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Wisconsin Department of Agriculture, Trade & Consumer Protection

Wisconsin Pest Bulletin

PO Box 8911 • Madison, WI 53718 • Phone 1-800-462-2803 • Fax: 608-224-4656

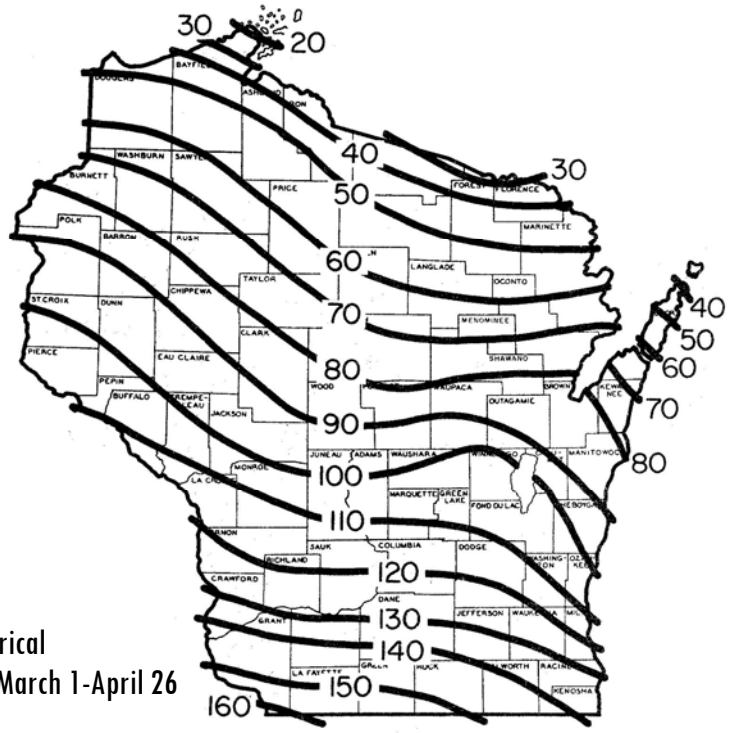
Your weekly source for crop pest news, first alerts, and growing season conditions for Wisconsin

Weather and Pests

Sunny days and mild temperatures during the past week created favorable conditions for planting oats and continuing spring tillage activities. Spring fertilizer applications are underway and farm machinery has become a consistent part of roadway traffic. The average statewide GDD accumulation has reached 158 (base 50F), marking the beginning of activity for several pest insect species. The common asparagus beetles began laying eggs, the first peak flights of spotted tentiform leafminer and redbanded leafroller are in progress, and corn flea beetles have surfaced from overwintering sites. This is the time of year we await the arrival of annual migrant insects that spend winter months in the warmer, southern part of the United States. These pests include: black cutworm, armyworm, aster leafhopper and potato leafhopper. Problem weed species have also begun to emerge, trying to get a head start on any potential competition.

Growing Degree Days through 4/27/06 were

	GDD 50F	2005	48F	40F
Dubuque, IA	196	243	184	413
Lone Rock	192	228	170	390
Beloit	214	233	201	445
Madison	175	225	161	376
Juneau	167	216	156	379
Sullivan	189	226	176	409
Waukesha	166	190	155	377
Hartford	161	186	152	371
Racine	144	145	137	347
Milwaukee	146	148	138	348
Appleton	150	170	137	345
Green Bay	120	134	110	307
Big Flats	182	211	163	380
Hancock	176	204	156	371
Port Edwards	181	197	163	380
La Crosse	215	240	208	449
Eau Claire	199	219	190	414
Cumberland	163	181	146	349
Bayfield	095	092	077	252
Wausau	152	171	130	324
Medford	153	162	134	331
Crivitz	119	126	103	292
Crandon	131	151	105	282



Historical
GDD March 1-April 26

Agricultural Statistics Districts

Looking Ahead

Codling moth - Look for adult emergence to begin at advanced southern sites in the week ahead if warm daytime temperatures continue. The first codling moths usually appear in traps between 201-340 GDD (base 50F). The lower range of the threshold could be reached by May 8 near Racine, by May 3 near Madison, by May 12 near Green Bay and by May 25 near Bayfield.

Redbanded leafroller – Moths are in flight statewide, and peak trap counts have been observed in areas where 106-160 GDD (base 50) have accumulated (in all but the northwest, north central, and northeast districts). According to the GDD forecast for RBLR, oviposition is occurring in apple orchards and on other hosts. Growers near Bayfield can expect the first flight of RBLR moths to peak around May 14. Begin scouting for the first larvae of the season once 167-228 GDD (base 50F) have accumulated. Scouting recommendations are provided in the FRUIT section.

Spotted tentiform leafminer - The first peak flight of STLM comes and goes quickly. Recent trap counts indicate this event is in progress in southern, west central and central orchards. At the present rate of accumulation, 150 GDD (base 50F) will be reached near Green Bay about May 3 and near Bayfield about May 11. Wherever peak flights are registered, growers should make preparations to scout for sapfeeder leaf mines, visible only on the undersides of leaves. The action threshold for first generation STLM is 0.1 mine per leaf.

