



# Wisconsin Pest Bulletin

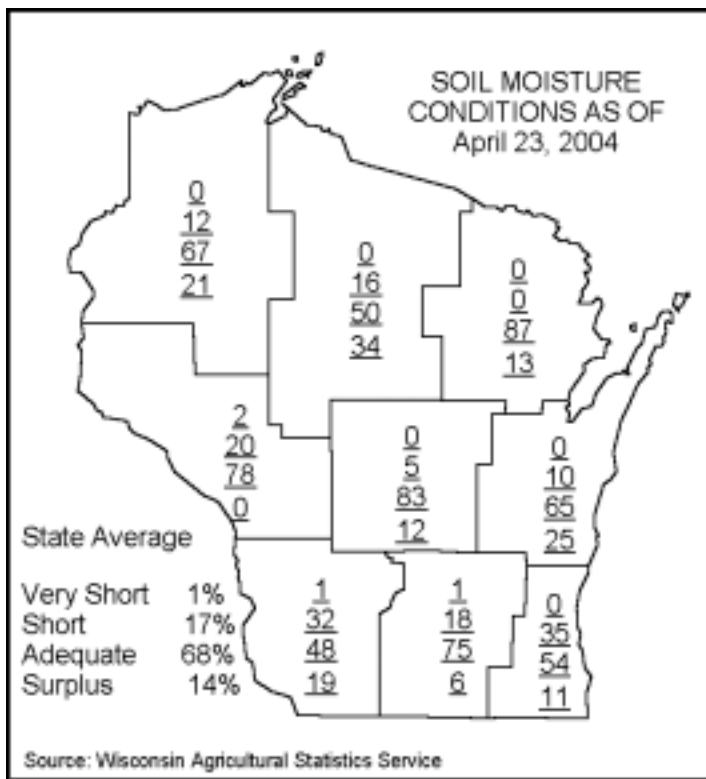
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Wisconsin Department of Agriculture, Trade & Consumer Protection

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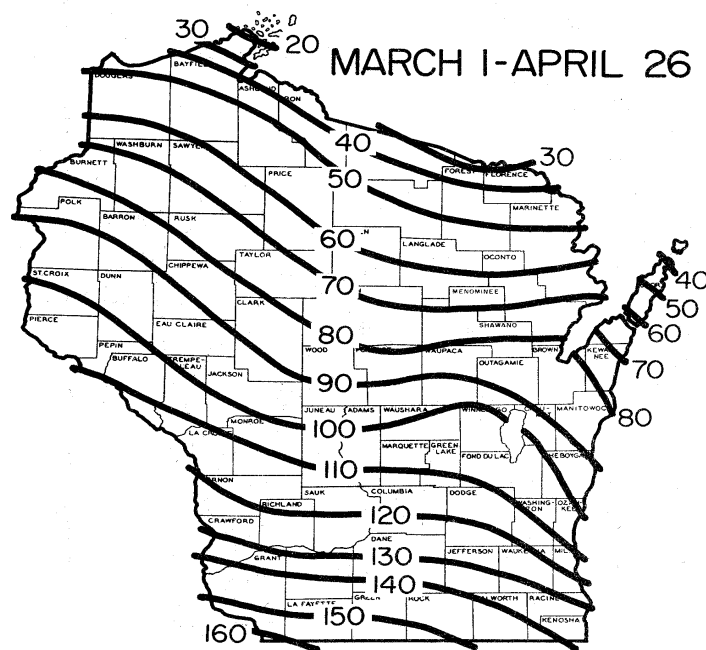
## Weather and Pests

Weather conditions finally improved during the latter part of the week, and the welcome sunlight and warmer temperatures inspired a great response from plants and insects. Unfortunately, conditions are expected to be cool and dismal over the weekend, much as they have been throughout April. While below-normal soil temperatures are slowing corn planting, spring tillage is nearly 50% complete. Winds from the south expected over the week may prove favorable for blowing significant numbers of migrant insect into the state. Insect development and activity is right on schedule. Early-season apple pest

