

Wisconsin Department of Agriculture, Trade & Consumer Protection

Wisconsin Pest Bulletin

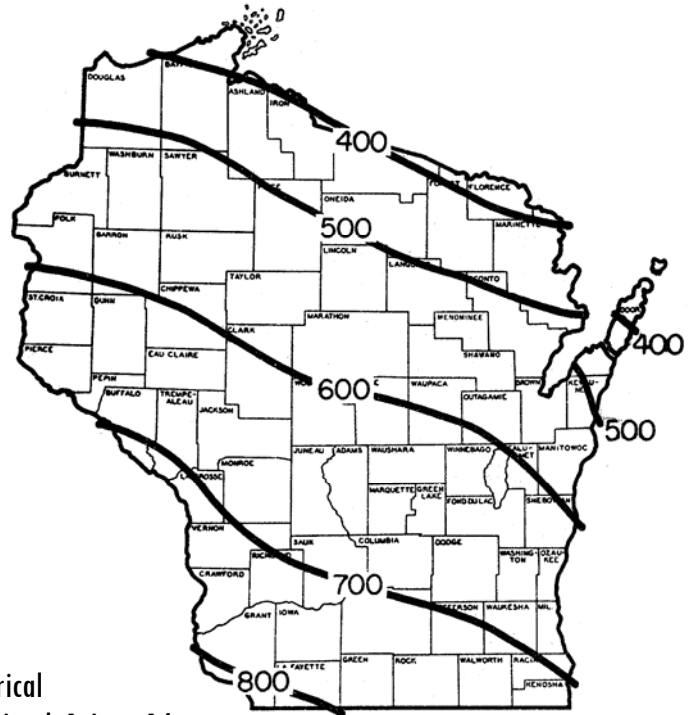
PO Box 8911 • Madison, WI 53718 • Phone 1-800-462-2803 • Fax: 608-224-4656

Your weekly source for crop pest news, first alerts, and growing season conditions for Wisconsin



Weather and Pests

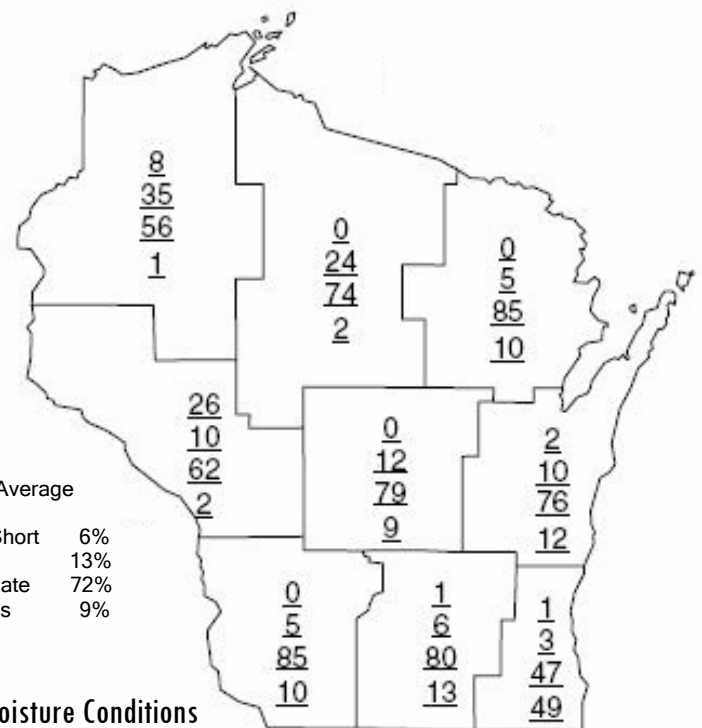
Weather conditions in the past week were agreeable and allowed for DATCP survey specialists to complete a considerable amount of survey work. Corn fields were scouted for first generation corn borer larvae and armyworms, while soybeans were checked for colonizing soybean aphids and bean leaf beetles. Surveys in alfalfa found most fields continue to support low to moderate levels of alfalfa weevils and potato leafhoppers. Aside from emerging weed problems and uneven growth, corn fields are progressing as expected, though most in the south appear somewhat spindly and mildly chlorotic. In contrast, the soybean crop is emerging evenly but slightly behind schedule compared to last year. Warmer weather expected to arrive over the weekend should help to accelerate development of all crops and the insects that feed on them.



Historical
GDD March 1-June 14

Growing Degree Days through 6/15/06 were

	GDD 50F	2005	Sine 48F	40F
Dubuque, IA	761	872	771	1382
Lone Rock	729	833	719	1321
Beloit	801	869	811	1444
Madison	693	841	695	1292
Juneau	658	836	661	1267
Sullivan	719	859	724	1343
Waukesha	641	787	646	1249
Hartford	634	773	642	1243
Racine	582	696	612	1186
Milwaukee	593	686	608	1195
Appleton	646	706	653	1244
Green Bay	564	626	597	1150
Big Flats	709	789	696	1300
Hancock	692	770	679	1278
Port Edwards	714	740	707	1310
La Crosse	823	850	827	1473
Eau Claire	799	772	816	1437
Cumberland	694	641	687	1273
Bayfield	463	397	443	960
Wausau	621	662	596	1164
Medford	634	627	616	1186
Crivitz	558	588	562	1118
Crandon	554	599	524	1055



State Average

Very Short 6%
Short 13%
Adequate 72%
Surplus 9%

Soil Moisture Conditions
as of June 12, 2006

Alert

Thrips on strawberries - Reports are circulating about damage from flower thrips on strawberries. Fields in Dane and Fond du Lac Cos. are showing the "bronzing" and hardening symptoms often associated with thrips damage; in one case, damage estimates are near 90%. While the association between thrips and the observed symptoms is generally accepted, there seems to be an environmental or management component to the damage that is not yet clearly understood. Flower thrips (*Frankliniella* spp, usually *F. tritici*, the eastern flower thrips, on strawberries) are not believed to overwinter in Wisconsin, but migrate in each spring, like potato leafhopper and other summer visitors. Thrips are slender, very small (0.03" long when mature; about the size of the eye of a needle) insects with feathery wings. Thrips feed by rasping plant tissue and then sucking up the exuded sap; the host range of thrips is wide. On strawberries, as on many hosts, flowers are the favored feeding site. This contributes to the effect seen on developing fruit.

