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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

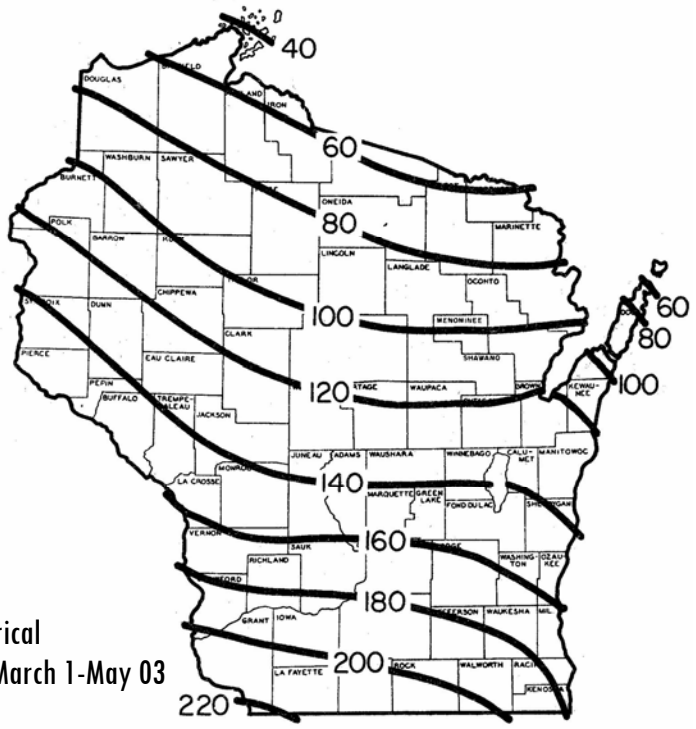
Your weekly source for crop pest news, first alerts, and growing season conditions for Wisconsin

Weather and Pests

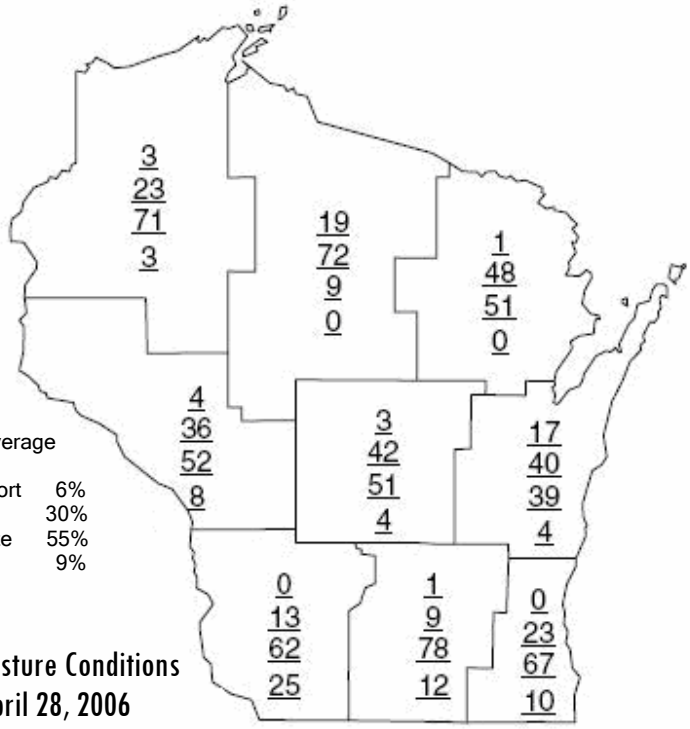
Planting progressed at an unprecedented rate again this week, after being slowed momentarily by two days of light rain last weekend. Vegetation seemed to double in height following the precipitation, and development of both crops and insects is advancing at such a clip that it is proving difficult for survey specialists to keep up. As of May 1, corn planting was 31% complete, compared to 23% in 2005 and a five-year average of 15%. The percentage of corn planted is the highest ever recorded at this point in the season. Oats planting is 80% complete, compared to 66% last season and a five-year average of 52%. Similarly, soybean planting is reported to be proceeding rapidly. Also ahead of schedule this week was the arrival of migratory potato leafhoppers and the emergence of overwintered bean leaf beetles.

Growing Degree Days through 5/04/06 were

	GDD 50F	2005	Sine 48F	40F
Dubuque, IA	248	266	244	526
Lone Rock	241	250	225	498
Beloit	275	258	272	569
Madison	221	246	214	483
Juneau	209	239	204	482
Sullivan	239	253	235	522
Waukesha	207	211	203	479
Hartford	200	205	198	471
Racine	181	158	182	444
Milwaukee	182	162	182	445
Appleton	193	186	186	448
Green Bay	158	145	153	404
Big Flats	229	231	215	487
Hancock	223	223	209	478
Port Edwards	228	216	215	486
La Crosse	267	263	269	565
Eau Claire	243	240	243	522
Cumberland	193	200	182	484
Bayfield	123	109	106	330
Wausau	189	187	170	416
Medford	192	177	176	425
Crivitz	155	140	142	384
Crandon	162	166	137	365



Historical
GDD March 1-May 03



State Average

Very Short	6%
Short	30%
Adequate	55%
Surplus	9%

Soil Moisture Conditions
as of April 28, 2006

Looking Ahead

Potato leafhopper - Typically a few ambitious leafhoppers arrive in Wisconsin by early May ahead of the primary influx of adults, but enough adults were swept from south central fields this week to suggest annual migrants have "officially" settled into the state. Although it is not uncommon for a few adult potato leafhoppers to be netted from fields this early, the regularity of detections from field to field was somewhat surprising. Potato leafhoppers have definitely arrived. Expect more migrants to turn up in alfalfa fields next week.

