

Wisconsin Department of Agriculture, Trade & Consumer Protection

Wisconsin Pest Bulletin

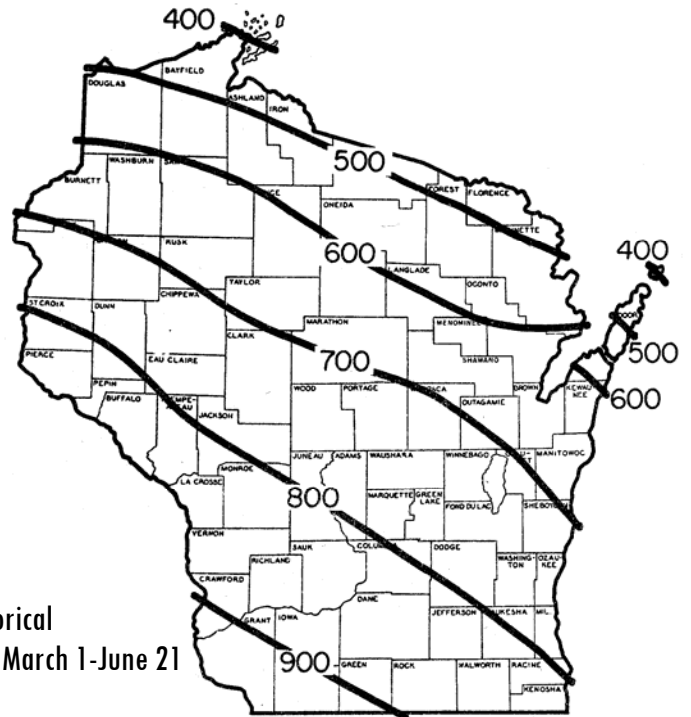
PO Box 8911 • Madison, WI 53718 • Phone 1-800-462-2803 • Fax: 608-224-4656

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

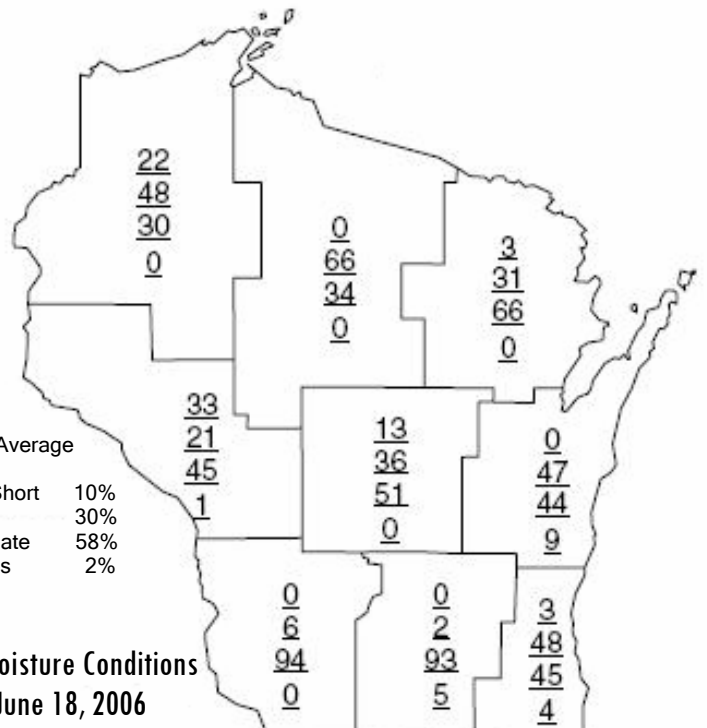


Weather and Pests

The first days of summer were hot, humid and generally quiet in terms of weather. Scattered rain showers this week brought varying amounts of moisture to the state and the response by corn and alfalfa was immediate. Field crops in the southern and west central districts have exhibited remarkable growth in recent days and waist-high fields are now relatively common in the south. Harvest of second crop hay is moving ahead due to favorable drying conditions, nearly all of the state's corn acreage has emerged, and soybean planting is expected to be finished in a matter of days. Despite the recent rains, soil moisture levels are still not adequate in most parts of the state. The general consensus among Farm Reporters and county Ag Agents is that more precipitation is needed soon.



Historical
GDD March 1-June 21



State Average

Very Short 10%
Short 30%
Adequate 58%
Surplus 2%

Soil Moisture Conditions
as of June 18, 2006

Growing Degree Days through 6/22/06 were

	GDD 50F	2005	Sine 48F	40F
Dubuque, IA	922	990	910	1614
Lone Rock	884	946	876	1547
Beloit	969	979	957	1686
Madison	851	952	831	1522
Juneau	815	944	797	1496
Sullivan	881	966	864	1579
Waukesha	801	886	784	1483
Hartford	792	875	779	1475
Racine	746	787	755	1425
Milwaukee	755	779	749	1433
Appleton	802	805	787	1476
Green Bay	715	716	751	1372
Big Flats	862	903	828	1524
Hancock	846	881	812	1503
Port Edwards	868	851	840	1536
La Crosse	990	973	971	1713
Eau Claire	960	893	955	1673
Cumberland	831	750	826	1479
Bayfield	580	488	571	1143
Wausau	763	764	717	1376
Medford	771	731	765	1391
Crivitz	702	675	683	1335
Crandon	869	692	632	1255

Weather conditions in the past week have been ideal for the development of many insects, the most noteworthy being the European corn borer and potato leafhoppers. Populations of potato leafhoppers have increased sharply in a week's time and many alfalfa fields now support above-threshold numbers of leafhopper adults and nymphs. As June draws to an end, Wisconsin farmers should expect soybean aphid colonies to grow more rapidly, possible armyworm problems in corn and small grains, emergence of corn rootworm adults, and more pressure from the potato leafhopper.

