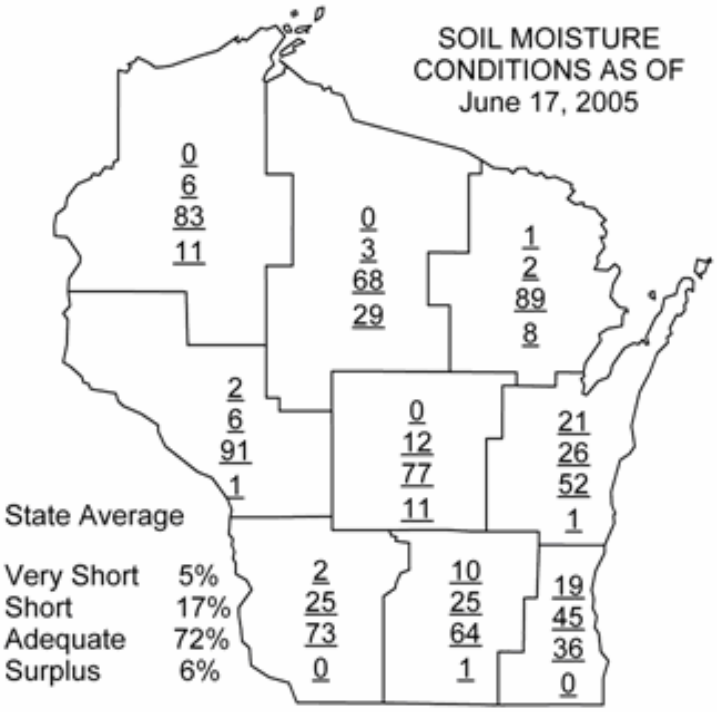
Wisconsin Department of Agriculture, Trade & Consumer Protection

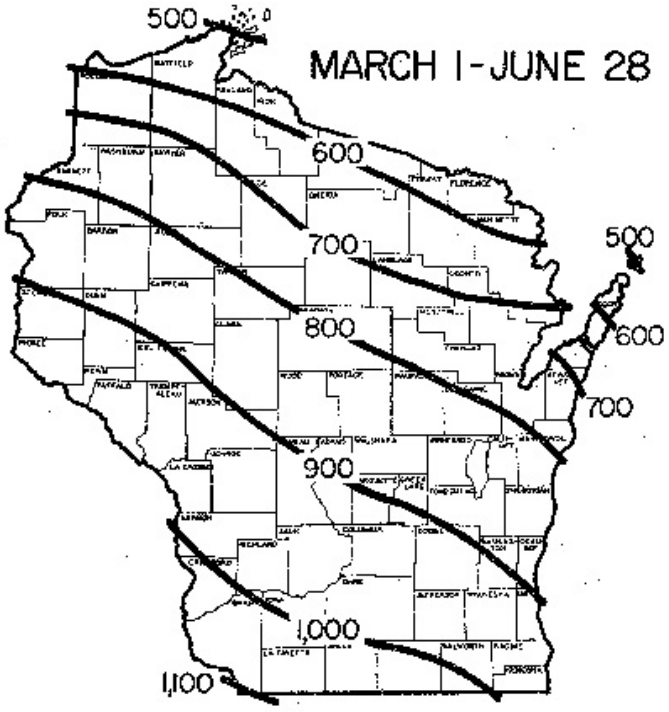
Wisconsin Pest Bulletin

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

Volume 50 Number 11 Date 06/24/2005 http://pestbullletin.gov



Source: Wisconsin Agricultural Statistics Service



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

Weather and Pests

Drought stress has surpassed insects and diseases to become the most important challenge now facing southern Wisconsin field crops. An early June dry spell has worsened into a moderate drought and a good amount of rain is urgently needed to saturate parched fields. In the south, field corn plants have begun to wilt and some soybeans are flowering early. If no rainfall is received in the next week, many early flowers may not set pods. Fields on light, sandy soils appear to be the most severely affected.

Insect populations continue to develop rapidly, although some have not increased as much as might be expected. High temperatures and inadequate moisture levels stress some insects, just as they do plants. On a positive note, most diseases are developing slowly due to lack of rainfall and low relative humidity, and mosquitoes are hardly noticeable.

Growing degree days from March 1 through June 23 were:

Site	GDD*	2004 GDD	Base 48	Base 40
SOUTHWEST				
Dubuque, IA	1018	1012	1022	1759
Lone Rock	973	917	982	1676
SOUTH CENTRAL				
Beloit	1003	982	1006	1717
Madison	979	879	986	1693
Sullivan	989	898	963	1694
Juneau	968	854	949	1671
SOUTHEAST				
Waukesha	908	839	899	1593
Hartford	898	798	895	1583
Racine	811	761	844	1478
Milwaukee	802	730	812	1469
EAST CENTRAL				
Appleton	828	639	858	1466
Green Bay	740	572	775	1371
CENTRAL				
Big Flats	931	765	928	1599
Hancock	908	726	906	1567
Port Edwards	878	678	894	1518
WEST CENTRAL				
LaCrosse	1003	908	1008	1731
Eau Claire	922	730	969	1604
NORTHWEST				
Cumberland	778	549	806	1406
Bayfield	515	384	514	1053
NORTH CENTRAL				
Wausau	789	584	803	1387
Medford	758	544	782	1359
NORTHEAST				
Crivitz	699	507	718	1304
Crandon	716	506	712	1276

Looking Ahead

Potato leafhopper - Alfalfa growers should be on high alert in the week ahead as potato leafhopper pressure intensifies. Moderate to high counts were present in fields surveyed from Helenville (Jefferson Co.) to Gresham (Shawano Co.). Given the current hot, dry conditions, it is quite probable for damaging populations of adults and nymphs to develop in early third growth alfalfa, as well as in other crops such as snap beans.