Alfalfa weevil - Low numbers of first instar larvae were present in most of the south central alfalfa fields surveyed this week (< 2 per 10 sweeps). Adult activity showed no signs of slowing and spring egg laying is well underway. Levels of young larvae are expected to increase throughout southern Wisconsin in the week ahead. Begin scouting for alfalfa weevil feeding injury next week as 300 GDD (base 48F) are reached.

Flea beetles – Flea beetles are pests that pass the winter in the adult stage, which means they emerge in the springtime ready to resume feeding. Overwintered flea beetles have been active for more than two weeks, so it comes as little surprise that growers are already reporting signs of flea beetle feeding on susceptible plants, spinach in particular. Visit the VEGETABLE section for preventative measures and post-infestation control strategies.

Bean leaf beetle – Emergence of the overwintered generation of beetles is underway. Adults were detected in several Dane and Columbia Co. alfalfa fields this week at the rate of 1-2 per 100 sweeps. Surveys for this pest in alfalfa are scheduled to begin in southwest and south central counties in the week ahead and continue northward through mid-May. A mild 2005-2006 winter likely favored beetle survival, putting early planted soybean at increased risk of defoliation, and potentially BPMV transmission.

European corn borer – Overwintered larvae are pupating near Dubuque, Beloit and La Crosse where 246 GDD (base 50F) have accumulated. Black light trappers should anticipate moths of the first flight to appear in traps within the next week or two, once 347 GDD are reached. Based on last fall's statewide average of 39 borers per 100 plants, a moderately-sized first flight of moths is expected to take to the skies later this month.

True armyworm - Counts at the Janesville black light trapping site rose sharply to 52 moths during the April 24-May 4 reporting period, indicating egg deposition is soon to occur in grasses and the time to search for larvae is approaching. Generally the best time to scout is 10-14 days after a peak flight has been registered. True armyworm catches ranging from 5-15 moths were also registered at the Arlington, Sparta, Lancaster Mazomanie trapping sites. All grasses are susceptible to armyworm, especially corn, oats, rye, wheat, sorghum, bluegrass, and barley.

June beetles – It's that time of year when June beetles are active near lights, often struggling determinedly to turn themselves right side-up. These ungainly scarabs are hardly skilled fliers, and even less skilled at landing. Anyone who has taken the time to watch an individual June beetle has likely witnessed its "crash landing" and subsequent struggle to its tarsi. A Sparta black light trapping site reported a capture of 38 beetles this week.

June beetle Laura C. Jesse www.extension.iastate.edu

Codling moth - Look for adults to appear in pheromone traps where 201-340 GDD (base 50F) are reached in the coming week. Apple growers in the south central, southwest and west central districts are urged to review the procedure for calculating the biofix (see April 28 issue), as this event is just around the corner. The first spray (using standard chemistries) should be applied approximately 250 GDD after the biofix if the threshold of five codling moths per trap per week is exceeded. Applications of growth regulators like Esteem should be made 100 GDD after the biofix, just prior to egg hatch.

Pine needle scale – Eggs of the pine needle scale are expected to begin hatching this week and next. Look for crawler activity between 200–350 GDD (base 50F). The optimum time for control of pine needle scale is during the period when the unprotected, bright red crawlers are active. See the FOREST and LANDSCAPE section for scouting recommendations.

Honeylocust plantbug nymphs – The accumulation of 100-200 GDD (base 50F) across most of the state means nymphs have emerged to feed on the new growth of honeylocusts. Regular inspection of susceptible trees in the next two weeks is recommended to determine if control may be needed.

Forage

Alfalfa weevil – Surveys this week found recently early instar larvae at the rate of 0-3 per 10 sweeps and adults numbering 2-3 per 10 sweeps in 20-22" Columbia Co. fields. First instar larvae were swept from Dane Co. fields at the rate of one per 10 sweeps, while counts of adults ranged from 2.5-3 per 10 sweeps. The degree day model available for alfalfa weevil forecasts egg hatch at 300 GDD (base 48F). This point is expected to be reached more widely in the next week.

Initiate scouting efforts in the week ahead, and base control decisions on action threshold of 40% tip feeding 7-10 days prior to harvest.

Tarnished plant bug – Nymphs appeared in sweep nets for the first time this week, suggesting a sharp population increase is in the forecast. Adults numbered three or fewer per 10 sweeps, while nymphs averaged two per 10 sweeps in Columbia Co. Fortunately alfalfa can support very high levels of plant bug adults and nymphs without the threat of damage. The action threshold for plant bugs in alfalfa that is three inches or shorter is three per sweep, and increases to five per sweep in alfalfa that is taller than three inches.

