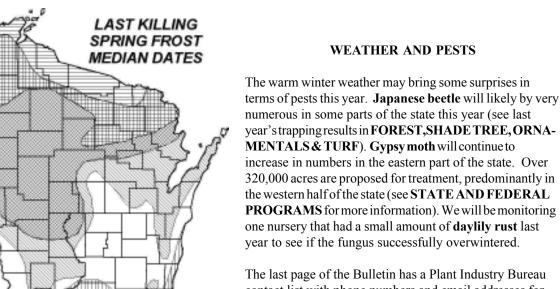


# Cooperative Pest Survey Bulletin

Wisconsin Department of Agriculture, Trade & Consumer Protection Bureau of Plant Industry, PO Box 8911, Madison, WI 53708-8911

www.wisconsin.gov Phone: 608-224-4571 Fax: 608-224-4656



The last page of the Bulletin has a Plant Industry Bureau contact list with phone numbers and email addresses for our different programs.

WEATHER AND PESTS

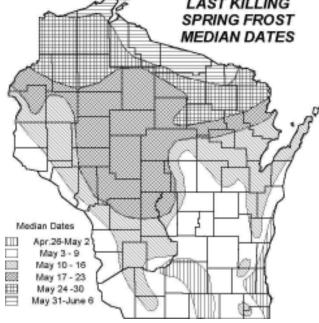
## ALERTS

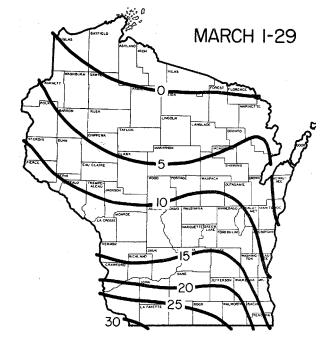
Hemlock woolly adelgid (HWA) - A quarantine hearing draft for this pest of hemlock will be brought before the Board of Agriculture, Trade and Consumer Protection in early June. Public hearings will then be held at several places around the state for public input.

Hemlock woolly adelgid is a serious insect pest that feeds exclusively on hemlock trees causing death in four to five years. Eastern hemlock stands in the east are being decimated by this aphid-like insect. The proposed quarantine would require hemlock logs, bark mulch, wood chips and nursery stock be certified free of HWA in order to enter the state. Currently Maine, Michigan, New Hampshire and Vermont are the only other states with quarantines in place.

For more information contact Bob Dahl at 608-224-4573.

Special cucurbit pesticide registration - Wisconsin producers who raise cucumbers, pumpkins and winter squash would have another means of weed control through a special pesticide registration proposed by the Wisconsin Department of Agriculture, Trade and Consumer





Historical Average Growing Degree-Days Accumulated Since March 1. (Wisconsin Agricultural Statistics Service) 1

Protection. The special registration would allow these growers to control broadleaf weeds and nutsedge using Sandea Herbicide. Wisconsin citizens have until April 5 to review and comment on the proposed five-year special pesticide registration.

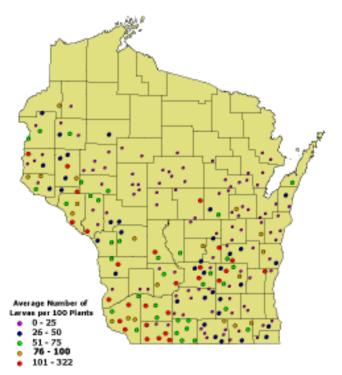
The preliminary environmental assessment indicates the proposed registration will not significantly harm humans, animals, or the environment, and a full environmental impact statement is not required.

For a copy of the environmental assessment, contact Ed Bergman, P.O. Box 8911, Madison, WI 53708-8911, (608)224-4546 or review the assessment at the department, Mon.-Fri., 7:45 a.m.-4:30 p.m., 2811 Agriculture Dr., Madison, 2nd floor. Comments received on or before 4:30 p.m., Friday, April 5, 2002 will become part of the preliminary environmental assessment record. Send comments to Ed Bergman by mail at the above address, or fax to 608/224-4656, or send an email to ed.bergman@datcp.state.wi.us.