Thrips damage is rarely reported on Wisconsin strawberries, despite the insect being a common inhabitant of fields.

Research on strawberries in Iowa

http://www.leopold.iastate.edu/research/grants/2004/2002-47_Thrips_On_Strawberries_%5BBiocontrol_IPM%5D.pdf indicates that thrips may have less of a role in bronzing than formerly believed. To assess the prevalence of the problem and to help identify other possible components in the bronzing phenomenon, we are asking for reports of bronzing from strawberry growers around the state. Please call (608) 224-4592 or email adrian.barta@datcp.state.wi.us, if you have bronzing in your strawberry fields.

Looking Ahead

True armyworm - A definite potential exists for localized outbreaks. Ordinarily, damage is most likely to occur in grassy cornfields (which are not uncommon this season), grassy and lodged peas, and lodged small grains. Consultants and advisors should be aware that weed control in cornfields sometimes forces larvae to the nearest green plant, which is often the corn itself; it's a classic case of a grower solving one problem and creating another. Be on the lookout for armyworms in all susceptible crops next week.



Armyworm injury

Marlin E. Rice

European corn borer - The spring flight of moths is winding down statewide and first generation eggs are beginning to hatch in southern Wisconsin. The distinctive "windowpaning" associated with feeding by young corn borer larvae was noted in whorl leaves in some south central fields this week. "Windowpaning" develops because the tiny, first instar larvae are incapable of chewing through the entire corn leaf and leave behind a clear, thin layer of leaf tissue.

In the week ahead, look for egg masses, first instar larvae, and windowpaning. Injury is likely to be most noticeable in the earliest planted fields. The most opportune time to treat heavy populations of first generation corn borers will begin parts of the south early next week once 800 GDD (base 50F) are reached, and continue through 1100 GDD.

Potato leafhopper - The heat wave expected to sweep across Wisconsin early next week could bring about an explosion in potato leafhopper populations. Sweep nets counts of nymphs and adults are variable, but mostly low throughout the south. Nonetheless, scout susceptible forage crops, potatoes, and snap beans closely in the week ahead.

Action thresholds for PLH in vegetables

Life Stage	Seedling Snap Beans	Larger Snap Beans	Potatoes
Nymphs	1/10 leaves	1/10 leaves	2.5/25 leaves
Adults	0.5/sweep	1.0/sweep	0.5 - 1.0/sweep

<http://www.uwex.edu/ces/wihort/gardenfacts/X1017.pdf>

Alfalfa weevil - Numbers are down somewhat in the south due to pupation, but recently cut alfalfa fields in the northern counties still face the possibility of heavy tip feeding damage. Growers in the northern two-thirds of the state should continue to scout regrowth for larvae.

Soybean aphid - More soybean fields infested with very low numbers of aphids per plant were detected this week in southern Wisconsin, but colonies appear to have increased little in the last reporting period. Although high temperatures in the forecast for next week may temporarily help to delay population growth, scouting is strongly encouraged. The key to managing soybean aphid outbreaks and avoiding yield losses is monitoring the rate of population build-up to determine when the action threshold of 250 aphids per plant is reached.

Rose chafer - Look for rose chafer activity to begin in sandy central and west central regions of the state next week. The adults generally appear around this time each June and live for only about three weeks. In that short amount of time the beetles skeletonize the leaves on a wide variety of plants, including grapes, fruit trees, roses, and raspberries. The adults are often seen flying around cornfields. Rose chafer grubs feed on the roots of plants in old fields, pastures and other open areas, but the grub stage usually causes no economic damage.

Forage

Potato leafhopper - Although reproduction has been underway for at least nine days, nymphs were still not widely

observed during surveys this week; potato leafhopper populations in southern Wisconsin are predominantly made up of adults. Sweep net counts in 12-24" Jefferson Co. fields ranged from 0.4-0.6 plh adults per sweep, and in 18-24" Rock Co. fields counts of 0.8 adults per sweep were found. Populations were also very low in some Grant and Richland Co. fields, numbering less than 0.2 adults per sweep.

Temperatures in the 80s and 90s over the weekend and into next week could promote nymph production and increase pressure in regrowth alfalfa. Recently cut fields and fields more than 7-10 days from harvest should be scouted closely for nymphs and adults. Sweep net counts exceeding 0.5 plh in 3-6 inch alfalfa are considered high, counts above 1.0 plh in 6-12 inch foliage are high, and counts above 2.0 plh in 12-14 inch alfalfa are above the economic threshold for plh. For treatment recommendations see UWEX publication *Pest Management in Wisconsin Field Crops* at <http://cecommerce.uwex.edu/>.

Alfalfa weevil - Surveys show alfalfa weevil to be below economic thresholds in most southern Wisconsin fields. Populations sweep (based upon 50 sweeps) and percent tip feeding per county averaged as follows: Jefferson Co. - 1 larvae per sweep and 20-50% tip feeding, Rock Co. - 1.3 larvae per sweep and 30-50% tip feeding, Walworth Co. - 1.4 per sweep and 10-40% tip feeding. A Richland Co. field, with no apparent spray tracks, had an exceptionally high number of adult weevils, 21 per 40 sweeps, but only one weevil larva per 40 sweeps. Populations in all fields were made up of second, third and mostly fourth instar larvae. Pupae were also observed in during surveys this week, indicating weevil pressure is likely to decline soon. The general circumstances observed during recent surveys did not justify treatment, despite high levels of defoliation in some of the fields. The fields with heaviest tip feeding, 40% or more, were within a few days of harvest. Nevertheless, recently cut alfalfa bears watching in the week ahead.