Pea aphid – Populations are on the increase. Sweep net counts currently range from 6-22 aphids per 10 sweeps in Dane and Columbia Cos. fields. The action threshold for pea aphids in alfalfa is approx. 100 aphids per sweep, particularly if soil moisture levels are inadequate. In pea fields the threshold is much lower; densities in the range of 10-35 aphids per sweep may justify an insecticide treatment.

Meadow spittlebug – Although their familiar, frothy spittle masses are not yet perceptible, newly-hatched meadow spittle bugs nymphs are active in southern alfalfa fields. Surveys in Columbia Co. detected an average of two nymphs per 10 sweeps. Look for nymphs to increase in size by next week, and for spittle masses to become noticeable in roadside grasses. Moist spittlebugs nymphs often stick to the rim of the sweep net instead of falling to the bottom like weevils and plant bugs, so be sure to carefully inspect the fabric around the rim.

Alfalfa caterpillar – Low numbers of bright green larvae with a prominent, white, longitudinal stripe were swept from alfalfa fields surveyed in south central fields. Alfalfa caterpillars are common inhabitants of alfalfa and rarely cause economic damage. Control is warranted when an average of 10 or more larvae per sweep is observed. Counts of 1 larva per 10 sweeps were noted this week.

Mystery mites – Once fields began to dry following light rain showers on Wednesday afternoon, thousands of tiny, black mites with red legs were netted from several Columbia Co. alfalfa fields. The mite species was unfamiliar to both DATCP's survey crew and local forage experts. Images were sent to various entomologists in the region, and we are awaiting their determinations.

Cowpea aphid – Despite warnings of heavy populations of this aphid species in Illinois, Wisconsin fields are free of cowpea aphid for the time being. No cowpea aphids were found in any Wisconsin alfalfa fields surveyed this week or last. Survey specialists remain on the lookout and will report any new finds.

Springtails – Thousands of minute, black and mustard-yellow springtails were active in 20-24" Dane, Columbia and Grant Co. alfalfa fields surveyed in the past week. These organisms are so tiny that they could easily escape notice if not for the high numbers. The common name "springtail" refers to their ability to spring quite a distance when disturbed. Most springtails present in alfalfa are feeding on decaying organic matter, and not the crop. Threshold levels of this pest are seldom exceeded in field crops.

Corn

European corn borer – Pupation of overwintered larvae is underway in the south central and west central districts, just as the mountain ash is flowering and 246 GDD (base 50F) have accumulated. Considering that the population going into last winter was moderate, averaging 39 borers per 100 plants (0.39 per plant), and overwintering mortality was likely to be low, the first flight of moths expected later this month could give rise to a larger first generation of borers than we've seen in some time. Look for moths to begin appearing in black light trap catches around May 14 near Beloit, May 20 near Madison and Hancock, and May 26 near Wausau and Cumberland, once 375 GDD have accumulated.

Black cutworm – Pheromone trap captures indicate migration continued at a slow pace during the past week. Janesville trapper Bill Veith reported nightly counts of six moths on April 28 and May 4, while captures at the additional 45 trapping sites numbered fewer than three moths per trap. Despite overall low trap counts, it can be guaranteed that the migrant moths that arrived in Wisconsin last month are now depositing eggs in weedy fields. Scout for leaf feeding once seedlings begin to emerge, before 310 GDD (base 50F) are reached.

Black cutworm feeding http://www.ipm.uiuc.edu/

Soybeans

Bean leaf beetle – Overwintered bean leaf beetles have come out of hibernation and started to move into alfalfa fields to pass the time before for soybeans emerge. In Dane and Columbia Cos., 1-2 beetles per 100 sweeps were found in 20-24" alfalfa fields. Keep in mind early planted soybeans are more susceptible to feeding injury by the overwintered beetles. The longer the gap between bean leaf beetle emergence and soybean emergence, the better. The small percentage of soybeans that have already been planted in the southern districts will be particularly attractive to this generation of beetles.

Free Soybean Rust Testing Through the UW-Madison Extension Plant Disease Diagnostics Clinic - In 2005, the Plant Disease Diagnostics Clinic (PDDC) at the University of Wisconsin-Madison offered free diagnostic services for soybean samples suspected of having soybean rust. Free soybean rust diagnostics will continue at the PDDC in 2006. The attached/enclosed instructions and submission form should be used whenever possible when collecting a putative soybean rust sample and sending it to the PDDC. An electronic version of the instructions/submission form is available on the web at pddc.wisc.edu. Hard copies of the form are available upon request by contacting: The Plant Disease Diagnostics Clinic, Department of Plant Pathology, University of Wisconsin-Madison, 1630 Linden Drive, Madison, WI 53706-1598. Phone: (608) 262-2863. Email: bdh@plantpath.wisc.edu.

