 to 5 years in each area.

Q. What chemicals are used?

A. Malathion is the primary pesticide used to eradicate the boll weevil. It is applied to cotton fields at ultra-low-volume rates of 10 to 16 oz/acre (43,560 ft²) from contract aircraft. That's like taking a can of soda and evenly distributing its contents over a football field. High-clearance tractors and truck-mounted sprayers are also used to treat fields that cannot be treated with aircraft. The application rate for ground equipment is approximately 16 oz/acre.

Q. How many chemical treatments does the program apply in each area?

A. The program applies insecticide only in infested cotton fields. In most new program areas, treatments begin in the late summer or early fall. Infested fields will generally receive an average of seven applications during this initial treatment period. Applications are monitored, especially around environmentally sensitive areas such as schools, hospitals, churches, and housing developments, to guard against exposure. After the initial fall applications, treatments in subsequent seasons are applied only where weevils are detected, from before the cotton blooms until harvest. Based on continuous trapping surveys, the number of fields requiring treatment in subsequent years usually goes down dramatically until eradication is accomplished.

Q. How are aerial applicators hired?

A. The program's grower organizations, including State regulatory officials, solicit bids for the aerial application of insecticide. Bids are reviewed by program managers, and contracts are awarded by the organizations on a competitive basis. All applicators must comply with State and Federal regulations and the requirements for certification.

Q. Who actually runs the program?

A. The following organizations are responsible for daily program operations on a statewide basis:

- Arizona Cotton Pest Research and Protection Council
- Arkansas Boll Weevil Eradication Foundation
- Georgia Boll Weevil Eradication Foundation
- Louisiana Boll Weevil Eradication Commission
- Oklahoma Boll Weevil Eradication Organization
- Texas Boll Weevil Eradication Foundation
- The Southeastern Boll Weevil Eradication Foundation, Inc. handles operations in Alabama, Florida, Mississippi, Missouri, North Carolina, South Carolina, Tennessee, and Virginia.

In New Mexico, two organizations are active:

- South Central New Mexico Cotton Boll Weevil Control Committee
- Pecos Valley Cotton Boll Weevil Control Committee

USDA's Animal and Plant Health Inspection Service (APHIS) provides technical support and limited Federal funds. The State departments of agriculture provide regulatory support, and USDA's Cooperative State Research, Education, and Extension Service helps in disseminating program information and providing other valuable information regarding crop production.

Q. How does the program expand into new areas?

A. Expansion of the program has usually required cotton producers within the area of proposed expansion to pass a referendum with at least a two-thirds majority. State regulatory agencies are authorized under State laws to hold such referenda. Once a referendum passes, participation becomes mandatory according to State law. Without mandatory participation, eradication could not be accomplished.

Q. How do growers benefit from participating in the program?

A. Growers benefit two ways: by eliminating all crop damage and losses caused by the boll weevil and by significantly reducing the cost of production. Once the boll weevil is eradicated from an area, growers typically experience an increase in cotton yield of at least 10 percent, and significantly more in some areas. Moreover, resurgence of beneficial insects preying on other cotton pests further reduces the need for pesticides, resulting in additional cost savings. After eradication, the grower's cost of production is significantly lower, yield is often greater, land value increases, and integrated control programs for other cotton pests become much more feasible.

Q. How does the general public benefit from boll weevil eradication?

A. As the weevil and its damage are eliminated from

an area, the local cotton industry becomes more stable and cotton acreage tends to increase. Reduced production costs make cotton more profitable, allowing growers to spend greater amounts in the local community for equipment, goods, and services. In Georgia, for instance, the economic benefits have been dramatic, with average gross crop revenues increasing from \$70 million per year prior to eradication to \$400 million per year afterwards. As a result of this increased profitability, rural and ultimately statewide economies are strengthened.

Q. Are there long-term environmental benefits from eradicating the boll weevil?

A. The long-term environmental benefits that come from eradicating the boll weevil are significant. After the boll weevil is eradicated from an area, the need for insecticides is significantly reduced, and in many areas nearly eliminated. Cotton growers experience a 40- to 100-percent reduction in their overall use of insecticides. In addition, a weevil-free environment allows growers to rely less on insecticides and to make full use of beneficial insects in developing their long-term integrated pest-management strategies.

