

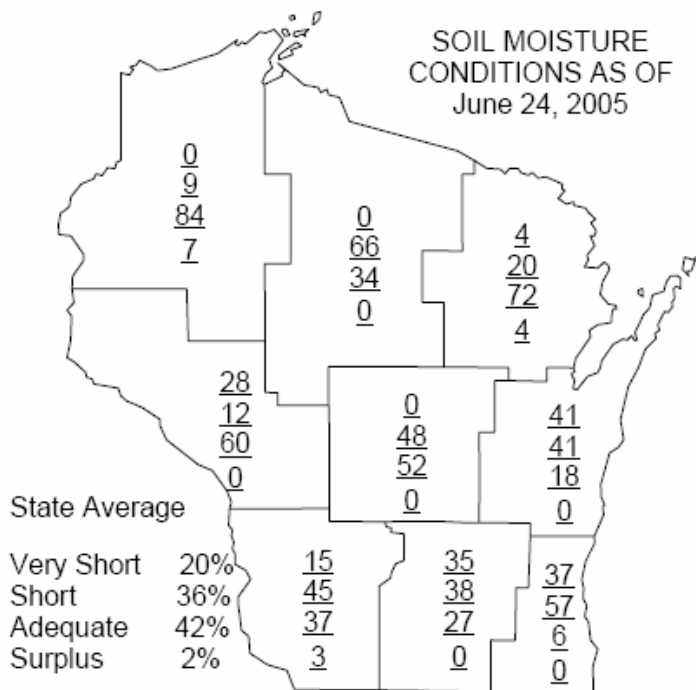


Wisconsin Pest Bulletin

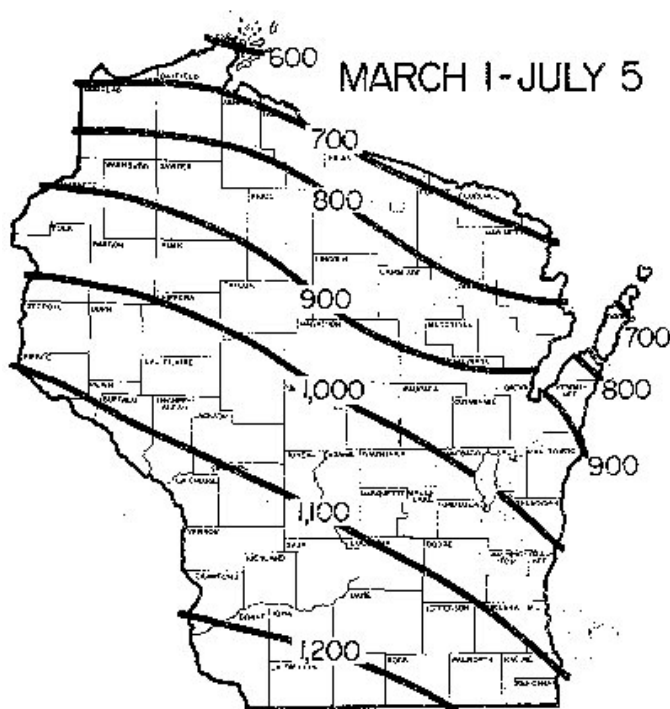
Your weekly source for crop pest news, first alerts & weather information for Wisconsin.

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<http://pestbulletin.wi.gov>



Source: Wisconsin Agricultural Statistics Service



Historical Growing Degree-Days Accumulated
Since March 1, 2005
(Wisconsin Agricultural Statistics Service)

Weather and Pests

Weather conditions during the last week continued to be hot and humid, with localized, heavy rain showers occurring across the state. Throughout the south, many acres of corn and soybeans continue to show stress due to inadequate moisture levels. Despite dry conditions, growth of corn, soybeans and third crop alfalfa is advancing at a remarkable rate. As of June 29, the average height of corn was 26 inches, nearly a foot taller than last year's average and the five-year average of 16 inches. Soybeans emerged at 99%, considerably higher than last year's 81% average, and the five-year average of 90%. Corn fields continue to retain a deep green hue, reflecting the abundance of sunlight received in recent weeks.

Insect activity intensified only slightly under the extreme heat. High temperatures may have actually suppressed the reproduction and activity of some pest species, particularly soybean aphids. In the week ahead, we expect the emergence of corn rootworm adults, continued growth of soybean aphid populations, and increased pressure from the potato leafhopper. -- Krista Lambrecht

Growing degree days from March 1 through June 30 were:				
Site	GDD*	2004 GDD	Base 48	Base 40
SOUTHWEST				
Dubuque, IA	1201	1099	1174	2018
Lone Rock	1152	1002	1141	1930
SOUTH CENTRAL				
Beloit	1195	1071	1143	1992
Madison	1163	970	1150	1953
Sullivan	1182	986	1101	1969
Juneau	1159	946	1119	1940
SOUTHEAST				
Waukesha	1100	931	1057	1863
Hartford	1086	891	1073	1848
Racine	997	857	996	1741
Milwaukee	985	825	971	1728
EAST CENTRAL				
Appleton	998	728	1019	1711
Green Bay	908	662	933	1615
CENTRAL				
Big Flats	1100	851	1089	1842
Hancock	1076	813	1065	1810
Port Edwards	1038	760	1046	1752
WEST CENTRAL				
LaCrosse	1182	998	1167	1985
Eau Claire	1079	816	1129	1833
NORTHWEST				
Cumberland	914	619	956	1612
Bayfield	624	453	638	1232
NORTH CENTRAL				
Wausau	940	658	958	1611
Medford	906	613	933	1578
NORTHEAST				
Crivitz	855	576	865	1533
Crandon	856	588	855	1488

Looking Ahead

Corn rootworm - Bursting bottle rockets, sparklers and Roman candles signal that it's time to be on the lookout for the earliest corn rootworms. Adult emergence in southern Wisconsin is an event that traditionally begins just after Independence Day. Look for the first corn rootworm beetles of the season to appear in fields next week. Damage caused by larvae should also soon become noticeable in heavily infested fields, particularly following severe thunderstorms or gusty winds.