Looking Ahead

Potato leafhopper - A rapid build-up has occurred in some southern and west central alfalfa fields. Populations of adults and nymphs are moderate to high on a wide variety of plants, including alfalfa, potatoes and reportedly apple trees. Closely monitor leafhopper levels by sweeping forage crops and potatoes or by counting the number per leaf in apple orchards in the week ahead.

European corn borer - First and second instar larvae are common in the southern and west central regions of the state where larval injury was noted on 0-52% of the plants in fields surveyed. In the days ahead, third instar larvae will begin tunneling into the midribs of leaves or into corn stalks and treatments will no longer be effective. Scout now to determine whether an insecticide treatment is justified. Control of first generation corn borer is best achieved from 800-1000 GDD (base 50F).

Soybean aphid - Very light aphid infestations were detected as far north as La Crosse and Monroe Cos. this week. Surveys of V1-V3 soybean fields showed colonies are still very much localized as the aphids have not dispersed throughout most fields. These low aphid densities are not likely to last for long. Start scouting now to monitor the rate of population build-up. The action threshold is 250 aphids per plant while populations are actively increasing.

Corn rootworm - The first adults of 2006 could begin emerging in the next week or two at some advanced southern sites. Look for the greater part of the population to make an appearance from mid-July through the first weeks of August.

Corn flea beetle - ELISA testing of overwintered corn beetles collected from 40 of 100 southern and central Wisconsin sites found that no beetles tested positive as carriers of the Stewart's wilt bacterium, *Pantoea stewartii*. These results suggest the incidence of Stewart's wilt should be very low this season, although in 2005 Stewart's wilt was detected in 28 of 44 seed corn fields.

Corn earworm - Hartstack traps should be installed as soon as possible and counts reported to Clarissa Hammond at (608) 224-4544 or Clarissa.Hammond@datcp.state.wi.us. Replace the Hercon Zea lure tape once every two weeks through July 15, then once a week from July 16- August 30. The corn earworm season has started early in Wisconsin, with trappers from Lancaster to Sparta are already reporting moth captures. Trap counts this week were as follows: Janesville 4, Lancaster 18, Mazomanie 6, Sturtevant 9, Sparta 21, and Coon Valley 5.

Bean leaf beetle - Final results of the spring survey for overwintered bean leaf beetles and bean pod mottle virus (BPMV) are in. Of the 64 samples tested by plant pathologists at the Plant Industry Laboratory, only three bean leaf beetle samples tested positive as carriers of BPMV. The positive beetles were collected from one site in Grant Co., one site in Juneau Co., and one site in Walworth Co. Beetles were collected from a total of 21 counties. These results suggest that trace to very low levels of BPMV were present in the overwintering population of bean leaf beetles. See SOYBEAN section for additional information.

Redbanded leafroller - The second flight of moths is underway in nearly all parts of the state where 780 GDD (base 50F) have accumulated. Watch for pheromone trap catches to increase in the week ahead. Counts this week ranged from 0-82 moths per trap.

Apple maggot - Red ball traps and yellow sticky boards, both visual traps used to capture apple maggot flies, should be placed in orchards in the week ahead. Apple maggot emergence is expected to begin once 900 GDD (base 50F) are reached, which could occur near Beloit, Eau Claire and La Crosse at any time. The apple maggot fly has a distinctive F-shaped wing banding pattern and a noticeable white dot on its back. Look closely for these two characters to differentiate apple maggot from similar species of fruit flies.