#### CORN

**European corn borer** – The 2001 fall larval abundance survey documented a low to moderate populations. Thee statewide average was 40 larvae per 100 plants and 21% of the state's corn acreage had populations exceeding 75 borers per 100 plants. Based on this average we can expect a moderate first flight of mothsr. Spring weather conditions will be an integral

# 2001 European Corn Borer Survey



Wisconsin Department of Agriculture, Trade and Consumer Protection

factor in determining the success of this first moth flight. Historically, the combination of early planted corn and favorable weather conditions during the first flight has resulted in dramatic population increases, but doubling and tripling of populations is more common. Growers in areas with high averages (>60/100 plants) should pay particularly close attention to this first flight, growing degree day accumulations, and scout for injury caused by 1st generation larvae later this spring. Black light trap counts, provided later in the season, will help in forecasting the potential magnitude of larval infestations following the first and second flights of moths

**Corn flea beetle & Stewart's wilt** – Based on winter temperatures, **corn flea beetle** populations at the end of the 2001 growing season, and the prevalence of Stewart's disease in 2001, it appears the risk for **Stewart's wilt** in 2002 is low.

Winter temperatures are the basis for estimating **corn flea beetle** survival rates, thus are an important variable in predicting the risk for **Stewart's wilt**. The **Stewart's wilt** bacterium, *Pantoea stewartii*, overwinters in the gut of the **corn flea beetles**; therefore, if the beetle survives, the bacterium survives as well. During mild winters, more **corn flea beetles** are expected to survive, increasing the risk of **Stewart's wilt** for the following summer. Presently we use a model developed at Iowa State University to determine the **predicted risk for Stewart's disease** based on monthly mean ambient air temperatures for December, January and February (see below).

0 month > 24°F very low risk 1 month > 24°F low to moderate risk 2 months > 24°F moderate to high risk 3 months > 24°F high risk

Undoubtedly, this winter has been one of the mildest on record. Mean monthly temperatures from weather stations at locales throughout the state are not yet available, but it is highly likely that a number of these sites had mean temperatures exceeding 24°F for all three winter months. Based on the model above, this translates into a high risk for **Stewart's wilt** in 2002. But when additional risk factors are considered, it seems this high-risk scenario is unlikely.

First, fall 2001 survey results indicated **corn flea beetle** populations were extremely low at the end of the growing season. Beetles were collected in from only 8 of the 220 sites included in the survey. Sites positive for **corn flea beetle** were in Green, Rock, Racine, Walworth, and Waukesha Counties.

Further, in 2001 no cases of **Stewart's wilt** were detected. The prevalence of **Stewart's wilt** during the preceding growing season is another factor used to forecast risk, and in 2001, **Stewart's wilt** was not found anywhere in the state, during summer corn disease survey or seed corn inspections. Next, we generally look at the percentage of **corn flea beetles** infested with the **Stewart's wilt** bacterium heading into winter (2001-2002). However, only 8 beetles were collected last fall, not enough to warrant carrying out the costly and time-consuming ELISA test procedure used to determine the percentage of infected beetles. We can conclude that the percentage of the **corn flea beetle** population carrying the bacterium must be low, simply because so few beetles were collected, indicating **corn flea beetle** populations are low in general.

The Iowa State University model is helpful, but it has some obvious limitations. In this case, the model indicated the risk is high for **Stewart's wilt** in 2002, but we know based on fall survey results that there are few **corn flea beetles** present in the state, and that of those few, only a very small fraction may be carrying the **Stewart's wilt** bacterium. Therefore, despite what the temperature model indicates, it appears the risk for **Stewart's wilt** in 2002 is low. Nevertheless, growers in the Southeast agricultural district, those counties where **corn flea beetles** were detected last fall, and those who have experienced **Stewart's wilt** in the past should continue to be alert to the possibility of future infection.