Soybean aphid - Expect aphid populations to approach peak levels in the week ahead as soybean plants reach the early reproductive stages of growth. DATCP's annual soybean aphid survey, targeting peak aphid populations between R2-R4 growth stages, is scheduled to get underway on Tuesday, July 5. Little change in aphid densities has taken place in the past week; however, as temperatures cool off slightly over the weekend, as our local meteorologist foretells, conditions may prove more suitable for increased aphid reproduction.

Apple maggot - Two and a half inches of rainfall in a Crawford Co. orchard was enough to prompt emergence of apple maggot flies this week. Three were captured on a red ball trap near Gays Mills. Apple growers located in areas where soil moisture levels are adequate or where rainfall is received in the coming week should anticipate the emergence of more apple maggot flies.

Squash vine borer - There's no time like the present to begin monitoring pumpkins and squash for squash vine borer infestations. DATCP's West Madison research station cooperator reported a moth sighting at the station's pumpkin patch on Thursday. He also noted that chicory is in full bloom in Dane Co., a phenological event that is closely timed with emergence of squash vine borer moths. If moths are active, it can be inferred that egg laying also is occurring. Squash vine borer larvae will feed for 14-30 days, into late July, possibly early August. In the coming weeks, look for sawdust-like frass left behind as the larva feeds within the vine. See Karen Delahaut's UW-Extension publication X1024 Squash Vine Borer at <http://www.uwex.edu/ces/wihort/gardenfacts/X1024.pdf>, for control recommendations.



Potato leafhopper - Nymphs continue to grow increasingly abundant in alfalfa fields. Sweep net counts in Juneau, Monroe, Richland and Vernon Cos. were very near or above threshold levels this week. The combination of high temperatures and dry conditions mean there is a distinct possibility that heavy populations could build in third crop

hay. Fields in the counties listed above are beginning to exhibit the V-shaped yellowing associated with leafhopper feeding called "hopperburn." Continue to scout for leafhoppers and hopperburn in the week ahead.



European corn borer - Although the outlook has been for a light first generation, this week's survey findings demonstrate

the potential for moderate, possibly even a few heavy corn borer infestations to develop. In Juneau, Monroe, Richland and Vernon Co. fields, larval feeding was evident on a maximum of 31% of the corn plants. On average, 14-19% of the plants were infested in fields that were nearing the early tassel stage; larvae were predominantly in the second and third instars. The second flight of moths should begin about July 9 near Beloit, July 10 near LaCrosse, 1400 GDD50 and July 15 near Hancock, if the heat continues. See the **CORN** section for this week's survey specifics. -- *Krista Lambrecht*

Corn

European corn borer - While surveys have found mostly very light infestations of first generation corn borer this summer, a growing number of moderately infested fields were encountered in the past week. The detection of corn borer hotspots reminds us that some localized heavy infestations are going to develop, even if the overall impact of first generation is expected to be light. Central and west central



corn fields showed light to moderate amounts of first generation corn borer feeding. An estimated 0-31% of the plants in Juneau, Monroe, Richland and Vernon Cos. were infested with

first to third instar larvae. A small number of heavy infestations have also developed in the Central Sands, where corn borer levels were high enough to justify implementing control measures.

Throughout a majority of the state where 1100 GDD50 have been reached, the corn borer treatment window has closed. The window remains open for another two days in the southeast, and about another week in the north central and northeast districts. Scouting for first generation larvae should not be delayed any longer. The shot-hole feeding injury associated with corn borer larvae is highly conspicuous and very easy to assess at this time (see image below). Examine 25 consecutive plants in five separate locations for every 80

acres within a field to accurately assess corn borer levels.

This week's corn borer observations were as follows: Juneau Co. fields had infestations ranging from 0-30%, averaging 16.3%; Monroe Co. fields ranged from 0-28%, averaging 14%; Richland Co. infestations ranged from 0-31% averaging 16.3%; Vernon Co. ranged from 0-19%, averaging 11%.

Corn rootworm - Growers and consultants are urged to initiate scouting efforts for larval injury during the next two weeks, and to watch closely for the emerging adults at the same time. In the very near future menacing corn rootworm beetles will begin to surface from the soil to clip corn silks, feed on foliage, tassels and pollen. In some instances, beetle populations may be high enough prior to pollen shed to disrupt pollination. The yellow and black striped western corn rootworm typically emerges before the pale green northern variant. Northern corn rootworms tend to be silk feeders, while western corn rootworms are more likely to feed on corn foliage. Expect peak larval feeding, and symptoms associated with rootworm feeding, to grow visible between 1300-1700 GDD50.



Western corn rootworm
cropwatch.unl.edu



Northern corn rootworm
Martin E. Rice

Sandhill cranes - Another crane damage report came from a Waushara Co. this week, one in a core group of central and south central counties where 60% of the Wisconsin's crane population resides (the others are in Columbia, Dane, Dodge, Green Lake, Marquette, Green Lake, Jefferson and Winnebago Cos.). Whereas residents in other parts of the state can look to these slender, stately birds with admiration, corn and potato growers in these nine counties bear the brunt of crane damage to field crops and understandably look at the cranes with contempt. Fields located in close proximity to emergent wetlands often sustain substantial economic loss and the expense of having to replant. Sandhill cranes commonly pull newly emerged corn seedlings from the ground, and are especially fond of wheat, barley and potatoes. As long as the development of corn seeds coated with a crane deterrent is still in the works, there is little for frustrated farmers to do to dissuade cranes from their fields.