Corn rootworm - Larvae are certain to be developing rapidly under present conditions. Based on degree day accumulations, an estimated 50% larval hatch has transpired as far north as Wausau (684-767 GDD50). Expect evidence of larval injury to roots to grow noticeable during the first two weeks of July. If the heat persists, the first adult of the season could emerge earlier than normal, perhaps prior to July 4 in the southernmost counties.

Stalk borer - Field observations suggest that this species may be slightly more numerous than normal this season. Evidence of larval activity was noted in all Jefferson, Dane and Dodge Co. fields where one to nine of 50 border row plants were affected. In addition, a single larvae was determined to be the culprit of branch flagging in a raspberry planting near Hubbleton in southern Dodge Co. Stalk borer is a generalist pest with a wide host range including as many as 176 plant species. In years when larvae are abundant, it effects may be noticed in everything corn to common ragweed. Throughout southern Wisconsin it is too late for effective stalk borer control.

Japanese beetle - Skeletonized leaves, a telltale sign of Japanese beetle feeding, were visible in Dodge and Jefferson Co. soybean fields surveyed earlier in the week. In recent years Japanese beetle have grown abundant enough to threaten both corn and soybean production in scattered regions of the state. The issue with Japanese beetles in corn is silk feeding, which may disrupt pollination when beetle populations are high. In soybeans, Japanese beetles are one in a group of occasional serious defoliators (grasshoppers, bean leaf beetle, etc.). Monitor both crops closely in the week ahead. The threshold for Japanese beetle defoliation levels in soybean fields is 30%.

Green peach aphid - Growers in the Central Sands should look for colonies of this aphid pest to build up on peppers and other susceptible crops in future weeks.


Green peach aphid
ufl.edu

European corn borer - The treatment window for first generation corn borer larvae will remain open only for another day or two in the southern tier of counties, and perhaps another week in the north. The optimum time to treat is now through 1000 GDD. No problematic infestations of corn borer were encountered this week. In fact, the heaviest infestations observed ranged from 2-5% in Iowa and Jefferson Co. fields. Larvae in both counties ranged were in the first, second and third instars.

Soybean aphid - Growers who have been watching populations build since the first week of June are undoubtedly wondering, "is it time to spray?" The answer depends on the aphid situation in an individual field, but In general, aphid densities are not yet high enough to warrant spraying. For some southern fields the time to treat may be reached next week, particularly as soybeans approach the early reproductive stages. Close monitoring of aphid populations growth is critical at this time.

Potential apple pest - Recently another non-target moth species was lured into a trap baited with apple ermine moth pheromone. The species, *Choristoneura fractivittana*, has no common name, but is a member of the family Totricidae. Species belonging to this group of moths such as *Archips podana* and *Archips fuscopreanus*, are primarily fruit pests. Apple insect trappers are urged to monitor exotic fruit moth traps closely in the weeks ahead, and to send in any suspects for identification.

Corn leaf aphid - Individuals are beginning to colonize south central Wisconsin cornfields. Corn leaf aphids are usually unimportant corn inhabitants, but when plants suffer from a lack of moisture, their effects may be pronounced and pollination may be interrupted. Add corn leaf aphids to the list of corn pests to watch for in the week ahead.

Grasshoppers - In drought-stressed regions of the state where grasses become dry, dormant and unappetizing, grasshoppers could concentrate in greener, more moisture-rich crops such as garden vegetables and beans.

Mosquitoes - One of the few advantages to having little or no rainfall are the scarcely detectable mosquito populations. Even near wetlands and streams populations are atypically low. DATCP's entomologist received just a bite or two in the last week, highly unusual for this time of year.

Corn

Corn rootworm - The corn rootworm season has arrived. Now that most of the state's rootworm population is more than half-way through egg hatch, indicators of rootworm feeding are expected to become apparent in the next three weeks. A majority of the larval population should finish feeding by mid-July. In the interim, growers should assess the level of injury to roots to evaluate the efficacy of an earlier treatment, or to determine the need for a rescue treatment.

While technologies and scouting protocols seem to change regularly, growers may be reassured to learn that the trusty 1-6 root rating scale developed by entomologists at Iowa State University more than 30 years ago, has remained the same. The protocol is as follows: randomly select and pull or dig up 10 widely separated corn plants from a field. After the

roots have been extracted, clean them as best as possible to see the roots and rootworm injury clearly. Examine the roots for the overall amount of injury, and rate each root system according to the system below. Add all of the ratings of roots from an individual field, and divide by the number of roots examined to obtain an average root rating for the field. Growers should not see more than a few roots pruned back to within 1.5 inches of the plant stem. A low root rating, usually 3 or less, indicates that rootworm levels are low or an insecticide applied earlier has adequately protected the roots.

ROOT RATING SCALE

1. No injury or only minor feeding scars.

2. Some roots with feeding scars, but no roots pruned off to within 1.5 inches of the plant.

3. Several roots pruned off to within 1.5 inches of the plant, but never an entire node.

4. One node of roots (or equivalent) pruned off to within 1.5 inches or the plant.

5. Two nodes of roots pruned off to within 1.5 inches of the plant.

6. Three nodes of roots pruned off to within 1.5 inches of the plant.

European corn borer - As anticipated, corn fields continued to show exceptionally light amounts of first generation corn borer feeding. About 2-5% of the plants in Dodge, Jefferson and Iowa Cos. were infested with first to third instar larvae.


