http://www.oznet.ksu.edu/entomology/extension/extensio.htm

Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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March 23, 2007 No. 4

# Colony Collapse Disorder

During the last month there has been a lot of media attention about a disease, killing honey bees across the country in great numbers, called Colony Collapse Disorder. Kansas has not yet reported this disease. Many beekeepers are just beginning to open their hives from overwintering to assess the damage. A current map showing affected states can be found at http://maarec.cas.psu.edu/pressReleases/CCDMap07FebRev1-.jpg

Colony Collapse Disorder, or CCD, is different from other bee death in that the dead bees are not found in or around the hive. Typically, the bees leave the hive and die elsewhere. There is currently no official known cause for this colony die-off. Other symptoms include small clusters of young bees left in the hives, with honey and brood present. Delayed robbing, and slower than normal invasion by pests such as wax moth and small hive beetle.

The Mid-Atlantic Apiculture Research and Extension Consortuim (MAAREC) has a "Working Group" made up of participants from the University of Pennsylvania, the Pennsylvania Department of Agriculture, Bee Alert Technology, Inc affiliated with the University of Montana, USDA/ARS, and the Florida Department of Agriculture. This working group has put together an official CCD website at http://maarec.cas.psu.edu/pressReleases/ColonyCollapseDisorderWG.html . This website is full of good information, including a good paper title "Tentative Recommendations for Hives Experiencing CCD".

As of February 2007, many beekeepers reporting large losses due to CCD are large migratory beekeepers, some loosing 50-90% of their colonies. Other similarities in colonies experiencing CCD are stress in the colonies about 2-months before die-off, frequently hive splitting to increase hive numbers, and a "dead-out" rate of 30% or more. Factors NOT in common with colonies experiencing CCD are antibiotic use, miticide use, source of queens, and supplemental feed, according to a presentation found at the Working Group website.

Beekeepers and beekeeper groups are asked to help by responding to a survey found at: http://www.beesurvey.com/

Sharon Dobesh

# Army Cutworm Alert

According to Michael J. Stamm, our canola breeder, army cutworm infestations are being reported in canola fields across Kansas. He started receiving reports about army cutworm activity in central and northern Oklahoma during the first week of March and began receiving reports of army cutworm activity in south central Kansas during the second week of March. As the mild weather continues, reports are expected to increase. These infestations are the result of eggs laid by female 'Miller moths' last fall. Larvae feed mainly at night, hiding in the soil around plants during daylight hours. In cold weather they remain below ground, returning to feed above ground during warm spells. Feeding by small larvae, results in 'windowpane' damage to young leaves as larvae strip away the lower leaf surface leaving transparent patches of dead cells on the upper surface. This damage is usually insignificant and often goes unnoticed. As the larvae grow in size, the evidence of feeding becomes more apparent, as larger larvae are able to chew through the entire leaf. Larvae feed exclusively on above-ground green foliage and heavily infested fields fail to green-up in the spring. Flocks of birds foraging for the plump larvae are often a sign of cutworm infestations in a field.

Like most cutworms, army cutworms will feed on a great many plants including many crop and weed species. Alfalfa, wheat, and canola are the agricultural crops at risk because those are the crops in Kansas that were present in the fields last fall when the female moths were searching for oviposition sites. Despite their diverse diet, the larvae still show strong feeding preferences for certain types of plants, and even certain crop cultivars. Canola is a preferred crop plant, meaning that larvae feed voraciously on it and can cause severe defoliation.

