

Wisconsin Department of Agriculture, Trade & Consumer Protection

Wisconsin Pest Bulletin

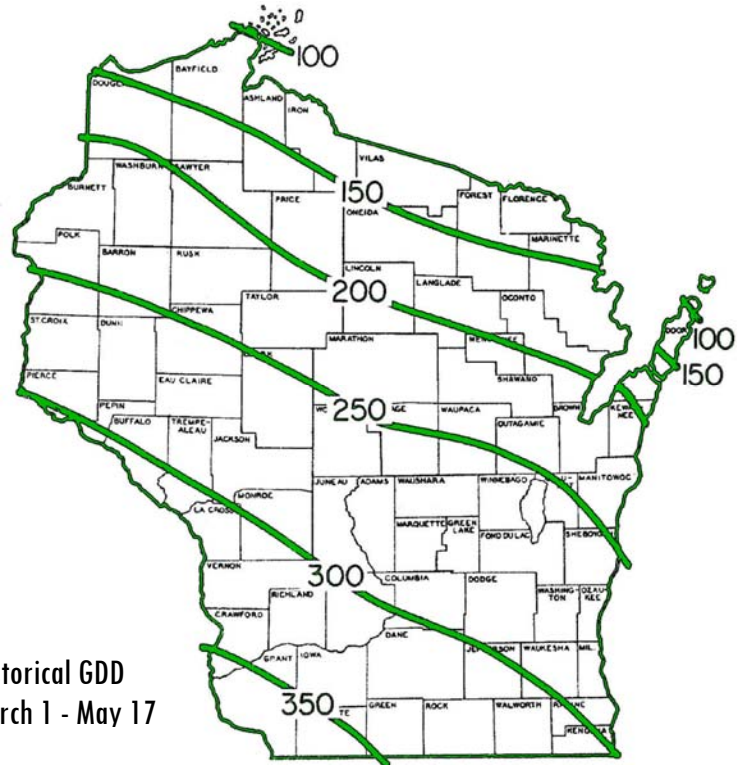
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Your weekly source for crop pest news, first alerts, and growing season conditions for Wisconsin



Weather and Pests

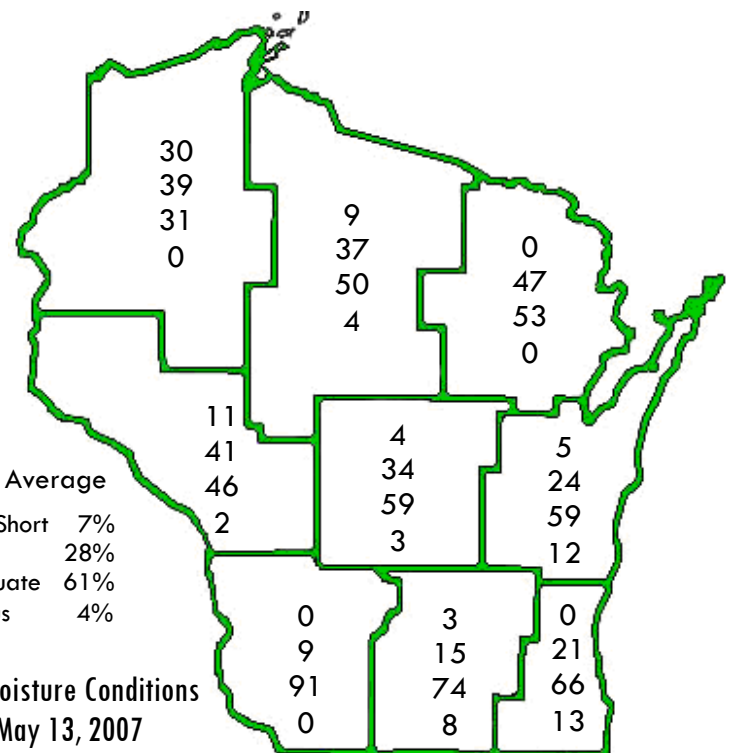
Mild, seasonable temperatures have profoundly influenced crop development and insect populations in the past few weeks. A marked increase in alfalfa weevil populations is one of the most noteworthy events that can be attributed to recent favorable spring weather conditions, as well as an unusually early start to the first flight of European corn borer moths. Relatively light rain showers brought much-needed moisture to most of the state, but the amount was insufficient in the northwest where drought conditions have prevailed since last summer. Considerable strides were made in corn planting, which increased to 76% complete, jumping a remarkable 38 percentage points in just one week. Roughly 32% of the state's soybean crop has been planted.