Bird-proofing Pherocon VI traps - A few cooperators have noted bird activity in or near delta traps baited with fruit moth lures; apparently the resourceful animals are in search of a free lunch of STLM moths. The new Pherocon VI traps are large enough to invite unwanted avian guests, therefore, simple bird proofing may be a good idea. Cooperators with practical ideas on how to keep birds out while still letting the bugs in should email Krista Lambrecht with their strategies at krista.lambrecht@datcp.state.wi.us.

Alfalfa weevil - Egg laying is beginning in alfalfa fields in the southern half of the state. Look for spring-laid eggs to hatch and first instar larvae to appear in fields about 300 GDD (base 48F). Note: the growing degree days **base 48F** listed on the *Wisconsin Pest Bulletin* homepage are specifically for the alfalfa weevil. Current weevil degree days are: Racine 138, Madison 161, La Crosse 208, and Wausau 152. Initiate scouting efforts for alfalfa weevil larvae at 300 GDD.

Black cutworm - The first "concentrated capture" of eight moths occurred near Janesville on the night of April 24, indicating that corn seedlings will be susceptible to cutting about 310 GDD (base 50F) from now. Expect the first eggs of the season to be deposited in weedy fields at about 175-255 GDD, or in the week ahead in southern and central Wisconsin. Scout for leaf feeding before 310 GDD accumulate to prevent larval injury.

Armyworm – A total of seven true armyworm moths were captured at the Janesville black-light trapping sites on the nights of April 24-26, and more migrants are expected to follow. An April 27 report from Brownfields Agriculture Today warns, "Large numbers of armyworm moths have been blown north from Kentucky and Arkansas by recent high winds." Watch black-light trap catches closely in the coming week.

European corn borer – Mature larvae that endured the winter months confined to corn stubble and other hosts will enter the pupal stage next week or the following, as 246 GDD (base 50F) are reached. The first moths of 2006 can be anticipated once 347 GDD have accumulated about two-three weeks from now. Overwintering survival of corn borers is likely to be high, given the mild temperatures. A moderately-sized first flight is in the forecast.

Wireworms – Adults (click beetles) are commonplace in grassy borders of corn fields, indicating egg laying is occurring in susceptible fields. Surveys this week found 3-6 adults per 100 sweeps. Wireworm larvae attack many plants, including: corn, oats, beans, beets, cabbage, carrots, peas and potatoes.

Cowpea aphid – A recent University of Illinois Extension (*The Bulletin*) article reports "impressive densities" of this species (*Aphis craccivora*) have developed in portions of Illinois. The cowpea aphid first caught the attention of Wisconsin growers in 2004 when high populations grew common in southern hay fields, but no reports of this black aphid were received last season. Be on the lookout when scouting first crop alfalfa in the week ahead, and please report any sightings to DATCP.

Aster leafhopper – Migrants were detected in roadside grasses from southwestern Grant Co. to eastern Dane Co. earlier this week. Counts averaged about 3 per 100 sweeps. Look for populations to increase as more aster leafhoppers arrive over the course of the coming weeks.

Potato leafhopper – Two individuals were swept during surveys of alfalfa this week, one from a Dane Co. field and the other from a Lafayette Co. field. It is unknown whether these are the first of an influx of migrants expected about mid-May, or a couple of holdovers from last fall. Occasionally, a small number of potato leafhoppers survive the winter moths here in Wisconsin, but vast majority of the spring population are the result of a migration from the Gulf States.

Forage

Insect development has accelerated in alfalfa, which continues to grow taller at a rapid rate. Fields have reached an average height of 12-14" in parts of the south. Among the most abundant inhabitants of southern fields are tarnished plant bugs and alfalfa weevil adults, currently averaging about 3.5 and 2.2 per 10 sweeps, respectively. In close second are pea aphid adults, detected for the first time this week, followed by a light assortment of beneficials, including damsel bugs and predatory lady beetles.

Alfalfa weevil – Sweep net sampling of 10-12" fields in the past week found a host of active, overwintered adults, but still

no larvae. On the warm, sunny afternoons, mating pairs were observed moving clumsily about on leaflets, occasionally tumbling to the forage floor upon perceiving the approach of a sweep net. Counts of alfalfa weevil adults in Jefferson and Grant Cos. ranged from 0-4 per 50 sweeps.

When not engaged in springtime mating activities, it's likely that the lively female weevils are laying eggs. Using their long "snouts" with mouthparts at the tip, the females chew holes in alfalfa stems and deposit anywhere from 1-40 eggs in each niche. After hatching, the young larvae will climb to the alfalfa terminals or any place where the leaves are tightly packed together to feed. Evidently, the pressure of a leaf pressing upon the head capsule is needed to initiate feeding. Below are the developmental times for the various stages of this insect.

Alfalfa weevil event	GDD (base 48F)
Egg hatch	300
1st to 2nd instar	301 - 438
3rd to 4th instar	439 - 595
Pupa to adult	596 - 814

Alfalfa weevil lateral view Krista Lambrecht DATCP

Pea aphid – Small numbers of plump, female pea aphids were swept from southern alfalfa fields in the last week. Counts ranged from 0-7 aphids per 50 sweeps in Grant, Jefferson and Lafayette Cos.