#### SOYBEANS

**Soybean cyst nematode (SCN)** - In 2001, despite sampling soil in 13 counties, with extensive sampling in Pierce and Brown Cos., no new county records were added by DATCP to the list of counties known to have **soybean cyst nematode**, *Heterodera glycines*. However, the lack of additional positive counties on the map does not mean that SCN is not a growing (and probably under-estimated) threat to soybean production. Dr. Ann MacGuidwin of UW detected SCN in two new counties in 2001—Marquette and Dodge.

Testing for **soybean cyst nematode** is available. Information on testing (from UW Soybean Plant Health Bulletin "Detecting SCN"):

Soil can be sampled any time for the presence of SCN. A good time to sample soil is in the fall, before the soybean harvest.

#### Procedure:

1. Use a soil probe or narrow-bladed trowel or shovel. Take cores close to plants at a depth of 8 to 10 inches. Discard the upper 2 inches of soil, especially if it is dry. Be sure to include plant roots.

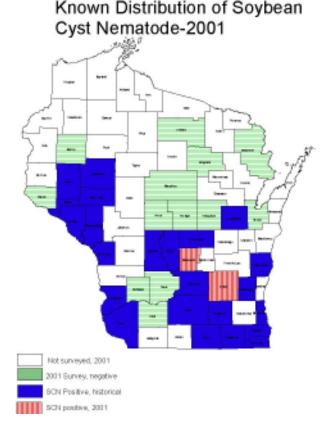
2. Submit one sample for a 10-acre field, or for a suspected area within the field. Sample from plants in the margins of suspected areas, and not from their centers. Or collect in a zig-zag pattern across the field. Collect from areas of similar soil texture and cropping history. If different crops were grown, or there is markedly different soils within a field,

sample separately.

3. Take soil and roots from 12 to 20 plants and mix into one sample (1 to 2 pints of soil). Place in a sturdy plastic bag (or soil sample bag), fasten the open end securely, and label accurately with an indelible marker. Keep the samples out of the sun and don't let them dry out.

4. Mail as soon as possible, and early in the week to avoid delays in transit. Mail to the Plant Disease Diagnostic Clinic, 1630 Linden Drive, University of Wisconsin-Madison, Madison, WI 53706. The cost of the analysis is \$14 per sample. Or consult with your county extension agent about private laboratories that conduct SCN analyses.

Laboratories will report the number of nematodes per unit soil or per unit plant root and give you an assessment regarding the possibility of economic damage.

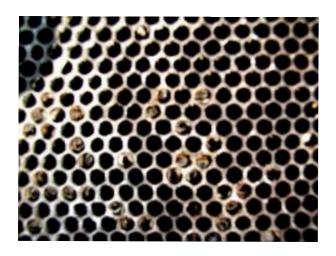


#### APIARY

Apiary program - FEED THOSE BEES – Until the beginning of March over-wintering in Wisconsin was exceptionally good. Beekeepers reported only 13% average winter mortality at the southeastern meeting of the Wisconsin Honey Producers in Ashippun. But high losses are often sustained in March and April because bee populations are starting to

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The most successful ways to feed in spring in Wisconsin are: 1) Using a 1:1 sugar syrup solution in feeder pails inverted over the hole in the inner cover with an empty hive body and cover on top; or 2) Using a side board feeder. Add a pollen patty.



**SPRING MEDICATING** – Mind the mites but beware of **American foulbrood** (AFB). Early to mid-April is the time to start Terramycin and CheckMite or Apistan. Beware of buying nucs or hives, infested comb is the number on source of **American foulbrood** (AFB). For detailed information please visit our web site or call the Apiary Program for hard copies (608) 224-4575.