Historical GDD
March 1 - May 17

Growing Degree Days through 05/17/07 were

	GDD 50F	2006	5-Yr	48F	40F
Dubuque, IA	461	318	388	479	888
Lone Rock	433	310	367	437	838
Beloit	433	352	383	445	851
Madison	387	286	339	392	780
Sullivan	373	311	347	371	751
Juneau	361	273	321	359	736
Waukesha	353	275	310	349	727
Hartford	351	268	299	349	724
Racine	321	246	268	318	685
Milwaukee	320	249	263	317	684
Appleton	334	262	268	325	677
Green Bay	287	218	219	281	625
Big Flats	383	296	327	371	741
Hancock	369	289	312	352	709
Port Edwards	371	298	304	361	718
La Crosse	469	347	382	471	889
Eau Claire	407	327	336	412	787
Cumberland	366	267	280	357	708
Bayfield	236	165	164	220	513
Wausau	330	249	261	315	650
Medford	327	254	253	315	651
Crivitz	263	214	209	254	568
Crandon	282	217	218	261	566



State Average

Very Short 7%
Short 28%
Adequate 61%
Surplus 4%

Soil Moisture Conditions
as of May 13, 2007

Alerts

Alfalfa weevil - A severe alfalfa weevil threat exists for the southern and western areas of the state, particularly those alfalfa stands on sandy loam to lighter silt loam soils. Surveys this week showed high populations of larvae and economic levels of tip feeding injury in many fields. Scattered problem areas with 1.3 to 8.6 larvae per sweep and 75-100% tip feeding were detected in Racine and Kenosha counties, while counts of 4-7 larvae per sweep and 60-90% tip feeding were common in Iowa, Lafayette and Richland counties.

UW-Madison Extension Entomologist, Eileen Cullen underscored the seriousness of the situation in the May 17 issue of the Wisconsin Crop Manager available at <http://ipcm.wisc.edu>. Her article included the recent observations of two crop consultants who noted 40% to 80-90% tip feeding in fields south of Fort Atkinson in Jefferson County and north of Elkhorn in Walworth County, and 60% tip feeding near Holmen and Mindoro in La Crosse County. This is the first time in several years that the economic threshold of 40% tip feeding has been exceeded in so many fields so early. Some spraying has already been done.



Alfalfa weevil larvae collected per 20 sweeps Krista Hamilton DATCP



Alfalfa weevil tip feeding injury Krista Hamilton DATCP

Growers are urged to examine fields very carefully. Alfalfa weevil populations are largely comprised of first and second instar larvae, and tip feeding is not yet evident in many fields. In some areas, most notably Columbia and Dodge counties, moderate populations of larvae are present, but tip feeding is still very minimal. The situation is expected to intensify by next week as the larvae and their appetites increase in size.

Infestations should be properly evaluated before any management decisions are made. Circumstances justify treatment in some fields, but dense alfalfa weevil populations may be effectively reduced by harvesting. Growers who can adjust their cutting schedule should harvest early if possible. Those fields that cannot be cut for a week or two may benefit from a treatment, but only if 40% tip feeding is observed more than 7-10 days prior to harvest.

Potato late blight - ATCP 21.15 Wis. Administrative Code requires that potato cull piles must be field-spread and disked in, fed to livestock, or otherwise destroyed before May 20, and potato growers must control volunteer potatoes in their fields. The intent of this rule is to reduce the likelihood of infected potato plants sprouting from overwintering tubers and providing early inoculum of *Phytophthora infestans*, the causal agent of late blight. Reducing the amount of initial inoculum is "a critical management strategy", according to the Compendium of Potato Diseases, edited by Dr. Walt Stevenson of the University of Wisconsin-Madison.

Looking Ahead

Potato leafhopper - More migrants were detected this week, but in numbers too low to draw much attention. Populations in southern Wisconsin are very light at this time, averaging 1-2 adults per 25 sweeps. It appears that strong southwesterly winds on May 14 (up to 32 mph) may have directed additional leafhoppers into the state. Reproduction should start within a few weeks, with the possibility of substantial populations by mid- to late June. Nymphs are likely to appear during the first week of June.

European corn borer - First brood moths have started to emerge in southern and central Wisconsin. The first eggs were laid near Dubuque and La Crosse on May 15 and near Beloit on May 17, following the accumulation of 450 GDD (base 50°F). Virtually all corn is too small to support larvae at this time; therefore, females will deposit eggs on other herbaceous hosts with stems large enough for larvae to bore into. Some of the common weeds infested include barnyardgrass, cocklebur, dock, jimsonweed, panic grass, pigweed, and smartweed. Begin egg surveys in early-planted corn soon after the first emergence of moths. European corn borer egg masses are frequently laid on the top one-half of the plant on the undersides of the leaves near the midrib.

Bean leaf beetle - Surveys this week found a total of 145 bean leaf beetles in 25 of 33 alfalfa fields sampled. Beetle

activity declined noticeably on the cool, cloudy days and fewer beetles were swept. Nonetheless, surveys continue to show bean leaf beetles overwintered successfully in the southern two tiers of counties. Soybeans beginning to emerge in the south central and southwest districts could sustain serious defoliation by this generation of beetles.

True armyworm - Begin scouting field margins for signs of true armyworm activity. A high capture of 256 moths near Janesville last week and another 83 moths this week indicate mating and egg laying are underway in grasses and small grains. Expect the larval offspring of these moths to feed for the three to four weeks before pupating. The first generation is usually the least damaging in Wisconsin, but should be monitored as it produces a more damaging second generation in July.

Southern corn rootworm - Adults of this species, *Diabrotica undecimpunctata howardi*, have started to emerge in southern Wisconsin. A few individuals were collected in sweep nets in Columbia and Dodge counties earlier in the week. Unlike the northern and western species, which overwinter in the egg stage, the southern corn rootworm overwinters as an adult and lays its eggs early in the spring.