Alfalfa weevil pupa

Krista Hamilton DATCP

Pea aphid - A leveling off in numbers was evident in both alfalfa and peas this week. Counts ranging from 6-26 per sweep in alfalfa were found in Jefferson, Rock, and Walworth Co. alfalfa fields, while numbers in some Grant and Richland Co. fields were much lower and ranged from 1-4 pea aphids per sweep. Counts in peas appear to be low for now, with some fields in Jefferson and Rock Co. having no more than 48 aphids per 100 sweeps, or about two aphids per sweep.

This is well below the published economic threshold for pea aphid in peas. No virus symptoms were observed in the south central pea fields visited from June 12-15.

Corn

European corn borer - First generation eggs have started to hatch in southern Wisconsin and newly emerged larvae are actively feeding on corn plants. The most noticeable indicators of corn borer larval feeding are the very small, usually round holes in whorl leaves with distinctive "windowpaning". This pattern develops in corn leaves when new larvae feeding deep inside the whorl do not chew completely through the leaf. Instead, the larvae leave behind a clear, thin layer of leaf tissue and the effect is described as "windowpaning". As corn borer larvae grow larger they eventually chew entirely through the leaf, but for the next week or two expect to see the distinctive windowpaning. All other corn caterpillars present at this time of year feed differently and create dissimilar symptoms. Armyworms, for instance, feed on the leaf margins giving the leaf a notched appearance, and the frass (feces) which accumulates in the whorl is usually very obvious.



European corn borer egg mass

Krista Hamilton DATCP

At the same time first generation larvae are beginning to feed in corn whorls, female moths continue to fly and deposit eggs. Low numbers of egg masses (0-3 per 100 plants) were found this week in south central and southeast corn fields. At current temperatures, corn borer hatch is expected about six or seven days after the eggs are deposited. A slight decline in black light trap catches indicates egg laying should also decrease in the next week.

The infestations observed this week are not considered to be high, but they suggest a good start to another corn borer season. In some V5-V6 Jefferson Co. fields, feeding by new first generation larvae was apparent on 7-20% of the plants and no more than three egg masses were found per 100 plants. In V5-V7 Rock Co. fields, infestations affecting 4-12% of the plants were observed. In V5 Sauk Co. fields, 2-17% of the plants were infested with first generation borers and no eggs were found. Near Lancaster in Grant Co., a field with 8% of plants infested and zero egg masses per 100 plants was observed.

Once 800 GDD (base 50F) are reached by early next week, the treatment window for first generation corn borer will open in parts of the south. Scout for first generation corn borers by examining five sets of 20 plants throughout a field. Look for egg masses on the undersides of leaves along the midrib and recent leaf feeding in the whorl, particularly the windowpaning described above. Unfold at least two of the infested plants and count the number of larvae inside. Be sure to unroll the leaves very carefully as the larvae are very small and sometimes difficult to see (they are white with black heads and are smaller than a gnat). Record the number of infested plants per set of 20 and the number of larvae found in the two infested whorls. Refer to Management Worksheet for First Generation Corn Borers in the UWEX publication titled The European Corn Borer by Eileen Cullen and John Wedberg available at: <http://s142412519.onlinehome.us/uw/pdfs/A1220.PDF>

seldom have much to do with Wisconsin, on occasion armyworm outbreaks do cover several states. In addition to the out-of-state news, reports of first generation armyworm injury were received from the northern part of Wisconsin in recent days.

Another factor that could heighten the armyworm threat this season is widespread weed problems. Fields with dense weed growth are more attractive for egg laying and are more likely to develop armyworm infestations. Also, when herbicides are applied to control the weeds and the weedy food source is removed, the larvae are sometimes forced to the nearest green plant, which is often the corn itself. In fact, it is believed that last summer's outbreaks in the west central, central, and northwest Wisconsin were strongly influenced by untimely herbicide applications.

Corn is not the only crop at risk. Small grains, particularly wheat and oats, are also candidates for outbreaks. The best place to check for armyworm larvae in these crops is in lodged patches within the fields. True armyworm larvae are yellowish-brown to dark green with a tan or light brown head and measure 1½ -2 inches in length when fully grown. They have a prominent, dark longitudinal stripe running along each side and another yellow strip beneath. During surveys this week armyworms were detected at low levels in most cornfields visited. The telltale signs of armyworm feeding in the whorls of corn plants are notching of leaf margins (see images below).

The protocol for scouting for armyworm in corn is as follows: Select five locations in a field and examine 20 plants. Record the number of larvae (3/4 inch or smaller only) found on each plant. Using the data from all five locations, record the percent of plants with two or more larvae AND the percent of plants with one larva. Measures to control armyworm feeding should be taken when there are two or more larvae at 3/4" or longer on 25% of the plants OR there is one or more armyworm per plant on 75% of the plants. Consider spot treatment if infestations appear to be limited to certain areas.



European corn borer feeding damage

Krista Hamilton DATCP

True armyworm - Corn and small grains growers across Wisconsin should be aware that several factors suggest that early-season armyworm problems could develop in certain areas before the first generation caterpillars finish feeding and pupate.

Earlier in the week we received news of severe armyworm outbreaks in wheat in western Ohio. The fields were so heavily infested they warranted aerial spraying to control the population (see image below). While these infestations are usually very limited geographically and outbreaks in Ohio



Spraying for armyworm

photo from Lee Lovitt



Armyworm feeding

Marlin E. Rice

In small grains, scout lodged areas by shaking the plants to look for larvae. If armyworms are detected, sample five separate areas in the field and record the average number of larvae per square foot. See UWEX publication *Pest Management in Wisconsin Field Crops* at <http://cecommerce.uwex.edu/pdfs/A3646.PDF> for treatment recommendations. In the week ahead, crop advisors and consultants are encouraged to spend time surveying wheat, oats, and cornfields for armyworm.