### Growing degree days from March 1 through April 29 were:

Site	GDD*	Base 48	Base 40
<b>SOUTHWEST</b>			
Dubuque, IA	234	227	500
Lone Rock	215	207	466
<b>SOUTHCENTRAL</b>			
Beloit	229	220	486
Madison	197	193	444
Sullivan	210	201	457
Juneau	195	188	435
<b>SOUTHEAST</b>			
Waukesha	197	191	437
Hartford	183	178	414
Racine	182	176	405
Milwaukee	172	165	386
<b>EAST CENTRAL</b>			
Appleton	129	122	315
Green Bay	111	105	287
<b>CENTRAL</b>			
Big Flats	168	159	389
Hancock	151	142	360
Port Edwards	137	125	329
<b>WEST CENTRAL</b>			
LaCrosse	224	210	480
Eau Claire	158	144	356
<b>NORTHWEST</b>			
Cumberland	110	91	265
Bayfield	48	37	165
<b>NORTH CENTRAL</b>			
Wausau	108	94	264
Medford	97	83	240
<b>NORTHEAST</b>			
Crivitz	82	73	223
Crandon	90	77	226

\*GDD above modified base 50° F, with no low temperature below 50° F or above 86° F used in calculation.



Historical Average Growing Degree-Days  
Accumulated Since March 1.  
(Wisconsin Agricultural Statistics Service)

insects are abundant in orchards, and weevil activity is picking up in alfalfa fields.

## ATTENTION APPLE INSECT TRAPPING

**COOPERATORS** - Pheromone traps for both the spotted tentiform leafminer and redbanded leafroller should be in place in the orchard and monitoring insect activity. At this time traps for codling moth (CM) can be set as well. Traps for obliquebanded leafroller (OBLR) traps should be placed within two weeks after petal fall.

Pheromone traps alone will not control pests. Traps will, however, prove helpful later in the season when control decisions will have to be made. Record pheromone trap counts each week and use them to guide scouting activities. For STLTM, begin scouting for leafmines one week after peak moth flight. This event is rapidly approaching throughout southern Wisconsin.

## Alerts

**Giant African Land Snails** - Finds of Giant African Land Snails (*Achatina fulica*, colloquially GALS) continue throughout Wisconsin. GALS may pose a



substantial threat to Wisconsin's environment, due to their broad host range. In addition, the snails may vector several serious human diseases. GALS are large terrestrial snails, with brown shells. The snail body may reach eight inches in length and 4 inches in diameter. DATCP and USDA staff are collecting GALS at homes, schools, pet swaps and pet stores around the state. Owners of GALS are encouraged to contact DATCP at 800-462-2803 for disposal of their snails.

**Sudden Oak Death** find in Southern California nurseries, **Emerald Ash Borer** in Indiana--see *Forest, Shade Tree and Ornamental* section.

## Looking Ahead

*A brief forecast of pest-related events growers can anticipate in the upcoming week*

**Black cutworm** – The first moths of the season arrived

roughly two weeks ago and most areas of the state are now nearing the egg laying period (175-255 DD base 50°F). Pheromone traps will be watched closely during the next few weeks to pinpoint when an intense capture (total of 9+ moths in a two night period) of moths occurs. Once an intense capture of moths is documented, we will calculate degree days to project when developing corn plants will be most susceptible to cutting. See TRAP COUNTS section (pg 8) for weekly black cutworm trap counts.

**Alfalfa weevil** – Light activity was noted in Grant and Green Co. alfalfa fields during the last week. Adults were swept from advanced, south-facing slopes near Sinsinawa and in 12-14" fields near Monroe. Begin scouting for alfalfa weevil damage once 250-300 degree days (base 48°F) have accumulated. Note the base 48°F degree day accumulations in the degree day table on Page 1; these are listed specifically for the alfalfa weevil.

**Pea aphids** – In Wisconsin, nymphs and subsequent adults arise from overwintered eggs. Overwintered eggs are hatching in the south, and both adults and nymphs were active in Green Co. hay fields surveyed early in the week. Counts were low, numbering 0-6/50 sweeps. Aphid levels will likely begin to grow exponentially once the weather conditions grow warmer in the weeks ahead.