Soybean rust update - The absence of soybean rust in Wisconsin last year should not lull growers of the state into complacency. The threat from soybean rust still exists, and there is much we don't yet know about the epidemiology of the disease in the United States. Detections in Texas and Mexico (which did not occur in 2005) are likely to be significant to Wisconsin growers, given that general summer weather patterns often flow north from those areas. To encourage scouting and early detection, the UW Plant Disease Diagnostic Clinic is offering free testing of suspect soybean rust samples. Information on the UW PDDC testing program is available at **http://pddc.wisc.edu/forms/SoyRustSubmission.pdf**

Soybean rust lesions

As of April 24, soybean rust had confirmed in 21 counties in four states (AL, GA, FL, TX) in the United States in 2006. In a number of those locations, efforts have been made to destroy or remove host material. At all those sites, rust was found on kudzu or overwintering soybean; no rust has yet been detected on newly planted soybeans. Dry weather in the south may be slowing the spread of the disease for now.

In Wisconsin, the University of Wisconsin Extension is planting a network of soybean sentinel plots for a second season. Part of a national network of plots, the sentinels will track the northward progression of the disease. Sentinel plots will be planted early and scouted regularly by Extension personnel, and results will be communicated to soybean growers through both the USDA Soybean rust site **http://www.sbrusa.net/** and the UW Soybean Plant Health site **http://www.plantpath.wisc.edu/soyhealth**/, and via the toll-free Wisconsin Soybean Rust Hotline 1-866-787-8411.

Small Grains

English grain aphid - Counts ranging from 3-5 winged and non-winged adults per 50 sweeps were collected from winter wheat in western Dane and eastern Columbia Cos. earlier in the week. These were the first migrant English grain aphid sighted this season, although it is likely that low numbers of aphids have been present in some fields since late April.

English grain aphid University of Nebraska Dept of Entomology

English grain aphid is common in small grains, and is one species in a group of aphids that transmit barley yellow dwarf virus (BYDV). It is dark green in color, with black antennae and long, black cornicles, making it fairly easy to distinguish from other small grains inhabitants like the bird-cherry oat aphid and the greenbug.

Rust of small grains - The latest Cereal Rust Bulletin (May 2, 2006) reports that the only report of wheat stem rust in the country so far was a low level of infection at Baton Rouge, LA, and those plots were drying down due to a lack of rainfall. Wheat leaf rust is widespread and increasing in severity throughout the southern U.S., but very little wheat stripe rust is present. Stripe rust, long considered to be a problem only in the Pacific Northwest, has been increasing in incidence throughout the center of the country in recent years. Hot and dry conditions across much of Texas and Louisiana this April may have slowed the spread of this rust. The Cereal Rust Bulletin is available at http://www.ars.usda.gov/Main/docs.htm?docid=9757.

Potatoes

Idaho pale potato cyst nematode update - Survey efforts to delimit the extent of the infestation of the exotic nematode *Globodera pallida* in two Idaho fields are ramping up to full speed. The find of the nematode, first detected in soil samples from a grading line and identified on April 12, 2006, has led to temporary restrictions on Idaho potatoes being shipped to Canada, Korea and Mexico, and restrictions on all potatoes from the U.S. to Japan. Seven facilities (two fields

and several warehouses and packing sheds) have been placed under quarantine, and over 1,000 samples have been collected from the associated fields. Efforts also continue to determine the origin of the infestation. At of May 1, 2006, the Idaho State Department of Agriculture and the USDA had 50 people working on the incident.

Fruit

Codling moth – Two moths were captured in a trap near Hixton (Jackson Co.) this week and four were reported from Galesville (Trempealeau Co.), but it's not clear if these are the real thing or the look-alike *Proteoteras*. The coming weekend will likely bring about moths of the first flight, particularly near Beloit and La Crosse where GDD accumulations are approaching 300 (base 50F). Codling moth activity usually begins between 201-340 GDD. Near Bayfield, the first moths could appear as soon as May 24 or as late as June 28, at the present rate of GDD accumulation. Bayfield Co. apple insect trapping cooperators should place codling moths traps by May 11.

Proteoteras spp. – **ATTENTION**. This codling moth look-alike has started to turn up in codling moth traps, about a week before the actual codling moths are expected to appear. Two imposter moths were reported in a codling moth trap near Rochester, and several others were captured near Campbellsport (Fond du Lac Co.), Spring Valley (Pierce Co.), and possibly Galesville (Trempealeau Co.) and Hixton (Jackson Co.). Continue to watch traps closely for codling moth to arrive, and use a hand lens to differentiate the target pest from the look-alike.

Spotted tentiform leafminer – The progeny of the first flight of adults that reached peak levels from April 21-28 are now active. The GDD model available for STLM predicts the first sapfeeder mines will start showing between 209-231 GDD (base 50F). The optimum time to scout trees for sapfeeder larvae is this week and next, as more mines become detectable. Scout for STLM by collecting five leaves from 10 trees throughout the orchard and examining the underside of each leaf for sapfeeder mines. A count exceeding 0.1 mine per leaf during the first generation indicates the potential for problems.

STLM sapfeeder larvae S.D. Bishop www.nsapples.com

STLM mine on underside of leaf http://bugs.osu.edu/

Redbanded leafroller – Activity of the first flight of adults continued this week, with relatively high counts registered at several trapping sites including: Brownsville 114, Deerfield 116, Oneida 116, Lancaster 155, and Hill Point 129. Despite these high numbers, the first round of moths should be on the decline in all southern and central orchards now that 160 GDD (base 50F) have been surpassed throughout most of the state. Bayfield growers have not yet registered a peak flight, but that event can be expected to occur next week. Scout for RBLR larvae in the week ahead in orchards where 168-228 GDD have been reached.