In Wisconsin, pea aphids overwinter as eggs in the crowns of red clover or alfalfa, and hatch in spring when plant growth resumes. All of the spring hatched aphids are females, capable of reproducing without mating. Aphids will pass a generation or two on the primary host before departing for pea fields, about mid-May or early June. Males do not make an appearance until late summer.

Surveys for pea aphids should be directed at determining: 1) when the first aphids appear in alfalfa (that's now); 2) the appearance of winged forms in alfalfa; 3) the first aphids in peas; and 4) the population build-up in peas.

The action threshold for this pest has been the subject of debate in the last five years or so. Historically, the threshold in peas was 35 aphids per sweep, but this figure does not take into account the virus transmission potential of the pea aphid. After a few devastating virus years, pea growers now use a threshold of 10 aphids per sweep. This is considerably lower than the old threshold, and it has not been put to the test; it may be too low in years when few or no virus problems develop in peas. The best recommendation for now is to pay close attention to aphid levels, look for virus symptoms once aphids begin to migrate into pea fields in late May or early June, consider both thresholds, and use your best judgment.

Pea aphid lateral view Krista Lambrecht DATCP

Cowpea aphid – The cowpea aphid is a relative newcomer to Midwest alfalfa fields. The 2004 growing season was the first time that significant levels of this aphid species were observed, though it was likely around a few years earlier. In 2005, no noteworthy cowpea infestations were detected. University of Illinois Extension reports indicate that the cowpea aphid has reappeared and heavy populations have developed in parts of that state. Wisconsin growers are encouraged to be on the lookout for cowpea aphids next week and throughout the season. Please report new finds (with GPS coordinates, if possible) to krista.lambrecht@datcp.state.wi.us.

Corn

Corn flea beetle – Following a record year of Stewart's wilt detections in seed corn fields, DATCP survey specialists are in pursuit of overwintered corn flea beetles to better forecast the risk for Stewart's wilt in 2006. Remember, the Stewart's wilt bacterium (*Pantoea stewartii*) overwinters in the gut of corn flea beetle. If corn flea beetle survives the winter, generally the bacterium also survives.

To forecast the risk of Stewart's wilt this season, three risk factors were considered. Those risk factors are: 1) the incidence of Stewart's wilt in the previous season, 2) winter temperatures (December, January and February), and 3) corn flea beetle survival/population dynamics.

The first part of the risk forecast equation is clear. More cases of Stewart's wilt were detected in 2005 than in any

year since 1999. Seed field inspections last fall found the disease in 21 of 44 fields surveyed, or 48% of the fields visited. The disease occurred in eight counties, reaching as far north as Eau Claire County.

Corn flea beetle lateral view Krista Lambrecht DATCP

In terms of winter temperatures, two predictive tools, Iowa State Model and Stevens-Boewe Index (see April 21 Bulletin), show at least a low to moderate risk in the southeast. The two models differ slightly; Stevens-Boewe shows a "trace at most" risk for Stewart's wilt statewide, except in the southeast. The Iowa State model shows a "low to moderate" risk statewide, with a "moderate to high" risk in the southeast, and portions of the southwest and south central districts.

The missing piece of the predictive puzzle is the corn flea beetle–where is it distributed in Wisconsin? How successfully did the beetles overwinter here? What portion of the overwintered population is carrying *P. stewartii*? These are the questions the spring survey of corn flea beetles will attempt to answer. Look to future issues of the *Wisconsin Pest Bulletin* for survey results.

Black cutworm – For readers who are interested in the specifics on cutworm migration, the long-distance flight of cutworms into Wisconsin each spring is associated with a low pressure center over the Great Plains, and a trailing N-S cold front and a leading E-W warm front that initiates dispersal from southern overwintering grounds. Whenever this particular weather pattern develops, insects from the south are apt to be carried into Wisconsin from southern states. The unpredictable nature of the weather lends a strong element of unpredictability to early season pest forecasting.

Each season DATCP survey specialists place a network of pheromone traps along the southwestern edge of the state to detect the earliest arrival of migrant black cutworms, and each season we look for a "concentrated capture" of 8-9 moths in 1-2 nights. This event occurred on the night of April 24 near Janesville. Approximately 310 GDD from now, corn seedlings will be vulnerable to cutting by 4th instar larvae.

In addition, egg laying is underway, and "fields that contain winter annual and perennial weeds prior to final tillage and planting are most at risk to an infestation of black cutworms. Fields with common chickweed, mouse-eared chickweed, bitter cress, shepherd's purse, yellow rocket, or pepper grass are likely candidates for the development of a black cutworm infestation." (The Bulletin No. 5 Article 2). For an informative Q&A concerning early season black cutworm issues, readers should visit **The Bulletin: Pest Management and Crop Development Information for Illinois** at: http://www.ipm.uiuc.edu/bulletin/article.php?id=483

Seedcorn maggot – Although current warm, dry weather conditions do not favor seedcorn maggot outbreaks, be alert to the possibility of infestations in fields with an abundance of decaying organic debris or where emergence is delayed by low soil temperatures (when >5 days are required for seedings to break ground). In addition, if the picture-perfect spring weather seen throughout April should abruptly turn cool, the threat of seedcorn maggot will heighten. Current seedcorn maggot degree days are as follows (base 39F): Spring Green 466, Arlington 375, Hancock 371 and Marshfield 288.