**Cowpea aphids** – Look for these black aphids to reappear in Wisconsin alfalfa fields in upcoming weeks. The cowpea aphid is the only black aphid found in alfalfa; thus, it is easily distinguishable from other aphid species. While cowpea aphid in alfalfa is only an occasional pest, it may become problematic in fields under pressure from a combination of other pests such as potato leafhopper or other aphid species. It will be increasingly important to monitor aphid levels later this summer. Because the cowpea aphid has been in Wisconsin for only a short time, since 2002 or 2003, we are interested in determining the distribution of this new aphid species. Any reports from crop scouts and consultants would be greatly appreciated. Cowpea aphid observations should be emailed to [krista.lambrecht@datcp.state.wi.us](mailto:krista.lambrecht@datcp.state.wi.us). Please note the date, county, nearest town and observer.

**Spotted tentiform leafminer** – The first peak flight of the season is right around the corner. Growers can expect trap captures to rise dramatically as growing degree day accumulations approach 150 DD (Base 50°F). Several advanced sites have already surpassed this point, and apple growers at these sites should begin scouting for leafmines in the week ahead. See Spotted Tentiform Leafminer paragraph under the FRUIT heading for scouting tips and the TRAP COUNT section

on pg 8 for a growing degree day model.

**Redbanded leafroller** – Low numbers of moths are beginning to appear in pheromone traps, and degree day accumulations are such that the first peak flight of RBLR should soon occur (106-160 DD base 50°F). See TRAP COUNT section for growing degree day model.

**Codling moth** – Pheromone traps should be placed in the week ahead to capture the earliest emerging moths. Trap catches could occur as soon as next week at advanced sites.

**Plum curculio** – Overall weather conditions this season have not favored plum curculio activity; nonetheless, growers can expect plum curculio beetles to appear in orchards around apple bloom. Most activity occurs during the first warm period after petal fall, when temperatures reach 70°F or higher. New to the Bulletin this season, readers can find plum curculio trap counts in each weekly issue.

## Corn

**Black cutworm** – Degree day accumulations have surpassed the point when the first spring moths are expected to arrive in Wisconsin (20 DD base 50°F). Moths are here and most areas of the state are now nearing the egg laying period (175-255 DD). The first moth captures of the season occurred on April 18, in pheromone traps located near Monroe. Moths are continuing to show up on a daily basis, in traps between Beloit and Cuba City. No significant flights have been observed, but as temperatures rise in the days ahead we can expect to see an increase in activity. Further, southerly winds over the weekend could deliver an influx of black cutworm moths. In the weeks ahead it will be highly important to monitor emerging corn. Weedy fields in particular will be attractive to gravid female moths seeking egg laying sites.

**European corn borer** – Pupation of overwintered larvae begins once 246 degree days (base 50°F) have accumulated. In the southern portion of the state this is fast approaching. The first spring moths will not appear until 374 DD have been reached, an event that generally occurs between May 25 and June 17 in Arlington (Columbia Co.). Based on the low number of 5<sup>th</sup> instar caterpillars detected during last fall's larval abundance survey, growers can anticipate a light first flight of moths.

**Armyworm** – A black light trap at Lancaster Research Station, placed ahead of schedule, is catching early-season, migratory armyworm moths. Six moths were captured between April 16 and 23. Eleven moths were captured between April 24 and April 29.

## Forages

**Alfalfa weevil** – Adults are active in southern Wisconsin alfalfa fields. No early tip feeding injury was observed during this week's survey efforts, but as eggs begin to hatch and as larvae develop and increase in size, pinholes should become evident on leaf terminals. Expect larvae to become more visible in the next two to three weeks. Degree day accumulations in southern Wisconsin indicate egg hatch is at least a week off, depending on how rapidly degree days accumulate. Scouting should commence after the accumulation of 250-300 degree days.

Alfalfa Weevil Event	Degree Days (base 48F)	Location	DD through April 29
Egg hatch	300	Madison	193
1st – 2nd instar	301 - 438	Milwaukee	165
3rd – 4th instar	439 - 595	Racine	176
Pupa - Adult	596 – 810	Green Bay	105
		LaCrosse	210
		Hancock	142
		Wausau	94

### Alfalfa Weevil Thresholds

#### *Before 1st Cutting*

35% (weak stand) plants with feeding damage

40% (vigorous stand) plants with feeding damage and/or 2 live larvae/stem

#### *After 1st Cutting*

8 or more larvae/ft<sup>2</sup>, (6/ft<sup>2</sup> on sandy soil); or larvae are suppressing regrowth

**Pea aphids** – As early as April 23, aphids were found at low rates (<6/50 sweeps) in several southern Wisconsin alfalfa fields. In the week ahead aphid levels are expected to begin to increase substantially. Although DATCP pest survey staff typically scout for pea aphids using sweep nets, the preferred method of assessing abundance is to sample stems and estimate the number of aphids per stem. Randomly select six to ten stems from five separate locations within a field. Shake the stems into a carton or over a tray and calculate the average number of aphids per stem. Handle alfalfa stems carefully as pea aphids readily fall from the plant when disturbed.