European red mite – With orchards in bloom in southern Wisconsin, IPM Specialist John Aue suggests it may be a good time to scout for European red mites. Using a hand lens, closely examine the first leaves to unfurl around clusters, as nymphs are likely to be found in these areas first.

Vegetables

Cabbage maggot - Overwintered cabbage maggot flies emerge in early May (300 GDD base 43F), mate, then lay eggs near host plants in cracks in the soil around the time lilac is in full bloom. The larvae, or maggots, feed on the roots of cole crops such as cabbage, broccoli, cauliflower, brussel sprouts, and radishes, and pave the way for pathogens such as soft rot or black leg to invade. Larvae begin to hatch about 3-5 days after eggs are deposited and feed for 20-30 days or until it's time to pupate. Adults emerge 10-14 days later and the cycle begins again.

To minimize cabbage maggot egg laying, it is critical to determine when peak fly emergence is occurring. One method used to pinpoint peak emergence, albeit a labor intensive one, is to place yellow dish pans filled with soapy water at 100 foot intervals along field edges. Record the number of flies in the pans every 4-6 days to determine if the fly population is increasing or decreasing. Then, avoid planting transplants and seedlings when the population is reaching peak levels. For more information, visit: UWEX publication X1018 titled *Cabbage Maggot* at http://www.uwex.edu/ces/wihort/gardenfacts/X1018.pdf.

Onion maggot- The onion maggot, as its name suggests, is an economically important pest of onions. Like the cabbage maggot, onion maggot adults lay eggs on the soil surface near the base of host plants. Approximately three generations occur in Wisconsin, with the first usually being the most damaging. First generation eggs are deposited between 230-280 DD (base 40F) and first generation flies emerge around 680 GDD. Onion cull piles in field are an especially attractive egg laying spot.

Seed corn maggot- Seed corn maggots prefer to feed on decaying organic matter, but will commonly feed on the seeds and seedlings of corn and soybeans, as well as beans, peas, cucumber, melon, onion, sweet corn, peppers, and potatoes. Like the other maggots discussed above, seed corn maggot flies lay their eggs just below the soil surface. Adults usually begin to emerge from the soil around 200 GDD (base 39F). Weather conditions that may delay or prolong adult emergence and slow seed germination, such as cool evening temperatures and rainy days, promote seed corn maggot outbreaks in susceptible crops. Recent conditions have not been particularly favorable for damage to occur.

Flea beetles – Each spring, early-planted vegetables are prone to infestations of flea beetles. Despite the frequency of flea beetle damage, effective and easy options for controlling flea beetles are limited. Some of the alternatives available to growers are: 1) insecticidal control, 2) planting a trap crop, 3) sticky barriers, or 4) "home remedies".

Spinach flea beetle Whitney Cranshaw Colorado State University

Insecticidal control continues to be the most popular option for flea beetle control simply because it works. Applying a soil treatment at planting provides season-long control, while foliar insecticides will effectively reduce large populations of flea beetles. When using foliar insecticides, it's critical to avoid spraying when natural enemies of other pests of cole crops are active. Spot-treating "problem areas" is a practical option when infestations are patchy.

Another reasonable (but risky) method suggested by various web sites is to plant an early season "trap crop" about 7-14 days in advance of the primary crop. The trap crop should be about 1% of the total acreage in size, and planted along the field edge. In theory, the beetles are drawn to the taller, more advanced trap crop, leaving the primary acreage uninjured. This strategy, however, requires chemical control be applied to the trap crop once the beetles are observed feeding, to prevent beetles from moving into the primary crop. The trap crop option may help to minimize injury, but it still requires the use of a foliar chemical to eliminate the adults. In addition, a trap crop must be established in advance of planting the primary crop, which does little good for growers with existing flea beetles problems.

Sticky barriers made with light mesh and tanglefoot and draped over the infested plants may trap flea beetles bounding from the foliage. The precise setup of such a barrier is left to the grower's creativity.

"Home remedies" offered on the Web include tactics such as repellant foliage sprays made of crushed garlic cloves, or sprinkling wood ashes around the base of susceptible plants. Neither remedy has been tested under controlled circumstances, so efficacy cannot be determined.

For more information on flea beetle control visit: UWEX publication X1022 at;
http://www.uwex.edu/ces/wihort/gardenfacts/X1022.pdf

Weeds

Weeds - The heavy rain showers over the past weekend, followed by warm temperatures, triggered an explosion in vegetative growth this week. One opportunistic plant that was hard to miss was the dandelion, as its yellow flower heads painted the roadside ditches, lawns and alfalfa fields. In addition to the abundance of dandelion, surveys in the southeastern corner of the state found 2-4" lambsquarters (*Chenopodium album*), 6" bull thistle (*Cirsium vulgare*), horseweed (*Conyza canadensis*), prickly lettuce (*Lactuca serriola*) and hairy galinsoga (*Galinsoga ciliata*), 12" common mullein (*Verbascum thapsus*), wild carrot (*Daucus carota*) and curly dock (*Rumex crispus*). Except for in the extreme north, most areas have accumulated between 150-300 GDD (base 50F), making conditions right for giant foxtail, velvetleaf, common ragweed, and redroot pigweed, among other problem weed species. Reports from Illinois and Indiana indicate heavy weed competition in fields to our south.