Periodical cicada - As of May 18, cicadas of the much-anticipated Brood XIII have not begun to emerge from the ground. An Ohio-based blogger at www.cicadamania.com reported a mistimed, early emergence of Brood XIV cicadas on May 14 (see image from The Cincinnati Enquirer below), but still no Brood XIII *Magicalcicada*. After 17 years under ground, cicadas of Brood XIII are expected to surface later this month and throughout June, once soil temperatures warm to 60°F. This extraordinary event will last just six to eight weeks.



Early emerged Brood XIV cicadas Matt Berger www.cicadamania.com

Eastern tent caterpillar - In the southern one-half of the state, full-grown eastern tent caterpillar larvae are "wandering" in search of pupation sites. Most of the two-inch long caterpillars have left the tents of host trees and scattered to locate suitable sites to spin cocoons and pupate. During this period, caterpillars may be found resting, and sometimes feeding, on a variety of plants.

Although vacated, their tents will remain noticeable for several weeks. Adult eastern tent caterpillar moths are likely to appear in black light traps in two to four weeks.



Eastern tent caterpillar larva

Krista Hamilton DATCP

Insect Migration Risk Forecast (IMRF) - The IMRF is the insect equivalent of the daily weather forecast delivered by any local meteorologist, whether it's Bob Lindmeier in Madison, Steve Frazier in Green Bay/Appleton area, or Wausau's Tony Schumacher (our sincerest apologies to those Chief Meteorologists not mentioned). This "proactive forecasting product", issued daily Monday through Friday from mid-May to the end of September, was developed by Mike Sandstrom and Dave Changnon with the Department of Geography at Northern Illinois University. IMRF maps show regions at risk for insect migration in the Midwest and Ontario, Canada based on weather patterns in the central United States. While the daily forecasts are specifically directed toward corn earworm, they are applicable to all other migratory insects. The long-term forecast for Thursday through Saturday, May 19 predicts a **VERY LOW** (2-5%) relative risk of Insect migration into the Midwest, with the greatest risk area along and west of I-35 in the Plains states, western Iowa, and western Minnesota.

Corn

European corn borer - First brood moths took flight over southern and central Wisconsin this week in areas where 347 GDD (base 50F) were surpassed. Two adults appeared in the black light traps between May 11 and 17, and three were registered at Lancaster. Egg laying began near Dubuque and La Crosse on May 15 and near Beloit on May 18, according to the European corn borer degree day model. Careful attention should be paid to degree day accumulations and black light trap counts during the next few weeks. A catch of 10 moths per night suggests a flight is occurring, 25 moths per night indicate a significant flight is in progress, and 100 moths per night indicate a re-infestation. Peak activity of the first flight of European corn borer moths (and egg laying) is expected once 631 GDD have accumulated.

Begin egg surveys in early-planted corn soon after the first emergence of moths is registered at a nearby black light trapping site (see black light trap table on page 59). Most corn observed this week was not nearly tall enough to support larval development. Corn that is less than 18 inches tall contains a compound called DIMBOA, which prevents European corn borer larvae from establishing. Plants in the whorl stage (10-leaf) are usually most attractive to female moths in later May and June. Examine a minimum of 50 plants per field, 10 in five separate locations, and record the number of plants infested with egg masses. Eggs are usually laid on the top one-half of the plant on the undersides of the leaves near the midrib.

True armyworm - Susceptible crops should be monitored closely during the next three to four weeks, namely corn and wheat fields with grassy weed pressure. In wheat fields, young armyworm larvae feed on the foliage or stem just below the head and may completely clip off the seed heads. In seedling corn, late-instar larvae may consume entire leaves. Larvae from the moth flight that is now in progress are generally not as damaging as those of the second flight later in July. Scout border rows first, as armyworm feeding begins along field margins and progresses inward toward the interior. If evidence of armyworm feeding is observed, check five sets of 20 plants at random. Record the number of damaged plants and the number of larvae per plant. Spot treat when there are two or more $\frac{3}{4}$ inch or longer armyworm larvae at per plant on 25% of plants OR one larvae per plant on 75% of plants.



Grassy field susceptible to armyworm infestation Clarissa Hammond DATCP

Black cutworm - Cutting is expected to be intense in southern and west central corn fields in the week ahead. Under present temperatures, cutting stage larvae will take 12 days or less to pupate. Scouting efforts should be focused in corn fields which had dense growth of winter annual or perennial weeds before corn was planted.

Forages

Alfalfa weevil - Surveys in the southern one-half of the state revealed scattered problem areas with very high counts of larvae and high percentages of tip feeding injury.

In the Racine and Kenosha County areas, larvae numbered 1.3 to 8.6 per sweep and tip feeding ranged from 75-100% in eight fields checked. Near Gotham in Richland County, counts of 4-7 per sweep and 60-90% tip feeding were observed. In other parts of Iowa, Grant and Lafayette counties, weevil counts ranged from 2-7.4 per sweep. Surveys in Columbia and Dodge counties showed moderate numbers of larvae, about 0.2 to 1 per sweep, and roughly 10-20% tip feeding. However, the first instar larvae, which normally do not collect in sweep nets in appreciable numbers, were numerous in infested tips. These observations emphasize the need for careful scrutiny since many weevils are newly-hatched and tip feeding injury is not yet evident. The dominant stages present this week were the first and second instar larvae, although larvae in all stages of development were noted. Feeding injury in the southern and west central counties is expected to increase in severity and become more noticeable next week as the larvae become larger and alfalfa growth slows.