Apple maggot flies

vegedge.umn.edu

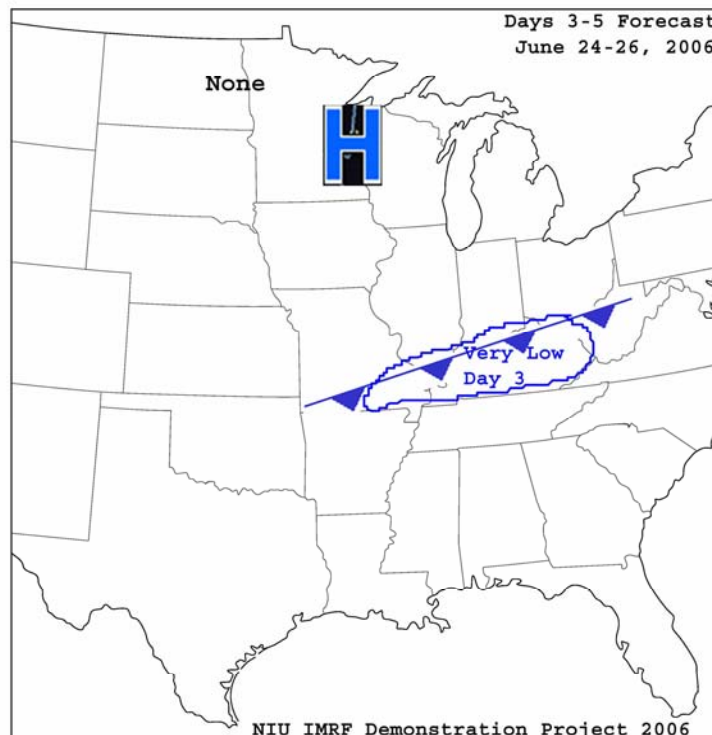
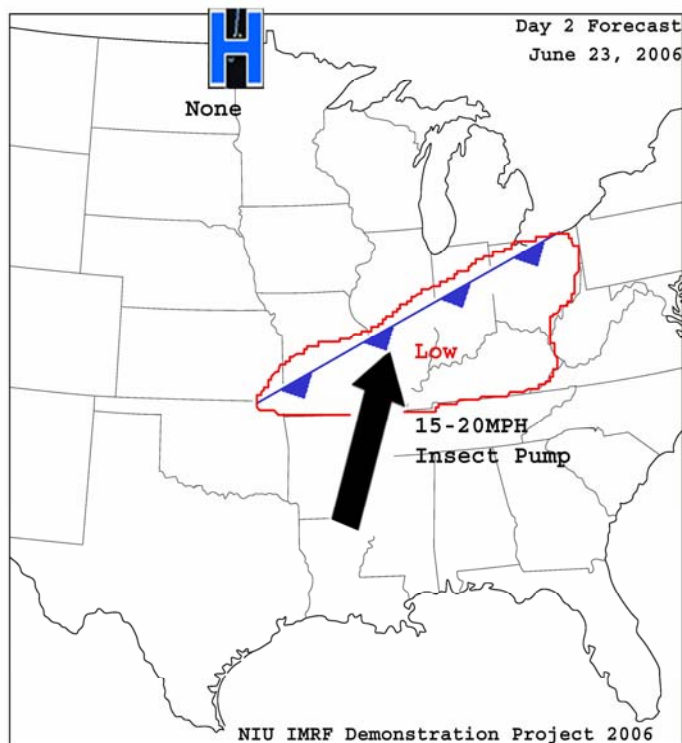
Insect Migration into Midwest Forecast

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

DAY 2 (FRIDAY, JUNE 23 NOON THROUGH SATURDAY, JUNE 24 NOON):

Relative Risk of Insect migration into the Midwest: LOW (5-10%) - greatest risk area is mainly along and south of the Interstate 44/70 corridor in central/southern Missouri, southern Illinois, southern Indiana and Ohio, and Kentucky.

The cold front will continue to move south during the Day 2 period (Friday afternoon into Saturday morning) as high pressure continues to build into the upper Midwest. Showers and thunderstorms will once again form along and either side of the frontal boundary, especially along and south of I-70. Only a low risk of insect migration will be forecast for this area given feeble southerly winds to the south of the boundary in the lower levels of the atmosphere. Further north, high pressure will continue to build in especially along and north of I-80, bringing calm or light northerly winds and little to no risk of insect migration. An upper level weather disturbance may cause late day precipitation in the Dakotas and northwest Nebraska, but this appears to be of little concern to insect migration given unfavorable wind flow (non-southerly winds) into this area.



Forage

Potato leafhopper - The first significant population increase of the season occurred in the past week. Potato leafhopper levels in alfalfa fields are double or triple what they were one week ago, and many fields now have above-threshold populations of adults and nymphs. Counts in 8-20" Monroe and La Crosse Co. fields ranged from 0.9 to 3.0 per sweep, and nymphs constituted about 20% of the population. In Grant, Fond du Lac and Dodge Cos., sweep net counts were slightly lower, ranging from 0.26-1.6 per sweep in 6-8" fields. The action threshold for potato leafhopper in alfalfa is 0.5 per sweep in 3-6" fields, 1.0 per sweep in 6-12" fields, and 2.0 per sweep in 12-14" or taller fields. Expect leafhopper pressure to escalate in alfalfa and other susceptible plants as more nymphs are produced in the coming week.

Alfalfa weevil - Numbers of larvae in second crop regrowth continue to decline due to pupation. Varied levels of tip feeding were visible in west central fields this week (generally less than 20%), and populations of late instar larvae in Monroe and La Crosse Cos. did not exceed 1.1 per sweep. Surveys in some Grant, Fond du Lac and Dodge Co. fields also found very low densities, ranging from 0.08-0.25 larvae per sweep. While weevil levels have declined considerably in southern counties and west central counties, some east central and northern fields may still be subject to damaging populations. Continue to check regrowth for larvae and tip feeding injury for another week or so. Beyond late June the threat of heavy tip feeding is expected to subside.

Alfalfa caterpillar - Low numbers of second-fourth instar larvae are present in most alfalfa fields. Sweep net counts in the west central counties ranged from 2-4 larvae per 10 sweeps.

Pea aphid - Very high counts of pea aphids (ranging from 41-52 per sweep) were found in the west central alfalfa fields

LONG-TERM (DAYS 3 TO DAY 5 - SATURDAY, JUNE 24 NOON THROUGH MONDAY, JUNE 26 NOON):

Relative Risk of Insect migration into the Midwest: VERY LOW (2-5%) - greatest risk area is mainly along and south of the Ohio River in Kentucky on Day 3, no risk of insect migration exists across the Midwest on Days 4 and 5.

The cold front will finally make an exit from the Midwest on Day 3 (Saturday into Sunday morning). Before it leaves the Midwest, scattered showers and thunderstorms may develop along its length as it continues to move southeast and weaken. Only a very low risk of insect migration is forecast for Kentucky on Day 3. Elsewhere, and on Days 4 and 5 across the entire Midwest, no risk of insect migration is forecast as calm or light northerly winds in association with a building high pressure continue to take hold across the Midwest. An upper level disturbance may bring scattered precipitation to parts of the Midwest this weekend into early next week, but little to no risk of insect migration is associated with this feature.

surveyed earlier in the week. Although these densities are not considered excessive in alfalfa fields, chemical control in peas may soon be warranted soon if sweep net counts exceed 10-35 aphids per sweep in fields that are more than 15 days from harvest. Pea aphids vector seedborne mosaic and alfalfa mosaic virus, both are yield reducing pea viruses.

