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Wisconsin Department of Agriculture, Trade & Consumer Protection

Wisconsin Pest Bulletin

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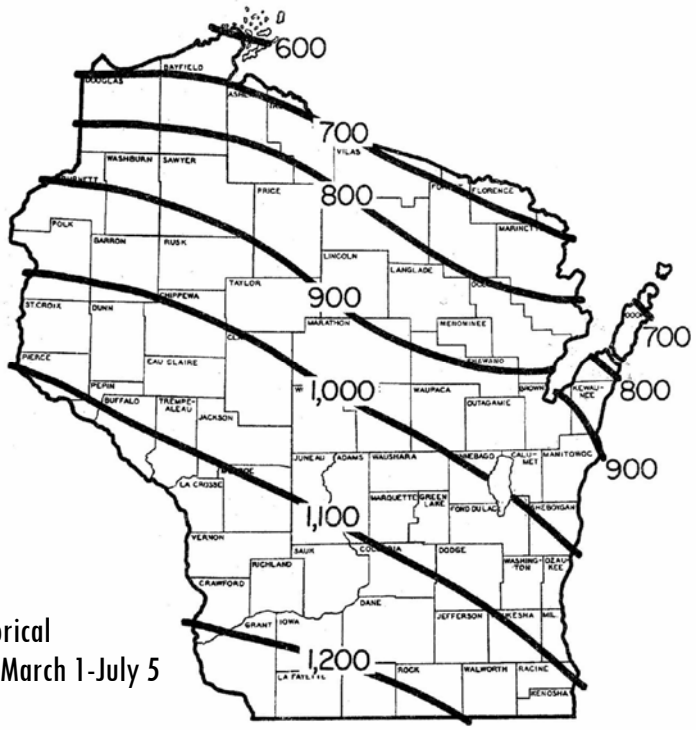
Your weekly source for crop pest news, first alerts, and growing season conditions for Wisconsin

Weather and Pests

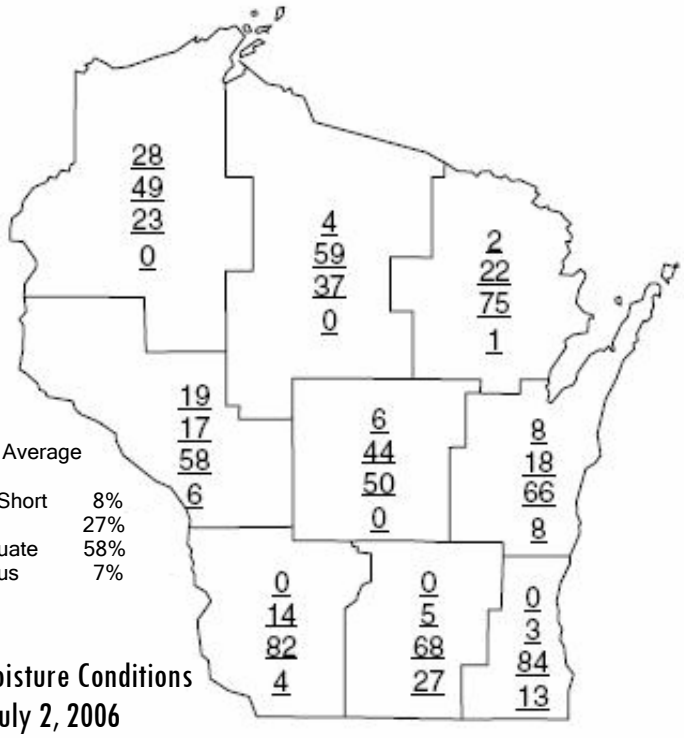
Recent weather conditions have been mostly hot, humid and typical of mid-summer in Wisconsin. Corn has fared well in past weeks and nearly all fields except for a few in the northeastern and east central areas of the state met or exceeded the "knee-high by the 4th of July" mark. As of July 3, the statewide average corn height was 37 inches, slightly shorter than last year's 38 inches, but above the 5-year average of 27 inches. Reports from Barron Co. and parts of the northwest and north central districts indicate fields are drought stressed and in urgent need of precipitation. The warming trend that is forecast to continue through the week ahead may cause the situation to worsen if no rain is received soon.

Growing Degree Days through 7/06/06 were

	GDD 50F	5-yr Ave	Sine 48F	40F
Dubuque, IA	1181	1219	1186	2014
Lone Rock	1126	1160	1135	1929
Beloit	1230	1207	1236	2089
Madison	1090	1132	1087	1900
Sullivan	1122	1138	1123	1961
Juneau	1044	1099	1054	1865
Waukesha	1034	1069	1035	1857
Hartford	1029	1050	1033	1852
Racine	984	996	1010	1804
Milwaukee	1000	983	1010	1818
Appleton	1041	974	1031	1854
Green Bay	948	876	989	1745
Big Flats	1104	1083	1075	1907
Hancock	1080	1058	1051	1878
Port Edwards	1114	1021	1091	1923
La Crosse	1271	1210	1248	2139
Eau Claire	1234	1106	1226	2091
Cumberland	1068	936	1075	1851
Bayfield	793	665	806	1487
Wausau	979	910	954	1724
Medford	988	879	993	1741
Crivitz	918	823	923	1686
Crandon	881	808	840	1571



Historical
GDD March 1-July 5



State Average

Very Short	8%
Short	27%
Adequate	58%
Surplus	7%

Soil Moisture Conditions
as of July 2, 2006

Development of most pest insects has been favored by the hot, dry weather conditions. Potato leafhopper nymphs are abundant and night-flying moth pests have had no difficultly mating and depositing eggs in susceptible crops. In contrast, insects like the soybean aphid that prefer cooler temperatures, appear to be finding recent conditions unsuitable for reproduction. Aphid densities are expected to remain stable for at least another week.