Weed management - Although fields are beginning to take on a hue of green, in most places it's the weeds, not the crops changing the color of the landscape. Now is a good time to revisit various weed management techniques available to growers. With improvements in technology and the continuous decrease in available time, it's easy to forget some basic techniques from the past to battle against unwanted plants. A successful integrated pest management program combines several different approaches to minimize the impact of pests. Besides the multitude of chemical formulas available, there are also a number of physical and cultural control methods that can be incorporated into management planning (see page 8 of this issue for the weed management techniques table).

Gypsy Moth

Gypsy Moth Trapping Program - All trappers have been hired for the 2006 season. Training for southern trappers will take place on May 15-16 in Madison, in Black River Falls on May 17-18, and in Hayward on May 22-23. Lead worker training was held on May 2, 2006 in Mosinee. Trapper training consists of gypsy moth biology and identification, map reading, trap setting procedures, GPS usage, safety and land owner contacts. Trappers are instructed to make contact with landowners if traps are to be placed on private property. While most of the traps are set along roadside rights-of-way, some traps must be "walked-in", sometimes up to a half mile from the road. If no landowner is home, trappers will leave a notice describing the program, the trap location, and the telephone to call with questions or if the resident would like the trap to be removed. We appreciate landowner cooperation in allowing traps to be set on private property. Trap setting will begin the week of May 15, 2006.

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

Forest and Landscape

Honeylocust plantbug nymphs – The accumulation of 100-200 GDD (base 50F) across much of the state means nymphs have emerged to feed on the new growth of honeylocusts. Routine inspection of susceptible trees in the next two weeks is recommended for residents who have experienced problems with this pest in previous years. Consider using foliar sprays or insecticidal soaps, only if damage is noticed and nymphs are present. Sprays are seldom needed but should be applied early, when the leaves first open, to be effective. Be sure to thoroughly cover the leaves and bark to achieve adequate control.

Pine needle scale – Egg hatch is expected to occur during the next two weeks, once 200-350 GDD (base 50F) are reached. Begin scouting in the week ahead to detect the tiny, bright red crawlers. These are the stage that can be treated to minimize pine needle scale problems. Select an overcast day to scout and begin by picking about a dozen needles with the characteristic white, waxy scales (mature females). Carefully examine the needles with a hand lens to detect the crawlers. Be aware that the window for crawlers' activity is narrow. They may move about only for a few days before settling in and developing the white, protective covering. A second generation becomes active around early to mid-July in Wisconsin.

Hosta Virus X (HVX) – This virus, first identified in 1996, is now found worldwide. Symptoms of Hosta Virus X are highly variable, and may include line patterns, mosaic patterns, ringspots, blotches and puckering. Less common symptoms include dried, brown spots and twisted, deformed leaves; these are typically found on cultivars intolerant of infection. In some instances, Hosta cultivars show no symptoms at all, or symptoms may not appear until a year after infection.

Because plants infected with HVX will not recover, prevention is key. HVX is spread by sap on hands, pruning shears and tools when mechanical injury occurs during propagation and cultivation, so be sure to disinfect tools frequently. In addition, only purchase hosta from reliable sources and separate any newly-purchased plants until they can be verified as virus free. Last, always remove and destroy any HVX infested plants.

HVX on Striptease Photo byJim Soper

HVX is the most common virus on Hosta. Initially the virus symptoms were considered to be genetic variations and some were given cultivar names. Following are susceptible cultivars: Breakdance, Eternal Father, Kiwi Watercolours, Leopard Frog, Lunacy, and Parkish Gold, Birchwood Parky's Gold, Blue Cadet, Color Glory, Diamond Tiara, El Nino, Fan Dance, Gold Edger, Gold Standard, Golden Tiara, Goldrush, Krossa Regal, Little Aurora, Pacific Blue Edger, Pilgrim, Paradise Joyce, Queen Josephine, Regal Splendor, Royal Standard, Stiletto, Striptease, Sun Power, Sum & Substance, Undulata albomarginata, Wide Brim (List of HVX infected Hosta varieties courtesy of The Hosta Library at www.hostalibrary.org).

To submit a sample for testing, visit to the Plant Disease Diagnostics Clinic website:
http://www.plantpath.wisc.edu/pddc/index.html

Exotic Pest of the Week

Hemlock woolly adelgid (*Adelges tsugae* (Annand) - The hemlock woolly adelgid has been killing native and ornamental hemlock trees in the United States since 1924. It was introduced to the United States in the 1920s to the Pacific Northwest, and in the early 1950s to the Washington DC and Richmond, Virginia areas. Because it lacks natural enemies in North America, HWA has spread unchecked to 20 states, including: Alaska, California, Connecticut, Delaware, New Jersey, Oregon, Rhode Island, Washington, Georgia, Maine, Maryland, Massachusetts, New Hampshire, New York, North Carolina, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia, and has devastated

both the eastern hemlock (*Tsuga canadensis*) and the Carolina hemlock (*Tsuga caroliniana*).