Eyespot - Growers are urged to be on the lookout for early symptoms of this distinctive leaf disease, particularly in seed corn. Low levels of eyespot were observed in fields from Richland Center to Mauston where plants showed 3-5% levels of infection, primarily in the lower leaves. The small, circular eye-like lesions that appear on the sheaths or ear husks are usually only a surface symptom in grain corn; however, eyespot can cause losses in seed corn production and on rare occasions may need to be controlled with a fungicide application. -- *Krista Lambrecht*



Potato leafhopper nymph
ipmworld.umn.edu

Forages

Potato leafhopper - From Lyndon Station to LaFarge, potato leafhoppers are multiplying at an accelerated rate, thanks to hot, humid conditions. Moderate to high counts are now present in many central and west central alfalfa fields. Nymphs were far more abundant this week compared to last, and some have developed wing pads, an indication that they have reached the third of five nymphal instars. The combined action of the mature migrant leafhoppers and the spry nymph generation means hopperburn may soon become visible in fields with heavy populations. Continue scouting for leafhoppers and hopperburn in third crop hay, and in susceptible crops adjacent to harvested second crop hay fields. When sweeping for leafhoppers, be sure to check closely for the tiny, neon yellow-green nymphs that tend to collect around the rim of sweep nets. Accounting for the one or two adults that managed to escape from sweep nets during sampling, potato leafhopper counts this week were as follows: Juneau Co.: 0.8-2.2 leafhoppers per sweep in 8-14 inch hay; Richland Co.: 0.2-1.8 leafhoppers per sweep in 6-24 inch hay; Vernon Co.: 1.0-2.1 leafhoppers per sweep in 8-24 inch hay. To reiterate, a population in excess of 1.0 adult/nymph per sweep in 6-12 inch hay is considered high; the threshold in 12-14 inch hay is 2.0 adults/nymphs per sweep.

Pea aphid - A quick Google search to find something as straightforward as the threshold for pea aphids in peas turns up a host of differing action thresholds, ranging from 10 to 100 per sweep. In last week's issue, and in previous years, we have recommended a threshold of 35 pea aphids per sweep in peas. Earlier this week, I received a call from Ron Brecker of Seneca Foods in Hancock, who pointed out that the threshold was lowered a few years back to account for virus transmission potential, as pea aphid is an avid vector of a number of serious pea viruses. Ron recalled that after a few bad virus years, the former UW-Extension recommendation of 35 aphids per sweep was re-evaluated and lowered to 10 aphids per sweep.



Pea aphid
K. Lambrecht, WE DDTCP

Not all years are bad virus years, but given the reproductive potential of aphids and considering that even a small number of aphids may transmit a serious amount of virus to peas, the lower action threshold of 10 aphids per sweep in peas seems the more appropriate recommendation. In addition to aphid densities, the growth stage when feeding occurs and environmental conditions that may worsen the effects of aphids should be factored into any management equation. Peas are most susceptible to damage during flowering and early pod development when conditions are hot and dry. When conditions are wet or humid, the fungus *Erynia neoaphidis* often does an acceptable job of keeping aphid populations in check. Sampling should be done when 50-75% of the plants are flowering.

Alfalfa caterpillar - Low numbers of this velvety green forage feeder were present in alfalfa fields this week; larvae were in the mid to late instars. Much like pea aphids, sampling for alfalfa caterpillars in alfalfa fields may be a good indicator of the threat to peas. Alfalfa caterpillars are most troublesome as contaminants in processed peas in their pupal form and as mature larvae. Movement into peas and other crops usually occurs as alfalfa is being harvested.



Alfalfa caterpillar
entm.purdue.edu



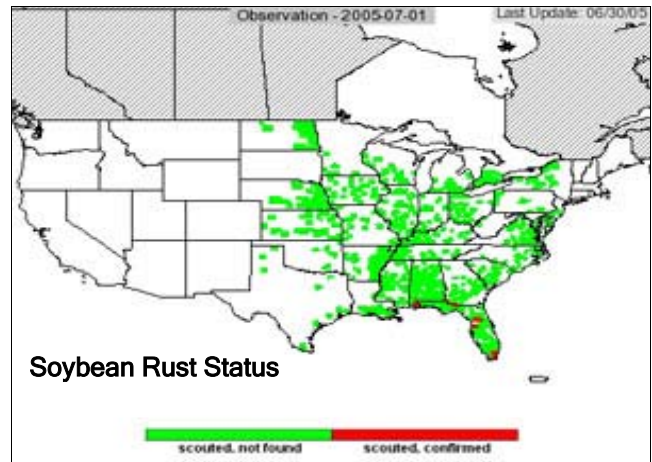
Alfalfa caterpillar adult
mamba.bio.uci.edu

Adult alfalfa caterpillar butterflies are sulfur-yellow in color with black wing margins (see image below). The larvae, as described above, are velvety green with a fine longitudinal white stripe. The pupal stages require five-to-seven days to complete, thus it is critical to monitor fields for several weeks prior to harvest. Insecticidal treatments in peas should be timed to target early instar caterpillars. If treatments are mistimed and applied when caterpillars are pupating, heavy contamination may occur as the dead pupae may remain on the plants during harvest. The action threshold for alfalfa caterpillar in peas is one larvae per 25 sweeps when peas are 15 days from harvest. -- *Krista Lambrecht*

Soybeans

Soybean rust - After a period of little activity, soybean rust appeared to be on the move in the last week. Confirmed finds this week included a soybean sentinel plot in Alabama, another sentinel plot in Florida, and a site with volunteer soybeans in Georgia. Intensive scouting continues throughout the southeastern part of the nation. More information is available at <http://www.sbrusa.net/>

Soybean aphid - Despite making an early appearance this season, soybean aphid densities seem to be holding steady at below-threshold levels for the time being. Survey specialists visited 62 fields in thirteen counties in the past week and found wide-ranging, but mostly low, densities of aphids. No fields with average densities exceeding the threshold of 250 aphids per plant were encountered.