Looking Ahead

European corn borer – The treatment window for control of first generation corn borer larvae has closed statewide. Chemical sprays are no longer effective now that 1,000 GDD (base 50F) have been surpassed and larvae are tunneling into corn stalks. Pupation is likely to begin in areas where 1,272 GDD will be reached over the weekend. Black light trappers should look for moths of the second flight to appear in traps around 1,400 GDD, or as soon as July 13 near La Crosse, July 15 near Beloit, July 21 near Madison, and July 30 near Wausau.

Corn rootworm – Emergence of western corn rootworm adults is in progress in southern and west central Wisconsin. Beetles are likely to grow more common in silking corn fields during the week ahead and could impair pollination in areas where heavy populations emerge. The action threshold for corn rootworm during pollination is five beetles per plant when silk clipping is noticeable. In addition to scouting for silk clipping, look for lodging and other symptoms of root feeding injury to become evident after thunderstorms or periods of high winds. Reports from *The Bulletin: Pest Management and Crop Development Info for Illinois* http://www.ipm.uiuc.edu/bulletin/article.php?id=576 indicate very severe root feeding by the variant western corn rootworm in some Illinois corn fields that were soybeans last year. (The variant western corn rootworm, an emerging concern, lays eggs in soybean fields, though the larvae don't feed on roots until corn becomes available the following year.)

Corn leaf aphid – Colonies are beginning to establish in tasseling southern and central Wisconsin corn fields. While aphid populations are low for now, they should be watched closely during the late whorl to pollen shed stages.

Corn leaf aphid insects.tamu.edu

Corn leaf aphid is a vector of Maize Dwarf Mosaic Virus (MDMV), though most dent corn varieties show resistance to MDMV. A greater concern is that populations in excess of 50 aphids per plant on 50% of the plants in a field may interfere with pollen shed.

Western bean cutworm – Low numbers of moths are appearing in Wisconsin milk jug traps. The first official captures of 2006 were registered last week at Darlington, Mazomanie and Lancaster, indicating that scouts and advisors in these areas should be on the lookout for eggs and larvae in the coming weeks. Counts ranging as high as 205 moths were reported in Iowa from June 29 to July 6, but thus far no comparable captures have been documented in Wisconsin. Trap counts are likely to escalate throughout July and peak around the first week of August. To view this week's trapping results from 136 Wisconsin trapping locations, visit the Iowa State University **Western Bean Cutworm Monitoring Network** Web site at http://www.ent.iastate.edu/trap/westernbeancutworm/isite.

Apple maggot – Catches of adults increased in the last week, suggesting scouting and control efforts should be intensified in all apple orchards. According to the development model available for apple maggot, the first eggs are being deposited where 1,100 GDD (base 50F) have been reached, namely in the south central and west central districts. Control efforts should target apple maggot flies before females have the opportunity to lay eggs in developing fruits. The action threshold for apple maggot on an unbaited red ball trap or yellow sticky board is one fly per trap per week. The threshold increases to five flies per trap per week when traps are enhanced with an ammonia attractant. Captures this week were as follows: Dodgeville 2 (red ball) and 3 (yellow board), Mequon 0.1 (red ball) and 0.1 yellow board, Rochester 0.5 (red ball), and Stoughton 1 (red ball) and 4.5 (yellow board).

Apple maggot fly Jack Kelly Clark

Codling moth – The summer flight of moths (flight number two for those scoring along at home) is underway. Expect trap counts to increase in the next two weeks and peak around 1,577 GDD (base 50F). Peak activity of the second codling moth flight could occur as soon as July 21 near La Crosse, July 23 near Beloit, August 6 near Racine, July 30 near Madison, and August 9 near Wausau.

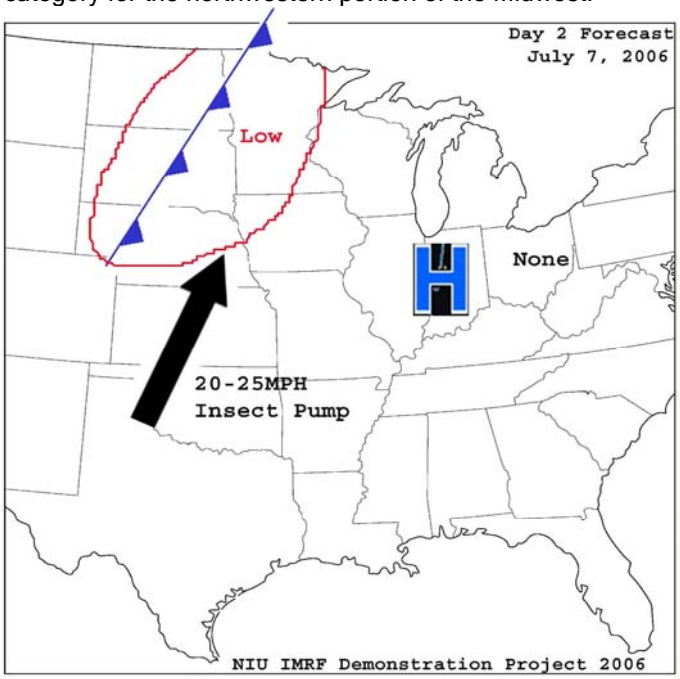
Insect Migration into Midwest Forecast

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

DAY 2 (FRIDAY, JULY 7 NOON TO SATURDAY, JULY 8 NOON):

Relative Risk of Insect migration into the Midwest: LOW (5-10%) – greatest risk area is along and west of I-35 and north of I-80 in the Dakotas, Nebraska, northwest Iowa, and western Minnesota.