HWA injures hemlock by sucking sap and by injecting a toxic saliva while feeding. This causes the needles on infested branches to desiccate, turn a grayish-green color, and then drop from the tree usually within a few months. Death of major limbs usually occurs within two years and progresses from the bottom of the tree upwards, even though the infestation may be evenly distributed throughout the tree. Trees often die within four years, but some survive longer in a severely weakened condition with only a sparse amount of foliage at the very top of the crown.

Eastern hemlock is an ecologically important and influential conifer that for thousands of years was a major component of forests over much of the eastern United States. It is an extremely shade-tolerant species, and with appropriate climatic and site conditions forms nearly pure stands that can persist for hundreds of years. The decline and loss of our remaining eastern hemlock stands could be more ecologically significant in some respects than the loss of American chestnut in the early 1900's to chestnut blight.

Wisconsin is one of the few states that has large populations of native eastern hemlock that are at risk if this insect were to be introduced into the state. For more information on hemlock woolly adelgid, visit
http://www.saveourhemlocks.org/pdf_docs/hwafactsheet.pdf
or
http://www2.nature.nps.gov/parksci/vol22/vol22(2)/PDFs/14_Evans.pdf

Hemlock woolly adelgid na.fs.fed.us/ fhp/hwa/branch.jpg

Hemlock woolly adelgid winged adult R. Childs www.umassgreeninfo.org

Impact of hemlock wooly adelgid in North Carolina www.camcore.org

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	5/2	5/4
Hwy 11 SOUTHERN LINE														
Grant	Fairplay	0	0			0			0	0	0	0	0	2
Grant	Prairie Corners	0	0			1			1	0	0	2	3	1
Grant	W Hazel Green	0	0			4			4	0	1	1	0	1
Grant	N Hazel Green	0	0			1			0	2	0	0	0	0
Lafayette	Lead Mine	0	0			0			2	0	0	0	0	0
Lafayette	N New Diggings	0	0			1			3	1	0	0	2	3
Lafayette	Shullsburg	0	0			1			1	0	1	1	0	1
Lafayette	E Shullsburg	0	0			5			3	3	2	2	2	2
Lafayette	W Gratiot	0	0			0			3	2	0	1	0	1
Lafayette	Gratiot	0	0			0			1	2	0	0	0	1
Lafayette	E Gratiot	0	0			0			2	1	0	0	0	1
Lafayette	E South Wayne	0	0			0			2	0	0	0	0	0
Green	Browntown	0	0			0			0	0	1	1	0	0
Green	Cadiz Springs	0	0			0			2	0	0	2	1	0
Green	E Cadiz Springs	0	0			1			1	0	0	0	1	0
Green	W Monroe	0	0			0			3	2	1	1	1	0
Green	E Monroe	0	0			2			4	1	0	0	1	1
Green	Juda	0	0			1			0	0	0	0	1	1
Green	E Juda	0	0			0			2	0	1	1	3	1
Green	Brodhead	0	0			0			0	0	0	1	1	1
HWY 18 SOUTH CENTRAL LINE														
Dane	Bluemound	~		0	0		0	0		0	0	0		0
Iowa	Barneveld	0		0	0		0	1		0	1	0		0
Iowa	East Ridgeway	0		0	0		0	0		0	0	0		0
Iowa	West Ridgeway	~		0	0		0	0		0	0	0		0
Iowa	East of Dodgeville	0		0	0		0	0		0	1	0		0
Iowa	East Dodgeville	0		0	0		0	0		0	0	0		0
Iowa	West of Dodgeville	0		1	0		2	0		0	0	0		1
Iowa	Edmund	~		0	0		0	1		0	0	0		0
Iowa	Cobb	0		0	1		1	0		2	1	0		0
Iowa	East Montfort	0		1	0		0	0		0	0	0		0
Grant	West Montfort	~		0	0		0	0		0	0	0		0
Grant	East Preston	0		0	0		0	0		0	0	0		0
Grant	West Preston	0		1	0		1	1		0	0	0		0
Grant	Fennimore	0		0	0		0	0		0	0	0		0
Grant	West of Fennimore	0		0	0		0	0		0	0	0		0
Grant	Mt Ida	0		0	0		1	0		1	1	0		0
Grant	Mt Hope	0		0	0		1	0		0	0	0		0
Grant	West Mt. Hope	0		0	0		2	1		0	0	1		0
Grant	West Patch Grove	0		0	0		0	0		0	0	0		0
Grant	East Bridgeport	0		1	0		0	0		0	0	0		0
Grant	Lancaster	0		0	0		0	0		0	1	0		0
Rock	Janesville	0	1	1	5 (4/10)		9	4		7	**8**	1		6
Monroe	Sparta									1	0*			2 (4/27-5/3)
Monroe	Tomah									0	0 (4/20-4/27)			2 (4/27-5/3)
Monroe	Cataract									0	2 (4/20-4/27)			1 (4/27-5/3)
Monroe	Ontario									0	0 (4/20-4/27)			0 (4/27-5/3)