**INSECTICIDE USE ON SOYBEANS** – Soybeans are no longer an insecticide-free crop. Soybean growers are fighting a new pest, the **soybean aphid**, which was first identified in 2000 and spread throughout Wisconsin in 2001. The next dry and hot summer may trigger an aphid explosion in soybean fields during soybean bloom. This could cause problems for honey bees foraging in soybeans.

Soybean growers may be using the following insecticides: Asana XL, Ambushe 2 EC, Pounce 3.2EC, and Warrior T (synthetic pyrethroids), Furadan 4F (carbamate), Lannate LV and SP (carbamate), dimethoate and Lorsban 4E. Dimethoate is not recommended this year because of performance complaints in 2001. Most of these pesticides are very toxic to foraging honeybees and should not be sprayed on flowering crops or weeds. Most of these products' label directions instruct that they should not be allowed to drift to blooming crops or weeds if bees are visiting the treatment area.

NOTIFY FARMERS - Let your landowner or coop know

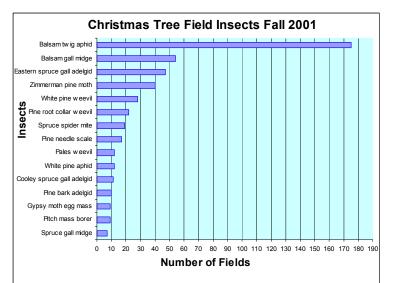
where your bees are! Even apiaries that are close by and obvious to you may go unnoticed by the pesticide applicator. Don't assume they know you and your beekeeping business. It won't hurt to point out that your bees are working for them, too by pollinating their soybeans and adding to yield. Ask pesticide applicators to spray in the evening and choose the least toxic product. A little communication can go a long way.

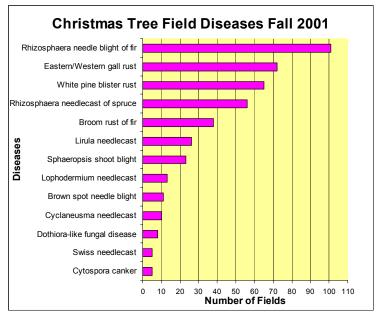
Take advantage of state rule **ATCP 29.151** Advance notice of **pesticide applications (1)**. It requires pesticide applicators to notify you, before they will spray, but first, you the beekeeper, must notify the farmers within 1 ½ mile radius of your apiary location in writing. Then the person who owns or controls the pesticide application using pesticides labeled "highly toxic to bees" must notify the beekeeper 24 hours in advance of spraying.

## FOREST, SHADE TREE, ORNAMENTALS AND TURF

**Christmas Tree Field Inspections -** In 2001 six weeks of group inspections were done primarily in three areas of the state-Jackson Co., Waushara Co., and Lincoln/Langlade Cos. Inspectors working in northern Wisconsin also assisted with **potato rot nematode** inspections. Other areas are inspected individually. This year GPS coordinate were collected to







record field locations. Four hundred twenty fields were inspected encompassing 240 growers. Over 11,200 acres in 51 counties were covered by inspectors. Nine fields (3 growers) had **gypsy moth** egg masses nearby although none in any Christmas tree field. Growers were directed to treat their trees in spring 2002 if they want to ship outside the **gypsy moth** quarantine. Surrounding fence rows or woodlots with **gypsy moth** egg masses were: Waushara Co. -7 fields, Portage Co. -1 field, Marinette Co. -1 field. See the accompanying charts and graphs for a breakdown of what insects and diseases were found during inspections.

**2001 Oriental beetle & Japanese Beetle Trapping Results** - The following two tables summarize our trapping efforts for these two scarab beetles.