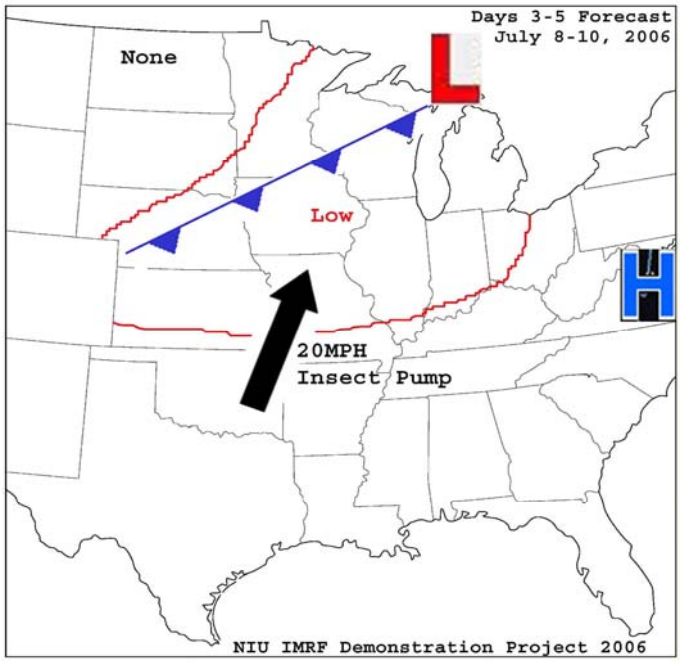
On Day 2, high pressure currently located over Iowa moves to the east, reaching the eastern Midwest by Saturday morning. Southerly winds will increase in areas especially along and west of the I-55 corridor by Saturday morning as low pressure continues to develop and moves northeast into southern Manitoba. A cold front will arc from the low southwestward into the eastern Dakotas into central Nebraska, serving as a focal point for scattered shower and thunderstorm development (potential insect drop zones) late in the day Friday into Saturday morning. Given an expected increase in precipitation coverage and a continued fetch of southerly winds, the forecast risk for Day 2 is increased into the Low category for the northwestern portion of the Midwest.



LONG-TERM (DAYS 3-5 SATURDAY, JULY 8 NOON THROUGH MONDAY, JULY 10 NOON):

Relative Risk of Insect migration into the Midwest: LOW (5-15%) – greatest risk area is along and southeast of the Missouri River across much of the Midwest north of the Ohio River valley, but only south of I-90 west of the Missouri River.

High pressure will continue to move to the east on Days 3-5, reaching the eastern U.S. by the end of the forecasting period. The low pressure and attendant cold front will continue to move east and southeast. Scattered mainly late-day into overnight precipitation areas will develop along the front, which is expected to be along the I-35 corridor by Day 3, and potentially turning stationary and more west-to-east along the I-80 corridor by Day 5. As mentioned yesterday, the pattern is very similar to what was experienced across the Midwest this past weekend, however, our computer forecasting models are currently not showing the system to be quite as strong as the system this past weekend and less organized. Since the forecasting period is still several days away, the current insect migration risk is maintained but a more focused area of risk may be inserted into the forecast tomorrow when details become clearer.



Forage

Potato leafhopper – Populations are highly variable across the state. According to reports from County Ag Agents, above-threshold populations have developed in drought-stressed, second crop hay fields in northwestern and north central Wisconsin. In the south, populations are mixed, but generally lower. Counts of potato leafhoppers in 10"-12" third crop growth in Dane Co. ranged from 0.52-0.66 adults and nymphs per sweep (below the action threshold of 1.0-2.0 per sweep), and one 20" field near Lancaster in Grant Co. had a count of 1.45 per sweep, also below the action threshold. Surveys in 12-18" Columbia and Adams Co. fields found levels ranging from 0.74-3.5 per sweep and an abundance of nymphs, suggesting reproduction is heavy. Alfalfa regrowth and new seedings, particularly those in dry regions of the state, are highly susceptible to leafhopper injury at this time of year. Continue to monitor fields on a weekly basis as long as hot, dry weather conditions favor the rapid build-up of leafhopper populations.

Alfalfa weevil – The finding of "new" adults this week confirms the end of the 2006 infestation in most of Wisconsin. With the accumulation of 814 GDD (base 48F), pupation has passed and first generation adults are emerging (remember the adults

present in spring were an overwintered generation, technically the first generation from 2005). Larval feeding damage may still be reported in a few northern Wisconsin fields, but throughout a vast majority of the state the threat of heavy tip feeding injury is over for another year.

Corn

European corn borer – First generation larvae are tunneling into corn stalks in most Wisconsin fields, meaning attempts at chemical control are ineffective at this point. With pupation getting underway near La Crosse and Beloit over the weekend, emergence of the summer flight should begin by late next week at advanced southern sites. Due to the 4th of July holiday few fields were surveyed this week, but those visited in Dane Co. had infestations affecting 27-58% of the plants. In V7-V10 Waushara Co. fields, infestations ranged from 0-15%. The moderate to heavy infestations of first generation borer that have been detected in the last three weeks in south central and west central districts may produce a considerable moth flight later this month, and a sizeable second generation of larvae in August. Continue to follow black light trapping reports for second flight moth activity in the weeks to come. Expect the first summer moths to begin appearing in traps near La Crosse by July 13 and Beloit by July 15.

