United States Department of Agriculture
Cooperative State Research, Education, and Extension Service

PSEP QUARTERLY

A Quarterly Newsletter for Pesticide Safety Education Program Professionals
Produced by Monte Johnson and Wanda G. Best

Volume I, Issue 4 December 2004

LEAD STORY

Ganging up to Stop Fire Ants

Inside this issue:

EPA Releases Report Containing Latest Estimates of Pesticide Use in the United States **2**

EPA Issues 3rd Annual Report to Natural Resources Defense Council (NRDC) **2**

EPA Reminds Pesticide Retailers Diazinon 'Stop-Sale' Date Approaching/Press Advisory **3**

Bacteria Take on Late Blight, Sprouting and Dry Rot in Potatoes **3, 6**

Announcements **4**

EPA Revises the Worker Protecton Standard Glove Requirements for workers, Handlers, and Pilots **5**

Ganging up to Stop Fire Ants

Fire ants and the U.S. South have been synonymous since the ants' arrival in Alabama in 1918 aboard merchant ships from South America. The pests found their way onto land and have been multiplying and migrating ever since.

Researchers at the Agricultural Research Service, the chief scientific research agency of the U.S. Department Agriculture, are working diligently to curb the spread of these troublesome pests, which have stung countless humans and damaged electrical and farm equipment. They even attack and kill young cattle and other livestock, as well as vulnerable wildlife.

To combat this ongoing problem, scientists in the ARS Biological Control of Pests Research Unit at Stoneville, Miss., and the Biological Control and Mass Rearing Research at Starkville, Miss., are conducting regional integrated management programs in Mississippi, Alabama and Tennessee. The programs are designed to implement and test biological control agents against red and black imported fire ants (*Solenopsis invicta* and *S. richteri*, respectively) and their hybrid. Two specific areas are the focus of the programs: the Natchez Trace Parkway, maintained by the National Park Service, and south-central Tennessee's nursery crops production region.

Establishment of biological control agents in central Tennessee may slow the spread of the ants into nursery areas. Currently, a pathogen and several species of parasitoid flies--including the decapitating phorid fly from the genus *Pseudacteon*--are the most effective known biological control agents.

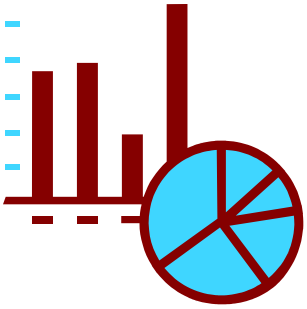
The Stoneville unit has reared thousands of phorid flies for research and field releases. One tiny species, *P. curvatus*, has been successfully established on black and hybrid fire ants in a multistate release program that began in 2002. Flies released in two pastures in Clay County, Miss., now occupy approximately 560,000 acres up to a distance of more than 28 miles from the release sites.

Also being implemented is an Integrated Pest Management approach that combines tactics such as distribution of insecticidal baits with natural organisms.

Chemical bait treatments alone are not sustainable, because fire ants will reinfest previously treated areas. However, baits can be very effective, consistently killing more than 90 percent of colonies in an area when applied correctly.

Read more about this multifaceted fire ant research in the December issue of ARS' *Agricultural Research* magazine.

EPA Releases Report Containing Latest Estimates of Pesticide Use in the United States



"This report contains the latest estimates of pesticide use in the United States. "

EPA's report, "Pesticide Industry Sales and Usage: 2000 and 2001 Market Estimates" is now available to the public. This report contains the latest estimates of pesticide use in the United States. It includes information on agricultural and non-agricultural pesticide use and illustrates graphically historical trends and levels of use over the last 20 years. Also included are data on imports, exports, firms, employment, the number of certified applicators, and the number of pesticides in use. The report contains statistics on pesticide sales and usage based on available information taken from Agency records of registrations, USDA surveys of pesticide use, and other public and proprietary sources. Highlights include:

Conventional pesticide use was down slightly from recent years at about 888 million pounds of active ingredient in 2001, 926 in 2000, and approximately 912 million pounds in both 1999 and 1998. Other pesticides, including wood preservatives, chlorine and hypochlorites, and specialty biocides, pushed total U.S. pesticide use to about 4,972 million pounds of active ingredient in 2001. Pesticide use occurs on more than 941,000 farms and in more than 78 million households in the United States. Herbicides were the leading type of pesticides used, in terms of both user expenditures and volume. With 85 to 90 million pounds used in 2001, the herbicide glyphosate replaced atrazine as the most widely used pesticide in the agricultural market sector–up from number 2 in 1999, 5 in 1997, and 17 in 1987. 2,4-D was the most widely used pesticide in both the home and garden and the industry/commercial/government sectors with 8-11 and 16-18 million pounds used in each sector, respectively. Annual U. S. pesticide user expenditures totaled approximately $11,090 million in 2001 accounting for about 34% of the total world market.

The new report is available on EPA's Web site at http://www.epa.gov/oppbead1/pestsales/index.htm. Multiple copies of the report can be obtained by writing to: NCEPI, P. O. Box 2419, Cincinnati, OH 45242-2419. Request EPA Publication # 733-R-04-001. Previous reports are also available online at the above Web site.

EPA Issues 3rd Annual Report to the Natural Resources Defense Council (NRDC)

On September 24, 2004, EPA issued its third annual report to the Natural Resources Defense Council (NRDC), discussing the Agency's risk findings and progress in implementing risk mitigation measures for 10 pesticides undergoing reregistration and tolerance reassessment, and subject to deadlines established by the September 2001 Consent Decree.

The pesticides addressed in the report include atrazine, azinphos-methyl, benomyl, carbaryl, chlorpyrifos, diazinon, endosulfan, lindane, phosmet, and propargite. In addition, the report discusses EPA's plans for completing cumulative risk assessments for several groups of pesticides identified as potentially having common mechanisms of toxicity.

The third annual report to NRDC is available on EPA's website at http://www.epa.gov/oppsrrd1/nrdc2.htm
.

EPA Reminds Pesticide Retailers Diazinon 'Stop-Sale' Date Approaching/ Press Advisory

EPA has issued a notice to remind retailers of a Dec. 31, 2004, stop-sale date for all outdoor diazinon home, lawn and garden products. It will be unlawful to sell diazinon outdoor non-agricultural use products in the United States after the end of this year. This is part of an agreement between EPA and diazinon registrants to phase out and eliminate all residential uses of the insecticide diazinon.
Discontinuing diazinon use in home, lawn and garden care is part of EPA's ongoing effort under the 1996 Food Quality Protection Act to reduce the risk of pesticides, especially to children.

Diazinon registrants are offering a "buy back" program to assist with removing these products from the market and preventing further sale. The registrants will repurchase any unopened, unused outdoor residential products from retailers or formulators. Retailers should make all possible efforts to sell their diazinon products back to the manufacturers by March 31, 2005.

Consumers may continue to use diazinon residential products according to label directions and precautions. If consumers choose to discontinue use, they should contact their state or local hazardous waste disposal program or local solid waste collection service for information on proper disposal. Consumers are advised not to dispose of pesticides in sinks, toilets, storm drains, or any body of water. The local government may recommend that consumers take diazinon products to a household hazardous waste collection site.

The organophosphate pesticide, diazinon, has been one of the most widely used insecticides in the United States for household lawn and garden pest control, as well as for indoor residential treatments. All indoor use product registrations have been cancelled and retail sale ended on Dec. 31, 2002. More information on diazinon is available at: http://www.epa.gov/pesticides/op/diazinon.htm .