Meadow spittlebug - Adults are numerous throughout the southern half of the state. In Dane, Columbia, Monroe and La Crosse Cos. the spittle masses of a few final instar nymphs were common in the fields checked, but these should disappear in the week ahead as the nymphs reach adulthood.

Corn

European corn borer - Moth activity has declined at most black light trapping sites (with the exception of Marshfield with 91 ECB), and the shot-hole feeding damage and "windowpaning" caused by early instar larvae is noticeable in corn whorls throughout the southern and central Wisconsin. The characteristic holes are larger than last week, indicating the larvae feeding inside are maturing quickly. During this week's surveys, foliar feeding was observed on 0-24% of the plants in Monroe Co. fields, 0-52% of the plants in La Crosse Co. fields, 14% of the plants in a Dodge Co. field, and 21% of the plants in a Fond du Lac Co. field. First, second, and a few third instar larvae were found in the whorls of infested plants in the west central counties.



European corn borer whorl feeding

Krista Hamilton DATCP

Surveys show most fields currently support low populations of first generation corn borer larvae; just two of nine west central corn fields visited this week had above-threshold populations. Corn fields must be scouted in the week ahead, before 1000 GDD (base 50F) are reached if treatments to control first generation larvae are to be effective. Near Beloit the treatment window will close by early next week as corn borer larvae beginning tunneling into midribs of leaves and stalks where they are invulnerable to pesticides. The treatment window will remain open for another seven days near Madison and about twelve more days near Wausau.

In the next week, examine five sets of 20 whorl leaves closely for pin holes, shot-holes and windowpaning, all of which are

evidence of European corn borer larval feeding. Unfold at least two of the infested plants and count the number of larvae inside. Record the number of infested plants per set of 20 and the number of larvae found in the two infested whorls. Refer to the following UWEX publication to decide if control is warranted:

<http://s142412519.onlinehome.us/uw/pdfs/A1220.PDF>

False Japanese beetle - Surveys this week found a flurry of false Japanese beetle activity in sandy Monroe Co. corn fields. A DATCP survey specialist was reportedly driven out of one field by a swarm of the beetles that landed on her clothes and in her hair as she attempted to take counts of corn borer-infested plants. False Japanese beetles are common in corn and soybean fields on sandy soils at this time of year, especially in the central and west central districts. Adults first appear during the third and fourth weeks of June and live for about 20 days. False Japanese beetles are aptly named for their strong resemblance to real Japanese beetles, but they're brown in color, and not shiny, metallic green like Japanese beetles. Further, Japanese beetles are active later in Wisconsin field crops, typically toward the end of July or early August. False Japanese beetles are not considered to be economically important pests of corn or soybean in Wisconsin at this time.



False Japanese beetle in Monroe Co. corn

Krista Hamilton DATCP

Armyworm - Although captures have declined temporarily at most black light trapping sites, continue to scout for armyworm damage in grassy corn fields and lodged small grains in the week ahead as the potential still exists for localized outbreaks. In Wisconsin, the largest numbers of moths usually appear in July, and these moths usually give rise to an abundance of larvae. Only light to moderate amounts of damage were observed in Monroe and La Crosse Co. corn fields where 2%-12% of the plants showed signs of armyworm feeding.

Soybeans

Soybean aphid - Infestations of soybean aphids have become more common statewide, but densities remain very light. Pest survey specialists detected aphids in nearly all of the Fond du Lac, La Crosse and Monroe Co. soybean fields surveyed this

week, though they were not always easy to find. In most fields it appeared that colonies were just beginning to establish. Some La Crosse Co. fields had 0-18% of plants infested with aphids and densities of 1-31 aphids per infested plant. Comparable soybean aphid densities were found in Monroe Co. fields where the percent of plants infested ranged from 0-22% with densities of 1-48 aphids per infested plant. The one Fond du Lac Co. field surveyed had soybean aphids on 4% of the plants and only one aphid on each of the infested plants. Soybean aphid densities are not likely to stay this low for much longer. Continue to watch fields closely next week and monitor the rate of population build-up. A sharp increase in Wisconsin soybean aphid populations usually occurs during the first weeks of July.

Bean leaf beetle - Final results of the 2006 survey of overwintered bean leaf beetles indicate that a very low percentage of the overwintered population were carriers of Bean Pod Mottle Virus (BPMV). During the spring survey from May 4 to June 9, a total of 202 central and southern Wisconsin first-crop alfalfa fields were sampled for beetles. Overwintered beetles were collected from 64 of the 202 survey sites. Individual beetles were tested by ELISA for bean pod mottle virus (BPMV). Only 5% of the beetles (3/64) tested positive for BPMV. The BPMV positive beetles came from fields in Grant, Juneau, and Walworth Cos. Survey findings support previous speculation that early-season BPMV transmission to soybean seedlings is not an issue in Wisconsin, at least not for now. A summer follow-up survey of bean leaf beetles and BPMV in soybean fields, scheduled from mid-July to mid-August 2006, should indicate if any BPMV problems are developing in soybean fields at that time.



