



The Texas Imported Fire Ant Research & Management Plan

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ABSTRACT. In 1997, the Texas legislature funded the Texas Imported Fire Ant Research & Management Plan, providing \$2.5 million annually to support research, education and regulatory programs to address the problems fire ants are causing in the state. The six-year plan is being implemented by the Texas Agricultural Experiment Station, the Texas Agricultural Extension Service, the University of Texas, Texas Tech University and the Texas Department of Agriculture. The goal of the plan is to eliminate the fire ant as a pest of major health and economic significance. The red imported fire ant, *Solenopsis invicta* Buren (Hymenoptera: Formicidae) is estimated to cause \$300 million in losses to Texas annually, with \$67 million in losses to the cattle industry alone. Efforts are being focused on developing sustainable solutions such as biological control and genetic methods as well as improve integrated pest management solutions that are cost-effective and environmentally sound. Educational programs are promoting managing the fire ants on a community-wide basis using currently-available technology and the "Two-Step Method" wherever applicable. Information about the Plan can be found on the web site.

KEY WORDS: Red imported fire ant; *Solenopsis invicta*; research; management; education; Texas.

Survey and Regulatory Programs



Ant survey results update map of quarantined counties and are posted on FASIMS: Fire Ant Spatial Information System.

Community-Wide Fire Ant Management



Assisted by a team of specialists, the adoption and impact of conducting community-wide fire ant management programs in urban areas is being documented. Specific pilot "showcase" programs in Dallas/Fort Worth, Houston, Austin, San Antonio and Mount Pleasant were selected in which intensive efforts are being made to document the impact of these efforts, including: 1) the reduction in fire ant populations; 2) reduction or change in pesticide use for fire ant control by individuals; 3) reduction in costly ant-related problems; 4) possible effects on non-target insect populations including native ant species; and perhaps 5) the reduction of pesticides such as diazinon detectable in runoff water. In-depth survey "instruments", geographic information system (GIS) based systems and biological survey methods have been developed. Results of these efforts will be critical in demonstrating the success of the fire ant management strategies implemented as a result of Extension educational program activities.



Sustainable Solutions



Phorid fly attacking fire ants



Mortality from *Beauveria bassiana*

The Texas Imported Fire Ant Research & Management Plan was funded by the Texas Legislature in 1997 at a level of \$2.5 million per year, and is now in its third year. The plan's overall goal is to develop products and procedures to reduce fire ant populations to a level that eliminates this insect as a serious pest—in terms of economic losses and health threats. Eradication is not the goal. This plan calls for developing short-term and long-term ways to manage the fire ant problem.

Funding supports a coordinated effort and differs from past plans in that this is a coordinated effort among all Texas organizations addressing the fire ant problem through research, educational, and regulatory programs, including: Texas Tech University, University of Texas, Texas Agricultural Experiment Station, Texas Agricultural Extension Service and the Texas Department of Agriculture. The six-year plan addresses a proposed research and management strategy that will provide short-term relief and lead to a long-term solution to the fire ant problem in Texas. To accomplish this strategy, the following objectives must be met.

② **Sustainable Solutions.** Conduct fundamental studies on the physical and biological factors that limit fire ant development, including biological control, genetics/molecular biology, environmental restraints, and competition and re-invasion.

② **Integrated Pest Management Solutions.** Develop pest management approaches by identifying ways to interfere with physiological and behavioral processes of organisms, colonies, and populations, including nutritional and reproductive biology, behavioral chemicals, and impacts of fire ants on economy, wildlife, crops, and electrical equipment.

② **New Technologies.** Evaluate and demonstrate existing and new technologies such as biological control agents and pesticides, in order to integrate them into an environmentally sound, cost-effective fire ant management program.

② **Community-Wide Management Program.** Immediately establish pilot community-wide management programs that aggressively control fire ants through a coordinated effort, assisted by the Texas Agricultural Extension Service, stressing community involvement.

② **Effective Quarantine and Survey Program.** Implement an annual survey to clearly define the location and density of fire ants. Develop a flexible and effective quarantine program to prevent the spread of fire ants. Maintain a strong fire ant-free certification program.

② **Strong Educational Program.** Develop and disseminate an effective, coordinated education program that will assist the public in implementing effective fire ant management.

Educational Programs



Web site: <http://fireant.tamu.edu>

Fire Ant Awareness Week