Offental Dec	the mapping Kest	1115
Traps Set	County	# of Beetles
2	Brown	4
2	Dane	2
2	Fond du Lac	0
1	Iowa	0
1	Jefferson	0
4	Milwaukee	1
1	Outagamie	8
2	Portage	1
1	Racine	0
2	Rock	3
1	Washington	4
1	Wood	0
	TOTAL=	23

Japanese Be	etle Trap	oping results by cour	nty for
2001	# of		# of
County	beetles	County	beetles
Adams	0	Manathon	1
Barron	0	Marquette	0
Bayfield	2	Milwaukee	1324
Brown	31	Oconto	0
Burnett	0	Outagamie	0
Chippewa	93	Ozaukee	52
Clark	1	Pierce	0
Columbia	0	Polk	6
Crawford	0	Portage	37
Dane	786	Price	1
Dodge	0	Racine	2795
Door	0	Richland	0
Douglas	0	Rock	4533
Dunn	2	Rusk	0
Eau Claire	77	Sauk	0
Fond du Lac	4	Sawyer	0
Grant	68270	Shawano	0
Green	24	Sheboygan	2
Green Lake	0	St. Croix	64
Iowa	5000	Trempealeau	0
Jackson	6619	Walworth	10140
Jefferson	147	Washington	17
Kenosha	49903	Waukesha	3776
Kewaunee	0	Waushara	0
Lafayette	0	Winnebago	2
Langlade	0	Wood	85
Lincoln	0	TOTAL=	155746
Manitowoc	1952		

#### STATE/FEDERALPROGRAMS

Gypsy moth program - Treatment areas proposed for 22 counties - Aerial spraying is proposed this spring and early summer to treat 100 sites covering approximately 325,000 acres in 22 Wisconsin counties to control the spread of the destructive forest pest gypsy moth.

Twelve sites will be treated in May with *Bacillus thuringiensis* sub sp. *kurstaki* or Btk. Btk, the commonly used organic pesticide has been successfully used in **gypsy moth** treatments for more than 30 years. **Gypsy moth** caterpillars eat the leaves that have been treated with Btk and eventually die.

The remaining sites will be treated in June and July with pheromone (FARE-uh-mone) flakes. These rice-grain-sized flakes carry the scent of the female **gypsy moth**, which confuses the male moths and disrupts their mating cycle.

In the past, Btk was the primary tool aimed at the **gypsy moth** caterpillars. This year 93% of the treatment sites will be treated with pheromone flakes. Both treatments are equally effective with low moth populations and each has advantages. In areas where high numbers of moths were trapped the previous year, Btk will be used. However, two applications of Btk are needed to be effective. Pheromone flakes only need one application and they only affect **gypsy moths**. Because the flakes are **gypsy moth** specific, they were initially used in sensitive areas containing endangered species like the Karner Blue Butterfly.

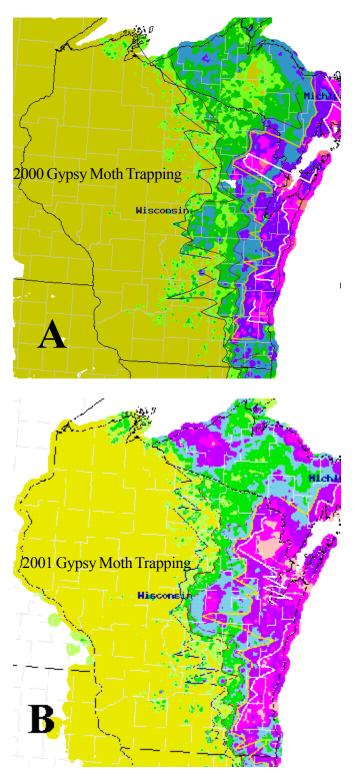
The counties with proposed treatment areas are Adams, Bayfield, Clark, Columbia, Dane, Grant, Green, Iowa, Iron, Jackson, Juneau, Lincoln, Marathon, Marquette, Monroe, Oneida, Portage, Price, Richland, Sauk, Vilas, and Wood.