Bean leaf beetles

Krista Hamilton DATCP

Fruit

Apple maggot - The first emergence of apple maggot flies should occur in the next two weeks now that 900 GDD (base 50F) have been reached at several locations in southern and west central Wisconsin. Growers who have not already done so should place red ball and yellow sticky over the weekend. Be sure to hang these visual traps at eye-level on the outside of trees where they are noticeable to passing apple maggot flies. It's best to place the traps in the earliest maturing

varieties and in the borders row to catch flies moving in from abandoned or neglected trees nearby. The key to **visual** traps is making sure they are **visible** to the target pest.

The two types of traps used to monitor apple maggot activity are the red ball trap and the yellow sticky board. Yellow sticky boards resemble a nectar source and are attractive to unmated male and female apple maggot flies, usually during the first 10 days after emergence. The red ball attracts mated female flies that view it as a ripe, red apple and land on it to deposit eggs.



Apple maggot red ball trap

ipm.uiuc.edu.jpg



Apple maggot yellow board

Wildwood Labs

An important aspect of the apple maggot life cycle to consider is the how the flies behave after emergence. When the flies first surface from the soil they are active in orchards and feed, but do not mate for the first 10 days. It is in this 10-day period that apple maggot control is most strategic, before the females begin to lay eggs. During the non-mating period yellow sticky boards are more attractive, but after mating has occurred the red balls work best. Both traps are recommended because emergence of apple maggot flies is closely linked to soil moisture levels and often occurs in increments, especially after periods of light rain. In very dry years apple maggot pupae sometimes forgo emergence and stay in the soil until the following growing season. Expect

adults to emerge from late June through September and a peak flight to occur in August.

Note: Because there are other fruit flies that occur in orchards, it's important to know how to distinguish AM from the others. The wing banding pattern, described as being "F-shaped" is diagnostic, as is the white spot on the back of the fly. Look for those two features to confirm that it is indeed AM that had landed on the red sphere or yellow board (see image on page 2).

Spotted tentiform leafminer - The second flight of moths began about two weeks ago in the southern and central districts, following the accumulation of 610 GDD (base 50F). Trap counts this week indicate the peak second flight has not been observed any of the reporting orchards, although the event is nearing in parts of the state where 1150 GDD could be reached by the first or second week of July. At the present rate of degree day accumulation, the second flight of moths should peak near Beloit by July 1, near Racine by July 11, near Madison and Hancock by July 7, and near Wausau by July 12, and near Bayfield by July 26.

Codling Moth - First generation egg hatch is now 50% complete in nearly all of the state (except for Bayfield) and larvae are tunneling toward the core of developing apples. These young larvae will feed and mature throughout July, pupate, and then produce a mid-summer flight of moths. In Wisconsin there are usually two generations of codling moth each season and sometimes a partial third in warm years; approximately 1000 GDD (base 50F) are required to complete each generation. Expect moths of the second flight to reappear in pheromone traps between 872-1296 GDD. Apple insect trapping cooperators should replace codling moth lures at this time.

European red mite - Heavy mite populations have developed in southern Wisconsin orchards, according to consultant John Aue. As of last week mites had not dispersed, but were still clustered on older apple leaves. John warned that populations were likely grow substantially once dispersal began, and this week he found substantial increases in mites densities, particularly in orchards without sufficient levels of predatory mites.

European red mites are a serious problem in Wisconsin orchards. Left unchecked, heavy mite populations affect fruit color and result in premature fruit drop, in addition to the standard browning or bronzing of the foliage. Cooperators are encouraged to scout for mite build-up in the week ahead. 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 (adults and nymphs). 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.

Vegetables

Colorado potato beetle - The plump, hump-backed, fourth instar larvae of this species were hard at work ingesting as much potato foliage as possible in Dane Co. gardens this

week. The highly destructive larvae are gregarious at times and seemingly work together to defoliate plants. It is the older, third and fourth instar larvae often cause considerable damage to potato crops, especially if feeding occurs while potatoes are flowering. In fact, flowering potato plants can sustain just 5-10% defoliation; after flowering 30% defoliation can be tolerated. Colorado potato beetle larvae will likely feed for another two or three weeks before dropping to the soil to pupate. A second generation of adults can be expected to emerge 10-14 days later.



Colorado potato beetle

USDA ARS



Colorado potato beetle larvae

Krista Hamilton



Colorado potato beetle defoliation

www.drncbug.com

The most effective time to control populations with a conventional pesticide or the microbial pesticide Btt (*Bacillus thuringiensis* var. *tenebrionis*) is while the larvae are young, second instar or smaller. Given that most larvae in southern Wisconsin are well past this stage, the most effective option for gardeners with small plantings is to hand-pick and destroy the larvae one by one.

Potato leafhopper - Increased nymph sightings in the last week signal that reproduction is in progress statewide. South central and central Wisconsin snap bean fields are at risk of developing damaging population and should be checked closely in the next few weeks. Monitor nymph populations in beans by examining the undersides of leaves. Turn over 10 leaves at 10 separate sample sites (for a total of 100 plants) and count nymphs as they scurry sideways. The economic threshold for potato leafhopper in snap beans is as follows:

Seedling stage (two true leaves)

- Adults: 0.5 per sweep or 2 per row foot
- Nymphs: Nymphs are usually not present at seedling stage

Third trifoliate to bud stage

- Adults: 1 per sweep or 5 per row foot
- Nymphs: 1 per leaflet (10 per 10 leaflets)

Potato leafhoppers stunt growth and decrease vigor in snap beans and potato crops in Wisconsin each year, and can be an occasional pest to eggplant and strawberries. Damage will occur quickly in hot and dry weather, but by the time significant visible damage is seen, yield loss will already have occurred. First symptoms appear as triangular, brown lesions on the tip of leaves. The lesion then spreads inward, eventually destroying the leaf.