According to UW Extension Entomologist Eileen Cullen's recent article titled ***Soybean Aphids and High Temperatures***, elevated temperatures may have had something to do with the pause in population growth. Recent research from the University of Minnesota has demonstrated that soybean aphid population growth slows considerably, aphids live shorter lives, and reproduction may stop altogether when temperatures soar into the 90° F range. In contrast, aphid population growth is expected to reach its maximum at temperatures in the mid-to-upper 70°F range. Eileen notes that the impact of high temperatures on aphid population growth is another variable for growers to be aware of when formulating management decisions. Again, the action threshold is 250 aphids per plant when populations are actively increasing. When temperatures exceed 90°F, we now know that soybean aphid populations probably are not growing.

As plants enter into the early reproductive stages in the week ahead, expect aphid densities to continue to escalate. Five years of surveys in Wisconsin have found that soybean aphid populations typically reach peak levels during the R2-R4 stages of soybean growth. This week's average levels of soybean infestations by county were: Calumet: 70% infestation with 5-31 aphids per infested plant; Columbia: 80% infestation with 6-57 aphids per infested plant; Crawford: 42% infestation with 1-20 aphids per infested plant; Dane: 77% with 4-72 aphids per infested plant; Green: 14% with 0-45 aphids per infested plant; Green Lake: 48% with 3-7 aphids per infested plant; Kewaunee: 65% with 5-77 aphids per infested plant; Manitowoc: 19% with 2-8 aphids per infested plant; Marquette: 84% with 6-36 aphids per infested plant; Monroe: soybean aphids in the area are somewhere between 1-15 per plant on every fourth or fifth plant at this time (from Bill Halfman); Richland: 70% with 5-65 aphids per infested plant; Sauk: 82% with 8-14 aphids per infested plant; Sheboygan: 74% with 3-14 aphids per infested plant; Waushara: 39% with 1-9 aphids per infested plant.

(*Wisconsin Crop Manager* Vol. 12, No. 16, June 23, 2005. [***Soybean Aphids and High Temperatures***](#). Eileen Cullen, Extension Entomologist.)

Vegetables

Cabbage looper - Observations indicate that the current life stage of the cabbage looper depends on the region. Last week early instar larvae were found in both Ozaukee and

Monroe Cos. In southern and central Wisconsin, no larvae were found on plantings in Rock, Waushara, or Dane Co. this week. In east-central Wisconsin, pheromone trap counts suggest that egg laying began last week. Eggs hatch in 4-6 days, so larvae probably began feeding this week. Growers should scout cole crops for early instar larvae. See the [UW-Extension Vegetable Crop Scouting manual](#) for more information.

Imported cabbageworm - Egg laying and larval feeding continues in all parts of southern Wisconsin. The whitish-yellow butterflies have been observed nearly everywhere, and reports are coming in of serious ICW damage to cole crops. A cabbage planting in Vernon County reportedly suffered serious damage in the past week. Retired DATCP Entomologist Lee Lovett reported 1.5 moths per plant in his garden on Sunday, and up to 12 eggs per leaf on Monday, and by Tuesday, 1/4 of the eggs had hatched, and tiny larvae and initial damage were everywhere. Eggs and larvae were found in Rock and Waushara Co. vegetable fields this week, and some varieties of cole crops at West Madison Ag. Research Station had eggs or larvae present on every plant.

Diamondback moth- Larval feeding continues in southern Wisconsin. Larvae and pupae were present on cole crops in Rock and Dane Cos., while none were found on cabbage in Waushara Co.

Thresholds for Imported Cabbageworm, Diamondback, or Cabbage Looper (% plants with eggs or larvae)

Broccoli and Cauliflower

- Seedbed: 10%
- Transplant to first flower or curd: 50%
- First flower or curd to maturity: 10%

Cabbage

- Seedbed: 10%
- Transplant to cupping: 30%
- Cupping to early heading: 20%
- Early heading to mature head: 10%

Western corn rootworm in cabbage - Recently, a grower commented that rotation of cabbage with sweet corn resulted in a severe infestation of corn rootworm larvae in the cabbage. Is this possible? Yes. Since the 1990's, a variant of the western corn rootworm has been surprising growers and researchers with its peculiar behavior. According to an article from Illinois IPM Publication [The Bulletin](#) (August 2001 No.21), an aggressive strain of western corn rootworm plagued central and northern Illinois vegetable growers that summer, even in urban gardens. The unlikely host plants included ash trees, ornamental cherry trees, roses,



Western corn rootworm
University of Kentucky

marigolds, beets, broccoli, cabbage, black and red raspberries, pumpkins, winter and summer squash, cucumber, spinach, snap beans, redroot pigweed, and velvetleaf. In addition to increasing their host range to include vegetables, western corn rootworm variants have also

evolved a new egg-laying adaptation. For the last decade, the variant western corn rootworm has managed to outsmart the corn-soybean rotation by laying eggs in soybean fields. The eggs survive the rotation by entering a period of extended diapause and delaying hatch until two years after they are laid. The result is economic root damage to corn despite the rotation and a management strategy that is no longer effective way to avoid rootworm problems, at least in areas where the variant is known to occur. If any vegetable growers observe western corn rootworm damage this season, please report it by calling the Pest Survey Hotline at 1-800-462-2803.

Tarnished plant bug - Tarnished plant bugs were observed this week in Dane Co. As predicted by Ed Grafius of Michigan State in last week's Pest Bulletin, tarnished plant



Tarnished plant bug
www.garden.org

bugs are moving out of harvested alfalfa fields and into vegetable crops. Damage to vegetables includes tissue damage and flower drop. Tarnished plant bugs are usually gone by the time damage is observed, so scout now for this pest.

