

Progress Report Series No. 42

December 1949

AGRICULTURAL EXPERIMENT STATION of The Alabama Polytechnic Institute, Auburn, Ala.

M. J. Funchess, Director

CONTROL of the IMPORTED FIRE ANT

F. S. ARANT, Entomologist
W. G. EDEN, Assistant Entomologist

For more than 20 years, the Gulf Coast area of Alabama has been troubled by the imported, or mound-building, fire ant. In recent years this ant has spread to other areas and now occurs in at least 10 counties, principally in southwestern Alabama, but extending as far north as Perry County.

The imported fire ant is an economically important pest because it frequently attacks germinating seed and young tender plants, and it builds unsightly mounds which may damage machinery such as mowers and combines. Its painful sting makes it an annoying pest. The ant is a general feeder, and it is frequently a household as well as a field pest.

The imported fire ant lives in nests or colonies, which may be numerous along roadways and ditch banks, in permanent pastures, and in other uncultivated areas. Mounds vary in height from approximately 6 inches to nearly 2 feet. The nest extends through the mound and into the ground beneath. During the spring and early summer winged males and females are quite numerous in the nests. These winged ants swarm out of the mounds, fly for varying distances, and establish new colonies.

Experiments have been conducted on the control of the imported fire ant during 1949 at the Gulf Coast Substation, Fairhope, and at the State Prison Farm, Atmore. These experiments involved seven separate tests, covering approximately 40 acres of land. Tentative recommendations for the control of this pest, based on the results of these experiments, are reported here.

MOUND TREATMENTS

Fire ant nests are frequently located in such places that the only practical treat-

ment consists of applying insecticides to the mound itself. Chlordane either as a 10 per cent dust or as a $\frac{1}{2}$ per cent emulsion spray was effective for mound treatments. The dust was applied at the rate of at least 2 ounces per hill. The spray was applied at the rate of at least one-half pint per hill. The mounds were broken down and the insecticide was mixed with the soil in the mounds. An ordinary garden rake was satisfactory for this purpose. Both of these methods gave practically 100 per cent elimination of colonies in experiments conducted at Atmore.

An alternate method of treating hills consisted of driving three evenly-spaced holes approximately 18 inches deep into the nest. One-third of the chlordane dust or spray was then placed into each hole and covered over with soil. Results from this method were satisfactory but slightly less effective than where the insecticide was mixed with soil in the mound.

Other insecticides that gave good results consisted of 20 per cent toxaphene dust, $\frac{1}{2}$ per cent dust of a new product named '118', 3 per cent gamma BHC- 5 per cent DDT (cotton dust), and a 1 per cent dust of compound '497.' Additional experiments are being conducted on the effectiveness of these materials. Where chlordane is available, it is recommended at present as the first choice for use against this pest.

AREA TREATMENTS

Experiments were conducted for control of ants on an area basis by broadcast treatments. Twenty to 40 pounds of 10 per cent chlordane dust or 10 to 20 gallons of $\frac{1}{2}$ per cent emulsion spray was applied per acre. Treatments included application of chlordane before disking, after disking,

and without disking. The results indicated that above 90 per cent control of all active mounds was obtained when 20 pounds of 10 per cent dust was applied either before or after thorough disking of the soil. This dosage is recommended for economical control.

In one experiment 40 pounds of 10 per cent chlordane dust per acre applied broadcast and disked-in gave 100 per cent elimination of all ants in the area over a 90-day period. This treatment was in a field free of roots and stumps and the entire surface of the soil was disked. In other areas where roots and stumps interfered with the disking, the treatment was somewhat less effective but still highly satisfactory. Several days were required to kill most of the ants. However, the insecticide continued to kill for weeks after the treatment.

Application of chlordane dust without disking was much less effective than when the soil was disked and when the mounds were torn down. However, chlordane sprays applied at the rate of 2 to 4 pounds of technical chlordane per acre showed promise of control without disking.

TIME TO APPLY TREATMENTS

Exact information on the best time of year to apply treatments is not available. From February to May should be the best time to treat either hills or areas, since the winged forms swarm from the nests during the spring and early summer to establish new colonies.

The assistance and cooperation of Otto Brown and Harold Yates, superintendent and assistant superintendent of the Gulf Coast Substation, and of T.P. Whitten, assistant horticulturist, Atmore, are acknowledged by the authors.