Seedcorn maggot life stages www.nysaes.cornell.edu/

Seedcorn maggot flies in sticky trap www.extension.umn.edu/

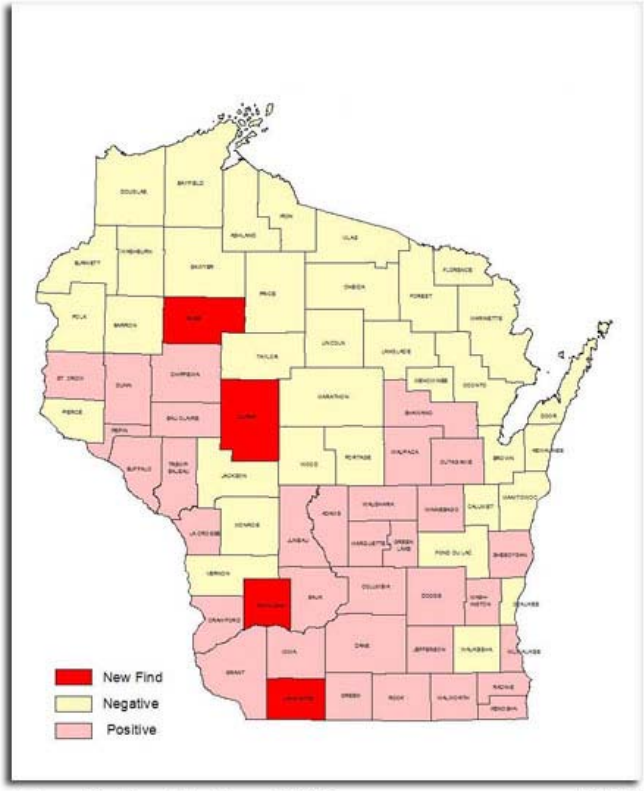
Soybean

Soybean cyst nematode - According to a report by the Brownfield network, University of Illinois research on soybean cyst nematode in the state indicates that 85% of Illinois fields surveyed contained soybean cyst nematode. Moreover, the average population found in those fields was five times higher than the level where injury becomes measurable. This finding stressed the need for growers to test for soybean cyst nematode, even in the absence of symptoms, and highlighted strategies for effective management of the nematode.

In Wisconsin, soybean cyst nematode has become widely distributed, occurring in 37 counties in the state (see map below). Growers are encouraged to test fields for the presence of soybean cyst nematode, to aid in proper management.

The Brownfield Network article is located at: http://www.brownfieldnetwork.com/gestalt/go.cfm?objectid=D277B15A-D092-D3EA-F0D52360A75FEB5F.

Information on SCN in Wisconsin is found at: http://www.plantpath.wisc.edu/soyhealth/scn.htm and testing services from the UW Plant Disease Diagnostic Clinic are available at http://www.plantpath.wisc.edu/pddc/.



Soybean Cyst Nematode Wisconsin 2005 DATCP

Fruit

Spotted tentiform leafminer – STLM pheromone trap captures in the past two weeks indicate peak flight activity is in progress across the state. The optimum time to begin scouting for first generation sapfeeder mines on the undersides of apple leaves is about one week after a peak flight is recorded. Sapfeeders are the young, 1st -3rd instar larvae. It's critical to distinguish between sapfeeders and the older tissue feeder larvae because sprays to control STLM are most effective when directed at the sapfeeder stage. Make decisions to spray based on the number of STLM mines and the action threshold, not the number of STLM moths caught in traps. Collect five leaves from ten trees throughout the orchard, for a total of 50 leaves. Examine the underside of each leaf for STLM mines and keep a running total of the number of mines. The action threshold for first generation STLM is 0.1 mine per leaf.

Redbanded leafroller - Peak trap catches of RBLR moths were recorded in the southern two-thirds of the state in the last two weeks, suggesting first generation larvae are likely to begin hatching at any time (167-228 GDD base 50F). Egg hatch is expected near Racine about May 1, near Madison over the weekend, near Wausau about May 3, and near Bayfield around May 15. Scout for RBLR larvae next week or the following by sampling five trees, 20 bud clusters per tree, for larvae or signs of larval feeding. The action threshold is an average of two or more larvae or fresh feeding sites per tree. RBLR larvae feed on the undersides of apple foliage, webbing or folding leaves together as they mature. This behavior is most damaging when the summer generation is active in August, once fruits are more fully developed.

Plum curculio – When temperatures turn mild each spring, plum curculio weevils begin to leave protective overwintering sites in fencerows, under leaf debris, or in brush piles, to move into apple orchards. Spring emergence continues for up to six weeks and peaks around petal fall. Expect plum curculio activity to resume between pink and petal fall after a few consecutive days of rain and daytime temperatures above 60F. Plum curculio trappers should place traps this weekend to track the movement of this pest into orchards.