Squash Bug - The squash bug has become a serious problem in Wisconsin in recent years and the importance of this pest continues to increase each year. They are capable of feeding on all vine crops, but are particularly fond of pumpkins and squash. Squash bugs feed on the sap of the plant and inadvertently inject a toxin in their saliva that causes the plant to suddenly wilt; this is called "anasa wilt." In addition, adult or nymph feeding on developing fruit will cause damage and render it unmarketable. At this time, conventional growers can optimize their time and expense by mixing up a tank of Asana XL (esfenvalerate) and treating pumpkins and squash every 5-7 days for a total of 2-3 applications during the 3 week egg-laying period of the SVB. If squash bugs continue to be a problem after that, continue the spray program, but don't exceed 0.25 lb ai/A/season. For more information on squash bugs see [UW-Extension Garden Facts Publication A3755-E Squash Bug](#). -Karen Delahaut, UW Fresh Market Vegetable Coordinator

Cabbage maggot - Second generation flies emerge at 1476 DD43. According to the [Wisconsin-Minnesota Degree Day Calculator](#), this event occurred in La Crosse Co. on June 23, Dane Co. on June 24, Waushara Co. on June 29, Racine Co. on June 30. Through Thursday, June 30, Outagamie Co. has accumulated 1329 DD43, and Marathon Co. has accumulated 1306 DD43. If the current weather conditions hold, most regions will continue to accumulate 25-30 DD43 accumulate per day, placing this cabbage maggot event as soon as July 6 in Outagamie Co., and on July 7 in Marathon Co.

Onion maggot - Second generation flies emerge at 1950 DD40. This event has already occurred in La Crosse and Madison. Through Thursday, June 30, Racine has accumulated 1740 GDD40, Hancock has 1810 GDD40, and Green Bay has 1232 GDD40, and Wausau has 1610 DD40.

Most areas accumulate 30-35 DD40 per day. Like the cabbage maggot, the first generation is usually more damaging than the second. Growers can place yellow dishpans filled with soapy water along field edges to monitor the increasing population of this onion pest.

Corn earworm - Moth activity remains light. Eight moths were caught in a pheromone trap in Racine Co., one moth in Dane Co., and no moths in Vernon Co. Two moths were caught in the black light trap at East Troy, and one at Marshfield. Sweet corn, tomatoes, lettuce, peppers and beans all are hosts. -- *Rachel Klein-Koth*

Cabbage Looper Pheromone Trap Counts				
Location		6/9-6/16	6/16-6/23	6/23-6/30
Southwest				
Grant	Lancaster		0	2
Lafayette	South Wayne	1	0	0
	Shullsburg	0	3	1
	Benton	0	3	1
Sauk	North Freedom			
South Central				
Dane	Madison	0	0	0
Green	Juda	0	1	
	Monroe	0	2	0
Rock	Orphardville	0	1	1
	Janesville	0	0	0
Columbia	Arlington			
Southeast				
Walworth	Lake Geneva	0	0	5
	Delavan	0	1	1
	East Troy			
Kenosha	Paddock Lake	0	0	1
Racine	Franksville			
West Central				
Vernon	Viroqua 1			
	Viroqua 2		0	1
Central				
Waushara	Hancock			
Green Lake	Princeton	0	2	0
	Green Lake	2	1	0
Waupaca	Waupaca	0	4	2
East Central				
Fond du lac	Rosendale	0	1	4
	Fond du lac	0	7	trap down
Sheboygan	Greenbush	0	1	0
	Kohler	1	0	3
	Northport	0	6	3
Outagamie	Stevensville	1	2	1
	Little Rapids	0	5	1

• A blank cell indicates no count was reported.

Fruit

Apple maggot - The first apple maggot flies of the season were trapped on red balls in orchards near Gays Mills (Crawford Co.) and Hixton (Jackson Co.) this week. The Gays Mills emergence was likely prompted by the 2.5 inches of rain that fell in recent days. Elsewhere, an increase in emergence could occur in the week ahead wherever the right amount of precipitation is received. Control measures for apple maggots should target flies before females have the opportunity to deposit eggs, and are warranted when five apple maggot flies are trapped per red ball.

Spotted tentiform leafminer - This week's trap counts indicate the second flight of moths, which began more than two weeks ago, has peaked in south central and southwest

orchards. The highest capture of the week, 1350 moths, was reported at Gays Mills. The second flight is expected to peak in other regions of the state once 1150 GDD50 are reached. As a reminder, the time to initiate scouting efforts to look for sap feeder mines is approximately one week after a peak flight has taken place. Be sure to examine the undersides of leaves for sap feeder larvae and count only active mines. For second generation STLM the threshold is one mine per leaf. In Wisconsin there are three STLM flights each season. Expect the third and final flight to get underway between 1479-1523 GDD50, which could occur near Beloit by July 13, Madison by July 14, Racine by July 21 and Hancock by July 18.

Control Options for Second Generation STLM Mines:

- **Option 1:** Apply a larvicide 10 days after peak flight or three days after appearance of sap-feeding mines (treat before larvae change to tissue feeders)
- **Option 2:** Do nothing until sap-feeding mines are counted (in some cases, control of first generations will result in season-long control). If an average of one mine per leaf is found, treat as in option 1.

(Control recommendations from UW-Extension Publication A3211, **Spotted Tentiform Leafminer A Pest of WI Orchards** by D.L. Mahr and N.C. Ravdin)

Obliquebanded leafroller - A very small amount of egg hatch was detected in southwestern orchards in the past week. John Aue, Orchard IPM Specialist, noted that this event should have begun more than a week ago in southern Wisconsin, but there may have been some egg mortality due to the extreme heat. John said the easiest place to look for newly hatched OBLR larvae is in the terminals. This, of course, is only applicable in orchards where trees have not already set terminals; once the terminals are set, early instar larvae move into developing fruit which makes scouting for larval hatch difficult. As a reminder, pheromone trap counts do not indicate when to spray. The peak capture of OBLR moths only suggests when to initiate scouting efforts for early instar larvae. No action thresholds have been developed for OBLR, but treatment may be justified when an average of three or more larvae per tree are detected.

