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CONTROL of the PEANUT WORM

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The peanut worm, also known as the velvet bean caterpillar, can be controlled. This pest need not be a serious menace, although it did cause serious damage to the Alabama peanut crops of 1939 and 1944.

Important steps in a control program are (1) planning ahead of time, and (2) making regular field inspections for worms.

As a result of intensive experimental work by the Alabama Agricultural Experiment Station, practical recommendations can be made for the control of the peanut worm.

Origin of the worms. The adults of the worms are moths, or "millers." Apparently, the moths fly in from southern Florida, where the insect passes the winter. There is a possibility that they also overwinter in southern Alabama. This point, however, has not been clearly established.

The moths are about $1\frac{1}{4}$ inches across the wings, which vary in color from light tan to dark brown. A zig-zag line runs crosswise of the wings from front to back. This marking helps to distinguish it from other relatively harmless insects that may be found in peanut fields. The moths are more active at night and on cloudy days. They fly rapidly for short distances when disturbed.

The moths lay eggs singly on the underside of the leaves and on the stems and branches of the peanut plants. The eggs can be seen with the naked eye, although they are quite small and are difficult to find. Time should not be wasted hunting for the eggs, but rather looking for worms when the moths are plentiful.

The eggs hatch in 5 or 6 days, producing very tiny green worms. The worms grow rapidly, and are about $1\frac{1}{4}$ inches long when mature. They may remain a greenish color until fully grown, or they may be darker and with stripes. They are very active, and if disturbed they readily fall to the ground. When placed in the palm of the hand, they will usually jump and wiggle like fish worms. Cutworms and grub worms are not as active and curl up when disturbed.

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When full grown the peanut worms burrow into the soil a half inch or so and go into a resting stage (pupate). In this stage the worm has a dark red case about an inch long. It is pointed at one end, which wiggles. The new moths emerge from these pupal cases. The worms require about 3 weeks to complete development. The entire life cycle is completed in 4 to 5 weeks.

Apparently, a full generation has to develop in the field before the population of this worm becomes large enough to seriously damage peanuts.

The peanut worm is not a true armyworm. When food becomes scarce, however, it will migrate to a better nearby food supply.

When to expect damage. There are usually some fields in Houston and Geneva counties that need dusting every year. Severe infestations in 1939 and 1944 affected the entire peanut belt in southern Alabama. There is nothing to indicate, however, that these epidemics will occur in 5-year cycles. Thus far no way has been found to forecast an outbreak. A late peanut crop coupled with an early flight of moths are conditions that contribute to a general worm outbreak. It remains largely with each grower to watch his fields, making weekly inspections when an outbreak of worms is likely to develop.

How much damage to expect. The extent of loss will depend upon the yield possibilities of the peanuts and the abundance of worms before the crop is mature. Defoliation of immature plants reduces the yield and results in the loss of mature nuts in the ground. The longer the peanuts remain in the ground after defoliation, the greater is the loss of nuts. This is a very practical consideration since rain or other conditions may delay harvest.

At the Wiregrass Substation, dusted peanuts yielded 200 to 400 pounds per acre more than undusted plants at the time of first digging, September 28. This harvest was soon after the undusted peanuts were defoliated and was about as early as digging could be done. Additional harvest records made October 9 from the same plots show that dusted peanuts yielded 700 to 1,000 pounds per acre more than undusted ones. This difference in loss between the first and second digging represents nuts lost in the ground.

The increased yields of dusted over undusted peanuts at the Wiregrass Substation emphasizes the value of dusting a good crop when worms are numerous and the expected yield is high. Where the expected yield is lower, less profit can be derived from poisoning. However, it will pay to poison heavily infested peanuts, even though the expected yield is relatively low.

When to start dusting. Since the worm population will vary from field to field and neighborhood to neighborhood, the time to dust will have to be determined largely by each grower. Generally the peanuts should be dusted without delay when the tops of the vines begin to get ragged and large worms are plentiful. The grower should anticipate this condition early enough to have dusting equipment and dust on hand.

If the population of small worms runs 10 to 20 per foot of row 3 or 4 weeks before the expected digging date, it is time to dust.

What to dust with. Arsenical dusts are not recommended as they may burn the foliage. Undiluted cryolite, either Kryocide or Alorco cryolite, is recommended. Although the worms may be controlled by the use of diluted cryolite, it is not as effective and the vines will not be protected for as long a period as when an equal quantity of undiluted cryolite is used.

A 3 per cent DDT dust, when applied to infested peanut foliage, has given promising results in the control of this insect. However, additional experimental work is necessary before DDT can be recommended for use on hay and food crops.

How much dust to use. Cryolite should be used at the rate of 20 pounds per acre per application.

How many times to dust. One timely application at the 20-pound rate will give an excellent kill of worms, provided rain does not follow within 2 or 3 days. Dusting should be repeated if rain follows immediately and worms are plentiful.

If applied too soon, a second dusting may be necessary to protect the vines.

Method of application. The poison can be applied with a hand-operated duster, a two-row cotton duster, a row-crop power duster, or by airplane. Regardless of the machine used, about 20 pounds per acre should be applied, and every row should be dusted. Observations indicate that the cloud or drift from a duster will not control a heavy worm infestation. These worms are ravenous feeders, and it is necessary to get a fairly heavy dose of poison on the top of each row. A six or eight-row power duster probably will do the best job. The discharge of each nozzle should be directly above each row.

Dusting can be done any time the wind is not blowing. Best conditions usually prevail in the early morning or late afternoon. It is not essential that the plants be wet with dew.