Plum curculio www.nysipm.cornell.edu/factsheets/treefruit/pests/pc/

Codling moth – Trappers anticipating the emergence of adults next week may benefit from a review of the procedure to follow once codling moth activity begins. The immediate objective of monitoring codling moth flight using pheromone traps is to achieve effective control of this direct apple pest. Trap counts will indicate when a spray is needed, but first it is necessary to time the BIOFIX. Follow the steps listed below to time the biofix for codling moths and to determine if a spray is warranted:

- Place traps now (if you have not already done so)
- Monitor traps twice a week until the first moth appears
- Note when the first moth is captured, then check traps daily until the second moth is captured
- Record the date the second moth is captured–this is the BIOFIX
- Once the biofix date has been determined, set GDD back to zero and begin counting

- Apply first spray when 250 GDD (base 50F) accumulate after the biofix – ONLY IF THE THRESHOLD OF **FIVE OR MORE MOTHS PER WEEK** IS EXCEEDED.

Codling moth www.vegedge.umn.edu/

Proteoteras spp. www.vegedge.umn.edu/.

Eyespotted budmoth www.vegedge.umn.edu/.

Pinpointing the biofix has confused trappers (and the author of this article) for years, primarily due to inconsistencies in definitions among different fruit IPM publications. Turning to the various guides to learn how to time the biofix will yield a wide range of thresholds. The IPM Manual for MN Apple Orchards uses a cumulative capture of five male moths, while other publications specify different thresholds.

Cooperators in Wisconsin should know that Apple IPM Consultant John Aue uses the date the second moth is captured as the biofix. He reasons that there are typically a few codling moths that emerge ahead of the others. If growers were to spray when the first moth is captured, they may be spraying too early. Instead, waiting until the second moth is captured is usually a better indicator that the first ***sustained flight*** of codling moths is underway. Growers who wait for five male moths to be captured may be waiting too long.

In sum, the BIOFIX is the date the second moth is captured; the date that marks the beginning of the first sustained flight of codling moths. To illustrate, if on Tuesday, May 2, the first codling moth is registered at Richland Center, but the second moth does not appear until Friday, May 5, then Friday, May 5 is the biofix. The first spray to control codling moth should be applied when 250 GDD50 accumulate after biofix if the action threshold of five moths per trap per week is exceeded. A second spray may be applied 10-14 days later if the action threshold is exceeded a second time. Use an action threshold of five or more moths per week throughout the season.

Codling moth look-alikes – Cooperators who are anxiously awaiting the appearance of the first codling moths of the year should be warned of a look-alike species that emerges slightly ahead of the real thing, ***Proteoteras* spp**. Last year several trappers in the southeast found *Proteoteras* invading traps. This fruit moth looks nearly identical to codling moth, but is a bit smaller and has tiny black bumps on the forewings (visible with a hand lens). Codling moth has no such bumps.

A second imposter which occurs later in the season, but also shows up in codling moth traps, is the **eyespotted budmoth** (EBM). EBM is quite a bit smaller than codling moth and has a gray, transverse band across the forewings. Codling moth is separated from this species by the bronze, metallic scales at the tip of the wings.

When the first moths begin showing up in traps baited with codling moth lure, quickly check to make sure it is indeed the codling moth, and not an imposter.

Weeds

Emerging weeds - Growing degree days continue to accumulate, making conditions ideal for crop growth and early-germinating weed species. To have an effective and lasting weed management program on your farm, it is critical to be knowledgeable about ideal times to target specific problem species. Routinely scouting fields for weed presence, abundance, type and size is one of the first and most basic measures to take to gain control of weed populations.

So far this season, weeds are most prolific in no-till fields. The freshly turned soil of cultivated fields gives the false impression that soon to be planted crops will be given a weed-free base on which to grow. Mechanical cultivation can be an effective tool to use for weed management, especially for perennial weeds. However, a new flush of

weeds will soon emerge and do their ecological best to compete with crops for nutrients and sunlight. In Jefferson Co., 10-12" shepherd's purse (*Capsella bursa-pastoris*), 4-6" prickly lettuce (*Lactuca serriola*), and 10-12" dandelion (*Taraxacum officinale* (Weber) were observed during surveys this week.

Other early weed species soon to appear include: horseweed or marestail, field pennycress, wild carrot, henbit, downy brome, and chickweed. The next round should emerge now that growing degree days have exceeded 150 (base 48F) throughout much of the state. Key species in this group are: kochia, quackgrass, giant ragweed, prostrate knotweed, white cockle or white champion, lambsquarters, wild mustard, Pennsylvania smartweed, horseweed and sunflower.

Weed resources - Several University weed scientists have developed a number of different guides and tools to aid in identification of specific species. The following Iowa State and University of Wisconsin-Extension sites are helpful online guides to species identification:

http://ipcm.wisc.edu/uw_weeds/extension/pdfs/WeedGuide.pdf

http://www.weeds.iastate.edu/weed-id/weedid.htm. These are only a few of the resources available for species identification.