European corn borer shot hole feeding

Based on growing degree day accumulations, larvae are just beginning to hatch in north central Wisconsin. No whorl feeding was detected in the Shawano and Portage Co. fields surveyed on Tuesday. Incidentally, the highest capture of corn borers this season occurred near Eagle in the past week (47 moths).

Corn growers across the state should check fields now for whorl feeding and first generation larvae while most regions are still within the period when insecticidal treatments are most effective (800-1000 GDD50). Examining 25 consecutive plants in five separate locations for every 80 acres within a field is the standard. In the far south, the treatment window for first generation corn borer is expected to close over the weekend. No fields warranting treatment were observed during surveys this week.

Armyworm - Moths have grown increasingly active in the last week, and black light trap catches indicate that adult populations may be moderate to high near Janesville, Mazomanie and Marshfield (22-25 moths). The potential exists for localized outbreaks, especially in grassy corn fields.

Corn earworm - Migrants arrived somewhat earlier than expected last week, and more continued to blow into the state in recent days. The cooperator located near Sturtevant in Racine Co. reported a capture of 10 moths in a pheromone trap this week; elsewhere, no corn earworm moths were detected. While earworms are usually a late-season corn pest, it is not unheard of for a few turn up in June. Sweet corn growers should follow corn earworm trap reports over the next few weeks. A capture of 5-10 moths per night indicates treatment of susceptible sweet corn is warranted.

Corn leaf aphid - The beginnings of very light colonies were observed in V9-V10 Jefferson and Dodge Co. fields this week. Numbers should build through early July and peak around tassel emergence. Corn leaf aphids are generally inconsequential, but their impact may be more severe when plants are drought stressed. Stalks with dense corn leaf aphid may wilt or yellow, and tassels may take on a black or sooty appearance as sooty mold begins to develop where honeydew secretions are heaviest. Corn plants are most susceptible to corn leaf aphid injury during the late whorl to pollen shed stages; populations decline quickly after tassel emergence due natural enemies, and as winged aphids migrate to other hosts. Economically important levels of corn leaf aphids are seldom reached, but again, their effects may be magnified during seasons when moisture is in short supply.

Japanese beetle - Historically, Japanese beetles have not been considered a pest of field crops in Wisconsin, but general populations now grow large enough each season for beetles to look to field crops as a food source. Stay alert to the risk of Japanese beetle feeding in corn fields this summer, especially during pollination. Treatment for Japanese beetles in corn should only be considered when three or more Japanese beetles per ear are present, silks have been clipped to less than 1/2 inch, and less than half of the plants have been pollinated.

Forages

Potato leafhopper - Leafhopper pressure has intensified in the past week, particularly in drought-stressed southern Wisconsin alfalfa fields. While much of the second crop has been harvested, third crop regrowth faces serious threat of injury so long as leafhopper populations continue to rise.

High adult populations were observed in 12-18 inch Jefferson, Dane and Dodge Co. fields, where sweep net counts were in the 1-3.5 per sweep range. Counts in Marathon, Portage and Shawano Cos. were slightly lower, in the 0.5-2 per sweep range. A population in excess of one adult/nymph per sweep in 6-12 inch hay is considered high; the threshold in 12-14 inch hay is two adults/nymphs per sweep. Nymph production was also noted in Marathon, Portage and Shawano Cos. this week, but adults remained more abundant than nymphs. Expect potato leafhoppers to flourish under present conditions, and continue to check all susceptible crops, vegetables and ornamental plants.

Alfalfa weevil - Although alfalfa weevils have mostly run their course this season, regrowth in the northern portions of the state should be examined for feeding for another week or two. Very low populations (less than four larvae per 10 sweeps) were observed in second crop alfalfa in central Wisconsin counties.

Pea aphid - Populations have increased considerably in peas and alfalfa in the central district, where sweep net counts ranged from 6-35 per sweep in both crops, with an average of 16 per sweep. Many of the aphids were large, suggesting fecundity and the possibility of a population explosion. Pea crops just beginning to flower are currently most susceptible, specifically because this growth stage happens to be coinciding with peak populations. Pea aphids vector more than 30 plant viruses, including Pea leaf roll virus, Pea enation mosaic virus, Pea mosaic virus and Pea seed borne mosaic virus, all of which may reduce pea yield. Control may be warranted in pea fields with counts exceeding 35 aphids per sweep that are more than 15 days from harvest.

Plant bugs - Alfalfa and tarnished plant bugs averaged 4.1-7.2 per sweep in south central alfalfa fields and 0.5-3.3 per sweep in the north central fields. It was unclear if plant bug feeding was having a measurable effect on the fields surveyed, but as long as plants are dry and stressed, insect pests like plant bugs certainly can't be helping the situation.

Soybeans

Soybean aphid - Pest survey specialists covered a considerable amount of ground this week, surveying soybean fields and assessing aphid densities from Jefferson Co. in the south central district, to Shawano Co. in the northeast. Soybean aphids were present in nearly all northern and central fields, but surveyors had to look hard to find them. Colonies were just beginning to establish, and densities mostly averaged fewer than 20 aphids per plant. In the south, the aphid situation has grown more serious. Densities still have not reached 250 aphids per plant, but some fields are very likely to exceed thresholds by next week. Following is a county by county summary of current soybean aphid conditions:

- **Jefferson Co.:** The percent of plants infested with aphids ranged from 0-100% in the fourteen fields surveyed (averaging 35%). Densities averaged 0-58 aphids per infested plant. The highest number of aphids detected on a single plant 194. Bases on this weeks observations, the potential exists for aphids to reach threshold levels in some fields in the week ahead.

