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Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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Itch Mites Linked to Oak Trees Plaguing Midwesterners Again:

MANHATTAN, Kan. -- The "Oak leaf itch mite," the cause of mysterious bites in many Midwestern communities in 2004, is on the loose again, according to Kansas State University scientist Alberto Broce. The mite population levels this year, however, appear to be different from those observed last year.

The mites became newsworthy last year because of the intensity and severity of their itchy bites. Men, women and children who were bitten hailed from a large geographic area, including Pittsburg and Manhattan in Kansas, Lincoln and Omaha in Nebraska, and St. Louis and Joplin in Missouri. Reports this year indicate that Lincoln, areas in Kansas City, Kan. and Kansas City, Mo., areas from Ft. Scott, Kan. to Nevada and St. Louis, Mo., and all the way to Evansville, Ind., are experiencing major mite outbreaks this year. In other communities affected last year, such as Manhattan, the problem is minimal this year, Broce said.

Facts About Oak Leaf Gall Mites

MANHATTAN, Kan. – Oak leaf gall mites (*Pyemotes herfsi*) are a species of itch mites that appeared in 2004 in several Midwestern states. Kansas State University and University of Nebraska scientists have monitored the pest since it was first reported in August, 2004 in southeastern Kansas.

He and other K-State personnel have received numerous calls and emails about the mites.

"We have learned considerably about the biology of the mite and its main hosts, midge larvae that cause the formation of leaf marginal roll galls on pin oak leaves," said Broce, who is an entomologist with K-State Research and Extension.

"We were able to observe in April the massive emergence of midges from lawns of Lincoln, Neb. homes that had experienced heavy mite infestation in 2004. Literally, there were clouds of emerging midges flying up to the young and developing leaves. There, female midges were laying their eggs near the indentation of the oak leaves. The hatched larvae would then crawl to the edge of the leaf and would secrete substances that would make the leaf curl, forming a cylinder-like gall, a well-protected place for the midge larvae. Regular monitoring for the itch mite in Lincoln and Manhattan has demonstrated the high population levels in the former and low in the latter."

Following are some facts about those mites:

* Typical bites on humans are raised, reddened, 1/2 to 3/4 inch (diameter) welts with a vesicle in the center -- itchy, but painful when scratched. The bites often result in secondary bacterial infections. Apparently, the mites must be in contact with a person's skin for four to five hours for the bite to be felt 10 to 16 hours later. Because of the delayed reaction, many people don't know they've been bitten until the next day.

* The mite is closely related to the straw itch mite, which for hundreds of years has pestered farmers handling straw and stored products.

* The oak leaf gall mite is a tiny, 0.2 mm (1/125 inches) long mite. It is barely visible to the naked eye.

* The mite's life cycle is unusual. A mated female searches for a host on which to feed.

She is small enough to be carried by the wind. If she finds a leaf marginal roll gall on an oak tree, she enters the gall. If she finds the midge larva

The mites can get access to the midge larvae through small openings in the galls. Questions remain, however, as to how the mites get from wherever they spend the winter to the galls in the summer, Broce said.

“At this time, the midge larvae have already or are dropping out of the galls and preparing for hibernation. However, the mites are also still active and a word of caution: raking leaves poses the risk of mite bites, especially if raking pin oak and red oak leaves,” he said.

“We don't have any new recommendations as we haven't found any solution to this problem. Previously, we recommended the use of DEET as a repellent, but we have had several reports indicating this product is failing in giving any protection. Avoiding spending time outdoors (in areas infested with these mites) more than three hours at a time and taking a shower after being outside appears to have a value in reducing the chances of getting the bites,” Broce said. “Washing the clothes worn outside as soon as possible after coming indoors is also still recommended,” he said.

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K-State Research and Extension is a short name for the Kansas State University Agricultural Experiment Station and Cooperative Extension Service, a program designed to generate and distribute useful knowledge for the well-being of Kansans. Supported by county, state, federal and private funds, the program has county Extension offices, experiment fields, area Extension offices and regional research centers statewide. Its headquarters is on the K-State campus, Manhattan.

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Additional Information:

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Weekly Report from the Kansas State University Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostic Laboratory from September 16 through October 19, 2005:

responsible for the gall formation, she feeds on the host larva. Within minutes, a neurotoxin in her saliva paralyzes the midge larva, which will die of starvation. The toxin is potent. One mite's bite can kill an insect larva 170,000 times its own weight. That toxin is what causes itching when the mites bite humans.

Once the female starts to feed, she develops up to 250 offspring. In seven days, her progeny -- of which five to 10 percent are males -- are ready to emerge as fully developed adults. Males emerge ahead of the females, mate with the females as they emerge from the mother and die shortly after. The females complete the cycle by dispersing in search of new hosts.

* First reports of bite outbreaks in Kansas and Nebraska in 2004 were in mid-August and persisted until mid-November. Early reports last year were from people bitten during recreational outdoor activities, but reports late in the season were linked mainly to leaf raking.

9-16-2005, Harvey County: Acrobat Ants in home.
9-20-2005, Geary County: Blowfly Larvae in home.
10-3-2005, Harvey County: Spotted Cucumber Beetle on gourds.
10-3-2005, Neosho County: Blowfly Larvae on carpet.
10-3-2005, Leavenworth County: Milkweed Tussock Moth.
10-3-2005, Washington County: Dragonfly nymph in stock tank.
10-3-2005, Rooks County: Oystershell Scale on Lilac.
10-5-2005, Decatur County: Hairy Fungus Beetle around grain bins.
10-5-2005, Neosho County: Wolf Spider in home.
10-6-2005, Riley County: Bee sting.
10-6-2005, Riley County: Camel Cricket in home.
10-6-2005, Dickinson County: Red Flour Beetles in wheat pellets.
10-7-2005, Kingman County: Thatch and a few insects in Bermuda grass.
10-7-2005, Sedgwick County: Midges on outside of home.
10-11-2005, Osborne County: Wolf Spider.
10-12-2005, Washington County: Possible Trumpet Leaf Miner on blackberry.
10-12-2005, Shawnee County: Soldier Beetle larvae crawling on garage.
10-12-2005, Coffey County: Wolf Spider under house.
10-12-2005, Sedgwick County: Longhorned Beetle larvae pine.
10-14-2005, Neosho County: Possible Leafminer damage on ash.
10-14-2005, Harvey County: Cobweb Spider in home.
10-19-2005, Reno County: Ground Beetle in hay.
10-19-2005, Neosho County: Gouty Oak Gall on Pin Oak.

If there are any questions regarding these samples or about the identification of any arthropod please contact the Insect Diagnostician at 785-532-4739 or at bbrown@oznet.ksu.edu.

Bobby Brown

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Sincerely,

Alberto Broce
Livestock Entomologist

Bobby Brown
Entomology Diagnostician