Codling moth - Lower traps counts this week suggest most orchards are currently in between moth flights. According to the codling moth degree day model, the second flight of moths should be in progress (anytime between 873-1296 GDD50). It appears this flight is off to a slow start, perhaps because of exceptionally high temperatures over the past few weeks. Nonetheless, now is an ideal time to examine fruits for scab and codling moth stings or entry holes, especially as moth activity picks up in the days ahead. Peak flight is expected to occur in approximately two weeks at advanced southern sites, once 1577 GDD50 have accumulated.

Apple scab - John Aue observed that in southwestern Wisconsin orchards fruits are exhibiting minimal amounts of scab symptoms from the primary scab season, and much scab seems to be dormant at this time. The most obvious explanation for light scab conditions is the lack of precipitation. John also commented that although it is risky to stretch out fungicide applications, if no rain is received and

orchard conditions are dry, stretching out applications may be acceptable until conditions are suitable for scab formation.

Fire blight - Symptoms have begun to develop in southwestern orchards within the last two weeks, particularly where previous hail damage has open up bark wounds. In most orchards trees are close to setting terminals or have already set terminals, so the progression of blight may not be as dramatic this season.

Forest and Landscape

Hosta virus X - Inspectors continue to find increasing amounts of this virus throughout the state. Most of the infected plants can be traced back to the Netherlands. This week, positive confirmation was established on 'Gold Edger', 'Night Before Christmas', 'Sum and Substance', 'Striptease', 'Geisha', 'Albopicta', 'Opipara', 'Scooters' and 'Chinese Sunrise.' 'Night Before Christmas' was asymptomatic and was sent in to be tested for foliar nematode, but the Plant Industry Lab tested for hosta virus X as well.

Cedar apple rust - Moderate amounts were observed on Winesap and Red Delicious apple trees at a nursery dealer in Chippewa Co.

Venturia shoot tip blight - Poplar at a Fond du Lac Co. grower were heavily infected with this fungal disease.

Septoria leaf spot - Variegated dogwood leaves had light amounts of this fungus at a nursery dealer in Chippewa Co.

Guignardia leaf blotch - *Aesculus parviflora* 'Rogers' had light to moderate amounts of the fungal leaf pathogen at a nursery in Rock Co. while light amounts were observed on horsechestnut at a nursery in Fond du Lac Co.

Aster yellows - This phytoplasma disease was found infecting many purple coneflowers at a nursery in Dane Co.

Xanthomonas leaf blight - Geraniums at a Marquette Co. grower had widespread, moderate amounts of this disease infecting leaves.

Leaf streak - This daylily disease was found at several nursery dealers in Milwaukee Co. at light to moderate levels.

Thrips - Adults and nymphs were observed on the undersides of assorted apple leaves, feeding in moderate amounts at a nursery dealer in Chippewa Co. and a nursery grower in Douglas Co. Thrips were also observed in light amounts on Rudbeckia 'Goldstrum' at a nursery grower in Rock Co.

Spiny witch hazel aphid - River birch at a Fond du Lac Co. grower and white birch at a Door Co. grower had light to moderate amounts of this pest. These aphids cause birch leaves to become crinkled in appearance, and can be found in groups feeding on the undersides of leaves.

Two-spotted spider mite - Moderate amounts were observed on 'Little Grapette' daylily, blue indigo, Echinacea, penstemon and spikenard at nursery growers and dealers in Chippewa, Marquette, Pierce, Rock and Winnebago Cos.

Ash flower gall - A Fond du Lac Co. grower had moderate amounts of this pest in Leprechaun ash.

Ash leaf curl aphid - Heavy amounts of this aphid were found feeding on Leprechaun ash at a Fond du Lac Co. grower.

Downy mildew - This fungal pathogen was observed on spotted cranesbill geranium in moderate amounts at a nursery grower in Pierce Co. The optimal temperature for downy mildew on a many crops is approximately 45 - 70F. Humidity usually has to reach 85% or higher to favor sporulation and disease development. The infection to sporulation cycle can be as short as 4 days but is usually longer - around 7-10 days. Downy mildew of geranium is caused by *Peronospora gerani* or *Peronospora conglomerata* and appears as white to purplish-gray "down" on leaf undersides when they sporulate. On pansy and snapdragon the color is purple while on alyssum and stock sporulation is white and looks as though the plants were sprinkled with sugar. If downy mildew is an annual problem, preventative fungicide applications will be needed to keep it in check.

Lacebug - Feeding damage from this insect was observed in light to moderate amounts on leaves of Solidago plants in Marquette Co. Feeding by the piercing, sucking mouthparts on the underside of leaves causes yellowing of the leaves. Adult and nymphal lacebugs can be found on the undersides of leaves.

Bristly rose slug - Larvae were observed feeding on the undersides of Champlain shrub roses at a nursery dealer in Chippewa Co.

Viburnum shoot tip sawfly - A Fond du Lac Co. nursery grower had damage in moderate amounts in Nannyberry viburnum.

Spruce needle miner (*Endothenia* spp.) - This insect was observed infesting Black Hills Spruce in heavy amounts at a nursery grower in Douglas Co. The lower third of some trees were noticeably blotchy with browned needles. The spruce needleminer prefers a dry growing environment which we have had so far this season.

A new spruce needleminer - *Batrachedra pinicolella* (Zeller, 1839), a Palearctic needleminer of spruce (*Picea* spp.), was discovered for the first time in North America in Litchfield, New Haven and Tolland Cos. of Connecticut. Besides spruce, this Lepidopteran pest also attacks fir trees (*Abies* spp.) and on rare occasions can be found on pines (*Pinus* spp.). Widely spread throughout Europe and occurring in eastern Russia, larval *B. pinicolella* will mine needles of spruce trees causing needle loss and discoloration.