**Alfalfa brown root rot** (*Phoma sclerotioides*) – During the past week, 26 alfalfa fields were surveyed in Grant, Lafayette, Green, Rock, Walworth and Racine Cos. in an effort to determine the southernmost range of alfalfa brown root rot in Wisconsin. This relatively new disease of alfalfa is known to affect hay fields across the northern part of the state and has been found as far south as Arlington, but it is still unclear whether it affects southern Wisconsin alfalfa. Survey samples will be processed at the Plant Industry Laboratory in the near



future and results will be available in a mid- to late May edition of the Bulletin.

## Vegetables

**Imported cabbageworm** – Imported cabbageworm (ICW) butterflies will soon begin emerging in southern Wisconsin. These familiar 1 ¾ inch butterflies are white, with one or two black dots on the forewings. The larvae are velvety green with light yellow stripes down the back, and can grow over 1 inch long. At least three generations of imported cabbageworm occur in



Wisconsin. Larvae initially feed on the first formed outer leaves of their host plants. Infested leaves become riddled with irregularly shaped holes. As the caterpillars mature, they move to the center of the plant to feed. Older, mature 5th instar larvae are the most injurious. Imported cabbageworms damage turnip, radish, mustard, and nasturtiums, in addition to the more common cole crops. Scout cole crops weekly for eggs and larva from mid-May through September. ICW rarely becomes an economic pest if controls for the other cole crop Lepidoptera pests (diamondback moth and cabbage looper) are being applied, or if beneficial predators and parasites are present. For cabbage, treatment is recommended when 30% of the plant is infested in the growth stages of transplant to cupping. Treatment is recommended for broccoli and cauliflower if 50% of a plant is infested from transplant to first flower. The most damage is usually caused by the 2nd generation, which occurs around mid-July. Crushing eggs on the underside of the leaves or hand picking can reduce populations of larvae. *Bacillus thuringiensis* (BT) and various other labeled insecticides can be used for control as well. Consult UW-Extension publication A-3422, Commercial Vegetable Production in Wisconsin, available at <http://cecommerce.uwex.edu/pdfs/A3422.PDF>.

## Forest, Shade Trees, Ornamentals and Turf

**Sudden oak death (SOD)** – This fungal disease, caused by *Phytophthora ramorum*, was found in two nurseries in southern California earlier this year, outside the coastal climate of Oregon and BC, and in trade. Only Camellia

plants have been found positive for the disease at the two California nurseries. Lists of stock shipment for the past year were provided to states in order to track down any possibly infected plants. So far, all of the plants we have found in Wisconsin and tested have been negative for sudden oak death. Other states have found infected plants that were either from the California nurseries or associated with plants from those nurseries.

USDA issued an amended Emergency Order restricting movement of nursery stock from California nurseries on April 22.

The amended order prohibits the interstate movement of any listed host nursery stock and associated articles from any commercial nursery in non-quarantined areas of California until the nursery has been inspected and determined by USDA to show no evidence of *P. ramorum* infection. The procedures and protocols for making this determination are detailed in the Order (<http://www.aphis.usda.gov/ppq/ispm/sod>). The Order also adds associated articles to the currently regulated articles in the existing Federal regulation. The April 22 Order will remain in effect until USDA can publish an interim rule in the Federal Register.

*P. ramorum* has been confirmed in plants traced forward from the initially-positive Los Angeles County wholesaler in 62 facilities in 10 states. The numbers of nurseries or garden centers with positive trace-forward samples from the wholesaler by state are California (15), Florida (5), Washington (5), Oregon (9), Georgia (13), Louisiana (4), North Carolina (8), New Mexico (1), Tennessee (2), and Virginia (1). The PPQ Confirmed Nursery Protocol is being implemented in confirmed positive facilities.