Western bean cutworm - By late June or early July Wisconsin growers are likely to see the emergence of the first western bean cutworm moths of 2006. In anticipation of the first (and only) flight this season, milk jug traps have been placed at about 130 sites in the southern two-thirds of the state. The traps are baited with a pheromone lure specific to Western bean cutworm and were set along major highways to facilitate the once-a-week checking schedule.

Weekly Western bean cutworm trap counts will be provided in future issues of the Wisconsin Pest Bulletin and posted on an Iowa State University web site along with counts from Indiana, Iowa, Illinois, and Minnesota. The multi-state effort should shed some light on the distribution of Western bean cutworm in the Midwest and give contributing states an idea of the scope of the issue. Western bean cutworm has been present in Wisconsin for only five to seven years, and it is still not clear if it poses a major threat to corn production, or any threat at all. DATCP entomologists have not observed larval feeding in the field, though unconfirmed reports of several unidentified larvae per ear (an indication that the larvae are WBCW, not corn earworm) were received in 2005.

Anyone interested in setting and monitoring a milk jug trap from late June to late August should call Krista Hamilton (formerly Lambrecht) at 1-800-462-2803 or email krista.lambrecht@datcp.state.wi.us and leave your name, address and telephone number.

Soybeans

Soybean aphid - More light colonies of soybean aphids were detected this week in Jefferson, Rock, Sauk and Walworth Cos. Infestations were localized within fields, with aphids on an average of 13% of the plants in V1-V2 Jefferson Co. and a high count of 49 aphids per infested plant. In most fields, no more than six or seven soybean aphids were found on any one plant. In Rock Co., soybean aphids were detected on 7% of plants in only one of five fields surveyed, and no aphids were found in any of the other four V2-stage Rock Co. soybean fields visited. Comparable densities were observed in Walworth Co. where no more than 12% of the plants were being colonized by 2-27 aphids and no aphids were found in two of four fields surveyed. Dane and Grant Co. fields also had very low populations with 0-2% of the plants with aphids and a maximum of one aphid per infested plant.

Soybean aphid densities are low at this time, and the good news for growers is that high temperatures expected next week may help to keep populations from escalating rapidly, at least temporarily. As a reminder, temperatures from the low 70s to mid-80s are ideal for development, while those above 90F tend to slow aphid development. Nonetheless, start scouting fields next week to monitor population build-up

and the possible need for control by early or mid-July. The action threshold for soybean aphids remains at 250 aphids per plant and populations that are actively increasing.

Bean leaf beetle - Although defoliation by bean leaf beetles is widespread, it appears to be very light in most southern Wisconsin soybean fields. In fact, no populations even approaching the action threshold of 16 beetles per foot of row have been observed during general surveys conducted since late May.

Light defoliation in V1-V2 Rock Co. fields affected from 8% to 54% of the plants, but no more than one beetle per foot of row was found in any field. In Jefferson Co. fields, defoliation was observed on 0-31% of the plants and again no more than one beetle was found per foot of row. A soybean field with 44% defoliation was observed in Dane Co. and in Grant Co. 7-100% (ave. 49%) of plants has signs of beetle feeding, but even in the field with 100% of the plants showing defoliation, only one beetle per foot of row was detected. In addition, nearly all the defoliation observed was light, affecting about 5-10% of the foliage per plant (defoliation >30% per plant is high).

Despite the relatively light infestations observed in the past week, continue to monitor fields for bean leaf beetle defoliation and the number of beetles per foot of row. Yield loss from bean leaf beetle injury to leaves may occur once densities reach 16 per foot of row in VC-V1 soybeans and 39 per foot of row V2+ soybeans.

National Soybean Rust Commentary (updated: 06/16/06) - Florida officials have reported soybean rust at a sentinel soybean site in Martin County. This is the first report on soybeans planted in 2006. Martin County is located in south eastern Florida near West Palm Beach. Even with this find, Florida officials feel the overall spore production in the state is still low. Scouting has intensified in soybean sentinel plots especially in the south as soybeans reach maturity. Most of the soybean sentinel plots have been planted throughout the country with plants in some early planted plots starting to reach maturity. Scouting continues on kudzu patches from Florida to the north as far away as Nebraska. Soybean rust was found on June 14th in Miller County, GA in the SW corner of the state on kudzu. This site was previously found to have rust during the winter months. Rust has been confirmed in five counties in Alabama, 12 in Florida, four in Georgia, and one in Texas. Many of the Southern states were experiencing hotter and drier than normal conditions reducing the likelihood of viable spore dispersal. Spore trapping continues throughout the U.S. using both active and passive traps. Any positive spore trap information does not imply infection has taken place and plant samples are used exclusively for indicating positive rust occurrence as indicated on the soybean rust observation map. (from <http://www.sbrusa.net/> 6/19/06)

Small Grains

True armyworm - Recent DATCP surveys detected no severe armyworm problems in southern small grains and only low-level infestations in corn. However, reports of first generation armyworm injury in northern Wisconsin suggest growers statewide should be aware of the potential for

localized outbreaks. The best place to check for armyworm larvae is in lodged patches of grain. Control may be warranted when populations exceed three armyworms per square foot.



Armyworm

www.ag.ndsu.nodak.edu

Fruit

Codling moth -The first flight of moths is winding down statewide, although a orchards near Dodgeville (70 moths) and Gay Mills (15 moths) registered high trap catches again this week. Apple growers near Bayfield should expect to see peak trap catches in the week ahead as 500 GDD (base 50F) are reached. By 713 GDD, egg hatch should be about 50% complete and the first moths of the second flight should begin to emerge around 873 GDD. This could occur as soon as June 21 near Beloit and Janesville, July 6 near Racine, June 27 near Madison, June 20 near La Crosse, July 4 near Wausau, and July 26 near Bayfield. In the meantime, southern and central Wisconsin orchardists are likely to see few or no moths in their codling moth traps.