One can sample for army cutworms by sifting a series of shovelfuls of soil through a metal screen with holes approximately 1/4 inch square. This should be performed at a minimum of 5 separate locations in a field. Take note of the size of larvae as well as their number. Four to five larvae per square foot is often consider a threshold level if the larvae are still small and feeding damage is considered significant. However damage potential is also very much dependent on the status of the crop. On wheat, the worms can be considered much like grazing cattle. A few worms grazing on wheat is not a problem, however if the stocking rate becomes too high and lasts too long damage can occur. Late-planted fields under dry conditions with poor tillering may suffer economic damage with as few as one or two larvae per square foot, but vigorous, well-tillered fields under optimal growing conditions can tolerate as many as nine or ten larvae per square foot without measurable yield loss. With alfalfa, recently seeded stands may suffer damage from one or two larvae per square foot where as more established stands may require four to five larvae per square foot to justify control. The key is monitoring fields to determine

if larvae are present and to evaluate the amount of injury the larvae are causing. If the crop is growing faster than the larvae are feeding then there probably is not a problem (unless you find high numbers of very small larvae), but if larvae are chewing off all of the new growth and damaging the crown of canola or the buds on the alfalfa then treatment may be justified. Once most larvae are greater than 1.25 inches long they are about to pupate and treatment is no longer justified.

If treatment seems to be warranted then try to select good weather for the application. Avoid applying insecticides if rain is imminent and try to select a treatment window with predicted daytime temperatures above 50 degrees F for the next few days following treatment. Treatment options vary by crop, but normally focus on may of the newer pyrethroid products. Lists of treatment options can be found on the following web pages:

**Alfalfa:** http://www.entomology.ksu.edu/DesktopDefault.aspx?tabindex=173&tabid=510
**Canola:** http://www.entomology.ksu.edu/DesktopDefault.aspx?tabid=646
**Wheat:** http://www.entomology.ksu.edu/DesktopDefault.aspx?tabindex=173&tabid=481

Or in the following publications.

**MF-814, Phillip E. Sloderbeck, and Robert J. Whitworth. Alfalfa Insect Management 2007, Kansas State University, January 2007.**

**MF-745 Phillip E. Sloderbeck, J.P. Michaud, and Robert J. Whitworth, Wheat Insect Management 2007, Kansas State University, January 2007.**

If treatment seems to be warranted, then it is important to time insecticide application, as soon as the treatment threshold is reached and with predicted daytime temperatures above 50 degrees F for the next few days following treatment.


Army Cutworm

Jeff Whitworth, Phil Sloderbeck and J.P. Michaud

# Predicting Insect Problems based on Winter Weather

One of the most common questions an entomologist receives this time of year is: How did the winter weather affect the insects? It seems to be common knowledge that severe winter weather is detrimental to insect populations. However, in reality things are not that simple. The winter's impact varies greatly depending on the species and location of the

insect(s) in question. The populations of some insects will undoubtedly be impacted by the cold winter weather that most of the state experienced this winter, but others probably escaped unaffected. We know that some insects only survive in Kansas during mild winters. Insects where Kansas is on the northern edge of their normal distribution are probably the most likely to be impacted by winter weather. For example the southwestern corn borer has historically been mainly a problem in southwest Kansas, however the last few years we have seen damaging populations reach the Nebraska border. This might be an insect where the winter weather may push populations back to its more normal range. The greenbug may be another example of a pest that will be set back by the cold winter weather. Greenbugs tend to overwinter in southern Kansas counties during mild winters and can then damage wheat stands in early spring. This winter, their populations should have been knocked back and they should not be expected to damage wheat this spring. Other pests that are common problems in more northern states probably had little trouble surviving our winter weather. For example the army cutworm that is now being reported in some canola fields (see article on Army Cutworm Alert). This insect often causes problems as far north as Canada so it is vary winter hardy and has adapted to withstand very cold conditions. Another insect that we can speculate on is the alfalfa weevil. This insect is accustomed to surviving winters much farther north than Kansas, so it should survive the winter, however the winter weather may affect when we see damage from this pest. The alfalfa weevil enters alfalfa fields in the fall and begins to lay eggs, it will continue to lay eggs most of the winter if the weather is favorable, but when it gets cold egg laying is stopped. This year we may see a split weevil larval season. The mild fall weather we had, should have allowed for a significant amount of fall egg laying. Then there should have been a long period with little or no egg laying activity. And now, the weevils should be laying eggs again. Thus, we could see some early weevil activity from the eggs laid last fall and then additional activity later in the season from eggs laid this spring, a situation that may in some cases require a second insecticide application. For many insects the weather we have this spring and summer will be more important than the winter weather in determining their damage potential. So while this speculation makes for good conversation we will really just need to wait and see what problems develop.