Another useful online resource is the "**Weedometer**" available at http://weedecology.wisc.edu/weedometer/. Dr. Jerry Doll maintained and monitored several weed species at the Arlington research station weed garden for a number of years. From those data, Dr. Ed Luschei at UW-Madison developed the '**Weedometer**', a phenological guide to key weed species in Wisconsin. Readers can use this tool to view individual species and see average emergence and flowering times.

Potatoes

Pale potato cyst nematode – Last week's detection of the pale potato cyst nematode (*Globodera pallida*) continues to have an impact on the potato world. As expected, Japan closed its borders to U.S. potatoes, a mostly-symbolic act, given the small amount of potatoes involved. So far, Canada and Mexico have limited restrictions to potatoes and soil from Idaho. Korea, Taiwan, Malaysia and Singapore have asked for information on the detection, but have not taken any trade action yet.

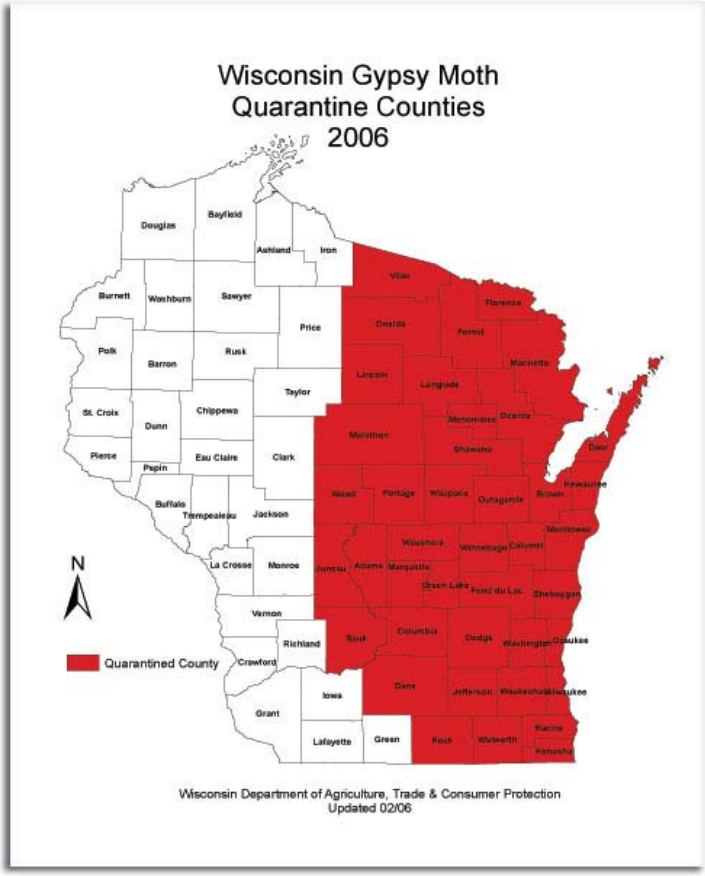
Sampling of the processing facility and the storage sheds has been completed, and intensive sampling of the affected fields has begun. According to information from the Unified Command (ISDA and USDA), the fields will be sampled on a grid of four meters by four meters–yielding something like 3,000 samples from the 500 acres. Samples will be analyzed at the University of Idaho Nematology Laboratory in Parma, Idaho. Trace-back investigations on seed origins continues, with historical information to 1995 and 1993 being collected. Obviously, lots of information will follow.

Gypsy Moth

Gypsy moth trapping program - All trappers have been hired for the 2006 season. A total of nine lead workers and forty-seven trappers will be setting traps starting in mid- to late May. Trapper training will take place in three locations: Madison on May 15-16, Black River Falls on May 17-18, and Hayward on May 22-23. Trappers will be trained in gypsy moth biology and identification, trap setting procedures, map reading and GPS usage. Each trapper will be responsible for setting approximately 700 traps which may cover part of one county, a whole county, or parts of several counties. Trap setting will take 4-5 weeks to complete. The goal of this program is to have all traps in place by the first week of July. 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/index.jsp

Gypsy moth inspection training - No additional counties were added to the gypsy moth quarantine for 2006 (see map). If you are traveling from a quarantined county to a non-quarantined county, products that can carry gypsy moths must be inspected and found clean before they can be moved. Products that must be inspected include: nursery plants and trees, firewood, outdoor furniture, and RVs. For gypsy moth inspection training, please contact Becky Hoffman at Rebecca.Hoffman@datcp.state.wi.us or 608-224-4588.

Gypsy Moth Traps per County March, 28 2006



Gypsy moth quarantined counties 2006

Forest and Landscape

Gladiolus Rust (*Uromyces transversalis*) - On April 7, 2006, the Hawaii Department of Agriculture identified Gladiolus Rust on leaves of cut gladiolus flowers coming from Florida. The USDA confirmed the initial identification. Trace-backs indicated that the rust-infected gladiolus originated from a gladiolus production farm in Manatee County, Florida. This is the first find of gladiolus rust in Florida.

