# A National Formosan Subterranean Termite Program

Termites are among the most economically important insects in the world. While also ecologically important in nutrient recycling, they're best known as structural and plant pests that compete with people for shelter and food.

The Formosan subterranean termite is a species from Asia that now infests over a dozen U.S. states, costing its human competitors about $1 billion annually in control measures and damage repair.

In this issue, you'll read about "Operation Full Stop," a national termite-fighting campaign led by USDA's Agricultural Research Service. Along with its collaborators, ARS is launching a coordinated attack using environmentally sound management practices aimed at suppressing termite populations and eliminating the damage they cause. This attack will take three concurrent paths:

• Integrating the best available control technologies into large-area pilot tests to suppress termite populations and keep them from regaining damaging numbers.

• Conducting site-specific trials to evaluate individual control products and technologies.

• Developing new and improved termite-fighting weapons through fundamental research and scientific discovery.

This aggressive new campaign arrives at a time when the conventional approach of excluding termites, structure-by-structure, is failing. Defending a building using chemical repellents around its perimeter does not decrease termite populations or activity in the surrounding area.

Moreover, chemicals available today do not provide the same long-term control as did organochlorine compounds. Chlordane, the last effective organochlorine used as a termiticide, was banned in 1988.

Unlike defensive measures used in the past, Operation Full Stop is strategically *offensive*—aimed toward reducing termite populations by attacking and killing the pests throughout an area or community.

This offensive approach to eliminating pests areawide or throughout an entire community not only prevents damage, it also offers built-in sustainability—key in reducing chemical usage over time.

ARS' community-based approach to Formosan termite control emphasizes use of toxic baits but will employ many tactics. Where appropriate, this holistic approach will call on chemical soil treatments, use of preserved wood, and sanitation—that is, removing wood trash and eliminating moisture sources that termites need to thrive. Physical barriers will also play a role.

All these tactics are critical to maintaining an environment inhospitable to termites. Still, research to improve baits by increasing their attractiveness and killing potential remains a high priority.

Another priority is development and use of sensitive monitoring devices that use acoustics and infrared technology to detect the termites' activity early so that remedial action can be taken before they do extensive damage. And better understanding of termites' food tastes and foraging behavior will lead to more precise placement of monitoring stations and baits. Besides minimizing damage, this approach lowers the program's operating costs and reduces the amount of toxicant needed to do the job.

The Formosan termite is an exotic pest that escaped its co-evolved natural enemies—one possible reason why it has spread unchecked across the South. Importation and establishment of one or more of this termite's natural enemies could permanently reduce its populations. With such prospects in mind, ARS scientists are preparing expeditions to the pest's native home in East Asia to seek out these as yet unidentified beneficial organisms.

On the home front, ARS is assembling a crack team of scientists to staff its new Formosan Subterranean Termite Research Unit at the agency's Southern Regional Research Center in New Orleans, Louisiana.

Scientists in the unit will conduct studies on biological control, insect nutrition, population ecology, biochemistry, toxicology, and structural engineering. They'll also investigate colony growth, development, and foraging behavior for clues to the termites' Achilles' heel.

But this team isn't doing the work alone. Members are in fact working closely with a cadre of experts from other collaborating agencies, research organizations, private industry, and academia. You'll read about many of them in the following pages.

Even with such talent, it's unlikely we can eradicate the Formosan termite. Instead, our goal is to reduce the pest's numbers, eliminate the damage it causes to our communities, and determine the best tactics for reducing and eliminating subterranean termite populations.

This effort should bring much-needed peace of mind to home and property owners across the South and throughout the nation.

**Edgar G. King**
Associate Mid South Area Director
Stoneville, Mississippi