Alfalfa weevil tip feeding injury

Krista Hamilton DATCP

Meadow spittlebug - Numbers remain low in all areas, well below the economic threshold of one nymph per stem. Nymphs are about half-grown in the south central counties. Spittle masses were noted on no more than one in 20 stems.

Pea aphid - Aphid populations continue to escalate. Counts averaged about 11 per sweep in the south central region, but there is considerable variation within and among different fields. Occasional fields have as few as one per sweep or as high as 31 per sweep. Populations are fairly low in the southeast, ranging from 0.1-1.4 per sweep. No pea aphids were detected in pea fields checked near Mazomanie in western Dane County.

Potato leafhopper - Migrants have settled in southwestern and south central alfalfa fields. Very low numbers of leafhoppers, roughly 1-2 per 25 sweeps, were found in Columbia and Dodge counties, and no adults were swept in the Racine and Kenosha fields sampled. The first adults to arrive in Wisconsin reproduce slowly, laying an average of 3-7 eggs per day. However, individual females may live for 30 or more days and deposit over 200 eggs during their lifetimes (Hogg et al. 2000). Egg and nymph development

requires nine and 13 days, respectively, and there is a delay of about three weeks before new adults appear. Under normal summer temperatures, just 10 days are needed for potato leafhopper populations with overlapping generations to double in size (Hogg et al. 2000). Sampling potato leafhopper populations is most important following the first cutting of alfalfa. Using a 15" sweep net, take 20 sweeps in five separate areas of the field and calculate the average number of leafhoppers per sweep. Refer to the table below to decide if treatment is warranted.



Potato leafhopper, *Empoasca fabae* Marlin E. Rice

Height of Alfalfa (inches)	No. PLH per Sweep
< 3	0.2 adult
3-6	0.5 adult
6-12	1.0 adult or nymphs
12-14	2.0 adults or nymphs

Hogg, D.B., J.L. Wedberg, D.J. Undersander, and K.G. Silveira, 2000. Potato Leafhopper Damage to Alfalfa. University of Wisconsin Departments of Entomology and Agronomy.

Plant bugs - Alfalfa plant bug nymphs were found in Columbia and Dodge County alfalfa fields at the rate of 4-9 per 25 sweeps. Nymphal development was approximately ¾ complete, suggesting higher numbers of adults should soon appear. In addition, the first tarnished plant bug nymphs of the season were swept from Columbia County fields at the rate of 4 per 25 sweeps; counts of adults averaged 3 per 25 sweeps. The economic threshold for all plant bug species (adults and nymphs), including tarnished plant bug, rapid plant bug and alfalfa plant bug, is five per sweep in alfalfa taller than three inches.

Soybeans

Bean leaf beetle - The search for overwintered bean leaf beetles in alfalfa progressed through the southern districts where sampling of Kenosha and Racine County fields yielded a total of 31 beetles from six of eight fields checked. Counts ranged from 2-10 beetles in Kenosha

County and from 0-5 beetles in Racine County (per 200 sweeps). Surveys in Columbia and Dodge counties found 15 beetles in seven of 11 fields sampled, but the number of beetles collected per field were generally lower compared to those found in the southernmost tier of counties. In Iowa County, a total of 23 beetles were swept from five fields checked, in Lafayette County 66 beetles were found in five out of five fields, and in Grant County 10 beetles were collected at two of four sites. A total of 145 beetles were collected from 25 of 33 fields (76%) sampled between May 11 and 17. The 1% of soybeans emerged as of May 14 are at a high risk of defoliation by this generation of beetles. The economic threshold for bean leaf beetle is 16 beetles per foot of row during the early seedling stage and increases to 39 beetles per foot of row at V2 and beyond. All bean leaf beetles collected during this survey will be tested for Bean Pod Mottle Virus (BPMV) next month at the DATCP Plant Industry Laboratory.

Soybean rust - Soybean rust was detected in a kudzu patch west of New Orleans in New Iberia, Louisiana. This is the first report of rust this far west in 2007 and it is 53 days ahead of last year's first find in Louisiana. Soybean rust is still active in six counties in Florida. Conditions in Louisiana are wetter than those in Florida where most of the state is under drought conditions. No active sites of soybean rust have been reported in Alabama, Georgia, or Texas. Scouting efforts have intensified in the south, especially on kudzu and on soybeans in some southern states. Soybean sentinel plots continue to be planted throughout the soybean belt. Soybean rust has been detected on kudzu in 10 counties in Florida and in five counties in each of Georgia and Alabama, and in one county in Louisiana. The disease was also detected on soybeans in one county in Texas, but that field has since been cultivated and planted with corn (excerpted from the Nation Soybean Rust Commentary updated 5/11/07 <http://www.sbrusa.net/>).

Weeds

Weed densities continued to increase this week, especially in southern Wisconsin no-till fields. Many fields already have weeds exceeding 16" in height and wind-dispersed dandelion seeds are beginning to fly. After weeds attain a certain height, management options become increasingly limited. Recent surveys found newly-emerged corn fields with weeds that fared well against herbicide applications specifically because of their height. Among the weeds noted this week were giant ragweed (6"), bull thistle (10-12"), purslane speedwell (14"+), lambsquarters (4"), curly dock (16"), wild carrot (12"), horseweed (10-12") and field horsetail (12"+).

