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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

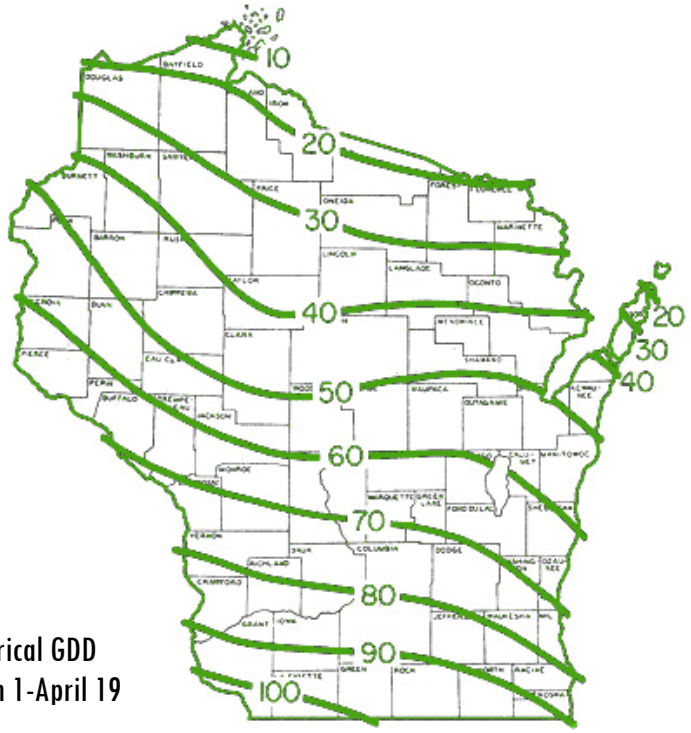
Weather and Pests

The last remnants of the winter season have passed and a series of annual spring events has begun to unfold. Temperatures have finally moderated, reaching the 50s and 60s during the daytime, and farm activity has progressed in the past few days. Relatively little planting has been done but many fields are prepared.

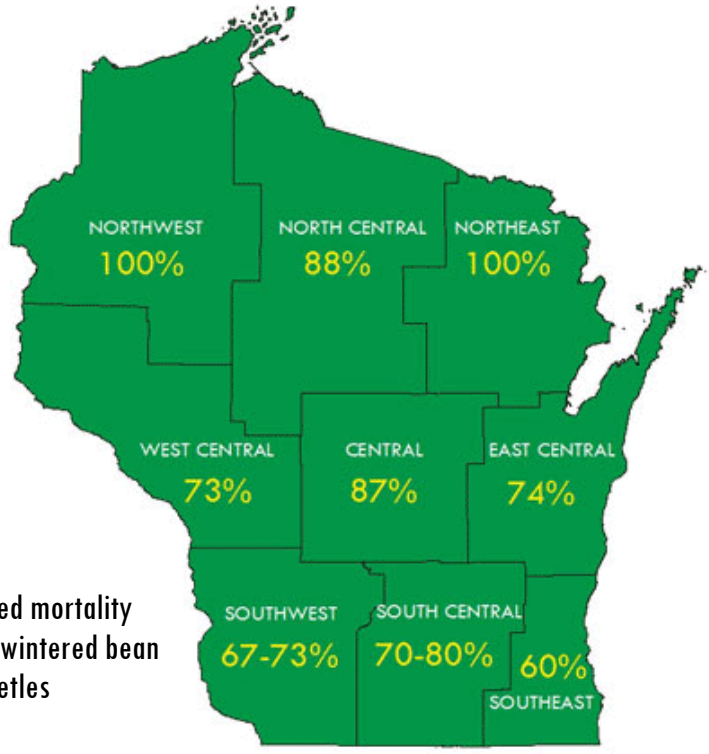
Insect activity has also escalated noticeably. The first round of early-season orchard pests, which includes spotted tentiform leafminer and redbanded leafroller moths, has taken flight throughout the south. In addition, the first overwintered alfalfa weevils were swept from fields earlier in the week and a few more black cutworm moths made their way into the state.

Growing Degree Days through 04/19/07 were

	GDD 50F	2006	Sine 48F	40F
Dubuque, IA	138	148	134	321
Lone Rock	125	144	118	302
Beloit	130	160	126	312
Madison	107	130	102	274
Sullivan	108	142	101	268
Juneau	102	129	97	261
Waukesha	110	123	102	270
Hartford	104	123	98	260
Racine	103	104	99	259
Milwaukee	100	107	94	251
Appleton	84	109	78	221
Green Bay	73	84	67	204
Big Flats	102	138	94	253
Hancock	96	132	89	241
Port Edwards	98	136	89	235
La Crosse	128	162	124	308
Eau Claire	99	149	91	243
Cumberland	81	123	70	203
Bayfield	40	71	33	140
Wausau	75	113	68	200
Medford	71	115	65	192
Crivitz	51	84	45	169
Crandon	55	98	44	160



Historical GDD
March 1-April 19



Predicted mortality of overwintered bean leaf beetles

Looking Ahead

Black cutworm – The first adults were trapped on March 29 following two successive days of strong southerly winds. Catches in pheromone traps have been sporadic since then, ranging from 0-2 moths per night. A concentrated capture of 8-9 moths in two nights could occur in the coming week if favorable weather patterns deliver more migratory black cutworms into the state. Egg laying by moths that arrived during the first weeks of April will begin in weedy southern Wisconsin fields over the weekend.