The potato leafhopper is a small, almost fluorescent green insect with piercing-sucking mouth parts. Both adults and nymphs extract sap from leaves by inserting mouth parts into the plant's vascular tissue. Ultimately the plant's photosynthetic ability is compromised due to damaged vascular tissue. Leafhoppers often migrate into snap peas and potatoes after alfalfa is cut. Scout now with a sweep net or count the number of nymphs and adults on leaves from the middle part of the plant. Infestations are most likely to occur in crops near alfalfa fields.

Tarnished Plant Bug - Damage to vegetable crops by tarnished plant bug is a distinct possibility in the coming weeks as the high populations present in alfalfa fields to move to vegetable hosts once hay fields are harvested. When tarnished plant bugs feed, they extract juices and inject toxic saliva into plants, which sometimes causes local tissue damage in vegetable crops like snap beans, celery, lettuce, asparagus, spinach, broccoli, cauliflower, tomatoes and potatoes. Additionally, plant bug feeding may cause flower drop or injury to new growth and marketable plant parts. Susceptible fields should be checked often and treatments applied quickly when heavy plant bug populations are present and injury is noted. Treatment of snap beans is recommended when numbers exceed one tarnished plant bug per five feet of row. In celery, treatment is recommended if numbers exceed one per 10 plants. In potatoes, economic damage rarely occurs.

Onion Thrips (*Thrips tabaci*) - Damage from this pest can occur in nearly all garden crops, but the most severe damage is seen in onions, cauliflower, cabbage, snap beans, cucumbers, melon, tomatoes, and sweet clover. Onions are most commonly affected and symptoms appear as silvery streaks or white blotches on the leaves. Heavy populations can eventually cause leaves to brown at the tips and decrease the size of onion bulbs.

Onion thrips can be difficult to monitor because of their small size, but treatment should occur early if thresholds are met. The treatment threshold is three thrips per leaf or 15 per plant. Some more tolerant varieties can have between 25-45 thrips per plant before significant damage will occur. Yellow or white sticky cards can be used to monitoring tool.

Gypsy Moth

Gypsy moth trapping program - Trappers continued to set traps again this week. Most traps will be deployed by July 7, but a few northern traps will be set during the week of July 10. As of June 21, trappers have set 22,600 traps, 66% of the expected total. Eleven counties have been completed and more are being finished each day. Once traps are set, trappers will have a few days off before beginning to spot-check traps to determine when moth flight has started. Moth flight is expected to get underway in southern Wisconsin on or about July 19, a week or two later in the north.

Weeds

Common ragweed and yellow foxtail made strides this week in field crops while Canada thistle and musk thistle stood intact in many pastures across the state. Canada thistle is of special interest because of its capability to spread both by seed and also through creeping rhizomes. Large colonies can form from just a single plant. Common ragweed and yellow foxtail are more easily kept under control, but if left unchecked can cause yield reductions.



Canada thistle

UGA1929057 L. M. Dietz

Yellow foxtail - Yellow foxtail was observed in high densities in some Dodge and Fond du Lac Co. fields this week. Many grass species can be difficult to identify when small, but this summer annual has some unique characteristics that make it easy to recognize. While most yellow foxtail plants observed this week were only a few inches tall, they were still readily identifiable.

Long, thin hairs present around the collar region make yellow foxtail distinct from the other foxtail species as well as many of the other grass species found in field crops. The photo shows a close up of what the hairy collar region looks like on a small plant. All foxtail species have an absent ligule and grow in similar habitats.



Collar region of yellow foxtail

Clarissa Hammond

Exotic Pest of the Week

Japanese beetle - No longer such an exotic, Japanese beetle (*Popillia japonica* Newman) was first found in the United States in 1916 near Riverton, New Jersey, and was first trapped in Wisconsin in 1956 (Milwaukee County). Infestations were detected in Eau Claire Co. in 1996 and in Grant Co. by 1998.

The distinctive beetle, noted for the copper-colored elytra and the metallic green thorax and head, with five patches of white hair along each side of the abdomen, feeds on about 300 species of plants. In Wisconsin, the adult beetle can be a serious pest on grapes, raspberries, cherries and apples, and on roses and other ornamentals. The larvae can cause significant damage to turf.

The beetle spends 11 months of the year in the soil as a larva or pupa, and feeds on roots for at least four of those months. Adults emerge in July to mate and lay eggs. While the adult stage is the most troublesome for horticulturists, control of adults can be difficult. Japanese beetles are highly mobile, requiring frequent applications of pesticides for adequate control, and in the case of raspberries, pre-harvest intervals may limit options. Control measures aimed at the larvae may be more effective, but (again, because of the mobility of the adults) require community-scale treatments to be truly effective. Recently, doubts have been cast upon the

effectiveness of the microbial control measure milky spore disease, *Bacillus popilliae*. It may be that the bacteria used have lost virulence in culture