- **Waukesha Co.:** Aphid infestations ranging from 0-33% were documented. The highest density of aphids per infested plant was 100+.

- **Columbia Co.:** In V2-V4 fields, 0-85% infestations (averaging 36%) were detected. The density of aphids per infested plant was in the range of 12.4-27. Highest number of aphids on any one plant was 125.

- **Winnebago Co.**: Infestations ranged from 18-85% infestations (averaging 41%). Again, the highest density exceeded 100 aphids per infested plant. In general, most plants had low aphid densities.

- **Outagamie Co.:** Infestations ranging from 5-30% (averaging 15%) were observed, with an average of 1-4 aphids per infested plant.

- **Brown Co.:** The percent of plants infested with aphids ranged from 10-55% (averaging 25%). The average number of aphids per infested plant ranged from 2-48.5.

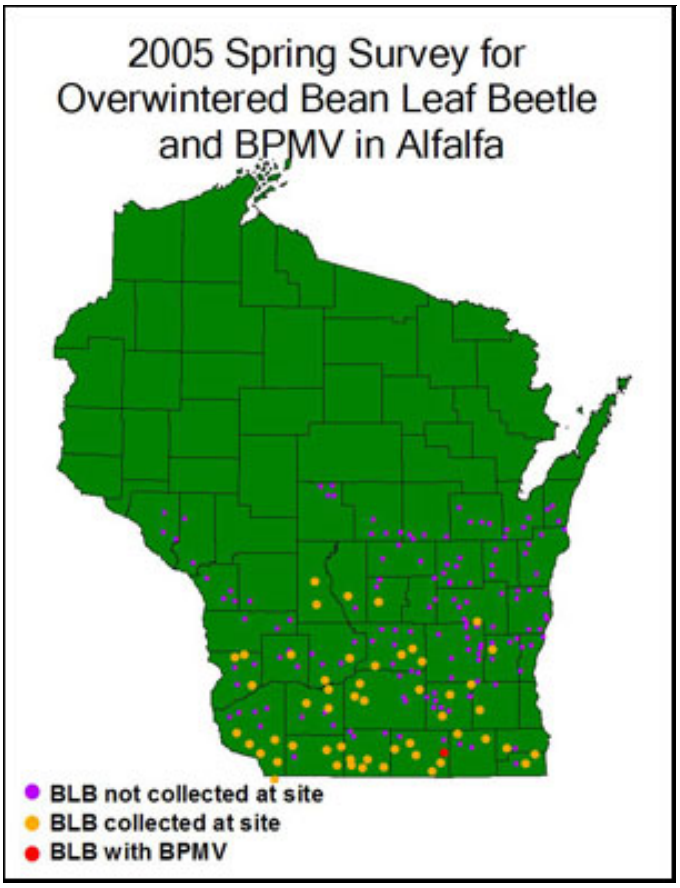
- **Waupaca Co.:** Aphid infestations were in the range of 10-25%, with an average of 3-12 aphids per infested plant.

- **Portage Co.:** Infestation levels from 10-40% were detected, with the average density of aphids per infested plant ranging from 2.5-7.0. Tom Mattek of DelMonte reported no soybean aphids have been found in fields near Plover.

- **Wood Co.:** The percent of plant infested with aphids in the fields surveyed ranged from 0-25%. Densities of aphids per infested plant were in the 0-41 range.

Bean leaf beetle - Overwintered beetles that have been active since early May haven't made much of an impact in soybean fields in recent weeks. Only minimal amounts of defoliation, mostly less than 5-10%, have been observed this season; many fields show no sign of bean leaf beetle activity at all. Even more encouraging are the results of the spring survey for overwintered beetles, which took place from May 16 to June 1 (see map below). The survey found beetles at 51 of 204 survey sites. When beetles from the 51 sites were

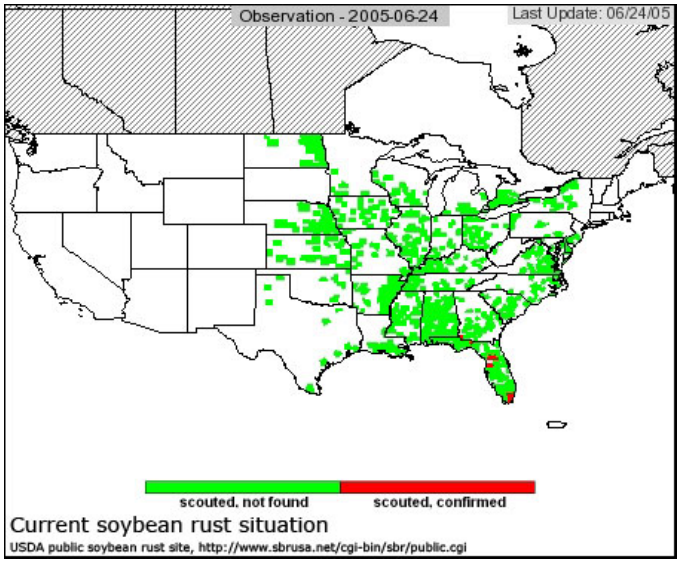
tested for the presence of Bean Pod Mottle Virus (BPMV), only a single beetle from Rock Co. tested positive. These findings, combined with overall low levels of bean leaf beetles, suggest neither the beetle nor the BPMV are likely to cause much off a stir in the next few weeks. Nonetheless, growers should be aware that the situation could change once first generation beetles begin to emerge in July.