Black cutworm moth, Agrotis ipsilon *mint.ippc.orst.edu*

Dingy cutworm – Overwintered third and fourth instar larvae, the progeny of last summer's moths, are active. Be alert to the possibility of injury where high black light trap captures were reported late last summer, particularly near Mazomanie, Marshfield, Sparta and Wausau. Although early-season injury attributed to this pest is usually limited to leaf feeding, more serious damage to corn could arise in areas where dense moth populations were documented last season.

European corn borer – Preliminary dissections of corn stalks in Columbia and Rock counties show 90 to 100% survival of European corn borer larvae. A more complete picture of winter survival will be provided once additional fields are surveyed in the week ahead. Corn borers pass the winter as mature larvae in corn stalks, corn cobs, weed stems, or plant debris. Overwintered larvae end diapause during April or May once temperatures exceed 50°F, pupate around 246 GDD (base 50°F), and emerge as moths after 347 GDD have accumulated in May.

Eastern tent caterpillar – Larvae should commence emergence from egg cases next week, although the characteristic webbing associated with this insect is not likely to be visible along roadsides in wild cherries, *Prunus virginiana*, and black cherries, *Prunus serotina*, until late next week or the following.

Redbanded leafroller – The first peak flight of redbanded leafroller moths is expected to occur at advanced southern and west central sites early next week. RBLR moths are active, with pheromone trap counts ranging from 0-77. Bayfield County apple growers should anticipate the first RBLR moths of 2007 in the week ahead, once 25-78 GDD (base 50°F) have accumulated.

Spotted tentiform leafminer - Peak flight is approaching in southern orchards where the 150 GDD mark (base 50°F) could be exceeded over the weekend. 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 registered. The action threshold for first generation STLM is 0.1 mine per leaf.

Pea aphid – Overwintered eggs in alfalfa, clover and other perennials and biennials are likely to begin hatching soon. Several generations are spent on the primary host before winged individuals migrate to peas in May and June. Surveys next week should detect newly-hatched females in alfalfa fields.

Corn

Black cutworm – The DATCP black cutworm monitoring network has detected signs of moth activity after a week of wintry weather put flight proceedings on hold. With spring temperatures back in the 50s and 60s, black cutworm moths have resumed the business they flew 2,000 miles to do. Mating is already underway and egg laying is projected to begin by 200 GDD (base 50°F), which should be surpassed near Beloit, Lancaster, and portions of southwestern Wisconsin over the weekend (April 21-22). Fields with winter annuals and perennial weeds such as chickweed, shepherd's purse, yellow rocket, bitter cress, and pepper grass, and fields with soybean stubble are preferred egg laying sites. Once the first concentrated capture of 8-9 moths in two nights is registered, cutting dates will be projected for locations in southern and central Wisconsin. Black cutworm counts ranged from 0-2 moths for the period of April 13-19 (see table on page 20).

Dingy cutworm – In contrast to the migratory black cutworm, this species overwinters locally as a partially-grown, third or fourth instar larva. While black cutworm eggs are just being laid at this point, dingy cutworms emerged from the 2006-2007 winter well on their way to maturity. Larvae of the dingy cutworm are active at planting, and feed during a very narrow April to mid-May window. Remarkably high moth captures were reported near Marshfield, Mazomanie, Sparta and Wausau late last summer, suggesting corn fields in these areas should be watched closely for leaf feeding following emergence.

The importance of the dingy cutworm is an unsettled topic. The literature suggests it rarely cuts seedling corn and at the same time indicates it is probably more damaging than we know. As one of the more common cutworm species in Wisconsin, it is possible that dingy cutworm damage has been incorrectly attributed to other cutworms in the past. At the root of the problem is cutworm identification. Cutworm larvae are distinguished on the basis of color, cuticle texture, tubercle (bump) size and markings, but these differences are often very subtle (see page 19).

Accurate cutworm identification is critical if the right management decision is to be made. Dingy cutworms are principally leaf feeders and their injury is usually inconsequential. Black cutworms, claybacked cutworms and sandhill cutworms all sever corn plants. Additional scouting is required to determine the extent of the injury and need for control when one of these three species has infested a field.