For more information on *Batrachedra pinicolella*, please see these publications:

Bolov, A. P. and S. Yu. Sinev. 1990. *Batrachedra pinicolella* Dup. (Lepidoptera, Batrachedridae) A pest of conifers in Kabardino-Balkaria. Entomological Review 69:16-20.

Maier, C. T. 2005. First North American records of *Batrachedra pinicolella* (Lepidoptera: Batrachedridae), a Palearctic needleminer of spruces. Can. Entomol. 137:188-191.

Gypsy Moth

GYPSY MOTH PROGRAM - As of June 29, trappers have set 29,198 (77%) of the expected total number of traps. Thirty-four counties have been completed and most will be complete by July 8. Many trappers are finishing up their regular grid traps and working on delimitation traps. Trap setting will continue for one or two more weeks. Gypsy moth larvae are starting to pupate this week. This part of the life cycle lasts approximately 10 days. We expect moth flight to begin in the south around July 15.

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/>

6/29/2005 COUNTY	Total Traps Expected	# of Traps Set	% Complete	Counties Complete
Adams	157	157	100%	X
Ashland	1186	785	66%	
Barron	918	820	89%	
Bayfield	2053	1544	75%	
Brown	78	78	100%	X
Buffalo	748	629	84%	X
Burnett	840	826	98%	X
Calumet	30	30	100%	X
Chippewa	1070	637	60%	
Clark	1829	1527	83%	
Columbia	195	67	34%	
Crawford	771	537	70%	
Dane	325	316	97%	X
Dodge	100	99	99%	X
Door	47	47	100%	X
Douglas	1397	1176	84%	
Dunn	956	676	71%	
Eau Claire	1354	1118	83%	
Florence	62	62	100%	X
Fond Du Lac	82	63	77%	
Forest	112	112	100%	X
Grant	1386	1018	73%	
Green	625	271	43%	
Green Lake	43	43	100%	X
Iowa	1324	608	46%	
Iron	830	443	53%	
Jackson	1718	1326	77%	
Jefferson	64	64	100%	X
Juneau	199	167	84%	
Kenosha	31	31	100%	X
Kewaunee	35	35	100%	X
LaCrosse	589	442	75%	
Lafayette	751	555	74%	
Langlade	95	45	47%	
Lincoln	225	168	75%	
Manitowoc	68	68	100%	X
Marathon	396	395	100%	X
Marquette	164	164	100%	X
Menominee	60	60	100%	X
Menominee	40	0	0%	
Milwaukee	49	49	100%	X
Monroe	1372	1026	75%	
Oconto	112	48	43%	
Oneida	309	301	97%	X
Outagamie	72	72	100%	X
Ozaukee	28	28	100%	X
Pepin	243	243	100%	X
Pierce	609	516	85%	
Polk	934	911	98%	
Portage	98	98	100%	X
Price	1476	1046	71%	
Racine	39	39	100%	X
Richland	694	442	64%	
Rock	250	234	94%	X
Rusk	969	876	90%	
St. Croix	736	614	83%	
Sauk	756	474	63%	
Sawyer	1300	1052	81%	
Shawano	100	100	100%	X
Sheboygan	61	61	100%	X
Taylor	1291	1121	87%	
Trempealeau	753	671	89%	
Vernon	1174	516	44%	
Vilas	217	211	97%	
Walworth	64	64	100%	X
Washburn	843	758	90%	
Washington	48	48	100%	X
Waukesha	64	64	100%	X
Waupaca	84	84	100%	X
Waushara	72	72	100%	X
Winnebago	51	51	100%	X
Wood	204	99	49%	
TOTALS	38024	29198	77%	34