Japanese beetle - Evidence of Japanese beetle activity was observed in a small number of Dodge and Jefferson Co. soybean fields this week. Growers are encouraged to look for skeletonizing and other signs indicating the presence of Japanese beetle in their fields. To assess levels of defoliation, select at least five areas of the field and at each location, examine 10 plants and estimate the average amount of defoliation on a leaf. Keep in mind that most scouts tend to overestimate defoliation levels. Once 50 plants have been examined, average the defoliation levels to obtain a single estimate for the whole field. **Treatment should in soybeans should be considered when defoliation reaches:**


Japanese beetle
University of Minnesota

- 30% before bloom
- 20% between bloom and pod fill
- 25% after pod fill to plant yellowing



Vegetables

Cabbage Looper - Early instar cabbage looper larvae were found feeding on cabbage in Ozaukee Co. Given that cabbage looper eggs hatch in 4-6 days, this finding is consistent with last week's report of 12 moths trapped in a black light trap near East Troy. Cabbage looper larvae were also observed in Monroe Co.

Although a pheromone trap had been in place at the Ozaukee site in a nearby field since June 9, no moths had been lured into the trap. This demonstrates that insect activity can vary greatly from field to field, and scouting is still necessary, even if a pheromone trap is in place. That said, pheromone trapping counts elsewhere in the state indicate that moth migration has picked up in the last week (see Cabbage Looper Trapping Results table below). Trap catches in the 10 traps placed along the southern border of the state ranged from 0-3 moths with an average of 1 moth per trap, and from 0-7 moths with an average of 3 moths per trap in the east central region.

Growers should definitely scout cole crops now for eggs and larvae. Eggs are white and spherical. Early instar larvae (1-4) are 1/8- 1/4 inch in length. Late-instar larvae (5-6), grow to over 1½ inches in length. Early instar larvae are most easily identified by the way they move. Young larvae move by "looping" and will raise the head and thorax off the host when disturbed. The current threshold for cabbage is 10% of plants infested with one or more early-instar larvae, and for optimum control, treatments should be applied when larvae are small. See the UW-Extension Vegetable Crop Scouting Manual for more thresholds.

Note to cooperators: Just to clarify, cooperators using delta traps should only set one trap at a time. Replace the trap when it becomes too dirty or too flimsy, and replace the lure every two weeks. Ideally, the trap should be placed in the center of the field. If this is inconvenient, then the trap should be placed upwind of the field. If the trap is placed downwind, then the scent from the lure will blow away from the field, yielding a lower moth catch. -- *Rachel Klein-Koth*

Cabbage Looper Pheromone Trap Counts			
County	**(site)**	**6/9-6/16**	**6/16-6/23**
Racine	Franksville		
Grant	Lancaster		0
Vernon 2	Viroqua 2		0
Columbia	Arlington		trap set
Sauk	North Freedom		
Waushara	Hancock		
Lafayette	South Wayne	1	0
	Shullsburg	0	3
	Benton	0	3
Green	Juda	0	1
	Monroe	0	2
Rock	Orfordville	0	1
	Janesville	0	0
Walworth	Lake Geneva	0	0
	Delavan	0	1
Kenosha	Paddock Lake	0	0
Green Lake	Princeton	0	2
	Green Lake	2	1
Fond du lac	Rosendale	0	1
	Fond du Lac	0	7
Sheboygan	Greenbush	0	1
	Kohler	1	0
Waupaca	Waupaca	0	4
	Northport	0	6
Outagamie	Stevensville	1	2
	Little Rapids	0	5

Diamondback larvae - Larvae were observed on cole crops in Ozaukee Co., and pupae were observed on cabbage in Racine Co. Full grown larvae are only 3/8 inch long; the larvae found in Ozaukee Co. were nearly full grown. Diamondback eggs are difficult to find. Larvae can be identified with a hand lens, by the two prolegs on the last segment which form a "v" and could be described as a "forked tail." Cocoons of pupating diamondback are gauzy and net-like. The life cycle for diamondback moths can be as short as 15 days in warm weather, which means there could be up to six generations this season if current conditions continue. *--Rachel Klein-Koth*

Diamondback moth

Diamondback moth larva

Imported cabbageworm - Lots of butterfly activity was observed in southeast and south central Wisconsin, and eggs were observed on cole crops in Ozaukee Co. and Racine Co. Growers should scout for the bright yellow, oblong eggs (see image below) on both sides of the leaf, and treat according to the thresholds in the table below. -- *Rachel Klein-Koth*

Imported cabbageworm egg

Imported cabbageworm larva

Imported cabbageworm butterflies

Cabbage aphid - Cabbage aphids were observed on cabbage in a Racine Co. The threshold for cabbage aphid is

one to two percent infested plants. Scout 10 plants in five different areas of the field to find the average number of infested plants. Cabbage aphid can cause stunting, discoloration of plants, and may serve as a vector for diseases. -- *Rachel Klein-Koth*

Onion thrips - With the increasingly hot and dry weather conditions, some growers may be fearing an attack from the infamous onion thrips. Onion thrips frequently cause serious damage to onion, cauliflower, cabbage, and less frequently to snap beans, cucumbers, melons and tomatoes.