Besides corn, hosts of the dingy cutworm include alfalfa, apple, bean, bluegrass, cabbage, celery, chickweed, clover, corn, cucumber, flax, goldenrod, horseradish, lettuce, melon, mullein, onion, pea, peach, plantain, potato, raspberry, rye, squash, strawberry, sweet potato, tobacco, tomato, and turnip. Infestations are more likely to develop in corn following sod or forage, and this insect is reported as an occasional garden pest.

Dingy cutworm moth, Feltia ducens *Will Cook*

Sandhill cutworm – Damage to corn fields by the sandhill cutworm is uncommon, but not unheard of in Wisconsin. Like the dingy cutworm, this species overwinters locally as a partially-grown larva and is active at planting in April and early May. The larvae feed typically feed below ground, often fatally severing plants beneath the growing point. Sandhill cutworms are whitish to tan to pale gray color, with seven faint, chalky white longitudinal stripes (see page 19). Economic thresholds have not been established, but recommendations for black cutworm may be applied (>5% of plants infested).

Claybacked cutworm – Claybacked cutworm infestations tend to develop in corn following clover or alfalfa. Larvae of this species are very similar in appearance to black cutworms, but are smoother and the dorsal surface is usually paler than the sides of the body (see page 19). Claybacked cutworms emerge from winter partially-grown, but fully capable of cutting young corn plants. Economic thresholds developed for black cutworms are probably appropriate for this species as well.

Corn flea beetle and Stewart's wilt risk for 2007 – Average monthly temperatures for December, January and February (2006-2007) were integrated into two predictive models to determine the risk of Stewart's wilt in 2007. The Iowa State Model, which predicts the prevalence or occurrence of the disease, indicated the risk of Stewart's wilt occurring is high near Kenosha, moderate to high near Milwaukee and Racine, moderate to high near three of four south central locations including Afton, Brodhead, and Watertown, moderate to high near Dodgeville in the southwest, and moderate to high near Manitowoc in the east central district. Based on the Iowa State Model, a low to moderate risk was predicted for sites in the northern, west central and central districts. The Stevens-Boewe Index, which indicates the severity of the leaf blight stage of Stewart's wilt in late summer, predicted a moderate level of risk near Kenosha and low level, or slight risk, in all other districts except the southeast.

Forages

Alfalfa weevil – Development of this first crop alfalfa pest is on pace, with chance encounters of adults in fields near Spring Green and Gotham in the southwest. The scarcity of adults at this time of year should not be mistaken for inactivity. Theoretically, the egg laying cycle has been underway since last September, on days when temperatures exceeded 33°F. For every degree above 33°F, females will lay an average of 0.697 eggs per day. The availability of green plant material isn't an issue for the alfalfa weevil. Females readily lay eggs in dead plant material at this time of year, even if green material is accessible.

Alfalfa weevil is one of our most predictable alfalfa pests. Every aspect of its life history, from egg to pupa, has been charted in a degree day model (provided below). Using this model, along with the degree day table posted in each issue of the bulletin, growers can anticipate every instar. According to degree day accumulations for the period of March 1 through April 19 (base 48°F), just 198 GDD remain before fields near Madison should be scouted for newly-hatched alfalfa weevil larvae. Growers near Wausau can wait another 232 GDD before beginning to scout fields.

All alfalfa growers should plan to start a weekly scouting regimen once 300 GDD (base 48°F) have accumulated. Development is expected to occur fastest in warm, sandy areas within fields, particularly south-facing slopes. Monitoring alfalfa weevil feeding is most important during the first crop.

Alfalfa weevil GDD model (base 48°F)

Stage of Development	GDD Required to Complete Life Stage	Accumulated GDD
Egg	300	300
1st instar	71	371
2nd instar	67	438
3rd instar	66	504
4th instar	91	595
Pupa	219	814

Soybean

Bean leaf beetle – Bean leaf beetle population dynamics have changed considerably in Wisconsin and across the Midwest since the late 1990s. When winters were bitterly cold, and Decembers felt more like February than November, this cold-intolerant species was unable to endure the harsh winter months. Milder winters mean more bean leaf beetles are surviving in the southern one-half of the state, and advanced planting dates now provide soybean acreage needed for egg laying earlier in the season.

Bean leaf beetle populations fluctuate from year to year, and since historically high populations were documented in Wisconsin in 2003, this species has been a relatively minor pest. In an article titled *Bean leaf beetles: A historical perspective*, Marlin Rice (2006) of Iowa State University suggested this insect has "hit on hard times" due to late-season spraying to control soybean aphids. Rice (2006) theorized that sprays intended for soybean aphids have led to decreased numbers of second generation bean leaf beetles.