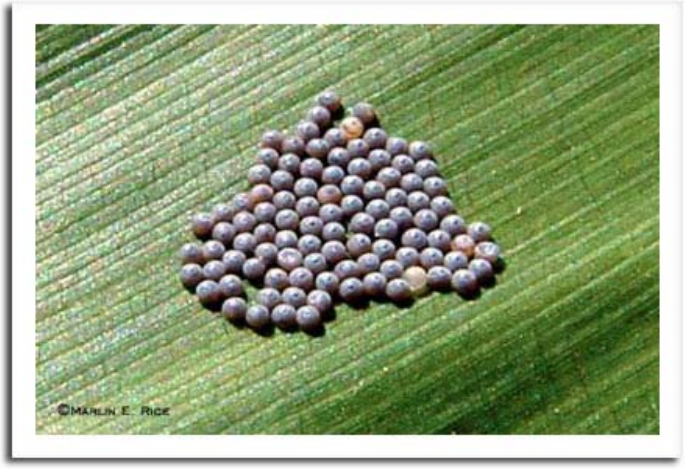
Corn earworm – Any silking sweet corn fields should be monitored closely for corn earworm larvae in the coming week. Moth activity increased at a few pheromone trapping sites during the last reporting period: Manitowoc (from 22 to 50 moths), Chippewa Falls (from 0 to 10 moths), and Lancaster (from13 to 24 moths), and earworm infestations are expected to develop in advanced fields given the early June arrival of migrant moths this season. As a general guideline, pheromone trap catches of 5-10 moths per night or black light trap captures of 3-5 moths per night for three consecutive nights indicate that moths are probably laying enough eggs to warrant treatment of susceptible fields. Before initiating control measures, fields should be scouted to determine if the action threshold of >10% of silks with eggs (this applies only to plantings with fresh silks or with silks just beginning to dry) is exceeded. For tips on scouting for eggs and specific control recommendations refer to UW Extension's *The Corn Earworm* at http://s142412519.onlinehome.us/uw/pdfs/A3655.PDF. Trap counts this week were as follows: Chippewa Falls 10, Coon Valley 1, Janesville 0, Lancaster 24, Manitowoc 50, Marshfield 7, Mazomanie 2, Sparta 8, Sturtevant 4, and Wausau 10.

Corn rootworm – Adults were detected on June 29 in west central fields, marking the start of corn rootworm beetle emergence in 2006. As more beetles emerge from the soil in July and early August, fields with fresh silks will be likely candidates for silk clipping by the western species. According to UMN research, the threat to pollination is highest within the first 4-6 days of silk emergence. Silk clipping by corn rootworm beetles interferes with pollination and leads to poor kernel fill. Monitor susceptible fields carefully and consider a rescue treatment if the following conditions exist: an average of five beetles per plant is found, silks are being clipped and pollination is still in progress.

Western bean cutworm – The first moth trap catches of 2006 were registered in the past week, signaling time for crop scouts to begin watching for eggs and evidence of western bean cutworm activity. Scouting recommendations provided on Iowa State University's Western Bean Cutworm Monitoring Network Web site read:

"In corn, check 20 consecutive plants at five locations. The University of Nebraska recommends that if 8% of the plants have an egg mass or young larvae are found in the tassel, consider applying an insecticide. Timing of the application is critical. If the tassel has not emerged when the eggs hatch, they will move into the whorl and feed on the developing pollen grains in the tassel. As the tassel emerges, the larvae will move down the plant to the green silks and then into the silk channel to feed on the developing ear.

If an insecticide is needed, apply it when 90-95% of the tassels have emerged. If the tassels have already emerged, the application should be timed for when 70-90% of the eggs have hatched. Once the larvae reach the ear tip, control is nearly impossible. If an insecticide application is needed, cornfields should be checked for the presence of spider mite colonies. If mites are found, select a product that does not stimulate mite flare ups (increased population growth)."



Western bean cutworm eggs Marlin E. Rice

While helpful for general informational purposes, this treatment recommendation is not applicable to Wisconsin growers at this time. Research on this species in Nebraska indicates captures of 700-1000 moths must be registered for there to be a moderate risk of larval injury to corn or dry beans. Pheromone trap catches from 2005 found very low populations of this species in the state (< 38 moths per week), and western bean cutworm injury has not been confirmed in any Wisconsin corn fields to date (though scattered sightings have been reported). If injury has occurred in past years, it escaped the notice of DATCP survey specialists and did not happen at levels high enough to warrant control measures.

The objectives of establishing an extensive, multi-state network of Western bean cutworm traps are to determine the distribution of this species in the Midwest, to track peak flight activity, and to establish the relative abundance of Western bean cutworm. Presently 136 milk jug traps are in place in 39 Wisconsin counties to track moth flight activity. To determine if a peak flight has occurred, look at the daily trap catches in

your area. When a marked increase occurs, followed by 1-3 days of declining numbers of moths captured, this may indicate a peak flight. However, it should be noted that declining trap counts may be caused by environmental factors such as rainfall, high winds, and cold temperatures. If you are not sure if you have a peak flight, continue watching trap counts for at least seven days to see if a rebound in numbers is registered. There are sometimes secondary peak flights. Scouting should continue for 7-10 days after the peak flight.

Rose chafer – Rose chafers are short-lived scarab beetles that appear in the sandy regions of the state in late June or early July and live for about three weeks. Growers in the west central district occasionally experience heavy populations of this insect. This week, chafers were spotted in Adams Co. corn fields. Rose chafers skeletonize the leaves on a wide variety of plants, including grapes, fruit trees, roses, and raspberries. Any feeding done during their brief lifespan rarely reaches economically important levels.

