THE IMPORTED FIRE ANT IN FLORIDA

G. W. DEKLE

Entomologist, State Plant Board

Gainesville

The Imported Fire Ant (*Solenopsis saevissima* var. *richteri* For.) is also known as the Argentine Fire Ant, Brazilian Fire Ant, and the Mobile Fire Ant.

In 1949, the State Plant Board received information that the imported fire ant was causing considerable damage to crops in Escambia County and was requested to investigate the conditions existing in West Florida with reference to this ant. A survey made by the State Plant Board under the supervision of the late Mr. H. S. McClanahan, then Grove Inspector, showed that the imported fire ant was generally distributed over Escambia County and most of Santa Rosa County. Reports of damage to crops directed to the Agricultural Extension Agent in Pensacola and the State Plant Board in Gainesville were investigated, and the findings revealed the loss to crops caused by the imported fire ant to be greatly exaggerated. The State Plant Board survey personnel remained in West Florida to conduct control demonstrations. During the month of March 1949, two hundred and ninety-two growers were contacted in Escambia and Santa Rosa Counties and 408 colonies of imported fire ants were treated, which included colonies used in demonstrations.

During 1950-51, the State Plant Board was not called on to assist in control demonstrations or survey for this ant.

In December 1952, a conference on fire ants between the Plant Commissioner, Mr. Ed L. Ayers, members of his staff, and Dr. George H. Culpepper of the Bureau of Entomology and Plant Quarantine, United States Department of Agriculture, was held in the Plant Commissioner's office in Gainesville. Dr. Culpepper pointed out on a map of Florida the areas considered totally infested by imported fire ants and also the locations of nurseries in the State where he had collected and treated these ants. The ants were found in Bay, Baker, Duval, Nassau, St. Johns, Seminole, Leon, Escambia, Santa Rosa, and Okaloosa Counties. Escambia and Santa Rosa and the western half of Okaloosa Counties are considered totally infested, while the infestation in Bay County is spread over an area of 75 to 100 square miles around Panama City. The incipient infestations in Baker, Nassau, Duval, St. Johns, Seminole, and Leon Counties apparently have been the result of the movement of balled and burlapped nursery stock from totally infested areas of Alabama, Mississippi, and Florida. Small colonies and fertile females are adapted to movement in balled nursery stock.

In January 1953, the Plant Commissioner suggested that all counties with incipient infestations of imported fire ants be reinspected and the colonies treated with one of the recommended insecticides. If the small infestations can be eliminated, the natural spread into Florida may be held back for a number of years.

Reinspection of the nurseries infested with imported fire ants was completed in August 1953. Fourteen colonies were found and treated along with many colonies of native fire ants. The inspection revealed the fire ants to be in Baker, Nassau, Duval, and St. Johns Counties.

As a result of the summer inspection and treatment of fire ants in nurseries, it was decided by the Plant Commissioner and members of his staff to treat all fire ant colonies, both native and imported, that could be found in nurseries where imported fire ants had been reported during 1953. This work was begun on September 21 and to date inspections in three nurseries have been completed. A total of 250 colonies of fire ants in the three nurseries were treated with chlordane. Nineteen of the colonies found were imported fire ants. One colony of fire ants was found in a balled camellia plant that had been received the day before from Alabama. Two other nurseries are scheduled for this work, and will be treated before the end of the year. Inspections will be made subsequently by the plant inspectors and any colony found will be treated. Nurseries that are found to be free from imported fire ants after four periodic inspections—at least twelve months having elapsed between the first and fourth inspections—will be considered noninfested and treatment will be discontinued.

In Florida the imported fire ant is primarily a nuisance rather than an insect causing severe

economic crop losses to farmers. The sting of this ant to man is vicious and a festered area usually results. The huge mounds this ant is capable of constructing in the heavy clay soils of West Florida are unsightly in lawns, and in pastures the mounds have been responsible for mechanical damage to cutter blades of combine machines. Mounds in sandy soil are not as large and in most cases the imported fire ant seems to prefer building its nest around the media retainer boards found in nurseries and at the base of plants. A mound in sandy soil is seldom conspicuous unless apparently constructed on or near a clay-balled plant. The clay apparently is needed to support the honeycombed arrangement of the nest.

The imported fire ant is about the same size as our native fire ant and can be distinguished from it with some degree of accuracy in the field. The major worker of the imported fire ant is needed for positive identification. The head of the major worker of the imported fire ant is never broader than the abdomen and is not as bilobed from the front. The head of a native fire ant major worker is much larger, more bilobed, and broader than the abdomen. The shape and arrangement of the teeth on the mandibles are good characters to use in distinguishing the imported from the native fire ant. The mandibles curve gradually from the base to the apex in the imported fire ant and the teeth are spaced at greater intervals on the inner face of the mandibles, while the mandibles of the native fire ant curve more abruptly on the outer face. The teeth are placed closer together on the inner face of the mandibles and do not overlap one another as much as those of the imported fire ant. In order to make a positive identification it is desirable to have a good representative sample of specimens, a dozen or more including the larger workers.

Nurserymen who are dealing in balled nursery stock from Alabama, Mississippi, and the Pensacola area of Florida should guard against this pest infesting their nurseries. A safeguard would be to treat all fire ant colonies with one of the recommended materials. Chlordane, aldrin, and dieldrin, each in a 0.25-percent solution, have been found to be equally effective in controlling this ant.

For individual mounds in lawns, gardens, nurseries, and pastures, the State Plant Board recommends the use of two tablespoonfuls of 72% chlordane emulsifiable concentrate to three gallons of water, or the equivalent of other percentages of chlordane concentrate. Remove the top two inches of mound and apply the three gallons of prepared solution to each mound, using a garden sprinkler. For pastures with 25 or more mounds to the acre, use 5.2 pounds of 40% chlordane wettable powder, or one quart of 72% chlordane emulsifiable concentrate to 50-75 gallons of water and spray uniformly over an acre in the spring. Cattle should be removed from pastures before treatment, and they should be kept off for two weeks after treatment. Succulent plants may be treated with 5% chlordane dust at the rate of 30 to 40 pounds to the acre.

LITERATURE CITED

1. Bruce, W. G., Coarsey, J. M., Smith, M. R., and Culpepper, G. H. 1949. Survey of the Imported Fire Ant, **Solenopsis saevissima** var. **richteri** Forel. Special Report S-15, U.S.D.A., B.E.P.Q., Div. Insects Affecting Man and Animals, Savannah, Ga.

2. Creighton, W. S. 1950. The Ants of North America. B. Mus. Comp. Zool., Vol. 104, Cambridge, Mass.

3. McClanahan, H. S. 1949. Observations by Plant Board Inspectors of the Area in West Florida Infested by Brazilian Fire Ant. Unpublished Report, State Plant Board, Gainesville, Florida.

GRANULAR INSECTICIDES

E. G. KELSHEIMER

Entomologist

Gulf Coast Experiment Station

Bradenton

During the past two years (1952 and 1953) work has been in progress with granular insecticide formulations for the control of lawn and turf insects. Granular formulations must not be confused with dusts since the material does not adhere to the foliage but falls through the ground cover to the soil. There is little drift during the application, hence a known amount may be applied to an area. The physical character of the product makes it one that can be handled easily without a mechanical applicator.

There is a great variety of effective organic insecticides on the market. Hesitancy to use many of these insecticides has been due in some cases to fear of the poisonous nature of