Weedy fields provide ideal habitat for a number of pest insects. Female true armyworm and black cutworm moths seek out weedy fields for oviposition (egg laying). Black cutworm females preferentially oviposit in crop residue and on species such as curly dock, chickweed and many mustard species, while true armyworm moths favor grassy areas for egg laying.



Giant Ragweed

Clarissa Hammond



Field horsetail

Clarissa Hammond

Glyphosate-resistant horseweed found in Michigan - Last week agricultural specialists at Michigan State University reported glyphosate-resistant horseweed was found in a Christmas tree plantation in Mason County, Michigan. Michigan is the sixteenth state to confirm glyphosate-resistant horseweed since the first case was detected in Delaware back in 2000. Like many of the other resistant populations across the United States, this case is thought to have developed due to repeated usage of glyphosate.

For now Wisconsin is not one of the 16 states with glyphosate-resistant horseweed, but resistance could develop independently or long-distance traveling seeds could drift in from neighboring states. Although the latter scenario seems unlikely, the wind-borne dispersal mechanism of horseweed seeds is one of the primary reasons for concern about this weed. Individual horseweed plants have the potential to produce 150,000 to 200,000 seeds, each of which can be blown hundreds of yards away.

The length of the horseweed life cycle is also cause for concern. Horseweed may act as either a winter or summer annual, emerging in fall or early spring. However, unlike many other early emerging annuals, it does not complete its life cycle until late summer or early fall. This gives horseweed ample time to compete with favored plants.

Areas where glyphosate is used to control weeds in successive years are likely candidates for development of resistance. Christy Sprague with the Michigan State University Crop and Soil Science Department offered the following comments in a recent article on preventing resistance:

Diversity is the key. Whether it is diversity in tillage, herbicide use or cropping systems, diversity is one of the main strategies to slowing down the development of glyphosate-resistant weeds. Here are six main strategies that should be followed to help reduce the development of glyphosate-resistant weeds.

- Rotate glyphosate with herbicides that have different modes of action
- Apply a residual herbicide before glyphosate or tank-mix another herbicide with glyphosate
- If glyphosate is used as a burndown treatment and in-crop in the same year, tank-mix the burndown glyphosate treatment with an herbicide that has a different mode of action
- Scout for changes in weed populations
- Use cultivation and other mechanical weed management practices, when appropriate
- Use recommended rate for the appropriate weed height

Fruit

Apple orchard pest insects - Insect activity has accelerated substantially in southern and central Wisconsin apple orchards which are at or recently past petal fall. Codling moths are flying in the southern one-half of the state, and the biofix has been set in many orchards. Counts range from 0-37 moths, with nine of 31 orchards reporting counts above the action threshold of five codling moths per trap per week. Spotted tentiform leafminer numbers have declined in most areas and populations consist principally of sap-feeder and some tissue-feeder larvae. Bayfield County growers should begin to scout for sap-feeder leafminers on the undersides of apple leaves this week. Both the Oriental fruit moth and lesser apple worm are flying, which is of interest to orchardists monitoring those insects. Plum curculio activity has been delayed by cool evening temperatures, despite what degree day accumulations might indicate. Light feeding and oviposition injury has been observed in a few unprotected southwest Wisconsin orchards. Redbanded leafroller counts continue to be high, ranging up to 151 moths in the last reporting period. RBLR larvae are numerous and active in terminals. The insecticide application made at petal fall to control populations of plum curculio, leafrollers, leafminers, and leafhoppers is perhaps the most critical spray of the season. For a list of insecticides available to control early-season insect pests, see UW-Extension Publication No. **A3314 - 2007 Commercial Tree Fruit Spray Guide**.

Vegetables

Imported cabbageworm - First generation larvae should soon appear in areas where 300-400 GDD (base 50°F) have been reached. The lower range of this threshold has been surpassed throughout southern and central Wisconsin. While the first generation is usually less damaging than the second that occurs in late July, it is recommended that growers scout for eggs and larvae on a weekly basis to assess populations. Imported cabbageworm eggs are yellow-orange and laid singly on any plant part; the larvae are velvety green worms with a pale yellow, longitudinal stripe along the back.

Colorado potato beetle - Emergence of adult Colorado potato beetles is underway in southern Wisconsin. The first eggs can be anticipated at 120 GDD (base 52F), followed by first instar larvae at 185 GDD, second instar larvae at 240 GDD, third instar larvae at 300 GDD, fourth instar at 400 GDD, and pupae at 675 GDD. Both the adult and larval stages severely defoliate potato, eggplant and nightshade. Feeding injury worsens as the larvae increase in size, and may be yield reducing when potato plants are flowering. Refer to UW-Extension Publication No. A3678 titled, "Colorado Potato Beetle," for more information on this potato pest <http://learningstore.uwex.edu/Colorado-Potato-Beetle-P559C104.aspx>.

