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WISCONSIN PEST BULLETIN

Timely crop pest news, forecasts, and growing season conditions for Wisconsin

STATE OF WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION PLANT INDUSTRY BUREAU
2811 Agriculture Dr. Madison, WI 53718 • http://pestbulletin.wisconsin.gov

WEATHER & PESTS

Field work has started but is sporadic due to rains, saturated fields, and residual snow drifts in some areas. Weather conditions this spring have been cool and very wet as a result of record snowfall last winter and a high frequency of rainy days. Farmers are prepared to begin planting immediately, as soon as temperatures moderate and the waters recede. Based on degree day accumulations, the season is progressing slower than normal and is about seven to nine days later than last year. Reflective of the cold spring weather, early emerging apple pests such as the redbanded leafroller and spotted tentiform leafminer are virtually non-existent in orchard traps. Ordinarily, activity of these and several other pest insects is well underway by now.

LOOKING AHEAD

BLACK CUTWORM: Migrant moths appeared in low numbers during the week of April 7. Counts of two moths per trap were noted at sites in Grant and Rock counties. The spring arrival of adult black cutworms in Wisconsin is being monitored with a network of 36 traps established along major roadways in the southwest and south central areas. Eleven of the pheromone traps at locations in Columbia, Grant, Green, Lafayette, and Rock counties have reported captures of one to seven moths to date.

PEA APHID: The degree day accumulation above base 40°F is such that overwintered pea aphid eggs should begin hatching next week. Pea aphids were first noted last season on April 24. This insect is of primary concern in early spring as alfalfa stands are becoming established and about the time first crop hay is harvested.

SEED CORN MAGGOT: Cool, rainy spring conditions favorable to the development of seedcorn maggot may contribute to higher emergence of flies later this month and damage to beans, corn and cucurbits in May and June. Emergence of adults from the soil is expected to begin in advanced southern counties by the week of April 20, following the accumulation of 200 degree days (base 39°F). Outbreaks of this pest are occasional and occur when adult emergence and seed germination are delayed, allowing the maggots to feed longer.

DEGREE DAYS: A table listing current degree day accumulations for 23 locations will be provided on the second page of each bulletin issue. When an insect development event is forecast to occur following the accumulation of a certain number of degree days, refer to the specified base temperature column (50°F, 48°F, 40°F) in the table to find the cumulative number of degree days at a particular location. Spotted tentiform leafminer moths, for example, are expected to appear in traps between 22 and 70 degree days (base 50°F).

Reference to the 50°F column in the degree day table to the right shows the lower range of this interval has been reached at most locations, with the exceptions of Bayfield, Medford, and Crandon.

FORAGES

ALFALFA WEEVIL: Of the wide array of insects that recurrently attack Wisconsin forages, the alfalfa weevil is one of the first to resume activity in spring. Overwintered adult females return to alfalfa fields on the earliest warm days and proceed to lay clutches of eggs in green, dry or dead plant stems. Larvae from an egg laying cycle that started last September should begin to appear in sweep nets by early May. Prevent damage to first crop alfalfa this season by initiating scouting efforts at 300 degree days (base 48°F), cutting or treating when tip feeding exceeds the economic threshold of 40%, and maintaining a flexible cutting schedule. Follow the degree days listed on the second page of each issue to anticipate egg hatch and larval development.

Adult alfalfa weevil, Hypera postica *UC Statewide IPM Program*

ALFALFA WINTER INJURY: Assessments of winter injury should be performed this month. Older alfalfa fields on poorly drained soils, varieties with moderate winter hardiness, and fields harvested late in fall are all candidates for injury. Fields that regenerate slowly, remain brown, or display uneven growth can be evaluated by digging plants 4-6 inches deep and examining the roots. Vigorous roots appear firm and white, while injured roots are soft, discolored, and water soaked. Consider reseeding or inter-seeding perennials in fields with fewer than five healthy plants per square foot or 55 stems per square foot. For more information on diagnosing winter injury and forage options after winterkill, visit the UW Team Forage website at http://www.uwex.edu/ces/crops/teamforage/.