Although late-season spraying may be reducing bean leaf beetle populations, the predominant factor influencing the abundance and distribution of this species in Wisconsin is temperature. As mentioned, the bean leaf is not as cold-tolerant as many other temperate zone insects. A study by Lam and Pedigo (2000) determined beetles were killed by temperatures ranging from 23°F to 14°F. Just fifteen minutes of exposure to temperatures of 14°F and 5°F proved lethal to most bean leaf beetles in the same study. As a second part of their research, Lam and Pedigo (2000) found the daily mean temperature of leaf litter in an Iowa woodland remained at or above the lethal temperature of 23°F, suggesting beetles avoid low temperatures by taking cover beneath leaf litter.

Bean leaf beetle on soybean seedling *www.planthealth.info*

The same Iowa State University researchers, W.F. Lam and L.P. Pedigo, developed a model to estimate mortality of overwintering bean leaf beetles based on the sum of average daily subfreezing temperatures (average daily temperature (°F) minus 32). When applied to 11 locations in Wisconsin, the model estimated high bean leaf beetle mortality at most sites: Arlington 80%, Beloit 70%, Boscobel 67%, Eau Claire 86%, Green Bay 74%, Hancock 87%, Spring Green 73%, La Crosse 73%, Madison 71%, Milwaukee 60%, Rhinelander 100%, and Wausau 88% (see map on page 1). As expected, sites in the northern districts had higher mortality rates than those in the southern districts.

A spring survey for beetles in alfalfa, scheduled to begin early next month, should shed light on the 2006-2007 overwintering success of this species as well as the usefulness of the Iowa State winter mortality model to Wisconsin.

References:

Lam, W.F. and L. P. Pedigo. 2000. Cold tolerance of overwintering bean leaf beetles (Coleoptera: Chrysomelidae) Environmental Entomology. 29(2): 157-163.

Lam, W.F. and L. P. Pedigo. 2000. A predictive model for the survival of overwintering bean leaf beetles (Coleoptera: Chrysomelidae) Environmental Entomology. 29(4): 800-806.

Rice, M. E. 2006. Bean leaf beetles: A historical perspective. Integrated Crop Management. IC-496(9). http://www.ipm.iastate.edu/ipm/icm/2006/5-1/beetle.html.

Soybean rust – Besides indicating the need for preparedness, the finding of soybean rust on leaf tissue in an Iowa grain bin is not cause for immediate concern. On March 13, 2007 the Iowa Department of Agriculture and Land Stewardship reported soybean rust had been found on leaf residue in a grain bin containing beans from the 2006 harvest. Although the Iowa detection of soybean rust generated a flurry of media reports, it does not translate into a higher or more immediate risk of soybean rust this growing season.

Since Asian soybean rust was first detected in the United States in 2004, reproductive spores have swept further northward each season. Nonetheless, the fungus cannot overwinter in northern climates like Wisconsin or Iowa. Last year soybean rust was found in 15 states, including southern Illinois and northern Indiana. If spores do blow in this summer, they are more likely to originate from Mexico, Texas and Louisiana rather than from Florida or other southeastern states.

This season, Wisconsin county extension agents, agriculture research station staff and UW-Madison campus research staff will continue to monitor 21 soybean rust sentinel plots in 19 counties. Results of these sentinel plots will be disseminated through the USDA Soybean Rust Information site http://www.sbrusa.net/. In addition, DATCP survey specialists will sample approximately 250 soybean fields statewide for soybean rust and other viruses as part of their annual soybean survey in August.

Apiary

Colony Collapse Disorder - Colony Collapse Disorder (CCD) is the name given to the mysterious illness that has killed thousands of honey bee colonies in at least 22 states since 2006. The exact cause of CCD is unknown. Colonies affected by this illness exhibit several key symptoms, such as the complete absence of adults and little or no buildup of dead bees in the colonies or at the hive entrances (occasionally the queen and a small number of survivor bees are present in the brood nest), the presence of capped brood, and the presence of food stores, both honey and bee bread, which have not been immediately robbed by other bees.

Due to the seriousness of CCD, the DATCP Apiary Program urges beekeepers to participate in an online bee survey, have hives inspected, know the symptoms of CCD, stay informed, and report any symptoms consistent with CCD to Liz Meils, State Apiarist. Colonies may show early symptoms before collapse occurs, including an insufficient workforce to maintain the brood, a workforce consisting mainly of young adult bees, reluctance to consume sugar syrup, protein supplements, or other food provided by the beekeeper, and greatly reduced or nonexistent foraging populations.

Bee Alert Technology, Inc. has developed a confidential online survey for all honey producers and beekeepers that have or have not experienced CCD. The survey, available at www.beesurvey.com, seeks information on symptoms, feeding, supplements, other honey bee diseases, chemical treatments, queen information and medications. Results of the Bee Alert survey may help to pinpoint the cause of CCD.

Honey bee on thistle *http://severinghaus.org*

The DATCP Apiary Program offers free hive inspections from May through July and again in the fall. During a typical inspection, bee inspectors look inside the hives, locate the queen, and check for varroa mites, foulbrood disease, viruses, and other pests. Inspectors also review hive treatments and discuss overwintering success.