Maps of the proposed treatment areas are available on the Gypsy moth program Web site at *http://datcp.state.wi.us/* then enter the keyword 'gypsy moth'.

**Trapping** - DATCP will be setting approximately 27,000 traps this year to monitor **gypsy moth** in Wisconsin. Most counties will be trapped at 1 trap per 2 square miles mainly with the triangular orange or green delta traps. Regulated counties will be trapped at 1 trap per 4 square miles with the green milk carton traps. In areas where we need to gather more data, trap densities of 1 per square mile and 4 per square mile will be used.

This year, 10 lead workers and 50 trappers will be hired to set the traps, monitor them this summer, and take them down by the end of September. Trappers will start setting traps around Memorial Day and should have them up by July 4th. We appreciate landowner cooperation in letting us set traps on private property.

For more information on the GYPSY MOTH PROGRAM, please call our hotline at 1-800-642-MOTH



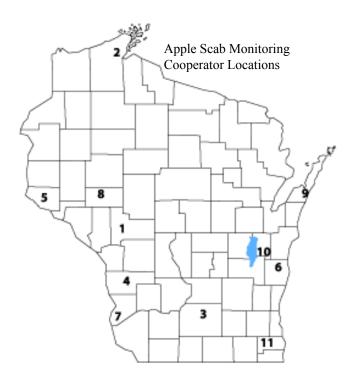
#### FRUIT

**Apple Insect Trappers** – Supplies are on their way! Growers should place pheromone traps for spotted tentiform leafminer and redbanded leafroller by the first week in April. Michigan State University data indicates spotted tentiform leafminer adults can be expected to appear in pheromone traps at 22-70 DD (base 50°F). Larvae can be anticipated at 209-231 DD, and the first leafmines at 329-402 DD. The first redbanded leafroller adults can be expected between 25-78 DD (base 50°F). Report trap counts each Thursday, by 10:00 am or earlier.

#### **Apple scab - Monitoring Program Prepares for Third**

Season - Once again, Wisconsin apple growers can check the threat of apple scab infection through a web site offering data collected by other state growers. For the third Spring, a network of Wisconsin apple growers will record weather data in their orchards with electronic data loggers and share that information with growers around the state. Via the Internet, the data will be converted into estimates of the threat of primary apple scab infection. Through a cooperative effort of the WI Department of Agriculture, Trade and Consumer Protection (DATCP) Plant Industry Bureau and the University of Wisconsin, those estimates will be made available on the World Wide Web. When the growing season begins, apple scab maturity predictions from nine orchards around the state will be available at http:// www.soils.wisc.edu/cgi-bin/aws/scabsummary and weekly in the Cooperative Pest Survey Bulletin.

The project, originally funded by a Pesticide Research grant administered by the DATCP Agriculture Chemical Bureau,



models the developing maturity of overwintering ascospores of *Venturia inaequalis*, the fungus which causes **apple scab**. *V. inaequalis* overwinters in dead leaves on the orchard floor. Ascospores (the spores that cause primary infection) are not mature when winter arrives, and require heat to complete their development in the Spring. This development roughly parallels the development of new leaves on apple trees; it is an advantage to the fungus to have spores reach maturity as the trees provide young susceptible leaf tissue. Primary infection requires three components: mature ascospores, susceptible host tissue and proper environmental conditions (a certain number of hours of free water on the leaves). If one of the components is missing, the risk of infection is minimal.

Years of research on **apple scab** have yielded a model that predicts the maturation of *V. inaequalis* ascospores based on temperature accumulation in the Spring, and a model that identifies periods of temperature and moisture suitable for infection to occur throughout the season. Use of these models allows apple growers to target control measures more accurately, and prevent the expense of unnecessary treatments. Advances in weather monitoring equipment and computer power have made the use of predictive models possible on a widespread basis.