Nursery, Forest and Landscape

Emerald Ash Borer Program - With only two weeks left in the emerald ash borer detection tree survey season, DATCP crews will stop peeling ash trees in search of beetle larvae, and spend the remainder of the season establishing detection trees for assaying next fall. The strategy behind detection trees (sometimes called "trap trees") is to take advantage of the adult beetle's attraction to volatile chemicals produced by stressed or declining ash trees. Detection trees are established by girdling the tree, removing a four to six inch strip of bark from the tree trunk, thus stressing the tree. After the trees have stood through the adult beetle flight season (in Michigan, late May or early June to early September, with the peak emergence in late June), the tree will be felled and all the bark will be stripped to uncover any developing larvae. The Wisconsin EAB Program hopes to have 1,100 detection trees established by May 25. To date, EAB has not been detected in the state of Wisconsin. Reports from infested states as of May 17 indicate that adult beetle emergence is beginning south of Columbus, Ohio.

A statewide radio campaign to encourage the public to report EAB—and to discourage the movement of firewood, which is a proven pathway for long-distance EAB transport—will begin Memorial Day week and run through the summer. For more information on EAB, visit <http://emeraldashborer.wi.gov/> To report a suspect beetle or tree, call the DATCP Emerald Ash Borer Hotline at 1-800-462-2803.

Oystershell scale - Oystershell scale, *Lepidosaphes ulmi*, is a common pest of shade trees and shrubs in Wisconsin and throughout the northern United States. More than 130 plants have been reported as hosts, although lilac, ash, willow, poplar, apple, dogwood, boxwood, birch, elm, linden, viburnum and walnut are among the most commonly infested. Hatch of overwintered eggs has now occurred statewide, and first generation crawlers are active in areas where 275-500 GDD (base 50°F) have been reached.

As its common name suggests, this scale insect resembles minute oyster shells due to its noticeably convex, waxy exterior. Oystershell scales overwinter in the egg stage beneath the old scale covering of females. Depending on the form, there is either one generation (lilac or gray form) or two generations (apple or brown form) per year, with egg hatch occurring in May and June and again in mid-July and August. The apple or brown form typically infests apple, pear, plum, quince, currant, grape, other fruit trees, mountain ash, dogwood, hybrid lilacs, horsechestnut, and others. The lilac or gray form infests common lilac, beech, willow, maple, and many ornamentals.



Oystershell scales

www.forestryimages.org

Newly-hatched oystershell scales, referred to as crawlers, are pale in color and smaller than a pinhead. Upon hatching, the mobile crawlers find a suitable location on the tree, usually on a shaded area, and insert their mouthparts into the plant and begin feeding. Within a week, oystershell scales develop the characteristic protective, waxy covering. After feeding has started the scales remain stationary for the duration of their life cycles.

Controlling oystershell scale is difficult because the waxy covering is resistant to chemical insecticides. Manually scrubbing the overwintering scales off the tree during the dormant season is one approach. Consider pruning when a tree or shrub is heavily infested, but the infestation is limited to one branch (be sure to destroy or dispose of the infested branch far away from potential host trees). A third option is to apply a dormant oil to the scales after leaves have emerged in late April or early May; however, this option is no longer effective now that the crawlers are active. Crawlers may be controlled with an insecticide

spray in late May or early June. Insecticides are effective only against the mobile crawler stage.



Oystershell scale

www.entomology.wisc.edu



Oystershell scale

www.wihort.uwec.edu

Other nursery inspection finds this week include:

Southwest region: Leaf scorch on variegated euonymus, *Viburnum plicatum*, assorted roses and sweet basil, fireblight on French lilac, bacterial leaf spot on 'Vision' astilbe, black spot on rose and scab on profusion crab apple in Dane County.

South central region: Frost damage on peach and cherry in Columbia County.

Southeast region: Winter mortality on crimson barberry, leaf spot on salvia and petunia, septoria on gold barberry, aphids and blackspot on rose, botrytis on geranium, leaf streak on day lily, sun scorch on New Guinea impatiens, anthracnose on 'Gold Standard' hosta and fungus gnats on roses in Racine County.

Botrytis on geranium, alternaria on New Guinea impatiens, cold damage on hyacinth and hollyhock rust on hollyhock in Walworth County.

Leaf spot on pansy, botrytis on geranium and cold damage on salvia, hydrangea and violet in Kenosha County.

Cold damage on boxwood, 'Emerald Gaity' euonymus and *Vinca major*, anthracnose on 'Gold Standard' hosta, botrytis on geranium, leaf spot on petunia, pansy and veronica, black spot on rose and septoria on yellow leaf barberry in Milwaukee County.

East central region: Shothole disease on purple leaf sand cherry, cold damage on dwarf Alberta spruce and clematis, virus symptoms on 'Bowl of Beauty' and 'Shirley Temple' paeonia, hosta virus X on 'Golden Tiara' and 'Albo-marginata' hosta, hollyhock rust on hollyhock, virus on 'Liv Tyler' hybrid tea rose, Fletcher's scale on yew, cold damage on climbing hydrangea, frost damage and rhizosphaera on balsam in Door County.

Powdery mildew on 'Blue Stocking' *Monarda didyma*, hollyhock rust on hollyhock, shothole disease on purple leaf sand cherry, spider mites on mini rose, powdery mildew on Champlain rose, spruce needle drop on Colorado blue spruce, hollyhock rust on 'Peaches 'n Dreams' and 'Nigra' hollyhock, and hosta virus X on 'Wylde Green Cream' hosta in Calumet County.