UW Plant Disease Diagnostics Clinic

CROP	DISEASE/DISORDER	PATHOGEN	COUNTY
FIELD			
Corn	Anthraxnose	<i>Colletotrichum graminicola</i>	Iowa
	Yellow Leaf Spot	<i>Phyllosticta maydis</i>	Waukesha
	Herbicide Damage (Post Plus)	Chemical Injury	Walworth
Soybean	Root Rot	<i>Fythyum</i> sp.	Outagamie
	Chlorosis	Nutritional Disorder	Sauk
Wheat	Powdery Mildew	<i>Oidium</i> sp.	Dane
VEGETABLE			
Beet	Fertilizer Burn	Chemical Injury	Waushara
	Growth Regulator/Herbicide Injury	Chemical Injury	Waushara
FRUIT			
Apple (Including Cortland, Honeycrisp)	Root Rot	<i>Fusarium</i> sp.	Door
	Root Rot	<i>Fusarium</i> sp., <i>Phytophthora</i> sp.	Door
	Winter Injury	Physiological	Door
Cranberry	Rhizoctonia Root Rot	<i>Rhizoctonia solani</i>	Monroe
	Drought Stress	Physiological	Monroe
Raspberry	Cane Blight	<i>Coniothyrium fuckelii</i>	Portage
	Anthraxnose	<i>Sphaceloma necator</i>	Portage
Watermelon	Scab	<i>Cladosporium</i> sp.	Dodge
EVERGREEN			
Arborvitae	Root Rot	<i>Phytophthora</i> sp.	Dane
	Winter Kill	Physiological disorder	Dane
Fir (Including Balsam)	Macrophoma Needle Blight	<i>Macrophoma</i> sp.	Oneida
	Water Stress	Physiological	Oneida
Pine (Including Austrian)	Sooty Mold	Misc. fungi	Waukesha
Spruce (Including Blue)	Rhizosphaera Needle Cast	<i>Rhizosphaera kalkhoffii</i>	Dane
	Transplant Shock	Physiological	Brown
Yew	Root Rot	<i>Fythyum</i> sp.	Dane
HERBACEOUS ORNAMENTAL			
Clematis	Phyllosticta Leaf Spot	<i>Phyllosticta</i> sp.	Dane
	Chlorosis	Nutritional Disorder	Dane
Delphinium	Powdery Mildew	<i>Oidium</i> sp.	Brown
	Root Rot	<i>Fythyum</i> sp.	Brown
Hosta	Alternaria Leaf Spot	<i>Alternaria</i> sp.	Dane
	Sunburn	Physiological	Dane
WOODY ORNAMENTAL			
Birch	Phomopsis Canker	<i>Phomopsis</i> sp.	Dane
	Chlorosis	Nutritional Disorder	Dane, Milwaukee
	Water Stress	Physiological	Dane, Milwaukee
Crabapple	Scab	<i>Venturia inaequalis</i>	Green Lake
Elm	Dutch Elm Disease	<i>Ophiostoma ulmi</i>	Dane, Ozaukee
Hackberry	Growth Regulator Herbicide Damage	Chemical Injury	Walworth
	Tatters	Physiological	Walworth
Hickory	Anthraxnose	<i>Asteroma</i> sp.	Waukesha
	Downy Leaf Spot	<i>Microstroma juglandis</i>	Waukesha
Hydrangea (Including Annabelle)	Tatters	Physiological	Dane
Lilac	Growth Regulator Herbicide Damage	Chemical	Sauk, Walworth
Maple (Including Japanese, Norway, Red)	Anthraxnose	<i>Gloeosporium</i> sp.	Dane
	Phomopsis Canker	<i>Phomopsis</i> sp.	Dane
	Chlorosis	Nutritional Disorder	La Crosse
	Root Rot	<i>Fythyum</i> sp.	Outagamie
	Root Rot	<i>Phytophthora</i> sp.	La Crosse
	Water Stress	Physiological	Columbia
	Winter Kill	Physiological	Dane
Oak (Including Bur, Red)	Anthraxnose	<i>Gloeosporium</i> sp.	Dane, La Crosse, Outagamie, Rush
	Armillaria Root Rot	<i>Armillaria</i> sp.	Jefferson
	Oak Leaf Blister	<i>Taphrina caerulescens</i>	Rusk
	Oak Wilt	<i>Ceratocystis fagacearum</i>	Dane, Marathon
	Tubakia Leaf Spot	<i>Tubakia</i> sp.	La Crosse, Outagamie
	Root Rot	<i>Phytophthora</i> sp.	Jefferson
	Root Rot	<i>Fythyum</i> sp.	Outagamie
Pear	Sphaeropsis Canker	<i>Sphaeropsis</i> sp.	Outagamie
	Tatters	Physiological disorder	Dane
	Phyllosticta Leaf Spot	<i>Phyllosticta</i> sp.	Portage
Rose	Chemical Injury	Chemical Injury	Portage
	Phomopsis Canker	<i>Phomopsis</i> sp.	Brown
	Root/Crown Rot	<i>Phytophthora</i> sp.	Brown
Silver Bells	Nitrogen Deficiency	Nutritional Disorder	Rock
	Phomopsis Canker	<i>Phomopsis</i> sp.	Dane
Snowberry	Frost Injury	Physiological	Rock
Viburnum	Pseudomonas Leaf Spot	<i>Pseudomonas</i> sp.	Crawford

For additional information on plant diseases and their control, visit the PDCC website at:
www.plantpath.wisc.edu/pdcc

Apple Insect Trapping Results

	Date	STLM	RBLR	CM	OBLR	AM red ball	PC
Crawford Co.							
Gays Mills-E2	6/20-6/26	20	0	2	0	0	
Gay Mills-W2	6/23-6/30	1350	44	6	1	3	
Iowa Co.							
Dodgeville	6/23-6/30	95	13	0	0	0	
Richland Co.							
Hilpoint	6/22-6/28	310	16	1.5	0	0	
Richland Center - E	6/23-6/30	850	51	4	0	0	
Richland Center -W	6/23-6/30	500	31	1	1	0	
Richland Co.							
Baraboo	6/23-6/30	126	30	0	3	0	
Dane Co.							
Deerfield	6/21-6/29	245	20	6	2	0	
West Madison	6/23-6/30	41	60	11	10	0	
Green Co.							
Brodhead	6/23-6/30	2	8	0	3	0	
Dodge Co.							
Brownsville	6/23-6/30	28	6	1	2	0	
Racine Co.							
Raymond	6/23-6/30	552	31	10	14	0	
Rochester	6/24-6/30	238	94	7	4.5	0	0
Ozaukee Co.							
Mequon	6/21-6/27	200	0	0.1	2.5	0	0
Waukesha Co.							
New Berlin	6/23-6/30	32	13	7	1	0	
Pierce Co.							
Spring Valley	6/24-7/1	298	4	0.5	0	0	0
Jackson Co.							
Hixton	6/20-6/28	35	0	1	0	1	0
Marquette Co.							
Montello	6/22-6/28	304	18	2	0	0	0
Brown Co.							
Oneida	6/20-6/27	10	0	0	0	0	0
Sheboygan Co.							
Plymouth	6/24-7/1	650	0	15	15	0	
Fond du Lac Co.							
Campbellsport	6/23-6/30	300	8				
Malone	6/23-6/30	14	5	1	4	0	
Rosendale	6/23-6/30	43	11	2	1	0	0
	6/16-6/23	73	12	2	3		
Marinette Co.							
Wausaukee	6/24-7/1	132	0	1	3	0	0

Web Site of the Week

Wisconsin Crop Weather

<http://www.nass.usda.gov/wi/cropweather/cwcurr.pdf>

Weather and crop reports from around the state every Wednesday in season--this is *the* source for soil moisture and crop conditions.

Quote of the Week

Well, Doctor, what have we got?
A Republic or a Monarchy?

A Republic, if you can keep it.

*Reply attributed to Benjamin Franklin (1706-1790)
at the close of the Constitutional Convention*

July 1, 2005