Rose chafer Sarah Clark

Corn leaf aphid – Trace numbers of aphids are beginning to colonize V8-V9 southern and central corn fields. Numbers are likely to build over the next few weeks and peak around tassel emergence. Corn leaf aphids injure corn plants by removing plant sap, introducing disease, and secreting a sticky substance called "honey dew" that provides a medium for the growth of sooty mold. Plants with dense corn leaf aphid populations may take on a black or sooty appearance as mold develops on the honeydew. Corn plants are most susceptible to corn leaf aphid injury during the late whorl to pollen shed stages. Populations usually decline swiftly after tassel emergence due natural enemies and as winged aphids migrate to other hosts. Although corn leaf aphids seldom reach economically important levels in Wisconsin, some outbreaks were reported in sweet corn last season.

Soybeans

Soybean aphid – A very minor increase in the incidence of soybean aphid infestations was observed during surveys this week. More plants per field were colonized by aphids relative to last week, but the average number of aphids per plant remained very low. As plants enter into the early reproductive stages in the week ahead, expect aphid densities to increase. Six years of experience with this pest have shown that populations build to peak levels during the R2-R4 stages of soybean growth.

Soybean aphid infestations detected this week were as follows: Columbia Co. 75-85% infestation with 1.4-2.2 aphids per plant; Dodge Co. 85-90% infestation with an average of 1.45-1.7 aphids per plant; Dane Co. 55-90% infestation with an average of 0.75-2.2 aphids per plant; Green Co. 40% infestation with an average of 0.5 aphids per plant; Iowa Co. 60% infestation with an average of 1.1 aphids per plant; Jefferson Co. 55% infestation with an average of 0.75 per plant; Ozaukee Co. 95% infestation with an average of 1.9 per plant; Rock 85-95% infestation with an average of 2.0-3.1 aphids per plant; Sauk Co. 55-60% infestation with an average of 0.74-1.4 aphids per plant; Walworth Co. 80%infestation with an average of 1.5 aphids per plant; and Washington Co. 100% infestation with an average of 2.1 aphid per plant.

Corn Earworm Pheromone Trap Counts

	29-Jun	30-Jun	1-Jul	2-Jul	3-Jul	4-Jul	5-Jul	6-Jul
Southwest								
Lancaster	13				17			7
Reedsburg	trap up							
South central								
Mazomanie	5							2
Arlington								0*
West Arlington	0							0
Southeast								
Sturtevant	6							4
Janesville		2			0		0	
West central								
Sparta	0				8		0	0
Coon Valley	2							1
Chippewa Falls	0							10
Central								
Wausau	trap up		3	1	0	5	1	0
Marshfield	trap up				6			1
East Central								
Manitowoc					21		29	

Small Grains

True armyworm – Growers in all areas of the state should continue checking lodged wheat, oats and other susceptible crops for the presence of armyworms. Whether lodging is caused by heavy winds and rains, high seeding rates, or high nitrogen fertilizer rates, plants that are lodged are at a higher risk for developing armyworm outbreaks. In corn fields, the larvae may be easily detected by scouting for ragged leaved and heavy frass accumulation in the whorl. Consult UW Extension publication *The Armyworm* at http://cecommerce.uwex.edu/pdfs/a3327.pdf for scouting and control recommendations.

Lodged wheat www.oznet.ksu.edu

Fruit

Apple maggot - Emergence of apple maggot flies continued for the second week, with reports of catches at five of the 31 trapping network orchards. The highest count registered in the last reporting period was three flies on a yellow sticky board at the Dodgeville trapping site. Female apple maggot flies should be depositing eggs in orchards where 1,100 GDD (base 50F) have been reached.

Apple maggot injury to fruit Whitney Cranshaw CSU

With careful monitoring using red ball traps and yellow sticky boards, effective control of apple maggot can be achieved with a minimum number of sprays. The key is to use the traps to time sprays to eliminate the flies before egg laying takes place. Yellow sticky boards attract unmated male and female flies during the 8-10 day preoviposition period after the flies first emerge. Red ball traps attract mated female flies in search of ripe fruits for egg deposition. When apple maggot flies are captured on a yellow sticky board and the action threshold is exceeded (one fly per week on an unbaited trap, five flies in a week on a baited trap), the first insecticide spray should be applied **7-10 days** later. When apple maggot flies are found on a red ball trap, the first spray should be applied **immediately** to prevent further egg laying. Subsequent sprays may be applied every 14-21 days, and if trap catches of apple maggot are continuous and heavy, spray intervals should be shortened to 14 days. For specific recommendations visit the UW Extension Commercial Tree Fruit Spray Guide http://cecommerce.uwex.edu/showcat.asp?id=16.

Codling moth - The typical lull that occurs between the first and second codling moth flights was scarcely noticeable this season. Ordinarily, trap counts decline after the first flight peaks around 500 GDD (base 50F), then increase again between 873-1296 GDD as moths of the second flight emerge. So far this season DATCP's network of apple insect trappers has reported variable but continuous moth captures since the first flight began during the second week of May. Weekly codling moth averages were as follows:

- May 12: 0.24 per trap (range 0-1 moths,19 traps)
- May 19: 0.21 per trap (range 0-2 moths, 25 traps)
- May 26: 3.10 per trap (range 0-40 moths, 36 traps)
- June 02: 7.49 per trap (range 0-82 moths, 36 traps)
- June 09: 9.64 per trap (range 0-81 moths, 37 traps)
- June 16: 5.73 per trap (range 0-70 moths, 35 traps)
- June 23: 10.72 per trap (range 0-65 moths, 35 traps)
- June 30: 6.38 per trap (range 0-58 moths, 26 traps)
- July 07: 6.48 per trap (range 0-69 moths, 27 traps)

The codling moths reported since June 23 are the second, summer generation, which generally begin to emerge between 872-1,296 GDD (base 50F). Expect trap counts to continue to rise over the next two weeks as the second flight emergence gains momentum, then watch for the peak flight around 1,577 GDD. At the present rate of accumulation, this event could occur by July 21 near La Crosse, July 23 near Beloit, July 30 near Madison, August 6 near Racine, and August 9 near Wausau. Treatment is justified when pheromone trap counts exceed five moths per trap per week.