DEGREE DAYS MARCH 1 - APRIL 17

LOCATION	50°F	2007	NORM	48°F	40°F
Dubuque, IA	41	130	39	40	157
Lone Rock	40	115	32	38	146
Beloit	58	124	41	53	180
Madison	37	101	31	34	133
Sullivan	48	103	—	44	162
Juneau	38	97	—	37	141
Waukesha	41	105	35	38	146
Hartford	34	99	15	33	134
Racine	37	100	3	35	140
Milwaukee	31	96	14	31	129
Appleton	35	78	15	32	110
Green Bay	27	67	16	25	99
Big Flats	37	92	—	33	114
Hancock	39	87	18	34	114
Port Edwards	34	86	—	29	98
La Crosse	39	114	59	38	139
Eau Claire	34	85	28	29	103
Cumberland	29	69	—	22	88
Bayfield	15	38	0	11	61
Wausau	26	65	17	22	80
Medford	20	60	6	17	70
Crivitz	28	45	10	24	89
Crandon	17	46	—	14	58

Method: ModifiedB50; Sine48; ModifiedB40 as of March 1, 2008.

CORN

BLACK CUTWORM: Traps were installed at 36 southern Wisconsin locations during the first week of April to detect migrant black cutworm moths dispersing from source populations in the south central United States. Each trap contains a female-scented pheromone lure that attracts incoming male moths. A total of 20 male moths in 11 traps have been reported since the first moths were captured near Hazel Green in Grant County and Footville in Rock County on April 7. Pheromone trap counts will be used this season to forecast the period when seedling corn is most susceptible to cutting by black cutworm larvae, the progeny of moths arriving this month. Eight successive years of trapping have documented arrival dates ranging from March 29 to April

22. First black cutworm moth captures since 2001 were as follows:

2001 April 21	*2004* April 19	*2007* March 29
2002 April 17	*2005* April 12	*2008* April 07
2003 April 22	*2006* April 06	

Black cutworm pheromone trap *Krista Hamilton DATCP*

CORN FLEA BEETLE: High corn flea beetle mortality and a negligible risk of Stewart's wilt are predicted for Wisconsin in 2008, following one of the coldest and snowiest winters on record. While abundant snow may have afforded some protection to hibernating beetles, temperatures statewide were generally too low to permit their survival. The corn flea beetle, *Chaetocnema pulicaria,* is the primary species that harbors corn wilt bacterium during winter and transmits it to corn plants while feeding.

The basis for this forecast is a new prediction model developed by Paul Esker, Assistant Professor of Field Crops Extension Plant Pathology at the UW-Madison. The Esker Model, still in the final stages of construction, incorporates previous year's knowledge of Stewart's wilt occurrence and average monthly temperatures for December, January and February to predict a risk probability. Other prediction models, including the Iowa State Model and the Stevens-Boewe Index, formulate disease risk using only average monthly winter temperatures.

All three models performed similarly based on 2007-2008 winter temperatures, predicting a generally negligible risk for 20 Wisconsin counties (see accompanying table). However, the Iowa State Model indicated a MODERATE TO HIGH risk for Kenosha County and a LOW TO MODERATE risk for Milwaukee County. The Stevens-Boewe Index predicted a TRACE risk for the late leaf blight stage of the disease in all 20 counties. The Esker model, which uses a 60% probability threshold to classify risk, predicted a NEGLIGIBLE risk of the disease for the 20 counties assessed. Wisconsin seed corn that tests positive for Stewart's wilt is ineligible for phyosanitary certification and export to international markets.

STEWART'S WILT FORECAST 2008

COUNTY	IOWA STATE MODEL[1]	STEVENS-BOEWE[2]	ESKER MODEL[3]
SOUTH			
Kenosha	Moderate-High	Trace	Negligible
Milwaukee	Low-Moderate	Trace	Negligible
Waukesha	Negligible	Trace	Negligible
Grant	Negligible	Trace	Negligible
Crawford	Negligible	Trace	Negligible
Sauk	Negligible	Trace	Negligible
Columbia	Negligible	Trace	Negligible
Dane	Negligible	Trace	Negligible
Green	Negligible	Trace	Negligible
Rock	Negligible	Trace	Negligible
CENTRAL			
La Crosse	Negligible	Trace	Negligible
Eau Claire	Negligible	Trace	Negligible
Manitowoc	Negligible	Trace	Negligible
Brown	Negligible	Trace	Negligible
Wood	Negligible	Trace	Negligible
NORTH			
Douglas	Negligible	Trace	Negligible
Florence	Negligible	Trace	Negligible
Langlade	Negligible	Trace	Negligible
Marathon	Negligible	Trace	Negligible
Oneida	Negligible	Trace	Negligible

[1]Iowa State Model predicts disease prevalence or occurrence; [2]Stevens-Boewe Index predicts severity of leaf blight phase; [3]Esker Model predicts risk probability.