Weekly Apple Insect Trap Counts

APPLE INSECT TRAP COUNTS THROUGH MAY 05, 2006

County	Site	Date	STLM	RBLR	CM	PC
Bayfield	Atkins	4/25-5/1	4	1		
Bayfield	Carlson	4/30-5/4	50	0		
Bayfield	Carlson	4/21-4/30	117	0		
Bayfield	Erickson 1	4/28-5/4	74			
Bayfield	Erickon 2	4/28-5/4	34			
Bayfield	Erikson 3	4/28-5/4	82			
Bayfield	Kavajecz 1	4/28-5/3	40	0		
Bayfield	Kavajecz 2	4/28-5/3	30	0		
Bayfield	Kavajecz 3	4/28-5/3	35	0		
Bayfield	Kavajecz 4	4/28-5/3	32	0		
Bayfield	Galzen	4/28-5/4	84	0		
Bayfield	Olsen 1	4/28-5/4	119	0		
Bayfield	Olsen 2	4/28-5/4	611	1		
Bayfield	Lobermeier	4/28-5/4	61	0		
Brown	Oneida	4/17-5/1	405	116	0	
Dane	Deerfield	4/27-5/3	162	116	0	
Dodge	Brownsville	4/28-5/4	18	114	0	
Fond du Lac	Campbellsport 1	4/28-5/4	300	50		
Fond du Lac	Campbellsport 2	4/28-5/4	300	75		
Fond du Lac	Malone	4/28-5/4	240	20		
Fond du Lac	Rosendale	4/21-5/2	136	41	0	
Grant	Lancaster	4/28-5/4	0	155		
Green	Brodhead	4/28-5/4	2	42		
Iowa	Dodgeville	4/27-5/4	27	6	0	
Jackson	Hixton	4/28-5/4	360	8	2 (*Proteoteras?*)	
Marinette	Wauzaukee	4/28-5/4	11	11		
Marquette	Montello	4/23-4/30	816	11	0	0
Ozaukee	Mequon	4/27-5/4	520	9		
Pierce	Beldenville	4/28-5/4	11	3	0	
Pierce	Spring Valley	4/29-5/5	187	53	0	
Racine	Rochester	4/28-5/5	1050	39	0	
Racine	Raymond	4/28-5/4	125	73	0	
Richland	Hill Point	4/26-5/2	660	129		
Sheboygan	Plymouth	4/28-5/4	935	134	0	
Trempealeau	Galesville	4/28-5/5	700	12	4* (*Proteoteras?*)	
Waukesha	New Berlin	4/28-5/4	75	8	0	

Codling moth

Proteoteras spp.

Weed Management Techniques

	Technique	Purpose
Physical	Mowing	Mow prior to viable seed are produced
	Tillage	A variety of tillage options exist (ie. Depth and timing)
	Flame weeding	Hot flame kills weeds; usually optimal on small scale
	Hand weeding	Removes weeds as they emerge
Cultural	Crop rotation	Rotation helps to target different species
	Clean machinery between fields	Prevents seed from being trasported betweenfields, especially during harvest
	Row spacing	Proper spacing helps optimize competitive ability of crop
	Crop selection	Select crops ideal for climate and pest problems (optimize competition)
	Planting time	Plant when crops will grow quickly and out compete weeds
	Crop management	Proper management creates a strong plant

Note: These are just a few of the weed managaement practices used in successful IWM programs.

Weekly Black Light Trap Counts

Black Light Trapping Results

	Date	Black Cutworm	Cabbage Looper	Celery Looper	Corn Earworm	Dingy Cutworm	European Corn Borer	Fall Armyworm	True Armyworm	Forage Looper	Spotted Cutworm	Variegated Cutworm	Alfalfa Looper
Southwest													
Lancaster	April 27 - May 4	0	0	1	0	0	0	0	5	0	0	0	0
South central													
Mazomanie	April 27 - May 4	0	0	0	0	0	0	0	7	0	0	0	0
Arlington	April 28 - May 4	3	0	2	0	0	0	0	15	0	0	0	0
West central													
Sparta	April 27 - May 3	3	0	0	0	0	0	0	5	0	0	0	0
Southeast													
Janesville	April 28 - May 4	1	0	1	0	0	0	0	52	0	0	0	0

Black light trap

CATCH of the WEEK

True armyworm moth www.ca.uky.edu/agc/pubs/

Celery looper moth Bruce J. Martin 2002

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Web Site of the Week

CropMap

How much tobacco does Green County produce? How many acres of corn in Pocahontas County, Iowa? These people know.

http://www.hort.purdue.edu/newcrop/cropmap/

Quote of the Week

"Podrán cortar todas las flores, pero no podrán detener la primavera.

They may mow down all the flowers, but they can't stop spring.

-- *Pablo Neruda* (1904-1973), Chilean poet

Hemlock woolly adelgid na.fs.fed.us/ fhp/hwa/branch.jpg

EXOTIC Pest of the Week
Hemlock woolly adelgid, *Adelges tsugae* (Annand)

May 5, 2006