

## PRECISION APPLICATION and EFFICACY of INSECTICIDES against PEST ANTS

**L.M. Hooper-Bùi**

404 Life Science Building, Louisiana State University, Baton Rouge, LA 70803

In Louisiana, 115 chemicals are registered for use against red imported fire ants, *Solenopsis invicta*, and other pest ants such as Argentine ants, *Linepithema humile*. Yet citizens and pest control operators still struggle with adequate control of ant pests in homes, nursing facilities, hospitals, and electrical housings. Although all these registered insecticides have been adequately tested before they were taken to market, it is possible that the method of application can be further refined and control more successful. We tested several methods of pesticide application against *S. invicta* and *L. humile* in urban areas. We tested 1) application of bait at large-scale and small-scale efforts, 2) application of contact granular insecticide at large-scale and small-scale efforts, 3) application of liquid contact insecticide at high volume of water and low volume of water (at the same rate of insecticide).

Baits applied at large-scale (>0.5 hectare) are more successful than those applied on a small-scale. Large-scale use of bait resulted in control that lasted three times that of small-scale use. Lower cost of treatment and use of less insecticide are two benefits from large-scale bait treatments regardless of the type of bait used. We applied the same concept to application of contact insecticides for *S. invicta* and *L. humile*. There was no significant difference in efficacy in treatment with three granular contact insecticides.

We investigated application methods of liquid bifenthrin for *S. invicta* and *L. humile*. We hypothesized that at the same rate of chemical, high volumes of water (20L/96.1m<sup>2</sup>) would move the insecticide to the soil and be more efficacious while low volumes of water (4L/96.1m<sup>2</sup>) would place chemical on vegetation. However, low water volume applications were far more efficacious than high water volume applications against *S. invicta*. Method of application of baits and contact granular and liquid insecticides can dramatically affect the success of the treatment for ants.