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Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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April 29, 2005 No. 3

Its been cool, but.....

Recent mid-April 70 - 80 temperatures have lately been replaced by below average temperatures. And while some of us may have grabbed a jacket to ward off the chill, several insect pests (given their normal appearance during the cool early spring weather) have been unfazed. They are rapidly approaching the completion of their active feeding stages.

Previously discussed (Kansas Insect Newsletter Issue #1) **European pine sawfly** are nearly full grown, and as such, are rapidly consuming entire needle clusters (Figure 1) giving landscape plantings, such as mugo pine, a ragged appearance (Figure 2). Sawfly larvae can be eliminated with insecticides containing the active ingredients acephate, bifenthrin, esfenvalerate, lambda-cyhalothrin and permethrin. People preferring to utilize “softer insecticides” should consider rotenone/pyrethrin, horticultural oils or insecticidal soaps.

Figure 1
Large larvae

Figure 2
Severe feeding

Extension publication MF-2545, European Pine Sawfly provides a complete description of the insect’s seasonal life history and its effect on the various hosts (pine species) in Kansas. Copies of the publication are electronically accessible, or, hard copies available through local County Extension Offices.

Although previously unreported, **eastern tent caterpillar** web masses have recently been observed (Figure 3). Back tracking (in time) from their current size (Figure 4), initiation of their current season activities coincided with that for European pine sawfly — the last several days of March. Eastern tent caterpillars are also on the verge of completing their 2005 feeding phase.

Figure 3
Web mass

Figure 4
Caterpillar

The following images (on wild plum) illustrate the habits of eastern tent caterpillars. Web masses are formed in the crotch/fork of a branch or encircle the branch (Figure 5) ----- but never at the end of branches (as is the situation later in the season with fall webworm). On small shrubs, tent caterpillar larvae completely consume all foliage (Figure 6) forcing them to extend their feeding forays to adjacent plants. However, they always return to their tent sanctuary on the original host (Figure 7).

Figure 5
Web mass location

Figure 6
Defoliation of main host plant

Figure 7
Additional foliage on adjacent shrubs

The same synthetic insecticide active ingredients listed for sawflies will work against eastern tent caterpillars. While horticultural oils and insecticidal soaps may be labeled for use against tent caterpillars, they must be applied directly to caterpillars when they are out foraging, and not confined/protected within their tent web mass. An additional “natural product” containing spinosad may be selected to control tent caterpillar.

Above all, be assured that despite their presence and feeding (Figure 8), there is no overall detrimental damage to trees and shrubs as a result of tent caterpillar deeding. Their “disappearance”/completion-of-their-feeding-cycle occurs early in the season when trees and shrubs vigorously put out new flushes of foliage.

Thus for the remainder of the season, trees present a full appearance (Figure 9).

Figure 8
Visible web masses

Figure 9
Fully-leafed tree

Extension publication MF-2395, Web Producing Caterpillars in Kansas provides a complete description of the insect's seasonal life history. Copies of the publication are electronically accessible, or, hard copies are available through local County Extension Offices.

Bob Bauernfeind

The Alfalfa Weevil Situation:

We are still hearing occasional reports of people discovering alfalfa weevil-infested fields where damage is escalating. Applying the stem- count decision method (see our 2005 Alfalfa Insect Management guidelines, MF-809) may lead them to treat those sites with a short- residual product or to cut the field without spraying. However, it appears that alfalfa weevil treatments were well-timed on many fields. Unfortunately, a few growers with heavy infestations did not recognize the threat, so a scattering of fields have (or soon will) develop a grayish or silvery appearance that is visible from some distance. Remember to honor preharvest waiting interval requirements before swathing treated fields. In the 7 to 14 days following cutting, pay special attention to regrowth. With the abundant rainfall that many areas have experienced lately, new growth should not be delayed. In fields that do not green-up rapidly, check for variegated cutworms, alfalfa weevil adults or possibly alfalfa weevil larvae in the leaf litter. Remember that swathed hay must be removed from the field if stubble treatments are planned.

Watch for Early Season Corn Insects:

Corn in the early growth stages sometimes shows damage from a number of insect pests. Post-emergence treatment can sometimes be beneficial when pest populations are high, but is not always necessary if the growing point remains intact and injury is scattered. Injury that kills the growing point will lead to plant death and stand reduction.

