

**MALATHION USE IN THE SOUTHEAST BOLL
WEEVIL ERADICATION PROGRAM: A BUMPY
RIDE BUT THE DESTINATION IS WHAT COUNTS**

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Abstract

At its inception in North Carolina, the Boll Weevil Eradication Program (BWEP) used ULV Malathion as its material of choice for the elimination of the boll weevil. This proved to be a safe and effective means to reduce numbers to the point of eradication. As the program spread to the rest of North Carolina and into South Carolina, no major problems were encountered with the use of Malathion. It had become a proven material and there was little reason to consider change. However, with the next major undertaking of the program, the states of Georgia, Florida and Alabama beginning in 1987, there was a change. There was a lower bid for the use of ULV Guthion as opposed to Malathion, thus for the initial diapause treatments in the fall of 1987, Guthion was used. This proved to be unfortunate for the program. There were considerable environmental consequences associated with the use of Guthion, including numerous reports of fish toxicity. After that experience, the program returned exclusively to the use of Malathion.

As the BWEP proceeded through the most active phase of in-season and diapause control of the boll weevil, this coincided with explosive populations of beet armyworm through most of the three state expansion area. Beet armyworm (BAW) has long been known to be an insecticide induced pest and populations occurred worst during periods of extremely dry weather. The intense spraying utilized by the BWEP along with early and mid-summer droughts worked toward promoting the BAW problem. Much was said about Malathion being the "cause" of the problem, but was probably just one of many things that allowed the BAW to cause such serious damage. Similar problems had not occurred in the Carolina programs and, with the exception of the Rio Grande Valley disaster, has not occurred again with the intense use of Malathion.

On the positive side, the success of the BWEP has allowed for the widespread expansion of cotton acreage in the Southeast. Several factors fell into place to allow this to happen, however, the reduced risk/cost of insect control plays a prominent role in this expansion. As an example, the average number of insecticide applications in Georgia prior

to the eradication effort was about 12 to 15. By 1992 that number was reduced to five and currently averages about three insecticide applications per year. Additionally, yields of cotton have improved dramatically where weather conditions permit. Historically, a "top crop" was either non-existent or was very expensive to protect from boll weevils. By 1991 growers began to experience an increase in yields primarily because they were able to make a "top crop" without the threat of insect damage. Average yields moved upward about 100 to 250 pounds per acre with little additional cost. These successes supported a very rapid expansion of acreage in the southeast with Georgia moving from around 250,000 acres prior to the BWEP to 1.5 million acres in 1995.

The cost of BWEP to the producer is high, the threat for secondary pest problems is a possibility at any time, but the advantages of production of cotton without a threat from boll weevils provides clear benefits. Now with the introduction of transgenic Bt cotton, there is even greater incentive to eliminate the boll weevil as an economic threat from all areas of the Cotton Belt.