SOYBEANS

SOYBEAN RUST: Surveillance efforts since 2005 have found no evidence of this disease in Wisconsin. Asian soybean rust was first confirmed in the continental U.S. in 2004 and subsequently has been detected as far north as Illinois, Indiana, Iowa, and Ontario, Canada. Soybean sentinel plots used to detect rust at low levels and provide an early warning system for soybean growers are beginning to be planted in the Gulf Coast states, according to the United States Soybean Rust

Commentary. Soybean rust has been detected on kudzu at one site in Alabama and six counties in Florida as of April 11, 2008. Results of the Wisconsin sentinel plots and those established in about 30 other states in 2008 will be circulated this season through the USDA IPM PIPE website at http://www.sbrusa.net.

EXPIRED SECTION 18s: All of the Section 18 pesticide emergency exemptions allowing Wisconsin soybean growers to use certain fungicides to control soybean rust expired on November 10, 2007. The directions for the emergency use of these products ("emergency labels") are no longer valid and applicators can no longer legally use Bumper 41.8EC, Domark 230ME, Folicur 3.6F, Headline SBR, Laredo EC and EW, Propimax EC, Quilt, Stratego, or Tilt under emergency exemptions in the state.

The emergency labels, which included an exemption number such as 05-WI-01 and expiration date, stated use was authorized as a quarantine emergency exemption under "Section 18" and may have indicated "For use and distribution only in Wisconsin". Growers will need to check for and follow any disposal directions or other product stewardship information that may also be on the emergency labels. Products labeled for other non-soybean uses may still be used for those other purposes as directed by the label.

Most of the products mentioned now have full federal registration ("Section 3") for use on soybean plants to control soybean rust; new containers are, or will be, labeled accordingly. If a container is not already labeled for use on soybeans, growers should check with the product manufacturer to see if an EPA-accepted supplemental label is available. For more information on pesticide registration, including Section 18s, contact:

Matt Sunseri, Pesticide/IPM Program Specialist
State of Wisconsin DATCP
matthew.sunseri@wisconsin.gov
(608) 224-4547

SMALL GRAINS

WHEAT WINTER INJURY: Wheat stands showing symptoms of winter injury should be evaluated by digging several plants and examining the crowns for new, white root growth (once soil temperatures increase enough to stimulate root growth). Spring stands containing a minimum density of 12-15 live plants per square foot generally will recover, according to the UW-Extension. More recommendations for early season wheat stand and yield assessments are available at http://ipcm.wisc.edu/WCMNews/tabid/53/EntryID/469/Default.aspx.

WEEDS

EARLY EMERGING WEEDS: Weed emergence and development are proceeding on pace. Musk thistle, dandelion, and common mullein rosettes were noted in south central and southwest fields on April 10, as were white campion, shepherd's purse, wild carrot, and field chickweed seedlings. Perennial grasses are also regenerating over rural landscapes. Historical records from the Arlington Research Station weed garden document average first emergence dates from March 27 to April 18 for 30 weed species common to Wisconsin, including (in order of emergence): quackgrass, leafy spurge, dandelion, white campion, musk thistle, spotted knapweed, giant ragweed, common ragweed, wild mustard, bull thistle, common lambsquarters, curly dock, and Canada thistle. These early species should become evident within the next weeks in fields where they have not already begun to emerge.

White campion Viginia Tech Weed ID Guide

Weeds are among the most opportunistic of organisms, and basic knowledge of the species composition within fields is essential to optimal management. Prior to initiating spring weed control, an early weed community inventory should be conducted to assess shifts in composition (i.e. the diversity and range of weeds present in a field) and determine optimal treatment times.

Shifts in weed composition occur when similar management practices are followed from year to year, when treatments are applied around the same date each year, and when crops with comparable life cycles are grown for multiple years. Waterhemp, a late emerging species, can become dominant in fields where management practices consistently target early species such as field pennycress and white campion. Management practices that are not adapted to changing species composition may become untimely or ineffective.

FRUITS

SPOTTED TENTIFORM LEAFMINER: The first flight is just getting underway in the southeast, as evidenced by low trap counts ranging from 0-3 moths (see Page 7). Peak flight activity, and corresponding high trap counts, should occur in southern orchards before month's end, or around 150 degree days (base 50°F).

REDBANDED LEAFROLLER: Moths should soon appear in orchards statewide, following the accumulation of 25-78 degree days (base 50°F). The only activity reported for the week of April 10 to 17 was a single moth captured in Walworth County. Expect trap counts of redbanded leafroller moths to peak and egg hatch to begin at advanced southern and west central sites by early May.