Spotted tentiform leafminer - In contrast to codling moth, spotted tentiform leafminer trap counts are on the rise again as the second flight gets underway. Moths of the second flight usually begin to emerge between 539-750 GDD (base 50F). Already a capture of 1,100 leafminers was registered near Dodgeville while 972 moths were reported near Montello. Trap counts above 400 moths were recorded at Oneida, Deerfield and Richland Center.

Having been through a peak flight once this season, growers should plan to follow the same scouting procedure. Begin looking for sapfeeder mines on the undersides of apple leaves about one week after a peak flight is recorded in your orchard. The primary difference between this generation and the previous one is that action threshold for the number of mines per leaf increases from 0.1 mine per leaf to 1.0 mine per leaf. Collect five leaves from ten trees throughout the orchard, for a total of 50 leaves. Examine the underside of each leaf for spotted tentiform leafminer mines and keep a running total of the number of mines. The action threshold for this generation of leafminers is 1.0 mine per leaf.

European red mite - A serious European red mite situation has developed in some southwestern Wisconsin orchards, according to John Aue, Orchard IPM Specialist (*Threshold*

IPM Services). During routine scouting earlier this week John noticed that mites are still clustered on the older leaves and have not dispersed, as is standard operating procedure for mites at this time of year. He advises growers to carefully monitor European red mite build-up, especially where they are still clustered on older leaves. There is a good chance for populations to grow substantially once dispersal begins.

Mites can be sampled by examining apple leaves for motile mites (adults and nymphs). Collect four leaves from five trees for a total of 20 leaves per block and use a hand lens to examine the undersides of the leaves for motile mites. Once the leaves are examined, calculate the average number of motile mites per leaf and use an action threshold of 2.5 per leaf in June and 5.0 per leaf in July to decide if a miticide application is justified.

Apple rust mite - Earlier this week John Aue observed light "bronzing" of leaves by apple rust mites in the southern orchards he visits on a regular basis. He described the affected leaves as not fully bronzed, but less glossy from an apparent loss of chlorophyll. Although this mite species, the smallest of the three mite pests in orchards, seldom causes measurable economic damage, be aware that leaves that appear bronzed and less than vigorous may be suffering from high mite densities.

To assess summer populations, examine leaves with a hand lens. If many mites are observed, consider more intensive sampling using the protocol described above (collect four leaves per five trees, etc.). Treatment should be considered only when apple rust mites reach an average of 300-600 per leaf in most apple varieties. Use an action threshold of 200 rust mites per leaf for Jonagold and Braeburn, and in some cases Fuji and Gala, and base the final decision to spray on visible leaf damage.

Routine chemical control of apple rust mites is discouraged because apple rust mites are a valuable food source for some predatory mite species. Unnecessary sprays can destroy apple rust mites resulting in the disappearance of predatory mites and a buildup of spider mites or European red mite.

Weeds

Many weed infested fields were observed during surveys this week. Soybean fields showed the heaviest pressure, with some weeds reaching heights of two feet or more. Giant ragweed was the most noteworthy problem species observed. In a Dane Co. field recently treated with herbicide all weeds showed signs of decline except for the tallest giant ragweed plants. See the WEEDS section of the May 19 issue of the Wisconsin pest bulletin for more information on giant ragweed.

Other species surpassing the two-foot mark include: white cockle or white champion (*Silene alba*), broadleaf dock (*Rumex obtusifolius*), musk thistle and numerous grass species. Dandelion was also showing heavy pressure, especially in soybean fields and the second flush of common lambsquarters and giant foxtail were observed in several southern counties. If heavy weed pressure persists in the coming weeks, yield reductions will be seen at harvest.

Musk Thistle (*Carduus nutans*) - Musk thistle is usually a biennial and occasionally a winter annual, meaning it that reproduces by seed following a cold period. Basal rosettes form during the first season and then elongate during the second season to form a tall, erect stem. It then flowers and produce seed.



Musk Thistle

Clarissa Hammond

Problems with this species usually occur in pastures or roadside ditches. Grazing animals do not eat the thistle plants, which provide the plants the opportunity to grow quickly, especially when there is little competition from surrounding vegetation. Repetitive mowing prior to seed set helps to reduce populations.



Musk Thistle Flower

Clarissa Hammond

Musk thistle is easily distinguished from other weed species by the long spines along the stem and leaves and the large, showy pink to purple disc-like flowers. Similar looking

species include bull thistle and Canada thistle. Musk thistle leaves are nearly hairless compared to bull thistle and the lobes on Canada thistle and not as deep as those found on musk thistle. Differences also exist in flower characteristics, making the thistle species relatively easy to separate from one another.

Giant Foxtail (*Setaria faberi*) - Giant foxtail is a summer annual grass, meaning it emerges in spring, sets seed late summer/early fall and then dies. Each plant can produce up to 2,500 seeds at extremes, but an average of 900 seeds per plant is more common. A mere three plants per foot of row can reduce corn yields by 13-14%.

Giant foxtail grows well in soils with high nitrogen and phosphorus levels as well as compacted soils. Seeds germinate best in the top inch of soil, with germination rates decreasing at subsequent depths. One way to control populations is to incorporate at least two years of alfalfa in the rotation. Very few giant foxtail seeds will germinate in the crop following alfalfa.