Spotted tentiform leafminer - Emergence of the second flight of spotted tentiform leafminers is peaking in orchards where 1,150 GDD (base 50F) have been reached. Scout for sapfeeder leafmines approximately one week after a peak flight is registered. To assess numbers of spotted tentiform leafminer mines in the orchard, collect five leaves from 10 random trees for a total of 50 leaves. Using a hand lens, examine the underside of each leaf for active sap feeder mines (avoid counting parasitized mines). Use an average of 1.0 mine per leaf as the action threshold for second generation leafminers.

Vegetables

Onion maggot - As growing degree days approach the 1950 (base 40F) mark across the state, vegetable growers should be wary of second generation onion maggot emergence. Damage from the second generation can be more significant than that of the first generation. To monitor for this pest, put yellow dishpans of soapy water at 100 foot intervals along field edges and check every 4-6 days to determine if populations are increasing or decreasing.

Cabbage maggot – Second and third generation cabbage maggot emergence occurs at the 1476 GDD (base 43F) and 2652 GDD points, respectively. All areas of Wisconsin have surpassed the mark for second generation emergence. As with the onion maggot, cabbage maggot populations can be monitored using a dishpan of soapy water. See UW-Extension Garden Facts publication at http://s142412519.onlinehome.us/uw/pdfs/A3719_e.PDF for more details.

Onion maggot David N. Ferro

Squash bug - Squash bugs feed on all members of the cucurbit family, but most damage will be seen on pumpkins and squash. They have piercing/sucking mouthparts, which suck out plant sap and inject toxic saliva back in its place. The toxin in the saliva causes sudden wilting in the plant, called anasa wilt. If squash bugs feed on the fruit, the damage will likely make the produce unmarketable. Squash bugs have become an increasing problem in Wisconsin in recent years.

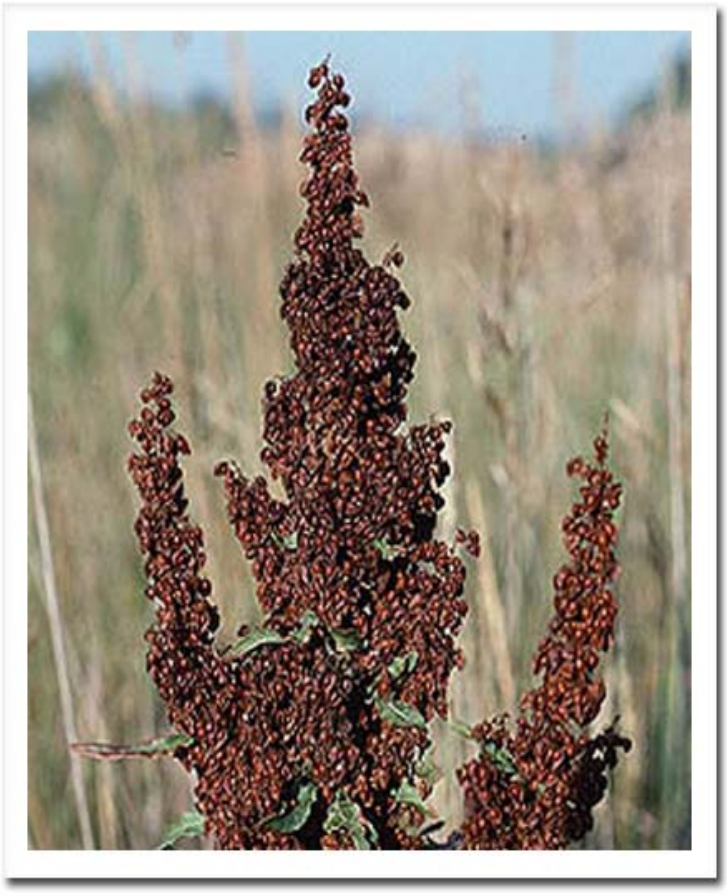
Squash bug J. Hahn (University of Minnesota)

Cabbage looper – Four cabbage looper moths were caught in a pheromone trap at the UW Arlington research station this week. Cabbage plants, along with related species such as collards, broccoli, and cauliflower are hosts for egg laying. Other vegetable crops such as potatoes, spinach, lettuce, parsley, tomato and cucumber can also be hosts. Larvae will feed primarily on the undersides of leaves, "skeletonizing" the leaf. High populations will move from the leaves and begin feeding on fruit. In **cabbage** plants, the treatment thresholds are as follows (% plants with eggs or larvae):

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

Weeds

The most noteworthy agricultural weeds observed this week were growing along roadside ditches and in abandoned fields. Many thistle species are beginning to form seed and curly dock seeds were approaching maturity in parts of southern Wisconsin. Some fields show persistent giant ragweed problems, and several soybean fields observed in Iowa and Richland Cos. had problematic levels of volunteer corn present. Growers should avoid planting Roundup Ready soybeans following Roundup Ready corn because of the simple fact that weed control efforts commonly used in this system will not be effective against volunteer corn. For more information on the control of volunteer corn, see Issue no. 5, article 6 of *The Bulletin*: *Pest Management and Crop Development Info for Illinois* at http://www.ipm.uiuc.edu/bulletin/article.php?id=487.