Bacteria Take on Late Blight, Sprouting and Dry Rot in Potatoes

Spraying potatoes with harmless bacteria that delay sprouting and suppress dry rots may also shield the tubers from late blight disease, according to Agricultural Research Service scientists. Patricia Slininger and David Schisler at the ARS National Center for Agricultural Utilization Research, Peoria, Ill., and colleagues patented methods for using 18 strains of *Pseudomonas* and *Enterobacter* bacteria to stymie postharvest sprouting and dry rot. Caused by the fungus *Fusarium sambuciunum*, dry rot costs $100 million in losses in stored potatoes, which comprise 70 percent of the nation's $3 billion tuber crop. Recently, at annual meetings of the Society for Industrial Microbiology and the American Phytopathological Society, the scientists reported their discovery that the spray-on bacteria also stymie infection of stored spuds by *Phytophthora infestans*, the funguslike organism responsible for late blight. This disease is a worldwide threat, causing $400 million in losses in the U.S. potato crop alone. The emergence of fungicide-resistant strains of late blight has exacerbated the problem, according to Schisler, who is in the ARS center's Crop Bioprotection Research Unit. Recently, at annual meetings of the scientists reported their discovery that the spray-on bacteria also stymie infection of stored spuds by *Phytophthora infestans*, the fungus-likeorganism responsible for late blight. This disease is a worldwide threat, causing $400 million in losses in the U.S. potato crop alone.

(Continued on page 5)

A

N

N

O

U

N

C

E

M

E

N

T

S

EPA Pesticide Program has a service by which we inform the public about activities and actions related to pesticides. These updates are sent by email about twice a week and include items describing decisions on reviews of older pesticides, a list of Federal Register notices published each week, and other items of interest. Anyone may join the list and receive the updates.

A list of all of EPA?s Listservs is available at https://lists.epa.gov/read/all_forums/.

To reach the Pesticide Update list from the Pesticide Web site, see http://www.epa.gov/oppfead1/cb/csb_page/form/form.html .

EPA WEBSITE

http://cfpub.epa.gov/pesticides/comments.cfm

USDA, CSREES, PAS

800 9th Street SW
Room 3143 Waterfront Centre
Washington, DC 20250

(202)401-3357
(202)401-6156
wbest@csrees.usda.gov

www.csrees.usda.gov/newsroom/newsletters/psep/psep.html

Bacteria Take on Late Blight, Sprouting and Dry Rot in Potatoes (continued)

(continued from page 3)

The emergence of fungicide-resistant strains of late blight has exacerbated the problem, according to Schisler, who is in the ARS center's Crop Bioprotection Research Unit.

To determine the beneficial bacteria's potential as a fungicide alternative, the Peoria team began by inoculating wounded potatoes with both the bacteria and an infectious-spore stage of late blight.

After storing the potatoes for one week at 15 degrees Celsius and 90 percent relative humidity, the team checked the spuds for the telltale signs of late blight: a shrunken surface with irregular brown patches beneath.

Their top bacterial "picks"--three strains of *P. fluorescens* and one of *E. cloacae*--reduced late blight by 25 to 65 percent.

In warehouse-simulation studies at the University of Idaho-Kimberly, the team sprayed boxes of potatoes with mixtures of late blight and the bacteria. In those studies, the bacteria curbed late blight by 35 to 91 percent.

The ARS team, together with University of Idaho scientists, will collaborate with a commercial firm to conduct further tests under a cooperative research and development agreement.

EPA Revises the Worker Protection Standard Glove Requirements for Workers, Handlers, and Pilots

EPA published the final rule amending the Worker Protection Standard (WPS) for agricultural pesticides to make the following two changes:

(1) all agricultural workers (harvesters, cultivators, pesticide handlers) are permitted to wear separable glove liners beneath chemical-resistant gloves; and (2) agricultural pilots do not have to wear chemical-resistant gloves when entering or exiting aircraft. Workers may choose when to wear the liners. The liners may not be longer than the chemical-resistant glove and they may not extend outside the glove. The liners must be disposed of after 10 hours of use or whenever the liners become contaminated.

Lined or flocked gloves, where the lining is attached to the inside of the chemical-resistant outer glove, remain unacceptable. Regulatory action was taken to reduce the discomfort of unlined chemical resistant gloves, especially during hot or cold periods. Additionally, chemically resistant gloves do not add any appreciable protection against minimal pesticide residues found around the cockpit of an aircraft. The WPS applies to workers performing hand labor activities in fields treated with pesticides; workers on farms, forests, nurseries and greenhouses where pesticides are used; and pesticide handlers who mix, load, apply or otherwise handle pesticides.

The Federal Register notice containing the final rule is available at: http://www.epa.gov/fedrgstr/index.htm. More information on EPA's Worker Protection Standard is available at:

http://www.epa.gov/pesticides/health/worker.htm