Q. How long will it take to complete the program?

A. Although areawide boll weevil eradication began in 1983, the nationwide effort still involves nearly 50 different program areas or zones. The program has expanded into these zones in a fairly orderly sequence, with all zones now involved in the program. Many zones have just started the program within the last year or two, while others have been completed for as many as 22 years. Once a zone begins eradication activities, it usually takes about 4 to 5 years for weevil populations to be eliminated. At that point, the zone moves into the post-eradication phase to guard against reinfestation. Nationwide eradication is expected by 2009.

Q. How is the program's cost financed?

A. Boll weevil eradication is a cooperative effort in funding as well as in field operations. Growers typically pay at least 70 percent of the program's cost, with APHIS paying for the remaining 30 percent. In some areas, State contributions have offset the growers' share by more than 50 percent. The growers' share is collected as an assessment, based either on the number of acres grown or bales produced. In addition to APHIS' cost-share cash contributions to the program, USDA's Farm Service Agency has provided critical loans to grower organizations involved in eradication. These loans allow growers to spread the program cost over a few more years, thereby reducing the amount of their annual assessments to more affordable levels.

Q. What is done to prevent reinfestation? What will keep the boll weevil from returning?

A. Domestically, seed cotton, trash from cotton gins, and used cotton-harvesting equipment are inspected, treated if necessary, and certified “pest free” before they can be moved into or through weevil-free areas. These measures are designed to keep boll weevils from being transported into an area from which they have been eliminated. In addition, the planting of noncommercial (ornamental or experimental) cotton is restricted during the active eradication phase. During the post-eradication phase, trapping continues around cotton fields to detect any reinfestation. Localized treatments are applied quickly if reinfestation occurs. Internationally, APHIS continues to cooperate with the Government of Mexico to implement the eradication program in adjacent cotton-growing areas of northern Mexico, providing increased long-term protection against reinfestation in the United States.

Q. What are the post-eradication costs?

A. In the 10 States where eradication is completed, typical post-eradication costs range from \$5 to \$10 per acre initially and then level out to about \$3 per acre per year. Eventually, as nationwide eradication is accomplished, these costs will decline significantly because the risk of reintroduction will decrease, reducing the need for trapping and other preventive work.

Q. How long will Federal funds be needed to support the program?

A. Federal funding decisions are made each year by Congress. Active eradication is likely to continue through 2008, with nationwide eradication expected in 2009. In the interim, Federal funds are expected to offset a portion of the program’s cost, making it feasible for growers to participate. The amount of Federal funding needed is expected to decline steadily over the next few years.

Q. How will the eradication program affect other cotton insects?

A. The boll weevil is considered the key pest in cotton production because the insecticides that cotton growers traditionally use early in the season to control weevils also eliminates many beneficial insects. As the need for early season boll weevil sprays is eliminated through the eradication effort, these beneficial insects can increase in number and become effective in controlling other cotton pests, like bollworms, budworms, plant bugs, and aphids. Growers in eradicated areas can now delay or even eliminate their initial spray operations, reduce pesticide rates, use alternative pesticides or genetically engineered cotton varieties, or lengthen the intervals between sprays to reduce their operating costs while controlling any remaining cotton pests.

Q. Who can answer additional questions about the program?

A. You may contact the following offices for more information about the program:

Arizona Cotton Research and Protection Council:
(602) 438-0059

Arkansas Boll Weevil Eradication Foundation:
(501) 223-2763

Georgia Boll Weevil Eradication Foundation:
(800) 269-9926

Louisiana Boll Weevil Eradication Commission:
(225) 952-8105

Oklahoma Boll Weevil Eradication Organization:
(800) 246-4810

Pecos Valley Cotton Boll Weevil Control Committee
(New Mexico): (505) 746-8700

South Central New Mexico Cotton Boll Weevil Control
Committee: (505) 541-0584

Southeastern Boll Weevil Eradication Foundation, Inc.
(AL, FL, MO, MS, NC, SC, TN, VA): (800) 269-9925

Texas Boll Weevil Eradication Foundation (Texas and
eastern New Mexico): (800) 687-1212

In addition, APHIS’ Cotton Pest Programs office
can be reached at (202) 752-5593.

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