Gladiolus rust is of plant quarantine importance in Europe and the United States. This fungus primarily attacks hybrid cultivars of gladiolus grown for flower production and could have significant impact if it became established or was transported into greenhouses or nurseries. This rust is apparently indigenous to eastern and southern Africa. It has also been reported from Morocco, southern Europe (questionably from France and Spain, possibly established in Italy, Malta, and Portugal), South America (Argentina and Brazil), Martinique, Australia, and New Zealand, and has recently been intercepted from Mexico. *Uromyces transversalis* is named for the transverse sori that develop across the width of the leaves, as compared to most rusts on monocots whose sori burst through longitudinally along the veins of the leaf.

Eastern tent caterpillar - A small, golf ball-sized tent was observed in a crabapple tree in Dane Co. this week, and in roadside wild cherry trees along Hwy 11 in Grant and Lafayette Cos. Caterpillars were about a quarter of an inch long and all contained within the tent. Very little feeding damage was observed on the foliage.

Eastern tent catepillar tent Lacy L. Hyche, Auburn University

Eastern tent caterpillar is native to the United States and feeds primarily on *Malus* and *Prunus* spp. While eastern tent caterpillars can defoliate smaller trees, they usually are more of a nuisance than a major pest. Tents in smaller trees can be broken apart and the caterpillars sprayed with soapy water or individual branches with tents can be pruned off, put in a plastic bag and discarded. It is not advised to burn the tents, as this may injure the tree more than the caterpillars would have. Another strategy for reducing populations is to search for the egg masses in the winter. Egg masses encircle small stems on host trees (see photo). Residents can simply scrape off the egg masses to reduce next year's population. Eastern tent caterpillar is often confused with gypsy moth, but gypsy moths do not form tents and are much more harry, with six pair of red dots and five pair of blue dots on the caterpillar. For more information see Extension Publication http://cecommerce.uwex.edu/pdfs/A2933.PDF

Eastern tent catepillar larva Lacy L. Hyche, Auburn University

Exotic Pest of the Week

Potato Tuber Moth - The potato tuber moth (*Phthorimaea operculella* (Zell) is a pest to crops in the Solanaceae family, but most commonly is associated with potatoes. The distribution of this species is worldwide, however, within the United States, it has only been found in California and within parts of Oregon, Washington and Idaho. California potato growers are accustomed to managing this pest, as its presence has been reported there since 1856 (Alvarez et al. 2005). Those growing solanaceous crops in Oregon, Washington and Idaho are also familiar with potato tuber moth, since significant populations have occurred in the last 4-5 years. Milder winter temperatures and dry summers are thought to be part of the reason for the new found migration (Alvarez et al. 2005).

Though this exotic pest species is named for the adult phase of the life cycle, it is actually the larvae that cause the most economical damage. The larvae feed both on the foliage and potato tubers. Foliar damage can be significant enough to effect tuber development and tuber damage makes potatoes unmarketable and creates more opportunities for pathogens.

Identification and Life Cycle – Adult potato tuber moths are silvery-gray in color, have a narrow body, and are approximately 10 mm in length. The wingspan is approximately 12 mm and the wings are grayish brown in color. The adult moths are found to be most active during the night.

Eggs are laid on the underside of leaves and on exposed tubers. When larvae hatch out of the eggs, they are usually 1-2 mm in length and after the fourth instar, reach a length of 15-20 mm. Each instar has a dark brown head. The early instars are grey or yellowish-white and later instars have a slight pink or green color. Pupation occurs in dead potato leaves, on the soil, or in stored tubers.

Potato tubermoth foliar injury

Should we be concerned? - The potato tuber moth has not been documented in Wisconsin, and although the places where it is found are over 2000 miles away, we still should be aware that this pest could eventually make its way to Wisconsin potato fields. Knowing how to recognize symptoms of potato tuber moth is one of the first measures to prevent dramatic economical losses. As mentioned earlier, the greatest losses occur when larvae move from feeding on foliage to feeding on tubers.

When the larvae feed on plant foliage, they create transparent leaf blisters by burrowing through leaf tissues. Once sufficient foliage is gone, the larvae will move underground and begin feeding on tubers. The larvae excavate tunnels through the tuber, often entering through the eyes and leaving piles of frass at the tunnel entrances. Potatoes are not free from harm once removed from the field. Larvae will continue feeding in storage locations and this could create one possible path of transit to new locations.