To schedule an inspection for the upcoming season, contact Liz Meils, State Apiarist, at the Wisconsin Department of Agriculture, Trade and Consumer Protection, PO Box 8911, Madison WI 53708-8911, (608) 224-4572, elizabeth.meils@datcp.state.wi.us. For more information on CCD, visit the Mid-Atlantic Apiculture Research and Extension Consortium (MAAREC) at http://maarec.cas.psu.edu/index.html. DATCP will continue to provide links and information on CCD through its agency apiary web page and the Wisconsin Pest Bulletin during the 2007 growing season.

Weeds

From the road many agricultural fields may appear to be relatively weed-free, but upon closer look early-emerging ½ inch to 1 inch tall seedlings are present and growing fast. This is especially true in no-till fields where green seedlings are temporarily dwarfed by brown stubble. Some weed species, such as dandelion and common chickweed, have already attained some height in southeastern Wisconsin.

A number of factors should be considered at this time of year regarding weed management. Management decisions made on a field to field basis are more effective than a blanket plan, and scouting on foot should be done prior to making any control decisions. Fields vary by soil characteristics, management history, crop rotation or crop history, topography, etc. All of these variables influence weed development and crop success. Growers can minimize weed problems and maximize crop growth by adjusting the timing of fertilization, timing of planting, seeding rate, row spacing and the specific approach to timing soil disturbance.

Timing of fertilization – Fertilization timing can be modified to take advantage of some of the biological differences between crops and weeds. In general, crop seeds are larger and have more stored nutrients in the endosperm of the seed, whereas weed seeds more readily need to draw on nutrients found in the soil to support early growth surges. Applying nitrogen in a split application will help decrease the nutrient availability to weeds during early growth; applying too much nitrogen early on offers no measurable benefits in terms of increased crop growth, and it may put weeds at an advantage. Weeds are adapted to store soil nutrients in their tissues at higher levels than most crops.

Timing of planting – In fields dominated by early-emerging weed species, it may be strategic to delay planting to permit to more weeds to emerge. Control measures can be taken prior to planting the crop, and with any luck, weed kill will be maximized. In contrast, in fields which tend to develop weed problems later in the spring, planting early gives crops a head start and better chance to out-compete weeds.

Seeding rate and row spacing - Plant population (or seeding rate) and row spacing can help suppress weed

species within the cropping system. Competition for sunlight and soil nutrients is more intense in systems with higher seeding rates and narrow rows. Advances in plant breeding have led to crops that perform well at dense populations, although results are less consistent between crops when row spacing is varied. Research has shown an increased ability for soybeans to compete with weeds when the plant population is high and rows are narrow. Canopy closure in this type of system occurs more rapidly, shutting out light that would trigger weeds to germinate. In corn, however, row spacing has not been shown to increase competitive ability. Also, narrow rows can be problematic in organic systems by making tillage and other cultural weed control methods difficult.

Timing soil disturbance – Two very different approaches to weed control through early-season seedbed preparation may be implemented. As part of the first approach, called *stale seedbed*, soil is kept undisturbed for as long as possible to prevent weed seeds from being triggered to germinate by tillage. Germination in response to tillage-related cues such as light, fluctuating temperature and nitrate are common in weeds (Mohler 2001). Emerged weeds are then killed prior to early planting and another method of weed control is used between planting and canopy closure.

A contrasting approach, called *false seedbed*, involves disturbing the soil early (always during the day) to stimulate as much weed seed germination as possible. Additional weed control measures are taken between planting and canopy closure. Growers who use this approach often delay planting in order to allow more weed species to germinate.

Reference:

Mohler. 2001. Ch 2: Weed life histories: identifying vulnerabilities, in Ecological Management of Agricultural Weeds, eds Liebman, Mohler and Staver. Cambridge University Press.

Fruit

Spotted tentiform leafminer – The first STLM moths of 2007 took flight in southern Wisconsin orchards just over one week ago, marking the start of another season of spotted tentiform leafminer activity. Predictably, egg laying will occur around 75-127 GDD (base 50F), and the first peak flight of moths can be expected at about 150 GDD. Scouting for sapfeeder mines on the undersides of apple leaves should begin about one week after the first peak flight has been recorded. The number of moths captured during a peak flight varies by orchard, but counts ranging from1,500-2,000 moths per week are not uncommon. STLM counts ranged from 0-112 moths for the April 12-19 reporting period (see table on page 20).

Redbanded leafroller – Pheromone traps in place in southern orchards since early April registered a sharp rise in moth counts in the past week. Some of the more noteworthy captures were: Sinsinawa-77; Gays Mills-58; Stoughton-54; Rochester-50; Brodhead-50. These numbers indicate the first peak flight of RBLR is approaching in the south. Cooperators should not be alarmed if unusually high counts are observed in the next week or two. This insect is a general feeder with a wide range of hosts besides apples.