Spruce needledrop on Colorado green spruce, bladder galls on autumn blaze maple, virus on dicentra and Olympiad rose, dothistroma on Austrian pine, oystershell scale on autumn purple ash, and aphids on crimson frost birch in Outagamie County.

Northeast region: Hosta virus X on 'Aurea-Maculato' hosta, tobacco rattle virus on bleeding heart, spruce needledrop on blue spruce, verticillium wilt on autumn blaze ash, and powdery mildew and rose mosaic virus on shrub rose in Portage co. Hosta virus X on 'Honey bells' hosta and spruce needledrop on Colorado blue spruce in Wood County.

Gypsy Moth

Gypsy Moth Program - Gypsy moth spraying through the Wisconsin Slow-the-Spread Gypsy Moth Program was postponed twice this week due to poor weather in some parts of the state. However, most areas scheduled for spray this week were accomplished.

The first application of Btk, a biological pesticide, was completed in Monroe, Clark, Chippewa and Rusk counties on May 15. Due to rain in Clark County and potential rain in other areas, spray was cancelled on May 16. With better weather on May 17, NPV treatments were completed in four sites in Monroe County and one site in Clark County. NPV is a gypsy moth virus. The Department of Natural Resources also completed its NPV treatments to five sites in Waushara and Adams counties on May 17.

Iowa, Richland, Sauk and Vernon counties received its second application of Btk on May 17. The site in Vernon County was partially completed, and spray is scheduled to continue there on May 18. Other sprays scheduled for May 18 includes a second application of Btk in Green, Rock, Monroe, Clark, Chippewa and Rusk counties.

Yellow spray planes will take off at around 5 a.m. and continue to spray until the day's spray plans are completed and if weather conditions allow. Spray is scheduled to move into northern Wisconsin the week of May 21.

Gypsy moth trapping began this week in southern and southwestern Wisconsin. Trapping in the northern part of the state will begin the week of May 21. A total of about 32,000 traps will be set by around the first week of July. The traps are expected to last until the gypsy moth flight ends in August. In 2006, more than 120,000 moths were caught. Numbers of gypsy moths have declined in the last three years. For more information, call the toll-free gypsy moth hotline at 1-800-642-6684.

Exotic Pest of the Week

False Columbia root-knot nematode (*Meloidogyne fallax*) - Wisconsin's potato industry ranks third in the nation with a total crop valued at \$187 million, accounting for 7.2% of the U.S. potato production. False Columbia root-knot nematode is a pest of regulatory concern to potato producers in Wisconsin and worldwide. This plant parasitic nematode has caused significant yield losses on potatoes in Europe, Australia and South Africa, but not in fields in the U.S. so far. The morphologically similar Columbia root-knot nematode (*Meloidogyne chitwoodii*) is a serious pest of potatoes in Europe and has been detected in the western U.S. According to E. Davis and R. Venette's "Mini Risk Assessment" the False Columbia root-knot nematode would encounter suitable climatic conditions and hosts in Wisconsin.



Columbia root knot nematode galls

aes.missouri.edu

Hosts of *M. fallax* include alfalfa (*Medicago sativa*), carrot (*Daucus carota*), potato (*Solanum tuberosum*), sugarbeet (*Beta vulgaris*), tomato (*Lycopersicon esculentum*), oyster plant (*Scorzonera hispanica*), primrose (*Oenothera erythrosepala*), bleeding heart (*Dicentra spectabilis*), lettuce (*Lactuca sativa*), and artichoke (*Cynara scolymus*). On potato, *M. fallax* infestations result in small, raised swellings on the tuber surface above the developing nematodes. Adult females, when alive, appear as glistening, white, pear-shaped bodies surrounded by a

brownish layer of host tissue, and are visible just below the surface. Lightly infested tubers may not show obvious contamination, though storage may lead to the development of the characteristic external symptoms mentioned above.

Due to its wide host range and distribution, *M. fallax* has the potential to become established in Wisconsin if inadvertently introduced. This species can spread via movement of infected or contaminated planting material, such as daylily bulbs or seed potato tubers. In addition, the movement of non-host seedling transplants, nursery stock, machinery or other products contaminated with *M. fallax* infested soil have the potential to spread this pest.

The continued export of seed potatoes relies on the certification of potato fields and tubers as being free from regulated pests. Wisconsin DATCP has conducted nematode surveys periodically in the past. False Columbia root-knot nematode has not been found in Wisconsin.



External tuber damage on Russett Burbank

R. Howard

Black Light Trap Counts through May 18

	ECB ¹	TA ²	BCW ³	SCW ⁴	DCW ⁵	CeL ⁹	VCW ¹³
Southwest							
Lancaster*	3	8	0	0	0	0	0
South central							
Mazomanie	2	9	0	0	0	0	4
Southeast							
Janesville	0	93	0	0	0	4	0
West central							
Sparta	0	3	1	0	0	1	0
Central							
Marshfield	0	20	2	0	0	2	1
East Central							
Manitowoc	0	1	0	0	0	0	0

¹ European Corn Borer; ² True Armyworm; ³ Black Cutworm; ⁴ Spotted Cutworm; ⁵ Dingy Cutworm; ⁹ Celery Looper; ¹³ Variegated Cutworm