In addition to conducting trace-forward surveys, several states have begun SOD surveys in accordance with the national protocol.

The number of states that have promulgated their own regulations to prevent the movement of suspect plants from California remains at 15. Several states are also

regulating plants from Oregon, Washington, or British Columbia. Nationally, 1,232 nurseries or garden centers received material from the initially positive Los Angeles County wholesaler. Seven hundred and ten state and/or federal holds are in place involving 144,794 plants. Over 5,500 samples have been collected from trace-forward nurseries nationwide.

A confirmed positive mail order nursery in San Diego County shipped potentially infected plants to over 6,000 retail customers. A letter from PPQ advising these customers to contact their state departments of agriculture for proper handling of the plants has been mailed.

**Emerald ash borer** – This very destructive pest (*Agrilus planipennis*) of ash trees has now been found in Ohio, Indiana, Maryland and Virginia, in addition to the original detection in Michigan.



An Emerald Ash Borer Science Advisory Panel (SAP) meeting was held in Brighton, Michigan during the week of April 12, 2004. Scientists

met with program managers and were given updates of the continuing program activities in response to the pest in Michigan, Ohio, Maryland, and Virginia. They reviewed the results of field and laboratory research from the previous season and discussed future response to the insect in light of this data. The SAP members continue to support the concept of a Reduced Ash Zone to control the spread of EAB into non-infested areas, and the use of trap trees to assist with determining the leading edge of infestations.

A suspected discovery of an Emerald Ash Borer in northeastern Indiana, at a campground near Fremont, was confirmed by USDA entomologist James Zablotny. On Tuesday, April 20, 2004, four samples were submitted from a damaged ash tree located in Steuben County, approximately 40 miles north of Fort Wayne, Indiana. The samples consisted of a combination of *Podesia* sp. (lilac borer) and *Agrilus planipennis*.

The infestation was discovered by a County Extension Coordinator who was examining ash trees in the Jelly Stone Campground, which is approximately 7 miles from the Pokagon State Park in Steuben County.

State Plant Regulatory Official Robert Waltz indicated that response teams consisting of DNR, Extension, Natural Resources, and the State Dept. of Agriculture will scout ash trees visually, using a bucket truck to examine tree crowns, in order to delimit the infestation. Trap trees will eventually be put in place. Infested trees will be removed before June 1st.

This campground has been posted regarding the ban to remove any firewood. All campgrounds in Indiana will be posted regarding the ban on firewood from Michigan and Ohio. The owners of the site have been very cooperative thus far and have volunteered to assist with the firewood ban.

The Ohio Department of Agriculture completed imidacloprid treatments in the second quarter mile area at the Whitehouse site in Lucas County. These are the second season chemical applications for this area.

On April 16, 2004, the USDA Identifier determined that 4 larvae submitted from a residence in St. Helen, Michigan were Emerald Ash Borer. This collection is the first for Roscommon County.



Removal of ash trees has begun in Saginaw County in the half-mile radius of known positives. Total removals will be approximately 112,000.

Inspectors in Wisconsin have noticed a reduction in the number of ash trees found at nursery dealers so far this year.

**Powdery mildew** – Roses at a nursery dealer in Dane Co. had widespread, moderate amounts of powdery mildew.

## State/Federal Programs

**GYPSY MOTH PROGRAM** - All gypsy moth trappers have been hired for this season. Training for lead workers will occur on May 4th in Mosinee. Training for trappers in the southern part of the state will be on May 17-18 in Madison. Trapper training in the northern part of the state will be on May 19-20 in Hayward. Training will consist of gypsy moth biology and identification,



trap setting procedures, safety, map reading, and GPS use. Trappers will also have field training with their crew and then individual field training with the lead worker. Trappers will have a picture I.D. card, wear an orange or green vest, and have vehicle placards on their car/truck to identify them as employees of the Gypsy Moth Program. Trapping will begin on May 24th. Trap setting will take approximately 4-5 weeks to complete and most traps should be up by July 4th.

Trappers will be setting approximately 32,000 traps statewide. Traps are set to find where gypsy moths are and where they are not. Traps are not used for eradication. Once an area becomes generally infested, such as in the quarantine counties of eastern Wisconsin, it is better to do egg mass surveys on your property to see if you have an infestation. A few traps are set in infested areas to monitor changes in the gypsy moth population, but eventually trapping will stop in quarantine areas.