Gypsy Moth

Gypsy moth trapping program - Trappers continue to set traps along roadsides in western and central Wisconsin. As of June 14, a total of 17,158 traps or 50% of the expected number of traps were in place. Trap setting will continue for approximately three more weeks and program staff hope to have all traps set by July 7. The caterpillar stage of gypsy moth should last approximately two more weeks and a little longer in northern Wisconsin. Pupation will begin during the first week of July and adult moths should start appearing 10-14 days later. Our computer model predicts moths should appear in southern Wisconsin on or about July 19 and a week or so later in northern Wisconsin.

If you have any questions about the Gypsy Moth Program, please call our hotline at 1-800-642-MOTH or visit our website at:

<http://www.datcp.state.wi.us/arm/environment/insects/gypsy-moth/index.jsp>

Forest and Landscape

Cedar hawthorn rust (*Gymnosporangium globosum*) - Cedar hawthorn rust was found on hawthorns in Fond du Lac and Manitowoc Cos. in the past week. This fungal disease affects both junipers and woody rosaceous plants, causing galls, stem swellings, and dieback of twigs on branches on their evergreen hosts; rosaceous hosts develop brightly colored yellow spots and localized swellings on the leaves. As the spots mature they take on an orange color and develop spermagonia at the center.

Junipers can easily be treated for the rust by pruning branches 6" below the galls. To control the pathogen before it infests plants, eliminate the overwintering fungi by raking leaves and pruning infected twigs and branches to reduce the amount of inoculum available. Fungicidal control for hawthorns is also an option. The fungicide can be applied when flower buds first show color, when half the flowers open, when petals fall, and a week after petal-fall.

Anthracnose - Anthracnose was found by DATCP inspectors on English oak, swamp white oak, silver maple, green ash, purple ash, and white ash in Fond du Lac and Manitowoc Co. The anthracnose fungus attacks numerous hardwood species including ash, basswood, birch, elm, maple, and oak to name a few. The symptoms vary from host to host, but typically are exhibited as irregular necrotic blotches. The affected tissue often turns a tan or brown color. Symptoms first appear in spring on expanding shoots and leaves. The sites of infection deform the leaves as they continue to expand because there is unequal growth in the healthy and infected parts of the leaves. When severely infected, trees may lose their leaves. As the leaves attain a full size, they become somewhat resistant to infection and the blotch growth is stopped.

Treatment for anthracnose is often unnecessary, and for many trees this is merely a cosmetic disease. However, if a tree has been defoliated by anthracnose for several years, it may be beneficial to treat with a fungicide to minimize future problems. The fungicide must be applied a number of times throughout the leafing-out period. Another step to help control anthracnose is to destroy the overwintering fungi in plant matter. This can be done by raking leaves and pruning infected twigs and branches to reduce the amount of inoculum available.

Exotic Pest of the Week

Emerald Ash Borer (*Agilus planipennis*) - Due to the recent detection in Illinois, emerald ash borer is featured as this issue's exotic pest of the week. Emerald ash borer is a metallic-green beetle, whose larvae tunnel beneath the bark of ash trees and eventually kill trees of any size. Symptoms of infestation usually appear gradually, but it is important to detect this pest before it can spread. Early symptoms may include dead or dying branches near the top of the tree, the presence of metallic green beetles about half the diameter of a penny on or around ash trees, D-shaped exit holes in the bark, or S-shaped tunnels under the bark.

The emerald ash borer, a devastating pest of all ash species (*Fraxinus* spp.) in the Midwest, was first found in Detroit, Michigan in 2002. It is suspected that EAB arrived in wooden shipping crates from China. Initially, six counties were found to be infested. Currently, there are 21 generally infested counties (counties with established EAB populations that aren't likely to be eradicated) in Lower Michigan, and the state is eradicating spot infestations throughout Lower Michigan and at Brimley State Park in the eastern Upper Peninsula. In addition, Indiana has eight infested counties, and Ohio has detected EAB in 14 counties. For a current map, visit <http://www.entm.purdue.edu/EAB/where.htm>.

Information about EAB biology, survey and control is limited, because EAB is new to the United States and is not a serious pest in its native environment (northern China, eastern Russia, North Korea and Japan). Pests we consider 'exotic' are rarely serious pests in their native environment because they have coevolved in their environment with their hosts, natural enemies and competitors to the extent that each is generally in balance with the other. Therefore, survey tools and control methods for EAB in the United States are rather basic. Currently, "detection trees" (girdled ash trees that attract EAB) are the best method for detecting low

populations. Eradication requires removing all ash trees, infested or not, in a half-mile radius around infested trees.



Emerald ash borer larva



D shaped exit holes of Emerald ash borer

Trees infested with EAB die in one to four years. How far EAB will spread in a year is unknown, but it is believed that the beetles will stay in an area with a plentiful food source. For this reason, part of the control strategy is to girdle trees near infested trees to attract the beetles. This helps localize an infestation until the adults have finished flying for the year (late August). After a beetle flight has ended, tree removal can begin.

Limiting natural spread is difficult, but artificial (human-mediated) spread may be an even more serious problem. EAB can be moved in infested firewood, nursery stock and logs. Though it is still uncertain how EAB arrived in Illinois, many suspect it was transported on contaminated firewood from Michigan. Firewood has been strongly implicated in several Indiana infestations. To help stop the movement of EAB and other firewood-inhabiting pests, the Wisconsin DNR has banned out-of-state firewood in state parks and state forests.

In a press release issued this week, the Illinois Department of Agriculture stated, "The emerald ash borer typically moves only short distances by flying, but can survive long distances in transit on ash nursery stock, ash logs, branches and firewood. To avoid the accidental introduction of the beetle to new areas, people are advised to purchase only locally-grown nursery stock and locally-cut firewood."

Jane Larsen, Public Information Officer at WI-DATCP said, "Because of the find in Illinois this week, we are getting a lot of interest on the issue from Wisconsin residents. We are following up on the inquiries and concerns as they come in." If you have questions, or suspect you may have emerald ash borer, call the DATCP Pest Survey Hotline at 1-800-462-2803. For more information and pictures, check out www.entomology.wisc.edu/emeraldashborer.

