

## Managing Red Imported Fire Ants in Crops and Orchards

### Background

Although well documented as an urban pest, the impact of fire ants on crop production in Texas has received less attention. Fire ants are destructive pests in some crops when they feed on seeds and seedling plants, are a stinging hazards to workers or livestock, and their mounds damage equipment. However, fire ants can be beneficial in cotton where they provide biological control of armyworms and bollworms. This project seeks to better understand the pest status of fire ants in corn, cotton, peanuts and pecan production in north central Texas.

### Objectives

- Determine if fire ants disrupt biological control of aphids in pecans by feeding on lady beetles, lacewings and spiders which help suppress aphid numbers.
- Evaluate Extinguish® fire ant bait for control of fire ants in pecans.
- Determine the impact of Extinguish® fire ant bait on native ant species in pecans.
- Quantify the predation by fire ants on bollworm and beet armyworm eggs in cotton and the impact o fire ants on cotton aphid densities.
- Determine if fire ants feed on peanuts in the field and quantify the impact of fire ant predation on corn earworm in corn.
- Document the impact of area-wide application of malathion applied for boll weevil eradication on fire ants and other beneficial insects in cotton.

### Benefits

- Cotton growers have a better understanding of the role of fire ants in pest management. Predation of bollworm and armyworm eggs was 2-4 times greater in the presence of fire ants in cotton. Cotton aphid numbers were greater in the presence of fire ants, but aphid numbers did not exceed thresholds and soon declined.
- Malathion applied for boll weevil eradication repelled fire ants from foraging in the cotton canopy and reduced predation rates on armyworm eggs.
- Fire ants were rarely associated with an increase in pecan aphid densities in pecans.
- Demonstrated that Extinguish® was an effective means for fire ant control in pecans.
- Fire ants did not reduce infestations of corn earworm larvae feeding on corn ears but fire ants densities were correlated with reduced density of corn earworm pupae in the soil.
- Studies found that fire ants were unable to penetrate sound peanut pods in order to reach the kernels, suggesting fire ant control in peanuts would provide little benefit.

### Team Members

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