

AGRICULTURAL EXPERIMENT STATION
*of The Alabama Polytechnic Institute, Auburn, Ala.***M. J. Funchess, Director**RECOMMENDATIONS ON BOLL WEEVIL CONTROL IN ALABAMAJ. M. Robinson and F. S. Arant
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Too much emphasis has been placed recently on pre-square mopping of cotton for boll weevil control, although it is of some value when large numbers of weevils have overwintered. The "sweet poison" may be applied to the young cotton by hand with a small cloth mop or by commercial mopping machines. The poison mixture is made by mixing together 1 pound of calcium arsenate, 1 gallon of water, and 1 gallon of cheap syrup. The syrup merely acts as a sticker; it does not attract the boll weevil. Mopping is of no value after the cotton begins squaring freely, nor is it insurance against boll weevil damage late in the season.

Although pre-square mopping or dusting is of value when the boll weevil is numerous before the cotton begins squaring, the most effective control of this insect results from the application of calcium arsenate dust during the time the cotton crop is being set and matured. The profits to be expected from dusting cotton vary with the abundance of boll weevils, the fertility of the soil, and the price of the cotton. It is profitable to dust, regardless of the amount of fertilizer which has been applied, provided the following conditions exist:

1. The boll weevil is numerous during the time the cotton crop is being made.
2. The soil fertility is sufficient to produce one-half bale or more per acre.
3. The price of cotton is approximately 7 cents a pound or above.

Dusting with calcium arsenate does not produce cotton; it merely protects it from destruction by the boll weevil. The greater yield of cotton and the more numerous the boll weevil, the greater is the profit to be derived from dusting. In experiments conducted at Auburn, gains as high as 814 pounds of seed cotton per acre have resulted from dusting during seasons of extreme boll weevil abundance. The five-year average gain on different types of soil in central Alabama was 260 pounds per acre on land producing about one-half bale per acre. On sandy land, producing a bale per acre, the eleven-year average gain from dusting was 331 pounds of seed cotton. At the present level of prices the seasonal cost of dusting an acre of cotton should not exceed \$3.00 to \$3.40, exclusive of labor. Thus, the total cost of dusting including labor is equivalent to approximately 100 pounds of seed cotton

per acre. Average profits equivalent to the value of at least 160 to 290 pounds of seed cotton per acre may be expected if weevils are numerous in cotton on soil with sufficient fertility to produce one-half bale or more per acre.

The only way to know whether weevils are numerous enough to warrant dusting is to examine the squares on the plants (not on the ground). After the cotton is squaring freely, 100 squares should be examined in each of several places in a field. When an average of 10 or more squares are punctured, out of each 100 examined, 3 applications of calcium arsenate should be made at 5-day intervals. One week following the third dusting, the squares should be examined again and if 15 to 20 squares or more are punctured, out of each 100 examined, 2 to 3 additional applications of dust should be made at weekly intervals. The proper amount of calcium arsenate to apply is 5 to 6 pounds per acre per application. Many farmers apply more than is necessary.

The kind of dust gun needed to apply the calcium arsenate will depend upon the amount of cotton to be dusted. An ordinary one-row hand gun, selling for \$12 to \$16, is satisfactory for dusting 3 to 5 acres of cotton. However, a mule-drawn, two-row or four-row, dust gun is more satisfactory for the average farmer. Such a dust gun may be purchased through the local farmers exchange or elsewhere at prices ranging from \$50 to \$75 each, depending upon the make and the type of the gun. A four-row dust gun usually differs from a two-row gun only in the number of distributors for the dust; the dusting machinery proper is the same. The cost of the four-row gun is \$5 to \$15 more than that of the two-row gun. Several factors, such as the abundance of rainfall and the presence or absence of numerous short rows in a field, will affect the acreage that may be dusted with any dust gun. In general, however, a two-row gun will dust 20 to 30 acres of cotton and a four-row gun, 40 to 50 acres throughout the season. For large acreages (100 or more) a power duster is desirable. Such a machine usually has four to eight distributors and sells for \$150 to \$500.