Curly dock seeds www.ipcm.wisc.edu

Gypsy Moth

Gypsy moth trapping program - The trap setting phase of our program is nearly complete. As of July 5, trappers have set 29,665 traps or 87% of the expected total. All southern Wisconsin traps have been placed, although there are some remaining traps to be set in the North next week. Trappers in the south are scheduled to begin spot checking traps in the week ahead. Gypsy moth phenology models indicate the expected appearance date for adult moths is July 16, earlier than initially thought. The period of trap checking lasts for approximately three weeks. More spot checking will follow to determine the end of moth flight.

Delta trap DATCP gypsy moth trapping archives

Forest and Landscape

Apple scab (*Venturia inaequalis*) – Apple scab was found on crabapples throughout much of the state. Apple scab is a fungal disease found throughout the world. It can infect most cultivars of Malus spp. except those bred for resistance.

This disease develops during wet conditions in the late spring, typically from pseudothecia which overwinter in leaf litter from the previous year. Leaves, flower parts, fruit, and twigs become infected when the rain splashes spores from the leaf litter onto the new growth. Symptoms on infected leaves first appear as velvety brown to olive colored circular spots. Later in the season, these spots turn black. When this occurs, photosynthesis is suppressed in the diseased leaves, and heavily infected leaves and fruit may fall prematurely.

Apple scab on crabapple www.extension.umn.edu

If a tree is only lightly affected with scab, no treatment is necessary. If a tree is heavily infected, year after year, consider applying a fungicide, or (in the case of ornamentals), consider replacing the tree with a scab-resistant variety. To help prevent infection in the future, remove and destroy leaf debris, which is the major source of spores. The most effective method of preventing apple scab is to plant a scab resistant cultivar.

Ash plant bug (*Tropidosteptes amoenus*) – Ash plant bug was found on Autumn purple ash in Dodge Co. This insect is typically active through June and July, feeding on all types of ash trees. Ash plant bug does not kill the tree, but causes discolored, stippled, or distorted leaves. The damage is done by the plant bug feeding on the plant tissue. When the bug pierces the cell to feed on the liquids, they inject their saliva, which is toxic to the plant cells, causing the cells to become bleached. Extensive feeding causes tissue death.

Ash plant bug eggs winter in small twigs and branches on the tree. The eggs hatch shortly after the buds open in the spring. Nymphs begin feeding immediately on the new shoots, petioles, and developing leaves. Within 3-4 weeks (by mid-June) the nymphs mature and mate. These second generation eggs hatch in 7-10 days and feed from early summer to mid fall. Eggs laid in July and August hatch the following spring.

Ash plant bug damage www.forestryimages.org

To control ash plant bugs, the first defense is to keep trees healthy, watering and fertilizing when necessary. For a small infestation, spray the insects off with a stream of water. For chemical control, apply insecticides in early to mid-May, or when damage first occurs. Applications may need to be repeated for large areas.

Shot hole disease (many causes) – Shot hole disease was found on Canada red cherry in Brown Co. Shot hole symptoms are commonly observed in *Prunus* spp. Symptoms are associated with leaf spots caused by several bacteria or fungi. Leaf spots typically appear in spring. The spots then

become necrotic and the injured tissue drops away, leaving holes and tattered areas in the leaf (as though someone fired a shotgun at the leaf, producing the appearance the disease is named after). After the tissue has dropped out, it is often hard to determine what caused the initial injury. Chemical treatment may be used once the specific cause has been identified, if warranted.

Shot hole disease on Canada red cherry WI-DATCP

Other nursery inspection finds this week include:

Northeastern region: Phyllosticta and apple scab on crabapple, powdery mildew on Amelanchier, and oak leaf blister on red oak in Oconto Co.

East central region: Oriental beetle in Outagamie Co. Spruce needle drop on Colorado blue spruce, shothole disease on Prunus cistena, Septoria leaf spot on spirea and variegated dogwood, anthracnose on maple, Dothiistroma on Austrian pine, nipple gall on hackberry, and oystershell scale on Patmore ash in Brown Co.

West central region: Leaf hopper burn on red maple, Septoria leaf spot on dogwood, black spot on rose, rust on serviceberry, barberry looper on barberry, and leaf curl aphid on ash in Green Lake co. Rhizosphaera needle cast on spruce, pine needle scale on white pine, cedar apple rust on crabapple, and anthracnose on hosta in Columbia Co.

Southeast region: Cedar quince rust on cockspur hawthorn, aphids on white ash, anthracnose on clump river birch, root rot on fraser fir, columbine leafminer on columbine, and oak leaf miner on swamp white oak in Dodge Co.

Exotic Pest of the Week

Pale potato cyst nematode (*Globodera pallida*) - Unknown in the United States until two cysts were found from one 45 acre potato field in Idaho in April, the pale potato cyst nematode has caused quite a stir in the U.S. potato industry. Several thousand samples have been collected, and a joint State-Federal team (numbering 40 or more staff) has been working to determine the origin and distribution of the nematode. To date, no more cysts have been found.

In Europe, annual losses (yield loss + control costs) from *G. pallida* and the closely-related *G. rostochiensis* are estimated to reach $100 million. With that potential for injury and the associated export concerns, the vigorous response to the Idaho find is warranted and appreciated.

In Wisconsin, if you suspect potato cyst nematode, please call the DATCP Pest Hotline at **1-800-462-2803**. As the Idaho experience shows, early detection is crucial to effective eradication.