Cutworms, especially black cutworm, generally cause economic damage during the first couple of weeks after emergence and typically is much more common in eastern parts of Kansas. Larger larvae can cut plants

off or damage the upper portion enough so that leaves wilt. Smaller cutworms will initially feed on one side of the leaf (creating a window-like appearance) and cut notches or holes in the leaves. Populations generally are heaviest where a living cover of spring weeds was killed, a lot of residue is present, and/or sometimes where corn follows soybeans. Rescue treatments may be justified if 3 to 5 percent of plants at the two-leaf stage are being cut and many small worms are present (indicating that more damage is likely). If cool weather conditions persist, lower thresholds might be justified since the plants will not be able to grow away from the damage. Seven post-emergence rescue treatments are listed in our 2005 Corn Insect Management Recommendations, MF-810. They include: Chlorpyrifos (Lorsban 4E); Cyfluthrin (Baythroid 2); Esfenvalerate (Asana XL 0.66); Gamma-cyhalothrin (Proaxis); Lambda-cyhalothrin (Warrior with Zeon Technology); Permethrin (Pounce 3.2EC, Ambush 2E); Zeta-cypermethrin (Mustang MAX). Sprays are generally more effective if the surface is moist to wet at the time of application.

Flea beetles sometimes cause injury to young plants up to about the fourth leaf stage. Injury is most severe when cool to cold temperatures slow plant growth. Border treatments may solve the problem. Populations at or above 4 to 5 flea beetles per plant on two-leaf corn are usually required to justify the expense of post-emergence sprays. We list nine treatments in our recommendations, the same active ingredients as for cutworms plus Carbaryl (Sevin) and Microencapsulated Methyl Parathion (Penncap-M).

In recent years, southern corn leaf beetles have become more generally recognized as causing early season injury to corn in eastern parts of Kansas. This drab-colored, 3/16 to 1/5-inch long drab, grayish-to-brownish beetle is hard to detect. It blends well with the soil, often lies motionless, and sometimes has its back covered with soil particles. Damaged plants are often described as the being chipped into pieces or fragments. Injured leaves sometimes become trapped and do not unfurl properly. Calculated thresholds have not been determined, but action needs to be taken if the stand appears to be threatened. Six products are listed in our management guide: Bifenthrin (Capture 2EC), Carbofuran (Furadan 4F), Chloropyrifos (Lorsban 4E), Cyfluthrin (Baythroid 2), Lambda- cyhalothrin (Warrior with Zeon Technology), and Zeta-cypermethrin (Mustang MAX).

Chinch Bugs occasionally injure young plants, but corn is not nearly as commonly threatened as sorghum. Generally, corn has achieved enough size by the time chinch bugs move into fields so that border treatments may be all that is required. Drop nozzles and directing the spray so it hits the base of the plant and the bugs themselves helps improve chances of achieving control. Insecticides listed as recommended in our 2005 guide include Bifenthrin (Capture 2EC), Carbaryl (Sevin), Carbofuran (Furadan 4F (a 2(ee) label)), Chlorpyrifos (Lorsban 4E, Nufos 4E); Cyfluthrin (Baythroid 2); Esfenvalerate (Asana XL 0.66); Gamma-cyhalothrin (Proaxis); Lambda- cyhalothrin (Warrior with Zeon Technology); and Zeta-cypermethrin (Mustang MAX).

Randy Higgins

Mosquito Misters:

This year mosquito control industry (several companies) introduces a new system for controlling mosquito adults. It is based on a reservoir with an insecticide, pump, timer, and system of tubes with nozzles that

spray an insecticide on the property at regular intervals (see images bellow). The price is around $2,500. I **do not** recommend this system for mosquito control for several reasons: a) environmental impact and killing non-target insects; b) frequent applications will lead to development of resistant mosquito populations; c) safety issues (dealing with a large quantity of an insecticide (gallons); d) most importantly - targeting mosquito adults for mosquito management is the least effective way to control mosquitoes.

Recommendations for protection from mosquito bites and consequently from the West Nile virus and other mosquito-borne diseases include using repellents based on DEET and controlling mosquito larvae in standing water. For details see MF-2571 at http://www.oznet.ksu.edu/library/ENTML2/MF2571.pdf


Mosquito Misters

Mosquito Repellents:

In 2005, CDC has updated the recommendations for mosquito repellents and added two new active ingredients:

1) Picaridin, also known as KBR 3023, has been used in Europe, Australia, Latin America, and Asia for some time. There are two products on the market, OFF Insect Repellent (10% picaridin) and OFF Skintastic Insect Repellent (5% picaridin), both made by S.C. Johnson. The efficacy is comparable to equivalent % DEET repellents.