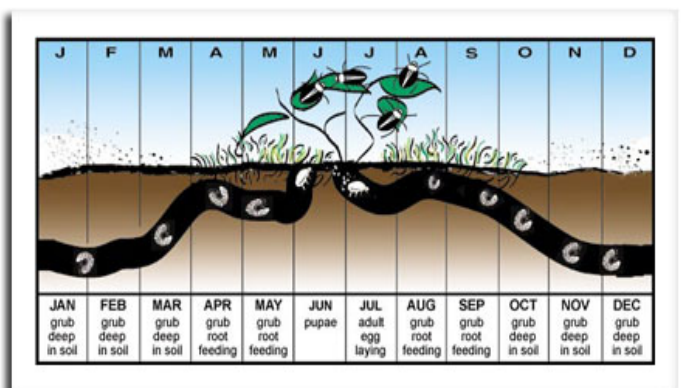
Japanese beetles defoliating soybean leaf

Marlin E. Rice



Japanese beetle

Marlin E. Rice



The Japanese beetle's year

A control measure once suggested, trapping adult beetles, has been shown to increase loss to *P. japonica*, as the lures appear to draw beetles from the surrounding region to the area of the trap, but not necessarily to the container itself. If trapping is deemed necessary, it's been suggested that the best strategy is to give traps to your neighbor for Christmas.

Pseudomonas blight (*Pseudomonas syringae* pv. *syringae*) - Found on lilac in Jefferson Co. This is a bacterial disease that infects a broad range of hosts including woody and herbaceous plants, both ornamentals and field crops. Some of these hosts include species of maple, alder, dogwood, ash, crabapple, pine, aspen, poplar, lilac and linden. Bacterial blight of lilac is characterized by death and shriveling of leaves, shoots, and sometimes flower clusters. The bacteria enter the leaves and twigs through natural openings or through injured leaves. The bacterium causes irregular-to-circular dark brown spots with yellowish halos on the leaves which then merge to form larger lesions, or entire leaves die. Lesions on the petioles and shoots cause them to bend or droop and die, forming a shepherd's crook. Among the lilacs, varieties with white flowers are generally the most susceptible.

To treat this blight, prune out infected twigs several inches below the margin of healthy and infected tissue. Pruning should be done when weather conditions are dry. Be sure to disinfect the pruning shears between cuts. Remove and destroy pruned twigs and leaf litter. Providing better air flow will also help to dry plants quickly, slowing bacteria spread. Growing resistant varieties of lilac is also an option.



Symptoms of *Pseudomonas syringae* on lilac

Liz Meils, WI DATCP

Powdery mildews (Erysiphaceae) - Found on spirea and shrub roses in Eau Claire Co., Purple leaf sandcherry, lilac, and serviceberry in Jefferson Co. Powdery mildew fungi are found on more than 7000 plant species worldwide. Most of these species fit into three genera: *Erysiphe*, *Phyllactinia*, and *Podosphaera*. The disease is found on many deciduous trees and shrubs as well as herbaceous ornamental plants and agricultural crops. Conifers are not affected by powdery mildew.

This disease appears on the surface of the leaves and has a white or light-gray, powdery appearance which comes from the fungal threads and summer spores. In more advanced stages it can cause buds to fail to open. Later, when infection is severe, leaves turn yellow, dry, and brown.

Powdery mildew fungi overwinter in leaf debris, stems, or dormant buds. In the spring the fungal threads produce spores that cause infection. That primary infection then

produces summer spores which then disperse to new sites to start new infections.

Powdery mildew is often merely a cosmetic disease that does not kill the plant. However, when a plant is severely infected, it can cause major leaf loss. Basic treatment would be to reduce the humidity around plants by spacing plants further apart to increase air flow. Be sure to remove and destroy any infected plant debris to help prevent overwintering.



Powdery mildew on lilac

www.plantclinic.cornell.edu

Corn Earworm Pheromone Trap Counts

	6/8	6/11	6/12	6/15	6/18	6/19	6/21	6/22
Southwest								
Lancaster	9		4	5		18	0	
South central								
Mazomanie	2		2	0			6	
Arlington						0		
West Arlington						0		
Southeast								
Sturtevant				0				9
Janesville						0	4	
West central								
Sparta	0	3		0	18		3	
Coon Valley				1				5



Corn earworm pheromone trap

Krista Hamilton DATCP



Corn earworm moth

virginia.tamu.edu

Weekly Apple Insect Trap Counts (June 16-23, 2006)

County	Site	Date	STLM	RBLR	CM	OBLR	AM red	AM yellow
Bayfield	Erickson	6/15-6/22	224	0	13	44		
Bayfield	Atkins	6/13-6/19	0	0	15	4		
Bayfield	Galazen	6/15-6/22	120	1	0	32		
Bayfield	Gellerman	6/12-6/19	1	0	0	0		
Bayfield	Olsen 1	6/15-6/22	159	1	15			
Bayfield	Olsen 2	6/15-6/22	47	0	9			
Bayfield	Lobermeier	6/15-6/22	1	0	1	3		
Brown	Oneida	6/12-6/19	500	0	12	6	0	0
Crawford	Gays Mills W2	6/6-6/15	0	5	1	0		
Crawford	Gays Mills	6/15-6/21	308	46	61	20		
Dane	Deerfield	6/16-6/22	542	7	0	1		
Dane	Stoughton	6/16-6/22	84	65	2	18		
Dodge	Brownsville	6/16-6/22	25	2	0	0.33	0	0
Fond du Lac	Campbellsport 1	6/16-6/22	125	0	18			
Fond du Lac	Campbellsport 2	6/16-6/22	200	0	5			
Fond du Lac	Malone	6/16-6/22	100	1	5	2		
Green	Brodhead	6/16-6/22	4	30	0	6		
Iowa	Dodgeville	6/16-6/22	850	39	43	0	0	0
Jackson	Hixton	6/16-6/22	45	0	0	2		
Kenosha	Burlington	6/16-6/23	200	11	2	4		
Marquette	Montello	6/11-6/18	10	3	0	2	0	0
Marinette	Wauzaukee	6/16-6/22	51		13	1		
Ozaukee	Mequon	6/16-6/23	25	3	0.5	1		
Pierce	Spring Valley	6/16-6/22	318		1	1		
Pierce	Beldenville	6/15-6/21	255	0	19	30		
Racine	Rochester	6/16-6/22	200	8	11.75	0		
Richland	Hill Point	6/14-6/20	840	12	2	27		
Richland	Richland Center E	6/15-6/21	1,350	49	12	6		
Richland	Richland Center W	6/15-6/21	720	82	2	11		
Sauk	Baraboo	6/15-6/21	630	3	3	20		
Trempealeau	Galesville	6/16-6/23	40	0	4	1		