Potato cyst nematode, Globodera pallida A. Morgan, USDA

G. pallida cysts on potato roots Canadian Food Inspection Agency

Potato field infested with G. pallida magallanes.sag.gob.cl

Weekly Apple Insect Trap Counts (June 30 – July 7, 2006)

County	Site	Date	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	AM red[5]	AM yellow[6]
Bayfield	Erickson	6/30-7/7	1,062	0	2	65		
Bayfield	Galazen	6/29-7/6	607	0	4	26		
Bayfield	Gellerman	6/26-7/2	1	0	0	0		
Bayfield	Olsen 1	6/29-7/6	16	0	8			
Bayfield	Olsen 2	6/29-7/6	2,064	0	13			
Bayfield	Lobermeier	6/29-7/6	107	3	1	61	0	0
Brown	Oneida	6/26-7/3	29	750	15	4		
Dane	Deerfield	6/29-7/6	463	4	0	0	0	"lots of flies"
Dane	Stoughton	6/30-7/6	133	119	3.5	2	1	4.5
Dodge	Brownsville	6/30-7/6	54	48	1	0	0	0
Fond du Lac	Campbellsport	6/29-7/6	150	45	2	5	0	0
Fond du Lac	Campbellsport	6/29-7/6	200	50	2	5	0	0
Fond du Lac	Malone	6/29-7/6	300	8	2.3	2		
Fond du Lac	Rosendale	6/29-7/6	35	13	2	1	0	0
Iowa	Dodgeville	6/29-7/6	309	81	69	2	2	3
Jackson	Hixton	6/30-7/6	27	0	1	0	0	0
Marquette	Montello	6/25-7/2	0	14	0	0	0	0
Marinette	Wauzaukee	6/30-7/7	10	1	4	3		
Ozaukee	Mequon	6/30-7/6	400	30	7.6	2.5	bait 0.1 range 0 - 1 unbait 0.1 range 0 - 1	0
Pierce	Beldenville	6/29-7/6	41	11	1	8	0	0
Pierce	Spring Valley	6/30-7/7	342	76	0	3	0	0
Racine	Rochester	6/29-7/6	350	43	5.5	2	unbait 0.5 range 0-1	
Racine	Raymond	6/29-7/6	915	14	2	2	0	0
Richland	Hill Point	6/29-7/5	960	42	2	3	0	0
Sheboygan	Plymouth	6/30-7/6	980	26	18	27	0	0
Trempealeau	Galesville	6/30-7/7	50	0	2	10	0	0
Waukesha	New Berlin	6/29-7/6	148	39	7	0	0	0

[1] Spotted tentiform leafminer; [2] Redbanded leafroller; [3] Codling moth; [4] Obliquebanded leafroller; [5] Apple maggot red ball trap;
[6] Apple maggot yellow sticky board

Weekly Black Light Trap Counts

	Date	BCW[1]	CabL[2]	CelL[3]	CE[4]	DCW[5]	ECB[6]	FA[7]	TA[8]	ForL[9]	SCW[10]	VCW[11]	AlfL[12]	WBCW[13]
Southwest														
Reedsburg	6-29 to 7-6	-	-	-	-	-	59	-	-	-	-	-	-	-
Lancaster	6-29 to 7-6	0	0	12	0	0	6	0	5	0	2	0	0	2
South central														
Mazomanie	6-29 to 7-6	2	0	7	1	3	0	0	12	0	0	0	0	1
Arlington Station	6-29 to 7-4	0	0	0	0	0	0	0	0	0	0	0	0	0
Rochelle, IL	6-21 to 6-27	0	0	0	0	0	31	0	2	0	0	2	0	0
Rochelle, IL	6-28 to 7-3	0	0	0	2	0	10	0	1	0	0	2	0	0
W. Arlington	6-29 to7-6	2	0	2	0	0	4	0	0	0	1	0	0	0
Southeast														
Janesville	6-21 to 6-27	1	0	29	0	0	6	0	19	10	0	0	0	-
Janesville	6-28 to 7-5	1	0	28	0	0	0	0	19	11	0	0	0	-
East Troy	6-29 to 7-6	1	0	0	0	0	0	0	0	0	0	0	0	0
West central														
Sparta	6-29 to 7-5	0	0	0	1	0	0	0	0	0	5	0	0	0
Chippewa Falls	6-30 to 7-6	0	2	0	0	2	8	0	0	0	0	0	0	0
Central														
Marshfield	6-29 to 7-6	0	0	2	3	2	104	0	1	0	21	0	0	0
Hancock*	6-29 to 7-6	0	0	0	0	1	0	0	0	0	0	0	0	0
Wausau	6-30 to 7-6	5	0	12	30	4	23	0	5	0	85	0	0	1
East Central														
Manitowoc	6-29 to 7-5	0	0	0	0	0	5	0	4	0	9	0	0	0

[1] Black Cutworm; [2] Cabbage Looper; [3] Celery Looper; [4] Corn Earworm; [5] Dingy Cutworm; [6] European Corn Borer; [7] Fall Armyworm; [8] True Armyworm; [9] Forage Looper; [10] Spotted Cutworm; [11] Variegated Cutworm; [12] Alfalfa Looper, [13]Western Bean Cutworm

*** Indicates trap malfunction during the week**

Black light trap CATCH of the WEEK

Spotted June beetle, *Pelidnota punctata* (Linnaeus)

Eastern tent caterpillar adult, *Malacasoma americana* (Fab)

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Web Site of the Week

Entomology at Iowa State University

We confess, this is the first place on the entire Web we look for insect images--the incomparable images of Marlin Rice. Great links, a number of active listservs, and be sure to check out the 'interactive grasshopper': how many places can you dissect a virtual grasshopper?

http://www.ent.iastate.edu/

Quote of the Week

What dreadful hot weather we have! It keeps me in a continual state of inelegance.

-- Jane Austen (1775-1817) (attributed)

Potato cyst nematode, Globodera pallida A. Morgan, USDA

EXOTIC Pest of the Week

Pale potato cyst nematode, *Globodera pallida* (Stone)

July 7, 2006