Two kinds of traps will be used: delta and milk carton. Delta traps are orange or green, have a triangular shape, are about seven inches long and are tied to a tree with string at chest height. These traps can hold about 20 moths before they are considered full and must be replaced. Milk carton traps are green, much larger, look like a milk carton with a “roof” on it and are hung from a low tree branch with string. Milk carton traps can hold about 1000 moths.

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/>

**Gypsy moth quarantine and what it means to the nursery industry--** Gypsy moth is an exotic, destructive insect that was introduced to the US in 1869. It feeds on over 500 species of trees and has caused major damage to forests throughout the northeastern parts of the United



States. This is the first of a series of articles regarding gypsy moth quarantines and how they effect certain industries in Wisconsin. This issue will cover the nursery industry followed by Christmas trees, timber and recreation.

Gypsy moth quarantines have been in place in Wisconsin since 1994. Currently we have 39 counties quarantined. Quarantines are imposed when it is determined that a county has an established population of the moth and there is no possibility of eradication. Quarantine procedures are aimed at preventing the artificial movement of various lifestages of the pest to non-infested areas. A nursery shipping woody plant material out of a quarantine area to an uninfested state is required to have a compliance agreement with the USDA. This agreement lays out the guidelines that are to be followed to ensure the movement of gypsy moth and other invasive species is avoided. In addition to the Federal requirements, it is also recommended that the nursery request a plant health certificate from Wisconsin Department of Agriculture, Trade and Consumer Protection. A plant health certificate may be required by the state receiving nursery stock. DATCP will conduct inspections before issuing a plant health certificate. If no regulated insect or disease is found the certificate will be issued. The certificate does not guarantee that the stock is free of gypsy moth, and it is the shipper's responsibility to make sure the stock is free of gypsy moth lifestages. The cost of a certificate is \$50, and the certificate is good for 12 months.

Nurseries in quarantine areas selling within Wisconsin

but out of the quarantined counties must ensure that the stock being moved is free of gypsy moth. WDATCP offers training in the identification of gypsy moth life stages to industries affected by the quarantine. For more information regarding gypsy moth quarantine call 1-608-224-4588.

## Fruit

**Spotted tentiform leafminer** – The first peak flight of the season occurred in some southern Wisconsin counties this week. Growers in the north can expect trap captures to rise dramatically as growing degree day accumulation near 150 DD (Base 50°F). Many areas are well beyond this point. Egg laying, an event that begins around 75 DD, is also well underway. Scout for leaf mines approximately one week following peak flight of moths. Look for larvae to appear between 209 and 231 DD and leafmines between 329 and 403 DD.

STLM is an indirect pest, damaging apples by mining the foliage. Each mine reduces the leaf's green tissue by approximately 5%. Because of the indirect injury, pheromone trap counts alone should not be used to make control decisions. Instead, control decisions for first generation STLM should be based on sap-feeding mine counts. STLM go through two developmental stages before emerging as moths: sap-feeding and tissue feeding. Sap-feeders are the youngest, very small larvae that pierce plant cells and feed on sap. Sap-feeder mines are visible on the underside of leaves. When scouting for STLM in the week or two ahead, growers should look for sap-feeder mines, visible as light areas on the undersurface of leaves. Later, as larvae mature, tissue-feeder mines will grow visible as a speckled oval on the upper leaf surfaces. Mines remain visible even after the leafminer has emerged; thus, it is very important to examine leaves closely to ensure that mines are still active. Sampling should begin at petal fall. See Extension Publication A3211 Spotted Tentiform Leafminer A Pest of Wisconsin Orchards (<http://cecommerce.uwex.edu/pdfs/A3211.PDF>) for a more detailed sampling procedure and treatment recommendations.

**Redbanded leafroller** – Degree day accumulations are such that the first peak flight of RBLR should soon occur (106-160 DD, base 50°F). The first larvae of the season will follow shortly behind, occurring around 167-228 DD. RBLR larvae skeletonize leaves from the underside, folding and webbing foliage together. When the webbing causes leaves to touch the fruit, the larvae begin to feed on the fruit as well. Larval feeding on fruit appears as shallow, irregular channels. Because redbanded leafrollers have an unusually wide host range, pheromone trap counts are not always indicative of the level of infestation in an orchard. Orchards that have

experienced redbanded leafroller problems in the past may want to control this pest by targeting the early larval instars with an insecticide spray. Pheromone trap captures should be used to determine when to scout for larvae and time sprays.