POTATOES

ROOT-KNOT NEMATODES: Results of a three-year detection survey indicate that Wisconsin potato fields are free from exotic root-knot nematodes. DATCP specialists sampled 279 fields in 45 Wisconsin counties from 2005 to 2007 and found no soil samples with either the Columbia root-knot nematode (*Meloidogyne chitwoodi*) or the false Columbia root-knot nematode (*Meloidogyne fallax*). Plant Industry Laboratory staff screened for nematodes present in the soil samples using sieves and Baermann funnels. Molecular methods were used to facilitate low level detections of one juvenile nematode per sample.

These microscopic worms are serious economic pests of potatoes, carrots, and tomatoes, but also infest the roots of a wide range of host plants such as alfalfa, buckwheat, corn, grasses, lambsquarter, white mustard, ryegrass, strawberries, and wheat. Root-knot nematodes are spread by infected seed potatoes and contaminated equipment.

NURSERY & LANDSCAPE

ALTERNARIA: The distinctive black spots with yellow halos caused by this fungus were observed in light amounts on the foliage of Coral Bell 'Canyon Bell' in Kewaunee County.

BOTRYTIS BLIGHT: Trace to light symptoms of this disease were noted on multiple hosts, including Coral Bell 'Fire Fly', Poppy 'Iceland', Veronica 'Royal Candles', Delphinium 'Magic Fountain Blue Sky', and Impatiens 'New Guinea' in Kewaunee and Brown counties. This condition is likely the result of growers holding plants too long due to cool weather and a late spring. Increasing air circulation can help reduce its occurrence.

COLD DAMAGE: Patchy leaf spots and distorted foliage were noted in Brown County on many plant species. The damage was attributed to exposure to extreme cold temperatures during the early growth stages.

CYTOSPORA CANKER: A Colorado blue spruce in Dane County was lightly to moderately infected with this fungal disease. Needles on affected branches first turn purple, then brown, and eventually die. Diseased branches often produce a bluish-white pitch flow in the area of the canker as the disease progresses from the base toward the upper branches of the tree. During dry periods, prune and destroy infested branches.

PSEUDOMONAS: Infected Dahlia, Coreopsis 'Early Sunrise', and Coreopsis 'Domino' were observed in Kewaunee County. Symptoms of this disease initially appear as gray or black spots on lower leaves, but may easily spread and kill entire leaves under warm, wet conditions.

SHORE FLIES: Adults were found on several plant species in Kewaunee and Brown County greenhouses. Shore fly larvae eat the alga that grows on moist soil in potted plants, cracks in concrete, or between rocks under benches.

TOBACCO RATTLE VIRUS: Three Coral Bell 'Fire Fly' and ten Old Fashioned Bleeding Heart potted plants were pulled from production in Kewaunee County due to

symptoms of this virus. Although the plants showed the characteristic pale green mosaic pattern on the leaves, an official lab diagnosis is required to confirm TRV.

FOREST

GYPSY MOTH TRAPPING: Approximately 32,000 delta and milk carton traps for detection and delimitation will be set primarily in the western half of the state in 2008. High density trapping (one trap per sq. mile) is planned for the western counties, medium density trapping (one trap per four sq. miles) is planned for most central counties, and low density trapping (one trap per nine sq. miles) is planned for other central counties. One hundred and fifty delimitation sites to evaluate the effectiveness of previously treated sites or delineate the boundaries of a potential infestation will be trapped at a higher density of four or nine traps per square mile. No traps will be set in the "generally infested" eastern counties of the state. The gypsy moth trapping season is scheduled to begin in mid- to late May.