Weekly Apple Insect Trap Counts (June 9-16, 2006)

County	Site	Date	STLM	RBLR	CM	OBLR	PC
Bayfield	Erickson	6/8-6/15	51	0	3		
Bayfield	Atkins	6/6-6/12	0	0	27		
Bayfield	Carson 1	6/8-6/15	27	0	0	2	
Bayfield	Carlson 2	6/8-6/15			13		
Bayfield	Galazen	6/8-6/15	21	0	0	1	
Bayfield	Gellerman	6/5-6/12	0	0	0	0	
Bayfield	Feraro	6/8-6/15	0	0	3 ?		
Bayfield	Olsen 1	6/8-6/15	11	0	2		
Bayfield	Olsen 2	6/8-6/15	0	0	0		
Bayfield	Lobermeier	6/8-6/15	0	0	0	0	
Brown	Oneida	6/5-6/12	440	0	5	1	
Crawford	Gays Mills W2	6/1-6/8	0	3	2	2	
Crawford	Gays Mills	6/9-6/15	27	8	15	2	
Dane	Deerfield	6/8-6/15	412	0	1	4	
Dane	Stoughton	6/9-6/15	21	0	2	15	
Dodge	Brownsville	6/9-6/15	0	0	0.67	0	
Fond du Lac	Campbellsport 1	6/8-6/15	8	0	0		
Fond du Lac	Campbellsport 2	6/8-6/15	14	0	0		
Fond du Lac	Malone	6/8-6/15	30	0	2	0	
Iowa	Dodgeville	6/8-6/15	1,100	5	70	0	
Jackson	Hixton	6/9-6/15	20	0	4	1	3
Kenosha	Burlington	6/9-6/16	50	0	1	4	
Marquette	Montello	6/4-6/11	972	0	1	2	0
Ozaukee	Mequon	6/9-6/16	40	0	0.1	3	0
Pierce	Spring Valley	6/9-6/16	27	0	1	0	0
Pierce	Beldenville	6/9-6/15	21	0	16	23	
Racine	Rochester	6/9-6/15	44	0	1.75	0.5	0
Racine	Raymond	6/8-6/15	287	0	1	8	
Richland	Hill Point	6/7-6/13	50	0	3	17	
Richland	Richland Center E	6/9-6/15	215	0	4	19	
Richland	Richland Center W	6/9-6/15	450	0	9	13	
Sauk	Baraboo	6/8-6/15	180	0	0	27	
Sheboygan	Plymouth	6/9-6/15	43	0	5	17	
Trempealeau	Galeville	6/7-6/14	200	0	6	0	
Waukesha	New Berlin	6/8-6/15	270	0	1	13	



STLM sapfeeder larvae

S.D. Bishop www.napples.com



STLM mine on underside of leaf

<http://bugs.osu.edu/>



STLM mine developing on upper surface of leaf

<http://bugs.osu.edu/>

Weekly Black Light Trap Counts

	Date	BCW ¹	CabL ₂	CeIL ³	CE ⁴	DCW ⁵	ECB ⁶	FA ⁷	TA ⁸	ForL ⁹	SCW ¹⁰	VCW ¹¹	AifL ¹²
Southwest													
Reedsburg	6-8 to 6-14	0	0	0	0	0	10	0	0	0	0	0	0
Lancaster	6-8 to 6-14	0	0	2	0	0	21	0	0	0	6	0	0
South central													
Mazomanie	6-8 to 6-14	0	0	1	0	0	20	0	0	0	2	0	0
Arlington Station	6-8 to 6-14	0	0	2	0	0	18	0	0	0	1	0	0
Rochelle, IL	6-8 to 6-14	0	0	0	0	0	69	0	1	0	0	0	0
West Arlington	6-8 to 6-14	0	0	0	0	0	23	0	0	0	2	4	0
Southeast													
Janesville	6-8 to 6-14	0	0	0	1	0	6	0	1	0	4	0	0
West central													
Sparta	6-8 to 6-14	0	17	1	0	0	7	0	0	0	24	0	0
Chippewa Falls	6-8 to 6-14	7	0	0	0	0	5	0	0	0	0	0	0
Central													
Hancock	6-8 to 6-14	0	0	0	0	0	0	0	0	0	0	0	0
East Central													
Manitowoc	6-8 to 6-14	0	0	4	0	0	2	0	3	0	6	0	0

¹ Black Cutworm; ² Cabbage Looper; ³ Celery Looper; ⁴ Corn Earworm; ⁵ Dingy Cutworm; ⁶ European Corn Borer; ⁷ Fall Armyworm;

⁸ True Armyworm; ⁹ Forage Looper; ¹⁰ Spotted Cutworm; ¹¹ Variegated Cutworm; ¹² Alfalfa Looper

Black light
trap

CATCH
of
the
WEEK



Whiteline sphinx moth, *Hyles lineata* (Fabricius)



Banded tussock moth, *Halysidota tessellaris* Dacula

Insect Migration into the Midwest Forecast (Friday, June 16 to Monday, June 19)

This forecast was developed and provided by Mike Sandstrom and Dave Changnon, Department of Geography, Northern Illinois University DeKalb, IL 60115

DAY 2 (FRIDAY, JUNE 16 TO SATURDAY, JUNE 17)