Jeff Whitworth, Phil Sloderbeck and J.P. Michaud

# Spring Has Sprung

It is now officially spring and we are receiving the first calls and e-mails of various insect problems. From aphids in alfalfa, to cutworms in canola (see article on Army Cutworm Alert), to foraging carpenter ants, can termite swarmers be far behind? So now would be a good time to being checking fields for signs of insect activity. Keep in mind that insect populations vary greatly from field to field and nothing beats infield scouting to detect insect infestations before they cause significant damage.

Jeff Whitworth, Phil Sloderbeck and J.P. Michaud

# Warmer Days and Warmer Nights = Accumulated Growing Day Degrees

Traditionally, March 1 is the launching point for recording Growing Degree Days. Slow to start (i.e. warm daytime temperatures offset by cool evenings usually lower the average daily temperatures below the Base-50 guideline), warmer evenings after mid-March quickly raise daily averages, and thus GDD's rapidly accumulate.

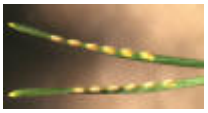
| | GDD (Mar. 1 - Mar. 14) | GDD (Mar. 15 - Mar. 21) | **Total (Mar. 1 - Mar. 21)** |
|---|---|---|---|
| Baxter Springs | 63.0 | 42.0 | **105.0** |
| Clyde | 20.5 | 27.5 | **48.0** |
| El Dorado | 46.5 | 34.5 | **81.0** |
| Elkhart | 20.5 | 44.5 | **65.0** |
| Ellsworth | 28.5 | 35.0 | **63.5** |
| Emporia | 42.0 | 35.0 | **77.0** |
| Garden City | 16.5 | 50.5 | **67.0** |
| Hays | 19.5 | 39.5 | **59.0** |
| Hiawatha | 27.0 | 15.5 | **42.5** |
| Hutchinson | 44.0 | 43.0 | **87.0** |
| Independence | 69.0 | 50.0 | **119.0** |
| Kansas City | 40.5 | 18.0 | **58.5** |
| Lawrence | 33.0 | 23.0 | **56.0** |
| Manhattan | 26.0 | 30.5 | **56.5** |
| Newton | 41.0 | 39.0 | **80.0** |
| Olathe | 43.5 | 22.5 | **66.0** |
| Pittsburg | 63.0 | 39.0 | **102.0** |
| St. Francis | 13.0 | 30.0 | **43.0** |
| Salina | 28.5 | 45.0 | **73.5** |
| Topeka | 39.0 | 26.5 | **65.5** |
| Wichita | 49.0 | 47.5 | **96.5** |

As mentioned in an earlier newsletter, accumulated GDD accumulations are guidelines related to the onset of insect activities. For instance, between 100 and 200 accumulated GDD's is the accepted guideline for two of the common early season landscape pests: eastern tent caterpillar (ETC) and European pine sawfly (EPS). Yet, eastern tent caterpillars have already hatched in Manhattan where **official recorded temperatures** accounted for only 26 GDD at the time of the March 16 observed egg hatch. At that same March 16 date, 54.5 GDD were accumulated as determined by **temperatures recorded on a Maximum/Minimum thermometer** positioned next to egg masses under observation. This reinforces the importance of visual monitoring of events that may not follow the established guidelines.

By looking at the accumulated GDD's at the different locations in Kansas, one would expect to see advanced development (for instance) in southeast Kansas Insect activities are likely advanced, especially in comparison to the more northern reporting stations.

Currently, then, in the Manhattan area, eastern tent caterpillar are active, and their "tents" are still small and not easily observed. European pine sawfly larvae have not yet hatched. However, their eggs have swelled and extruded through ovipositional slits on needles. Egg hatch is likely to occur within a week.

Eastern tent caterpillar - Center - Web Mass



European Pine Sawfly - "Egg swell"

Bob Bauernfeind

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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