Black Cutworm & Apple Insect Trap Counts from May 12 to May 18, 2007

Black Cutworm Counts

County	No.	Town	5/14	5/17
Grant	1	W Fairplay	0	1
Grant	2	Fairplay	1	4
Grant	3	Prairie Corners	0	7
Grant	4	W Hazel Green	1	0
Grant	5	N Hazel Green	1	0
Lafayette	6	Lead Mine	2	0
Lafayette	7	N New Diggings	0	0
Lafayette	8	Shullsburg	2	1
Lafayette	9	E Shullsburg	0	0
Lafayette	10	W Gratiot	2	1
Lafayette	11	Gratiot	3	0
Lafayette	12	E Gratiot	1	1
Lafayette	13	E South Wayne	1	1
Green	14	Browntown	0	1
Green	15	Cadiz Springs	0	0
Green	16	E Cadiz Springs	2	0
Green	17	W Monroe	3	0
Green	18	E Monroe	1	2
Green	19	Juda	2	1
Green	20	E Juda	0	2
Green	21	Brodhead	1	1
Rock	22	Orfordville	2	2
Rock	23	Footville	2	1
Rock	24	E Footville	2	2
Rock	49	Janesville	1	0
Iowa	25	Barneveld	2	---
Iowa	26	West Ridgeway	0	---
Iowa	27	East of Dodgeville	1	---
Iowa	30	Cobb	3	---
Iowa	31	East Montfort	0	---
Grant	32	West Montfort	2	---
Grant	33	East Preston	4	---
Grant	34	West Preston	0	---
Grant	35	Fennimore	1	---
Grant	36	West of Fennimore	1	---
Dane	37	Waunakee	---	2
Dane	38	Indian Lake	---	4
Dane	39	N Mazomanie	---	1
Iowa	40	W Mazomanie	---	1
Iowa	41	Arena	---	2
Iowa	42	W Arena	---	0
Iowa	43	Helena	---	1
Iowa	44	Spring Green	---	0
Iowa	45	W Spring Green	---	0
Richland	46	Lone Rock	---	0
Richland	47	W Lone Rock	---	0
Richland	48	Gotham	---	0
Monroe	50	Tomah	---	1
Monroe	51	Cataract	---	0
Monroe	52	Coles Valley	---	2

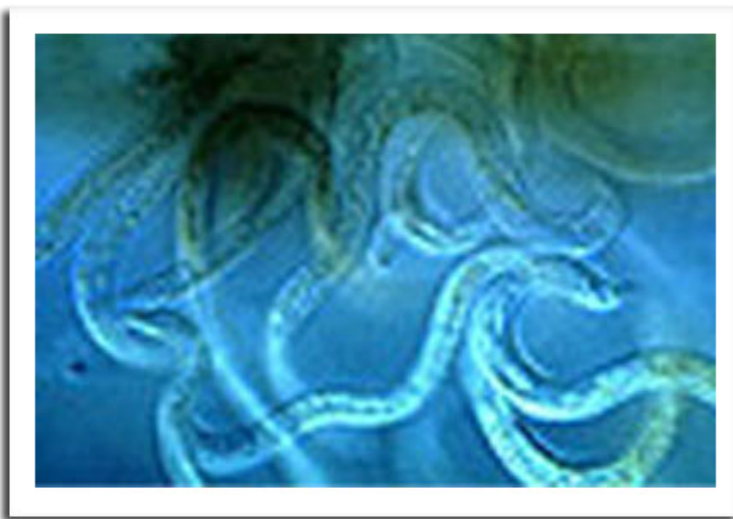
Apple Insect Counts

County	Site	STLM ¹	RBLR ²	CM ³	OBLR ⁴
Bayfield	Erickson	1620	0		
Bayfield	Gellerman	15	0		
Bayfield	Lobermeier	124	151	0	
Bayfield	Bayfield Apple	353	0	0	
Bayfield	Bayfield Apple	1323	0	0	
Brown	Oneida	891	72	1	
Crawford	Gays Mills	10	23	28	
Crawford	Turkey Ridge	94	32	37	
Dane	Deerfield	10	15	8	1
Dodge	Brownsville	10	5	0	0
Fond du Lac	Campbellsport	15	120	0	0
Fond du Lac	Campbellsport	17	75	0	0
Fond du Lac	Malone	125	30	0.3	0
Grant	Sinsinawa	0	0	4	
Green	Brodhead	0	21	9	0
Iowa	Dodgeville	27	20	6	6
Iowa	Mineral Point	40	87	3	1
Jackson	Hixton	30	61	0	2
Kenosha	Burlington	0	4	1.5	0
Marquette	Montello	127	0	0	0
Pierce	Beldenville	0	18	12	21
Pierce	Spring Valley	164	82	0	8
Racine	Rochester	70	12	3.56	
Racine	Raymond	50	9	4	0
Richland	Hill Point	550	58	4	0
Richland	Richland Ctr E	170	62	17	
Richland	Richland Ctr W	230	26	3	
Sauk	Baraboo	38	55	4	
Sheboygan	Plymouth	125	65	5	
Trempealeau	Galesville	50	2	6	6
Waukesha	New Berlin	14	1	2	0

¹ Spotted tentiform leafminer; ² Redbanded leafroller; ³ Codling moth; ⁴ Obliquebanded leafroller.



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EXOTIC PEST OF THE WEEK

False Columbia root knot nematode, *Meloidogyne fallax*