**Codling moth** – First flight begins once 201 DD (base 50°F) have accumulated. In Madison, this will likely occur sometime early next week. Degree day accumulations in the Beloit and LaCrosse areas have already surpassed this stage.

**Plum curculio** - Plum curculio panel traps should be in place to catch the first active beetles of the season. The critical time to monitor plum curculio activity is during the first few days of warm weather following petal fall, when temperatures remain at 70°F or higher. Early-blooming varieties within an orchard will be targeted as they are the first to offer suitable sites for feeding and egg laying. Expect adults to be present in orchards for 5-7 weeks. While some feeding is likely to occur on petals, buds and blossoms, little injury actually takes place until fruit is available. Eggs are laid singly, in small niches underneath the fruit skin during the first warm days after petal fall. Eggs typically hatch in 7 days, provided temperatures are high enough.

Plum curculio injury can be prevented with insecticide applications timed to prevent adult feeding and egg laying in the fruit. Recommendations for plum curculio are for an insecticide spray applied as early in petal fall as possible, treating on a variety by variety basis if needed. For additional treatment recommendations see <http://www.uwex.edu/ces/wihort/gardenfacts/X1098.pdf>.

**The DATCP apple scab maturity network** is up and running, with information available at <http://www.datcp.state.wi.us/arm/agriculture/crops/apples/cab/applecab.html>. A network of apple growers collect degree day information, which is used to estimate the percent maturity of overwintering ascospores of *Venturia inaequalis*. These spores give rise to the primary scab infection; if apple growers can control the initial infections during spore maturity, they will reduce inoculum for the rest of the season. The critical period for control of primary infection is when the model indicates that between 5-95% of the spores are mature. The web page is updated as data is received, so new information is available almost daily.

## Odds -n- Ends

Reports are being received that both **deer and wood ticks** are now active as far north as Price Co.

## Calendar of Events

**Organic Conference and Trade Show**

May 2-4, 2004  
McCormick Place, Chicago, IL  
[www.atoexpo.org](http://www.atoexpo.org)

### Wisconsin Berry Growers Association Strawberry Festival

Saturday & Sunday, June 26 – 27th, 2004  
8am - 3pm both days, (farm opens for U-Pick at 7am)  
**FREE ADMISSION**  
Kirschbaum's Strawberry Acres, N5802 Hwy 151,  
Beaver Dam, Wisconsin

**The UWEX Master Gardener Program** offers many educational opportunities and workshops. For information on offerings in your area, visit [www.hort.wisc.edu/mastergardener/](http://www.hort.wisc.edu/mastergardener/)

Have an item you'd like us to list in the calendar? Email event particulars to [bulletin@datcp.state.wi.us](mailto:bulletin@datcp.state.wi.us)



Gypsy moth delta trap

## Trap counts and development models

### Black Cutworm Weekly Trap Counts through 4-29-04

Site	County	City	Count
1	Rock	Beloit	1
2	Rock	Newark	1
3	Rock	Avon	1
4	Green	Juda	2
5	Green	Monroe	1
6	Green	Cadiz Springs	2
7	Lafayette	Gratiot	3
8	Lafayette	Shullsburg	0
9	Lafayette	Lead Mine	3
10	Grant	Hazel Green	0
11	Grant	Sinsinawa	0
12	Grant	Dickeyville	3
13	Grant	Cuba City	0
14	Grant	Lancaster	0

Black Cutworm Model		Ave Date
Stage	DD Base 50F	Madison
First moth	20	March 29
Early moth peak	55	April 12
Eggs laid	175-255	May 1
Larvae hatch	310-390	May 17
Damage begins-4th instar	562-640	June 2

### Apple Insect Models

#### Redbanded Leafroller model

RBLR Event	GDD (Base 50F)
1st moth occurs	25 - 78
1st eggs occur	82 - 162
1st peak flight	106 - 160
1st larvae	167 - 228
2nd flight begins	780 - 937

#### Codling Moth Model

CM Event	GDD (Base 50F)
1st flight begins	201 - 340
1st egg hatches	491
1st flight peak	500
Egg hatch 50% complete	713
2nd flight begins	873 - 1296
2nd flight peak	1577