Spotted tentiform leafminer www.caf.wvu.edu

GDD Base 50°F

INSECT EVENT	STLM	RBLR
1st moth occurs	22-70	25-78
1st eggs occur	75-127	82-162
1st peak flight	150	106-160
1st larvae	209-231	167-228
1st leaf mines	329-403	NA
2nd flight begins	780-937	539-750

Potatoes

Pale potato cyst nematode – In response to the 2006 detections of pale potato cyst nematode (*Globodera pallida*) in Idaho and golden nematode (*Globodera rostochiensis*) in Quebec, Wisconsin has enlisted in a rigorous nationwide survey for the pale Potato Cyst Nematode (PCN). As part of the survey, staff of the DATCP Fruit and Vegetable Inspection Service with support from the Wisconsin Seed Potato Certification Program and Wisconsin potato growers, are collecting samples of piler soil from seed potatoes being moved out of storage and into trucks this spring. As of April 16, a total of 560 piler soil samples have been collected and submitted to the DATCP Plant Industry Laboratory for testing. The lab has already processed 160 samples, all of which have tested negative for PCN.

In addition to safeguarding the U.S. potato industry and supporting market access, this intensive survey will help to document the PCN-free status of Wisconsin potato fields should all soil samples test negative. *Globodera pallida* has never been detected in Wisconsin and the 2006 find in Idaho was the first reported case of this nematode in the

United States. PCN is widespread in Europe and South America where it has the potential to cause significant potato losses when populations reach critical levels. The nationwide survey protocol calls for 1,800 piler soil samples to be collected and screened for PCN by March of 2008. In the interim, all seed potatoes destined for Canada must be tested and certified as free from PCN. To schedule a sampling of piler soil, contact Tim Leege at (715) 623-3930. For more information on the pale cyst nematode and golden nematode, visit the USDA APHIS website at http://www.aphis.usda.gov/plant_health/plant_pest_info/potato/index.shtml.

Potato cyst nematode (NOT IN WISCONSIN) *Jonathan D. Eisenback*

Phytosanitary Certification

Phytosanitary Certification – Unprecedented levels of global trade in plants and plant products in recent years have led to the increased spread of harmful plant pests worldwide. Moving plants invariably means moving the pests associated with those plants, unless they are inspected and certified as being pest-free. Other states and foreign countries have strict laws regulating the import and movement of plants or plant products. Most require a phytosanitary certificate declaring the shipment was inspected and found to be free of regulated plant pests. Growers planning to export plant products from Wisconsin should be aware of these phyosanitary certification requirements to avoid delays or rejection of shipments marked for interstate or international commerce.

As a service to Wisconsin businesses and residents, DATCP specialists inspect and certify plant products intended for shipment outside the state or country. DATCP has access to federal databases that specify the phytosanitary requirements of countries worldwide. Obtaining phytosanitary certificate is required by many countries and it reduces the possibility of plant products being delayed, returned or destroyed.

CERTIFICATE TYPES

- **Plant Health Certificate** – Obtained for movement of plant material within the U.S. Expires after one year.
- **State Phytosanitary Certificate** – Obtained for interstate movement of plant material within the U.S. and U.S. territories. Expires after 30 days.
- **Federal Phytosanitary Certificate** – Obtained for international movement of plant material and dependent on the requirements of the destination country. Expires after 14 days and must be issued within 14 days before shipping.
- **Federal Export Processed Plant Product Certificate** – Obtained for some processed plant products intended for international export. Expires after 14 days and must be issued within 14 days before shipping.

An online application for inspection/certification is available at http://pcit.aphis.usda.gov/pcit/faces/applicant_signIn.jsp. For more information about phytosanitary certification or phytosanitary requirements, contact Greg Helmbrecht at (608)224-4596 or send an email to greg.helmbrecht@wisconsin.gov.

Nursery, Forest & Landscape

Gypsy Moth and Pine Shoot Beetle (PSB) Regulations - The gypsy moth and pine shoot beetle quarantines remained static for 2007. The gypsy moth quarantine covers the eastern half of the state (see map on page 18) and the pine shoot beetle quarantine covers all of Wisconsin. For nurseries, mills, and Christmas tree growers moving stock/logs out of quarantined counties into non-quarantined counties, regulations also remain unchanged.

If you are a nursery or Christmas tree grower and you ship stock from a quarantined county to a non-quarantined county outside of Wisconsin, you need the following:

- Compliance agreement with the USDA-APHIS.
- A current field inspection:

  If a gypsy moth lifestage is found in or around a field, no stock within 100 feet of the find can be shipped out of quarantine until you follow guidelines set by DATCP and the USDA APHIS.