GDD (base 50F)

Apple maggot event

900	first adult emergence
1,100	first eggs laid
1,600	peak adult emergence
1,750	peak egg laying
2,800	end of adult emergence



Weekly Black Light Trap Counts

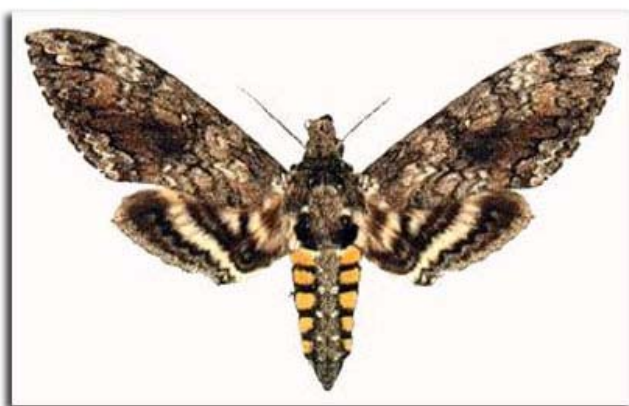
	Date	BCW ¹	CabL ²	CelL ³	CE ⁴	DCW ⁵	ECB ⁶	FA ⁷	TA ⁸	ForL ⁹	SCW ¹⁰	VCW ¹¹	AlfL ¹²
Southwest													
Reedsburg	6-15 to 6-21	0	0	0	0	0	39	0	0	0	0	0	0
Lancaster	6-15 to 6-21	1	0	12	0	0	21	0	0	0	13	2	0
South central													
Mazomanie	6-15 to 6-21	0	3	0	0	14	12	0	0	0	9	0	0
Arlington Station	6-15 to 6-21	0	0	0	0	0	6	0	0	0	1	0	0
Rochelle, IL	6-15 to 6-21	4	0	1	2	0	128	0	5	0	0	3	0
Southeast													
Janesville	6-15 to 6-21	1	0	12	0	0	12	0	7	3	1	0	0
East Troy	6-15 to 6-21	0	0	0	0	0	21+	0	0	0	0	0	0
West central													
Sparta	6-15 to 6-21	2	0	11	2	0	1	0	1	0	25	0	0
Chippewa Falls	6-15 to 6-21	0	0	0	0	14	11	0	2	0	0	0	1
Central													
Marshfield	6-15 to 6-22	2	2	7	0	21	91	0	0	0	46	2	7
East Central													
Manitowoc	6-15 to 6-21	0	0	1	0	0	9	0	3	0	13	2	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



Tobacco hornworm, *Manduca sexta* (Linnaeus)



Forage loopers, *Caenurgina erechtea* (Cramer)



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

Web Site of the Week

Google Scholar

Google Scholar

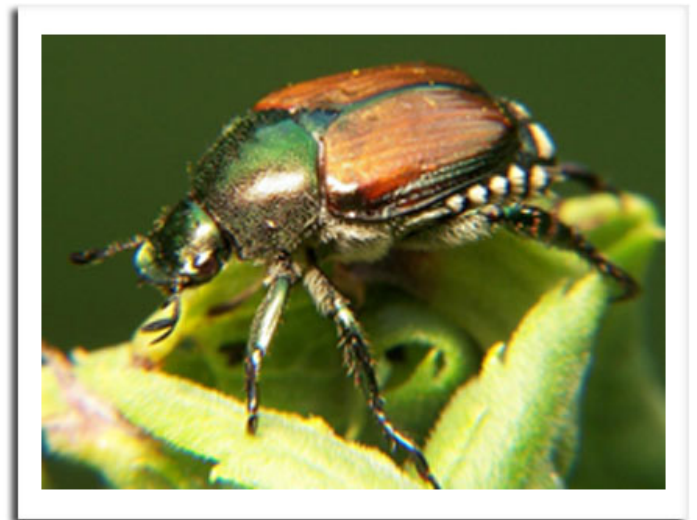
A beta service of the apparently infinitely-expanding Google, *Google Scholar* provides search access to a growing list of scientific journal. Access to abstracts at the least, with many full articles available.

<http://scholar.google.com/>

Quote of the Week

LONG ago I learned how to sleep,
In an old apple orchard where the wind swept by
counting its money and throwing it away...

--Carl Sandburg (1878-1967)
Wind Song (from "Smoke and Steel", 1929)



EXOTIC Pest of the Week

Japanese beetle, *Popillia japonica* Newman