Potato tubermoth http://www.fao.org/inpho/

Potato tubermoth larva http://www.bhg.com.au/Images/

Black Cutworm Trap Catches 2006

BLACK CUTWORM PHEROMONE TRAP CAPTURES - SPRING 2006

County	Town	3/29	4/5	4/7	4/11	4/12	4/13	4/17	4/18	4/20	4/24	4/27
Hwy 11 SOUTHERN LINE												
Grant	Fairplay	0	0			0			0	0	0	0
Grant	Prairie Corners	0	0			1			1	0	0	2
Grant	W Hazel Green	0	0			4			4	0	1	1
Grant	N Hazel Green	0	0			1			0	2	0	0
Lafayette	Lead Mine	0	0			0			2	0	0	0
Lafayette	N New Diggings	0	0			1			3	1	0	0
Lafayette	Shullsburg	0	0			1			1	0	1	1
Lafayette	E Shullsburg	0	0			5			3	3	2	2
Lafayette	W Gratiot	0	0			0			3	2	0	1
Lafayette	Gratiot	0	0			0			1	2	0	0
Lafayette	E Gratiot	0	0			0			2	1	0	0
Lafayette	E South Wayne	0	0			0			2	0	0	0
Green	Browntown	0	0			0			0	0	1	1
Green	Cadiz Springs	0	0			0			2	0	0	2
Green	E Cadiz Springs	0	0			1			1	0	0	0
Green	W Monroe	0	0			0			3	2	1	1
Green	E Monroe	0	0			2			4	1	0	0
Green	Juda	0	0			1			0	0	0	0
Green	E Juda	0	0			0			2	0	1	1
Green	Brodhead	0	0			0			0	0	0	1
HWY 18 SOUTH CENTRAL LINE												
Dane	Bluemound	~		0	0		0	0		0	0	0
Iowa	Barneveld	0		0	0		0	1		0	1	0
Iowa	East Ridgeway	0		0	0		0	0		0	0	0
Iowa	West Ridgeway	~		0	0		0	0		0	0	0
Iowa	East of Dodgeville	0		0	0		0	0		0	1	0
Iowa	East Dodgeville	0		0	0		0	0		0	0	0
Iowa	West of Dodgeville	0		1	0		2	0		0	0	0
Iowa	Edmund	~		0	0		0	1		0	0	0
Iowa	Cobb	0		0	1		1	0		2	1	0
Iowa	East Montfort	0		1	0		0	0		0	0	0
Grant	West Montfort	~		0	0		0	0		0	0	0
Grant	East Preston	0		0	0		0	0		0	0	0
Grant	West Preston	0		1	0		1	1		0	0	0
Grant	Fennimore	0		0	0		0	0		0	0	0
Grant	West of Fennimore	0		0	0		0	0		0	0	0
Grant	Mt Ida	0		0	0		1	0		1	1	0
Grant	Mt Hope	0		0	0		1	0		0	0	0
Grant	West Mt. Hope	0		0	0		2	1		0	0	1
Grant	West Patch Grove	0		0	0		0	0		0	0	0
Grant	East Bridgeport	0		1	0		0	0		0	0	0
Grant	Lancaster	0		0	0		0	0		0	1	0
Rock	Janesville	0	1	1	5 (4/10)		9	4		7	**8**	1
Monroe	Sparta									1	0*	(damaged)
Monroe	Tomah									0	0	(4/20-4/27)
Monroe	Cataract									0	2	(4/20-4/27)
Monroe	Wilton									0	0	(4/20-4/27)

Weekly Apple Insect Trap Counts

APPLE INSECT TRAP COUNTS THROUGH APRIL 28, 2006

County	Site	Date	STLM	RBLR	CM
Bayfield	Atkins	4/18-4/24	0	0	
Bayfield	Atkins	4/14-4/17	0	0	
Bayfield	Kavajecz 1	4/20-4/27	6	0	
Bayfield	Kavajecz 2	4/20-4/27	43	0	
Bayfield	Kavajecz 3	4/20-4/27	36	1	
Bayfield	Kavajecz 4	4/20-4/27	10	0	
Bayfield	Ferraro	4/20-4/27	0	0	
Bayfield	Galzen	4/20-4/27	20	0	
Bayfield	Olsen 1	4/20-4/27	46	0	
Bayfield	Olsen 2	4/20-4/27	10	0	
Bayfield	Lobermeier	4/20-4/27	16	0	
Pierce	Beldenville	4/20-4/27	115	45	0
Crawford	Gays Mills W2	4/19-4/26	150	60	
Dane	Deerfield	4/19-4/26	403	140	0
Dodge	Brownsville	4/21-4/27	16	90	0
Fond du Lac	Malone	4/20-4/27	275	10	
Grant	Lancaster	4/20-4/27	0	261	
Grant	Sinsinawa	4/21-4/28	21	0	
Green	Brodhead	4/20-4/27	26	132	
Iowa	Dodgeville	4/21-4/28	688	46	
Jackson	Hixton	4/21-4/27	810	23	0
Kenosha	Burlington	4/21-4/28	200	40	0
Marquette	Montello	4/16-4/32	240	8	0
Ozaukee	Mequon	4/18-4/27	1200	33 (4/24-4//27)	
Pierce	Spring Valley	4/21-4/28	326	43	
Racine	Rochester	4/21-4/28	738	90	
Racine	Raymond	4/21-4/28	700	95	
Richland	Hill Point	4/19-4/25	490	75	
Sheboygan	Plymouth	4/20-4/27	960	75	
Trempealeau	Galesville	4/21-4/28	1000	72	
Waukesha	New Berlin	4/21-4/28	500	18	

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

Web Site of the Week

The Weedometer

Get weeds before they get your crops by anticipating when they'll emerge. The Arlington Research Station's handy "speedometer" shows the average emergence time for more than 60 of Wisconsin's worst weed species.

http://weedecology.wisc.edu/weedometer/

Quote of the Week

"Life is hard for insects. And don't think mice are having any fun either."

--*Woody Allen*

EXOTIC Pest of the Week
Potato tubermoth, *Phthorimaea operculella* (Zell)

April 28, 2006