  If a pine shoot beetle lifestage is found, the stock cannot be shipped to non-quarantine counties unless it is treated by methods approved by the USDA-APHIS. These methods include methyl bromide fumigation or cold treatment. If neither of these options are viable for you, a piece by piece inspection of the stock can be done (by an officer/cooperator) to ensure all trees being shipped are PSB-free. Any trees found to exhibit symptoms of an infestation will need to be removed from the shipment; the rest will be allowed to go to destination.
- A Plant Health Certificate from the WI-DATCP is recommended, based on individual state requirements.

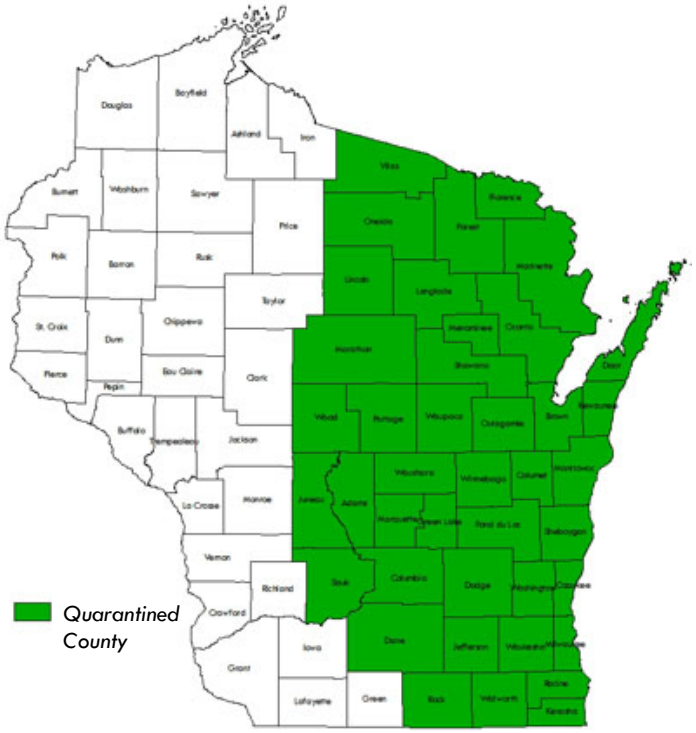
- A USDA issued stamp or sticker to accompany the stock during transit.
- Minnesota requires a plant health certificate for all stock originating from a quarantined county. A copy of certification should stay with the stock to their point of sale.

NOTE: The USDA no longer issues warnings to businesses not in compliance.

If you ship stock from a quarantined county in Wisconsin to a non-quarantined county within Wisconsin, you need the following:

- A Nursery Grower (or) Christmas tree grower's license from the WI-DATCP.
- A current field inspection

  If a gypsy moth life stage is found in or around a field, no stock within 100 feet of the find can be shipped out of quarantine until you follow guidelines set by the DATCP and the USDA-APHIS.



Wisconsin Gypsy Moth Quarantine 2007

If you ship stock from a non-quarantined area to a non-quarantined area within the state of Wisconsin, you need the following:

- A Nursery Grower (or) Christmas tree grower's license from the WI-DATCP.

If you are a mill:

- Obtain a *Federal Compliance Agreement* from the USDA-APHIS if you're moving wood from a quarantined county out-of-state into a non-quarantined area in Wisconsin. This is also required if you're moving wood from a quarantined county in Wisconsin to a non-quarantined county out-of-state.
- Obtain a *State Permit* if you're moving wood from a quarantined area in Wisconsin to a non- quarantined area in Wisconsin.

NOTE: A plant health certificate does not guarantee stock is free of gypsy moth or pine shoot beetle. It is the growers' responsibility to make sure any stock shipped out of a quarantined area is free of these regulated pests. If you have any questions regarding these regulations, visit the DATCP website or contact Liz Meils at (608)224-4572 elizabeth.meils@wisconsin.gov

Exotic Pest of the Week

Goatsrue - *Galega officinalis* is a perennial legume that was first introduced into Utah in 1891 as livestock forage, but it was soon discovered to be highly toxic. Both the leaves and stem contain an alkaloid called galegin, which can be lethal to humans and livestock when ingested in large amounts. Livestock seem to know better and actively avoid goastrue, and this contributes to its invasiveness in some states. In addition to not having a foraging predator, each plant can produce 15,000 pods or more, and each pod contains 1-9 seeds. Goatsrue is listed as a Federal Noxious Weed. Plants are shrubby, multi-stemmed with alternate, pinnately compound leaves, and purple to white, pea-like flowers.

Exotic goatsrue, Galega officinalis *Josef Hlasek www.hlasek.com*

Goatsrue is native to Western Asia and Central and Southern Europe. It has now been found in 10 U.S. states. This invasive plant has not been detected in Wisconsin yet, but it has become established in states with similar climates, such as Connecticut, Maine, Massachusetts, New York, Pennsylvania, Utah, Washington, Nebraska, Colorado and Maryland. Goatsrue typically invades croplands, pastures, irrigation waterways, fence lines, roadways and wet marshy areas where it forms dense thickets. This invasive legume should not be mistaken for the native plant, *Tephrosia virginiana*, with the very similar common name Goat's rue. *Tephrosia virginiana* in endemic to Wisconsin and is used as a medicinal herb.

