

Growing Cotton in the Garden: Current Legislation

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Although cotton is an exciting crop to grow and harvest, growing the crop in a noncommercial setting must be approved by the Tennessee Department of Agriculture. This publication provides a brief history and reasoning for this legislation.

As soon as the dogwoods begin blooming and crappie start biting, many Tennessee gardeners will begin preparing for their summer gardens. One crop that is prohibited from inclusion in gardens without prior approval from the Tennessee Department of Agriculture is cotton. To understand why this prohibition is warranted and how planting the crop without approval could be detrimental to the entire cotton industry within and beyond Tennessee, it is appropriate to give a brief background on the boll weevil (*Anthonomus grandis*) and some history on the eradication effort.

What is a boll weevil?

The boll weevil is the most recognizable pest in cotton production; the gray, brown or nearly black, quarter of an inch long beetle is easily identified by its snout, which is roughly one-half of the length of its body. Boll weevils damage cotton crops by either feeding or depositing eggs within the developing fruiting bodies. Affected squares and young bolls (immature fruiting bodies) are typically shed, but larger bolls (more mature fruiting bodies) may remain on the plant even as developing larvae feed on the boll. Roughly 20 days after the eggs hatch within the protection of the boll walls, mature adults will emerge to begin the cycle again. Since this cycle can occur four times within one year, it has been estimated that one pair of boll weevils can produce more than 12 million offspring in a growing season (Harned 1910). The resulting reductions in cotton yields are debilitating; in excess of \$15 billion in yield loss and control measures can be attributed to the boll weevil in the past 125 years.



Adult boll weevil feeding on a cotton square. Two feeding sites are pictured near the insect's front leg.

Boll weevil establishment and eradication in the United States

The boll weevil is said to have moved into Texas from Mexico in 1892, reached Tennessee by 1914 and southern Virginia by 1922. As the weevil moved through the Cotton Belt, the pest decimated cotton crops and destroyed local economies. Control of the boll weevil was difficult due to the large amount of time the pest spends protected in cotton's fruiting bodies and resistance due to repeated use of single pesticide chemistries. By the late 1950s, U.S. producers

"If cotton can be called the religion, politics, law, economics, and art of the American South (Vance 1929), then the boll weevil can be dubbed one of the most important influences on southern history and culture, second only to the Civil War." D.D. Hardee and F.A. Harris

who were still growing cotton were near a breaking point. Congress responded to the crisis by investing heavily in boll weevil research. Findings from this research led to the establishment of several eradication trials during the 1970s. Within a few years, these trials were expanded in the National Boll Weevil Eradication Program, widely

considered to be one of the greatest advancements in the U.S. cotton industry since the cotton gin. The program is supported by federal, state and producer funds, with the latter providing roughly 70 percent of total support. Since establishment, Tennessee alone has invested more than \$140 million in the program. These efforts led to boll weevils being completely eradicated in the state by 2009. Current trapping activities are of fairly low density and attempt to catch any natural or artificial movement of weevils back into the state as soon as possible. No movement of boll weevils back into the state has occurred since eradication was complete.

How was the boll weevil eradicated?

Eradication efforts capitalized on three main characteristics of the boll weevil: 1) the pest has a single host; 2) the pest overwinters as an adult before reproducing again in early summer; and 3) weevils could be attracted through the use of pheromones. Activities in the program, therefore, included controlling overwintering populations before they were allowed to reproduce, destroying harvested plants, and using pheromone traps to trap and trigger additional sprays.

Why must I contact the Tennessee Department of Agriculture before growing cotton in my garden?

The lack of boll weevils within the region is considered to be an asset to every cotton producer. Because of their investment, producers are now free to produce the crop without battling the boll weevil. Additionally, cotton producers in a posteradication setting are estimated to use 40-90 percent less insecticide to combat insect pests. Planting unmonitored, possibly unmanaged, cotton (from an insect standpoint) in a noncommercial environment would provide ideal host plants for boll weevils.

Although the risk of reinfestation is currently considered low, boll weevils have not been eradicated from the Lower Rio Grande Valley of South Texas. Numerous methods of transportation could serve as vectors and, therefore, the threat of a reinfestation must be taken seriously. Due to the potential for the pest to reproduce at such a fast rate, re-establishment could occur in a short time frame in Tennessee.

With this possibility in mind, the Tennessee Department of Agriculture promulgated rules (Chapter 0080-6-22-.11) pursuant to T.C. A. 43-6-401, which require a written waiver to be obtained from the commissioner if noncommercial cotton is to be grown within the state of Tennessee. These authorizations may be given if a substantial public educational purpose exists. If authorized, the gardeners will be required to allow a pheromone trap to be placed near the location, must allow access to the garden during the growing season, and must destroy stalks after harvest. Additionally, the cotton plants may have to be destroyed midseason if weevils are found.

Summary

Tennessee cotton producers have invested a tremendous amount of money and time in eradicating the invasive boll weevil, and current legislation/rules regulating cotton grown in noncommercial settings protect one of the industry's greatest assets. Prior to planting the crop in your garden, contact the Tennessee Department of Agriculture for authorization.

References and Additional Reading Material

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5/15 15-0190

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