Thrips overwinter in weedy areas or alalfa fields and emerge in June and July. Because eggs are laid inside the plant tissue, and nymphs feed between the leaf sheath and stem or inside the head, it is difficult to scout or to treat for thrips, and unfortunatly, by the time damage is noticed, it is too late to treat. The initial migration into vegetable plantings can be monitored with yellow or white sticky cards. Growers can scout for thrips by destructive sampling. For onion, if there are 5-10 thrips per plant or if 15-20% of plants are infested, treatment may be necessary. Most varieties of onion can tolerate 25 thrips per plant. For the most tolerant varieties, 45 thrips per plant is the threshold. No thresholds have been established for cole crops. Onion thrips have shown resistance to pyrethroid insecticides. See UW-Extension Publication A3422 *Commercial Vegetable Production in Wisconsin* for pesticide recommendations. -- *Rachel Klein-Koth*

Cabbage maggot - The second generation of flies will occur at 1476 GDD43. Through Wednesday June 15, according to the Wisconsin-Minnesota Degree Day Calculator, 1068 GDD43 have accumulated in Racine Co., 1240 GDD43 in Dane Co., 1207 GDD43 in La Crosse Co., 1213 GDD43 in Waushara Co., and 978 GDD43 in Outagamie Co. Most of these areas could reach 1476 GDD43 next week. Growers can place yellow dishpans filled with soapy water along field edges to monitor the increasing population of this cole crop pest. Normally the second generation is less damaging than the first. -- *Rachel Klein-Koth*

Onion maggot - The second generation of flies is expected to occur at 1950 GDD40. As of Thursday, June 23, Racine has accumulated 1490 GDD40, Madison has 1700 GDD40, La Crosse has 1757 GDD40, Hancock has 1522 GDD40, and Green Bay has 1363 GDD40. Much like cabbage maggot, if warm weather continues, Madison and La Crosse areas will most likely reach 1950 GDD40 late next week. Also like the cabbage maggot, the first generation was more damaging than the second will be. Growers can begin to place yellow dishpans filled with soapy water along field edges to monitor the increasing population of this onion pest. -- *Rachel Klein-Koth*

Potato leafhopper - Nymphs were observed in as far north as Shawano Co. this week, indicating reproduction is in progress in central snap bean fields as well. Because potato leafhoppers tend to achieve highest populations in late June to early August, snap beans usually prove to be an attractive host. Monitor nymph populations in beans by carefully examining the undersides of leaves. Turn over 10 leaves per sample site and count nymphs as they scurry sideways for cover. Use at least 10 sample sites per field. -- *Krista Lambrecht*

PLH thresholds in snap beans are as follows:

Seedling stage (two true leaves)
- **Adults:** 0.5 per sweep or 2 per row foot
- **Nymphs:** Nymphs usually not present at seedling stage

Third trifoliate to bud stage
- **Adults:** 1 per sweep or 5 per row foot
- **Nymphs:** 1 per leaflet (10/10 leaflets)

Green peach aphids - GPA were found in high numbers on peppers in Monroe County this week. It's important to manage this pest in such a way as to not cause the development of resistant populations. GPA has a tendency to become resistant to many insecticides so it's important to rotate classes while treating. Using insecticidal soaps will minimize the development of resistance. -- *Karen Delahaut, UW Fresh Market Vegetable Coordinator*

Tarnished plant bug - Tarnished plant bugs will be moving into vegetable crops as alfalfa is harvested and weeds mature and dry down. Tarnished plant bugs feed by sucking plant juices and inject a toxic saliva in the process of feeding. This can cause local tissue damage in a number of vegetable crops, including snap beans, celery, lettuce, asparagus, spinach, broccoli, cauliflower, tomatoes and potatoes. This damage can cause flower drop or injury to new growth or marketable plant parts. Tarnished plant bugs are very active fliers and often have left the crop by the time damage is visible, fields must be checked frequently and treatments need to be applied quickly if a problem arises.

Treatment of snap beans is recommended if numbers exceed one tarnished plant bug per five feet of row. In celery, treatment is recommended if numbers exceed one per 10 plants. In potatoes, damage is rarely serious and up to one plant bug per sweep may be present before treatment is necessary. Thresholds for other crops are not available. -- *Ed Grafius, Michigan State Entomology Department*

Fruit

Choristoneura (or Archips) fractivittana - A few weeks back, a Richland Co. cooperator submitted a several individuals of this species for identification. The moths were lured to a delta trap baited with apple ermine moth pheromone. *Choristoneura fractivittana*, identified by Steve Krauth of the UW Insect Research Collection, is a member of the group of moths known as tortricids, but lacks a common name. Its host plants include oaks, dogwood, blackberry, beech, maple, elm and apple (Tortricid fauna on apple in New York, Chapman, Lienk, 1971). With a wide host range, it's not clear if the moths came from within the orchard or from an outside source. Steve Krauth's response: "If you see this thing showing up in more traps, we have an orchard pest."

Codling moth - Egg hatch, an event expected at 713 GDD50, is now 50% complete as far north as Crivitz in Marinette Co. The larvae emerging from these eggs will mature in July, pupate, and produce a mid-summer flight of moths. Generally 1000 GDD50 are needed to complete each generation. In Wisconsin, there are two generations of codling moth and sometimes a partial third during warm

years. The larvae of the later generations cause the most significant damage. Codling moth control in the weeks ahead should be carefully timed to target larvae hatching from eggs. Once larvae tunnel into fruit, insecticide applications are ineffective. For control recommendations see the 2005 Commercial Tree Fruit Spray Guide (*UW-Madison Cooperative Extension Service Publication* A3314). The second flight of codling moths is underway where 873-1296 GDD50 have accumulated.

Apple maggot - Orchards in regions of the state where moisture levels are adequate can expect apple maggot emergence to begin shortly. Emergence will be delayed in the south as long as conditions remain unusually dry.


Apple Maggot
British Columbia Ministry of Ag, Food & Fisheries

Spotted tentiform leafminer - The second flight is in progress across the state and expected to peak once 1150 GDD50 have accumulated. At the current rate of degree day accumulation, advanced southern orchards should reach this point next week.