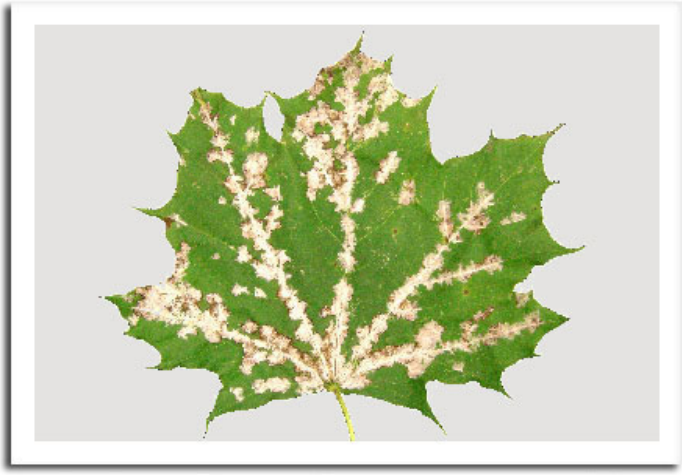
Trapping results from 2007 indicate that gypsy moth populations are on the rebound. The 293,160 moths caught last year was more than double the 2006 total of 121,355 moths. Favorable habitat and a warm, dry summer resulted in gypsy moth populations increasing dramatically in the south central, central and northeast counties. Trap data in the western counties revealed a high number of scattered, low density or isolated infestations ranging from just one to three moths; very few western traps registered counts in the double digits (excluding those set in quarantine counties). Winter survival of gypsy moth egg masses is expected to be high this season due to heavy snow cover and few consecutive days of temperatures below -20°F.

NEW STATE RECORDS

CYST NEMATODE: A new cyst nematode, *Cactodera milleri*, was reported in Wisconsin for the first time on common lambsquarters, *Chenopodium album*, in the summer of 2005. The nematode was found at the UW Agricultural Research Station in Waushara County and identified by UW researchers Nate Schroeder and Dr. Ann MacGuidwin. DATCP Plant Industry Laboratory staff helped confirm the genus *Cactodera* using molecular techniques. Host range studies conducted by UW researchers determined this nematode was not a pathogen of soybeans, potatoes, or beets. However, this find is noteworthy because the new cyst nematode can be easily confused with the soybean cyst nematode, *Heterodera glycines*. Control of lambsquarter and other weeds in soybeans fields is important to reduce the possibility of misdiagnosing a SCN infestation.

Cactodera milleri cyst, egg and young nematode *Anette Phibbs DATCP*

POWDERY MILDEW: In October of 2007 a new powdery mildew, *Sawadaea tulasnei*, was discovered by UW researchers in Dodge County on Norway maple, *Acer platanoides*. This is the first report of this powdery mildew species in Wisconsin, although many types of powdery mildews are common throughout the state. Powdery mildews affect the above ground tissues of plants, causing a white powdery growth that is usually very specific to the host plant. This fungus is an an aesthetic problem and generally is not fatal to trees or shrubs.



Sawadaea tulasnei, a powdery mildew on Norway maple *Glen Stanosz*

APPLE INSECT COUNTS APRIL 10 - APRIL 17

COUNTY	DATE	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	AM RED[5]	AM[6]
Bayfield	4/10-4/17	Erickson Orchards	—	—				
Bayfield	4/10-4/17	Orienta Orchard						
Bayfield	4/10-4/17	Lobermeier						
Bayfield	4/10-4/17	Bayfield Apple Co.						
Brown	4/10-4/17	Oneida						
Crawford	4/10-4/17	Gays Mills						
Crawford	4/10-4/17	Turkey Ridge						
Dane	4/10-4/17	Deerfield						
Dane	4/11-4/17	Stoughton	0	0				
Dane	4/10-4/17	West Madison						
Dodge	4/10-4/17	Brownsville						
Fond du Lac	4/10-4/17	Campbellsport						
Fond du Lac	4/10-4/17	Rosendale						
Fond du Lac	4/10-4/17	Malone						
Grant	4/10-4/17	Sinsinawa	0	0				
Green	4/10-4/17	Brodhead						
Iowa	4/10-4/17	Dodgeville	0	0				
Iowa	4/10-4/17	Mineral Point	0	0				
Jackson	4/10-4/17	Hixton						
Kenosha	4/10-4/17	Burlington						
Marquette	4/11-4/18	Montello	0	0				
Marinette	4/10-4/17	Wauzaukee						
Ozaukee	4/10-4/17	Mequon	0	0				
Pierce	4/10-4/17	Beldenville	—	—				
Pierce	4/10-4/17	Spring Valley						
Racine	4/11-4/17	Rochester	0	0				
Racine	4/10-4/17	Raymond	0	0				
Richland	4/10-4/17	Hill Point						
Richland	4/10-4/17	Richland Ctr E						
Richland	4/10-4/17	Richland Ctr W						
Sauk	4/10-4/17	Baraboo						
Sheboygan	4/10-4/17	Plymouth						
Waukesha	4/10-4/17	New Berlin	0	0				
Walworth	4/10-4/16	East Troy	3	1				
Walworth	4/10-4/16	Elkhorn						

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