2) Oil of lemon eucalyptus is a plant based repellent that gives time protection similar to that of low concentration DEET products.

Ludek Zurek

FOR IMMEDIATE RELEASE

Thursday, April 28, 2005

USE OF INSECTICIDES LINKED TO LASTING NEUROLOGICAL PROBLEMS FOR FARMERS:

New research shows that farmers who used agricultural insecticides experienced increased neurological symptoms, even when they were no longer using the products. Data from 18,782 North Carolina and Iowa farmers linked use of insecticides, including organophosphates and organochlorines, to reports of reoccurring headaches, fatigue, insomnia, dizziness, nausea, hand tremors, numbness and other neurological symptoms. Some of the insecticides addressed by the study are still on the market, but some, including DDT, have been banned or restricted.

These findings will be available online in April, and published in the June issue of "Environmental Health Perspectives". The research is part of the ongoing Agricultural Health Study funded by the National Institute of Environmental Health Sciences and the National Cancer Institute, two of the National Institutes of Health, and the Environmental Protection Agency.

"This research is really important because it evaluated the health effects of agricultural chemicals as they were commonly used by farmers. It's different from previous studies that focused on pesticide poisoning or high dose exposures, for example when large amounts of a chemical were accidentally spilled on the skin," said Freya Kamel, Ph.D., a researcher for the National Institute of Environmental Health Sciences (NIEHS).

The NIEHS researchers examined questionnaires completed by farmers on lifetime exposure to herbicides, insecticides, fungicides, and fumigants, and their history of 23 neurological symptoms. Those who reported experiencing more than 10 symptoms during the year prior to completing a study questionnaire were classified as having high levels of symptoms.

Researchers found that nearly 3,000 participants had a high lifetime exposure to insecticides -- that is, they used insecticides more than 500 days in their lifetime. Nearly 800 of these farmers reported more than 10 neurological symptoms compared to those using insecticides fewer than 50 days. The researchers found no significant association between neurological symptoms and other chemicals, including herbicides or fungicides, and only a weak association between fumigant exposure and neurological symptoms.

Some of the insecticides used by the licensed farmers over the past 25 years are no longer available commercially. DDT, a well known example of an organochlorine, has been banned for use in the US since 1972. Organophosphates, such as malathion, chlorypyrifos, and diazinon, have been banned or restricted for home and garden use in the US. However, some of the pesticides examined, including carbaryl and some pyrethroids, are available to home gardeners, although in different formulations and in lower concentrations, which may make them less hazardous.

"Because the participants in this study are telling us they have never been previously diagnosed with pesticide poisoning or medically treated for any exposure to any pesticide, we are led to conclude that their symptoms are related to moderate lifetime exposure," said Dr. Kamel.

"Most studies of this issue have sample sizes ranging from 50 to 100 participants, making it hard to understand the detailed relationship between exposure and health effects. The large size of this study gives it great statistical power," said Dr. Kamel.

The AHS (http://www.aghealth.org/) is designed to investigate the effects of environmental, occupational, dietary, and genetic factors on the health of the agricultural population. The study will provide information that agricultural workers can use in making decisions about their health and the health of their families.

NIEHS looks at factors in the environment that may be harmful to human health. More information about NIEHS and the Agricultural Health Study can be found at http://www.niehs.nih.gov .

Sharon Dobesh

Weekly Report from the Kansas State University Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostic Laboratory from April 18 through April 28, 2005:

4-19-2005, Cheyenne County: Winged Termites.
4-19-2005, Shawnee County: Myrmica ants.
4-20-2005, Reno County: Male Lone Star off person.
4-21-2005, Labette County: Termite worker from wallboard.
4-21-2005, Reno County: Delia maggots on Canola.
4-21-2005, Riley County: Mites on Spruce.
4-24-2005, Johnson County: Cecidomyiid larvae from oak.
4-24-2005, Jackson County: Lone Star Tick nymph.
4-24-2005, Cheyenne County: Lilac/Ash Tree Borer from Ash.
4-24-2005, Allen County: European Pine Sawfly larvae on Scotch Pine.
4-25-2005, Shawnee County: Lone Star Tick nymph.
4-28-2005, Riley County: Winged Termites from home.

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

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

Sincerely,

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