Redbanded leafroller - A second round of redbanded leafroller moths are active in orchards where 780-937 GDD50 have been reached. RBLR trap counts in orchards this week ranged from 0-48. The highest captures this week were reported from Rochester in Racine Co. and Gays Mills in Crawford Co,

Rose chafer - Fields on sandy soils in the northern and central districts were busy this week with rose chafers. Activity in the Central Sands region of the state is rather common at this time of year. Adults appear in June and live for only about three weeks. In the meantime, they skeletonize leaves on a wide variety of plants, including grapes, fruit trees, roses, raspberries. The grubs feed on the roots of plants in old fields, pastures and other open areas, but generally do not cause economic damage.

Comments from John Aue (*Orchard IPM Specialist*) **-** Main news this week is probably the heat. Growers should keep an eye out for heat-loving organisms such as powdery mildew and spider mites. European red mite populations can skyrocket in a couple weeks time.


Rose chafer
entomology.umn.edu

Forest and Landscape

Twospotted spider mite - Moderate to heavy amounts of damage were observed on columbine, hibiscus, lupine and roses at a nursery dealer in Oconto Co. Twospotted spider mite favors hot, dry weather which is just what we are experiencing in parts of the state. This mite is probably the most common pest of annual and perennial plants in home gardens, nurseries and greenhouses.

Twospotted spider mite overwinters as eggs or adults in debris or grass. Females become active in April and May and seek out the undersides of leaves on suitable hosts. Each female may lay more than 100 eggs. A single generation may require as much as 20 or as few as five days to complete, depending on the temperature. There are several generations per year.

Twospotted spider mite (adult)
Rayanne Lehman, Pennsylvania Department of Agriculture

Spider mites remove plant juices from leaves leaving whitish to yellowish stippling where the chlorophyll contents were removed. Under high populations these feeding spots coalesce eventually turning most leaves a grayish brown. Premature leaf drop can occur and seriously affect the health of the plant. To monitor for mites, look for the white or yellow stippling on the leaves and then turn the leaf over to look for the mites. If you tap a branch with a stick and hold a white piece of paper under it the mites should be evident. Spider mites move relatively slowly, while predatory mites are quick.

Biorational pesticides should used whenever possible to conserve the natural enemies. Insecticidal soap and horticultural oils can be used to control spider mites and there are several other biorational pesticides that are effective also; those include products containing abamectin, bifenazate, clofentazine and hexythiazox. If using insecticidal soap avoid using hard water as this inactivates the soap.

Twospotted spider mite infestation
Whitney Cranshaw, Colorado State University

Tobacco rattle virus - The story gets more interesting. The Plant Industry Lab tested a sample of Brunnera, or Siberian bugloss, and it came back positive by ELISA. The variety tested was 'Hadspen cream', a rather expensive variety.


Siberian bugloss with TRV symptoms
A. Phibbs, WI DATCP

Weir's cushion rust - This fungus was found in moderate amounts on a Colorado spruce at a nursery dealer in St. Croix Co. The infected tree was removed from sale and needs the recommended fungicide treatments to control this disease and keep it from spreading to other spruce.

Apple scab - This fungal disease was observed in moderate amounts on susceptible crabapples at nursery dealers in Dane, Oconto and St. Croix Cos.

Spruce sawfly - Larvae in moderate amounts were found feeding on Black Hills spruce tips at nursery dealers in St. Croix Co. and on field-grown spruce at nursery growers in Sawyer Co.. If not caught early, these larvae can quickly clean off new shoots, leaving behind only bare stems.

Bristly rose slugs - Larvae were observed feeding on the undersides of assorted shrub rose leaves, in moderate amounts, at a nursery dealer in St. Croix Co.

Thrips - Adults and nymphs were observed feeding on the undersides of assorted apple trees in moderate amounts at a nursery dealer in St.Croix Co.

Viburnum shoot tip borer - Larval feeding left flagged shoot tips in moderate amounts on nannyberry viburnum at a nursery dealer in St. Croix Co. Injury by this sawfly was obvious at a Dane Co. residence.