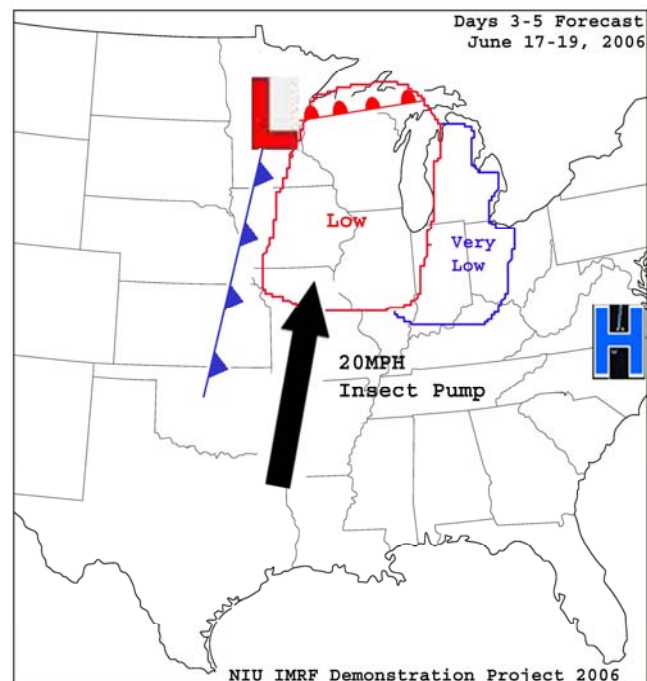
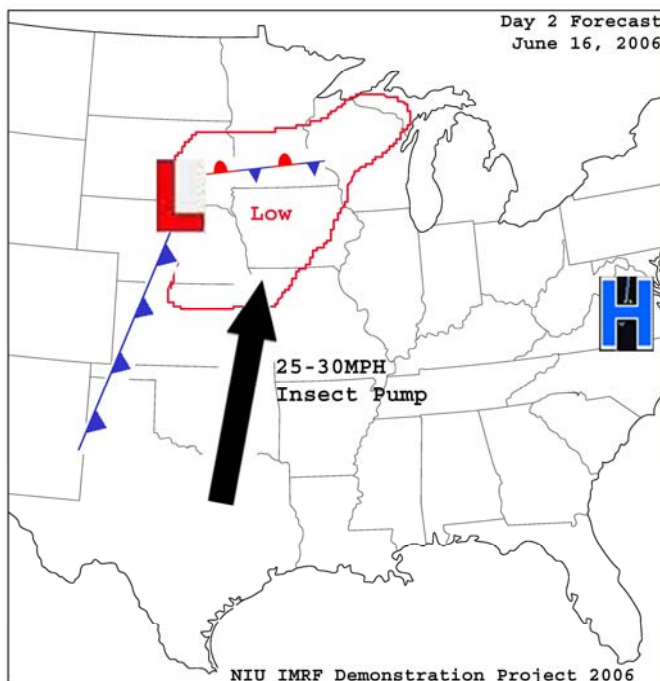
Relative Risk of Insect migration into the Midwest: LOW (5-15%) - greatest risk area along and west of I-35 in Iowa, Minnesota, eastern South Dakota and Nebraska, possibly stretching into the northern half of Wisconsin.

The low pressure and attendant cold frontal boundary is expected to continue to move slowly to the east during the Day 2 period, possibly reaching western Iowa and Minnesota by the end of the period. High pressure currently over the eastern Midwest is forecast to move to the eastern Carolina coasts by tomorrow evening. Southerly flow will be present over virtually all of the Midwest, with the strongest flow just ahead of the cold frontal boundary, especially along and west of the Mississippi River. Late in the day into the overnight hours, showers and thunderstorms (potential drop zones) are forecast to become widespread once again along the frontal boundary as southerly flow continues. A low risk of insect migration is forecast especially along and west of I-35 for the Day 2 period, but due to the potential of precipitation and downward moving air traversing further east of this line, areas just to the east of I-35 over eastern Iowa will also be included, but the risk for these areas should be toward the very end of this forecast period. Further east, to the east of I-57, the risk of insect migration is much lower so no risk area is forecast, but the risk is not forecast to be high enough for insertion into the forecast.

LONG-TERM (SATURDAY, JUNE 17 TO MONDAY, JUNE 19)


Relative Risk of Insect migration into the Midwest: VERY LOW to LOW (2-10%) - greatest risk area along and east of I-35 in Missouri, Iowa, southeast Minnesota, southern Wisconsin, and Illinois, and west of I-69/65 in western Indiana and Kentucky.

The forecast for this period is still met with a fairly high degree of uncertainty, mainly due to the forecasted eastward speed of the low pressure system and frontal boundaries currently over the Great Plains. The best approach at this time, this many days out, is to take a "middle-of-the-road" approach to the forecast and refine details as the forecasting period nears. Currently, the frontal boundary is forecasted to move into the Mississippi River valley especially by the middle and end of this period over Wisconsin, eastern Iowa, Illinois, and Missouri (Sunday into Monday). Due to a possible decrease in the strength of the low pressure system and attendant front as it moves east, a low risk of insect migration is still warranted but the overall percentages of risk were lowered for this period. Further east in Indiana, Ohio, Michigan, and Kentucky, if the system progresses as some forecasts currently indicate, a risk will be needed in these areas but forecast uncertainty and a general weakening of the system does not justify higher than a very low risk at this time. Hopefully by tomorrow, the forecast for late this weekend into early next week will become clearer but a great deal of uncertainty still exists at this time.





Department of Agriculture,
Trade & Consumer Protection,
Division of Agricultural Resources Management
PO Box 8911
Madison WI 53708-8911



Web Site of the Week

Minnesota Fruit and Vegetable IPM News

A weekly publication of the MN Department of Agriculture and the U of M. Excellent information on fruit and vegetable pests and links to some of the fine MN pest publications.

<http://www.mda.state.mn.us/ipm/ipmnews/default.htm>

Quote of the Week

A worm tells summer better than the clock,
The slug's a living calendar of days;
What shall it tell me if a timeless insect
Says the world wears away?

-- Dylan Thomas (1914-1953) "*Here in this Spring*"

June 16, 2006



Emerald ash borer

tncweeds.ucdavis.edu

EXOTIC Pest of the Week

Emerald ash borer, *Agrilus planipennis* Fairmaire