Table of Key Cutworm Characteristics

Cutworm sp.	Scientific name	Texture	Key features of larvae	Length (inches)	Similar to	Habitat
Black	*Agrotis ipsilon*	Rough or grainy	Nearly uniform in color; glossy sheen; inner pair of granules on top center of larva are about 1/3 to 1/2 the size of the outer pair	2	Dingy cutworm, claybacked	No-till; grassy weed fields
Dingy	*Feltia ducens*	Smooth	Pale grayish brown; four dark tubercles (bumps) on the top center of larva are about equal in size	2	Black cutworm	Corn after sod or forages
Claybacked	*Agrotis gladiaria*	Smooth	Dorsal surface is usually paler than the sides; broad, yellow-brown stripe on dorsal suface	1.3	Black cutworm	Corn after clover or alfalfa
Sandhill	*Euxoa detersa*	Smooth	Whitish to tan to pale gray in color, with seven faint, chalky white longitudinal stripes; head is tan or dull red-brown	1.3	White cutworm	Corn after pasture; sandy soils
Variegated	*Peridroma saucia*	Rough or grainy	Variable in color; narrow line of pale yellow dots along middle of back	1.5		No-till

Cutworm larvae (from left): Claybacked cutworm, dingy cutworm, black cutworm, variegated cutworm, sandhill cutworm.

Black Cutworm & Apple Insect Trap Counts from April 12 to 19, 2007

Black Cutworm Counts

County	Town	4/16	4/19
Grant	W Fairplay	0	0
Grant	Fairplay	0	1
Grant	Prairie Corners	1	1
Grant	W Hazel Green	0	1
Grant	N Hazel Green	0	1
Lafayette	Lead Mine	0	1
Lafayette	N New Diggings	0	0
Lafayette	Shullsburg	0	0
Lafayette	E Shullsburg	0	1
Lafayette	W Gratiot	0	2
Lafayette	Gratiot	0	0
Lafayette	E Gratiot	0	0
Lafayette	E South Wayne	0	0
Green	Browntown	0	0
Green	Cadiz Springs	0	0
Green	E Cadiz Springs	0	2
Green	W Monroe	0	0
Green	E Monroe	0	0
Green	Juda	0	1
Green	E Juda	0	0
Green	Brodhead	0	0
Rock	Orfordville	0	0
Rock	Footville	0	0
Rock	E Footville	0	0
Rock	Janesville	1	0
Iowa	Barneveld	0	0
Iowa	West Ridgeway	0	0
Iowa	East of Dodgeville	0	0
Iowa	West of Dodgeville	0	1
Iowa	Edmund	0	0
Iowa	Cobb	0	0
Iowa	East Montfort	0	0
Grant	West Montfort	0	0
Grant	East Preston	0	0
Grant	West Preston	0	1
Grant	Fennimore	0	0
Grant	West of Fennimore	0	0
Dane	Waunakee	0	0
Dane	Indian Lake	0	0
Dane	N Mazomanie	0	0
Iowa	W Mazomanie	0	0
Iowa	Arena	1	0
Iowa	W Arena	0	0
Iowa	Helena	1	0
Iowa	Spring Green	0	0
Iowa	W Spring Green	0	0
Richland	Lone Rock	0	0
Richland	W Lone Rock	0	0
Richland	Gotham	0	0

Apple Insect Counts

County	Site	Date	STLM[1]	RBLR[2]
Bayfield	Lobermeier	4/12-4/19	0	0
Crawford	Turkey Ridge	4/12-4/19	6	58
Dane	Stoughton	4/12-4/19	82	54
Dodge	Brownsville	4/13-4/19	0	3
Fond du Lac	Campbellsport	4/12-4/19	0	2
Fond du Lac	Rosendale	4/13-4/20	8	5
Fond du Lac	Malone	4/12-4/19	25	4
Grant	Sinsinawa	4/12-4/19	21	77
Green	Brodhead	4/12-4/19	1	50
Iowa	Dodgeville	4/12-4/19	15	10
Iowa	Mineral Point	4/12-4/19	24	17
Kenosha	Burlington	4/15-4/19	7	9
Marquette	Montello	4/08-4/15	0	1
Ozaukee	Mequon	4/11-4/19	0	
Racine	Rochester	4/15-4/19	112	50
Racine	Raymond	4/12-4/19	21	3
Waukesha	New Berlin	4/12-4/19	88	1

Department of Agriculture,
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Division of Agricultural Resouces Management
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EXOTIC Pest of the Week
Goatsrue, *Galega officinalis*