UW Plant Disease Diagnostics Clinic

CROP	DISEASE/DISORDER	PATHOGEN	COUNTY
FIELD			
Corn	Root Rot	*Fusarium oxysporum, Fusarium graminearum*	Dane
	Fertilizer Burn	Chemical Injury	Dane
Soybean	Seedling Blight	*Pythium* sp., *Fusarium* sp.	Winnebago
VEGETABLE			
Potato	Common Scab	*Streptomyces scabies*	Oconto
	Silver Scurf	*Helminthosporium solani*	Oconto
FRUIT			
Strawberry	Root/Crown Rot	*Pythuim* sp., *Fusarium* sp.	Bayfield
Raspberry	Orange Rust	*Arthuriomyces peckianus*	Dane
	Root Rot	*Pythium* sp.	Portage
EVERGREEN			
Arborvitae	Root Rot	*Pythium* sp.	Portage
	Macrophoma Needle Blight	*Macrophoma* sp.	Dane
	Winter Kill	Physiological disorder	Dane
Cypress (Including Alaskan)	Root Rot	*Pythium* sp., *Phytophthora* sp.	Dane
Pine (Including Scots, White)	Leptographium Root Disease	*Leptographium* sp.	Sheboygan
	Sphaeropsis Tip Blight	*Sphaeropsis* sp.	Dane
	Animal Feeding	Physiological disorder	Dane
Spruce	Sirococus Tip Blight	*Sirococcus* sp.	Kewaunee
	Water Stress	Physiological	Ozaukee
HERBACEOUS ORNAMENTAL			
Canada Thistle	Rust	*Puccinia punctiformis*	Dane
Hosta	Root Rot	*Pythuim* sp., *Phytophthora* sp., *Rhizoctonia* sp.	Dane
Rudbeckia	Anthracnose	*Colletotrichum* sp.	Jefferson
	Growth Regulator/Herbicide Injury	Chemical Injury	Jefferson
Star-Cluster	Edema	Physiological	Jefferson
ORNAMENTAL			
Ash	Sphaeropsis Canker, Phomopsis Canker	*Sphaeropsis* sp., *Phomopsis* sp.	Jefferson
Aspen	Herbicide Uptake	Chemical Injury	Dane
Elm	Dutch Elm Disease	*Ophiostoma ulmi*	Dane
Hawthorn	Root/Crown Rot	*Pythium* sp.	Jefferson
Katsura	Herbicide Damage	Chemical Injury	Waukesha
Lilac	Wind Injury	Physiological	Dane
Maple	Anthracnose	*Gloeosporium* sp.	Jefferson
	Sphaeropsis Canker	*Sphaeropsis* sp.	Jefferson, Waukesha
	Water Stress	Physiological	Columbia
Nyssa	Root Rot	*Pythium* sp.	Rock
Oak (Including Bur, Red)	Anthracnose	*Gloeosporium* sp.	Dane
	Leaf Spot	*Phyllosticta* sp.	Dane
	Oak Wilt	*Ceratocystis fagacearum*	Columbia, Dane
	Tubakia Leaf Spot	*Tubakia* sp.	Dane
	Cold Injury	Physiological disorder	Dane
	Tatters	Physiological disorder	Dane
Redbud	Verticillium Wilt	*Verticillium* sp.	Rock
For additional information on plant diseases and their control, visit the PDDC website at: www.plantpath.wisc.edu/pddc.			

Black Light Trapping Results

Trap Site	Date	ECB	TA	FA	BCW	DCW	SCW	VCW	WBCW	CabL	CelL	CEW
Southwest												
Lancaster	6/16-6/23	4	1	0	1	0	5	0	0	0	0	0
South Central												
Arlington												
West Arlington	6/18-6/23	12			5	10	4					
Mazomanie	6/16-6/23	6	22	0	0	0	5	2	0	2	0	0
West Madison	6/16-6/23	5	0	0	0	0	1	0	0	0	4	0
Southeast												
Janesville*	6/16-6/23	0	25	0	1						7	
East Troy												
Eagle	6/16-6/22	47				5				1		
West Central												
Sparta	6/16-6/22	9	2	2			25			11	4	
Chippewa Falls	6/16-6/23	4										
East Central												
Manitowoc	6/17-6/24	5	5	0	2	0	13	0	0		4	0
Central												
Wausau												
Marshfiled	6/16-6/23	19	22	3	1	0	61	4	0	0	0	0
Plover	6/16-6/23	7										
Plainfield	6/16-6/23	2										

ECB- European corn borer, TA- true armyworm, FA- fall armyworm, BCW- black cutworm, DCW- dingy cutworm, SCW- spotted cutworm, VCW- variegated cutworm, WBCW- Western bean cutworm, CabL- cabbage looper, CEW- corn earworm

*Bristly cutworm counts were mistakenly reported as variegated cutworm for Janesville in the June 4, 10, and 20 Pest Bulletins. We apologize for our mistake.

•Blank cells indicate species presence was not determined.

Apple Insect Trapping Results

	Date	STLM	RBLR	CM	OBLR	PC
Crawford Co.						
Gays Mills 1	6/14-6/19	234	0	10		
Gays Mills-E2	6/17-6/23	625	29	9	3	
	6/9-6/16	55	3	5	12	
Gay Mills-W2	6/12-6/20	50	0	2	1	
Iowa Co.						
Dodgeville	6/16-6/23	118	1	5	2	
Richland Co.						
Hillpoint	6/15-6/21	186	4	1.5	0	
Richland Center - E	6/17-6/23	360	22	3	2	
	6/9-6/16	180	3	1	7	
Richland Center - W	6/17-6/23	550	14	1	7	
	6/9-6/16	212	0	2	9	
Richland Co.						
Baraboo	6/17-6/23	145	1	3	4	
	6/9-6/16	45	0	5	2	
Dane Co.						
Deerfield	6/15-6/22	145	1	1	0	
West Madison	6/16-6/22	26	20	4	0	0
Green Co.						
Brodhead	6/16-6/23	41	16	5	12	
Dodge Co.						
Brownsville	6/17-6/23	17	1	0	0	
Racine Co.						
Raymond	6/16-6/23	475	10	6	1	
Rochester	6/16-6/24	335	48	5.4	21	0
Kenosha Co.						
Burlington	6/17-6/24	0	6	3	5	
Ozaukee Co.						
Mequon	6/14-6/21	0	0	0.5	0	0
Waukesha Co.						
New Berlin	6/16-6/23	250	4	1	6	
Pierce Co.						
Spring Valley	6/17-6/24	198	0	2	1	0
Marquette Co.						
Montello	6/13-6/22	500	12	2	1	0
Brown Co.						
Oneida	6/13-6/20	150	0	1	2	
Sheboygan Co.						
Plymouth	6/17-6/24	370	0	9	0	
Fond du Lac Co.						
Campbellsport	6/13-6/22	135	4	3	0	
Malone	6/16-6/23	40	2	1	10	
Marinette Co.						
Wausaukee	6/17-6/24	28	0	4	3	0

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

Web Site of the Week

Wiscsonsin 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

Visit the Wisconsin Pest Bulletin online at:
http://pestbulletin.wi.gov

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

July 1, 2005