#### Spotted Tentiform Leafminer model

STLM Event	GDD (Base 50F)
1st moth occurs	22 - 70
1st eggs occur	75 - 127
1st peak flight	150
1st larvae	209 - 231
1st leafmines	329 - 403
2nd flight begins	539 - 750



## Apple Insect Trapping Results through April 29

	Date	STLM	RBLR	CM	OBLR
<b>Crawford Co.</b>					
Gays Mills-W2	4/20-4/27	40	15		0
<b>Grant Co.</b>					
Cuba City	4/22-4/29	6	118		
Sinsinawa	4/23-4/29	32	28		
	4/15-4/22	82	67		
<b>Columbia Co.</b>					
Rio	4/22-4/29	257	53		
<b>Dane Co.</b>					
Deerfield	4/19-4/27	650	12	2	4
West Madison	4/15-4/27	20	56		
<b>Dodge Co.</b>					
Brownsville	4/19-4/27	0	1		
<b>Green Co.</b>					
Brodhead	4/22-4/29	7	71		
<b>Kenosha Co.</b>					
Burlington	4/23-4/30	>800	13	4	2
<b>Ozaukee Co.</b>					
Mequon	4/14-4/19	850	18.5		
<b>Racine Co.</b>					
Franksville	4/16-4/22	400	65		
Rochester	4/25-4/30	1135	31	11.4	
	4/17-4/25	1725	79.3	10.2	
<b>Waukesha Co.</b>					
New Berlin	4/16-4/22	200	3		
<b>Jackson Co.</b>					
Hixton	4/17-4/26	0	0		
<b>Pierce Co.</b>					
Beldenville	4/18-4/24	8	0	0	0
Spring Valley	4/23-4/30	0	17		
<b>Trempealeau Co.</b>					
Galesville	4/23-4/30	310	19		
<b>Marquette Co</b>					
Montello	4/18-4/25	481	55	0	0
<b>Fond du Lac Co.</b>					
Campbellsport 1	4/21-4/29	Full	3		
2	4/21-4/29	Full	9		
Campbellsport 1	4/8-4/21	75	1		
2	4/8-4/21	100+	15		
<b>Sheboygan Co.</b>					
Plymouth	4/21-4/28	5	0	0	

## Web Site of the Week

**VegEdge, Vegetable IPM resource for the Midwest**

**<http://vegedge.umn.edu/>**

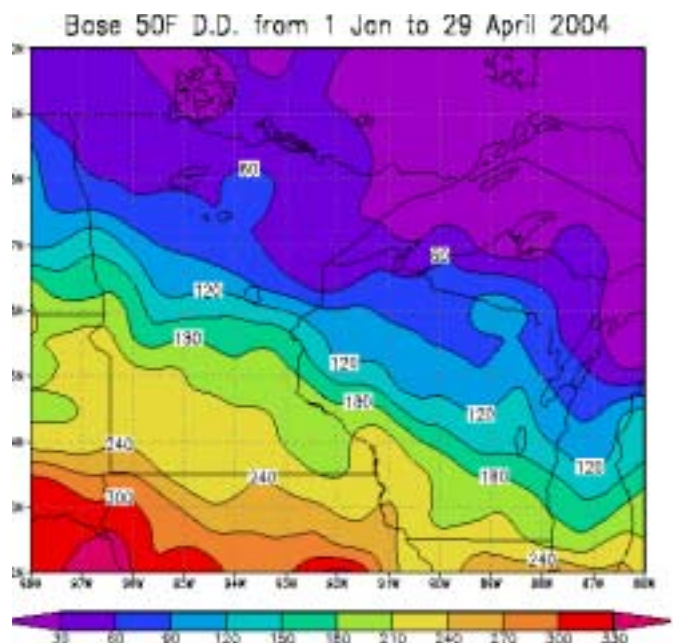
A great resource for vegetable IPM information, including trap catch data and information sheets on a number of veggie pests.

## Quote of the Week

"Whenever I hear of the capture of rare beetles, I feel like an old war-horse at the sound of a trumpet."

Charles Darwin (1809-1882)

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**<http://www.soils.wisc.edu/wimnext/tree/arbor.html>**