A network of apple growers around the state have been equipped with weather data loggers (Spectrum WatchDog model 450). Using their personal computers and the Internet, these growers send the data to DATCP, where it is transformed and sent to UW-Madison. At UW, it enters a database that calculates degree day accumulation and ascospore percent maturity. Formerly, the database also identified periods suitable for infection, but that information is both very time-critical and of little value outside the fence of the original orchard, so that component of the program has been dropped for 2002.

Individual growers in the network have DATCP-provided software on their computers which allows them to model both spore maturity and infection period. Using the software, most growers report a reduction of one to three fungicide applications per season. The ready adoption of the system by most growers and several years of apparent adequate scab control should encourage other apple growers in the state to consider exploring the technology. An additional advantage is that models for a wide range of apple diseases and insect pests have been worked out, and more are being published all the time. Degree day data and various models can be used for decision support to better target control treatments for a wide range of pest problems.

Many people have contributed to the success of this program. Dr. Patty MacManus of UW Plant Pathology, Dr. Bill Bland of UW Soil Science and Paul Kaarakka of the UW Integrated Pest Management Program have provided crucial support and made possible the Web distribution of the scab information. The cooperators of the growers network (see map) have volunteered a considerable amount of time during a busy time of each year to provide data and take part in the program, and we at DATCP would like to express our sincere thanks for their efforts.

For more information on the apple scab monitoring program, please visit http://www.soils.wisc.edu/cgi-bin/aws/ scabsummary or contact Adrian Barta at adrian.barta@datcp.state.wi.us or (608) 224-4592.

Hixton, WI

Apple scab Monitoring Cooperator Network

Cain's Orchard

Eric Carlson	Blue Vista Farm	Bayfield, WI
Tomas Mejia	Fabrita Orchard	Waunakee, WI
Andy Meyer	Kickapoo Orchard	Gay's Mills, WI
Wilson Mills	Circle K Orchard	Beldenville, WI
Scott Overby	Log Cabin Orchard	Plymouth, WI
Dave Shihata	Shihata's Orchard	Prairie du Chien, WI
Spencer Smith	Eau Claire Orchard	Eau Claire, WI
Matt Stasiak	Peninsula Research	Sturgeon Bay, WI
Linda Struye	The Little Farmer	Malone, WI
Bob Willard	Ela Orchard	Rochester, WI

(reprinted from the WAGA Apple Press)

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<b>Pest Survey</b> Pest survey-pathologist Pest survey-entomologist	Adrian Barta Krista Lambrecht	608-224-4592 608-224-4594	adrian.barta@datcp.state.wi.us krista.lambrecht@datcp.state.wi.us
<b>Plant Protection</b> Nursery inspector	Stacy Chic	608-224-4593	stacy.chic@datcp.state.wi.us
Gypsy moth STS specialist Seed control & certification coordinator Nursery program coordinator Regulatory program assistant	John Domino Greg Helmbrecht Thad Kohlenberg Paula Noel	608-224-4588 608-224-4596 608-224-4572 608-224-4574	john.domino@datcp.state.wi.us greg.helmbrecht@datcp.state.wi.us thad.kohlenberg@datcp.state.wi.us paula.noel@datcp.state.wi.us
Nursery inspector and pest survey Apiary and ginseng program coordinator Nursery inspector and Christmas tree coordinator	Sara Ott Anette Phibbs Bria Radtke	715-345-5349 (Stevens Point) 608-224-4575 608-224-4576	sara.ott@datcp.state.wi.us anette.phibbs@datcp.state.wi.us bria.radtke@datcp.state.wi.us
<b>Other resources</b> <i>Pesticide Certification and Licensing</i> <i>Program Manager</i> <i>Program Assistant</i>	Anne Parrish Bonnie Shebelski	608-224-4551 608-224-4548	anne.parrish@datcp.state.wi.us bonnie.shebelski@datcp.state.wi.us
<b>DNR</b> State Forest Pathologist	Jane Cummings-Carlson 608-275-3273	608-275-3273	cummij@dnr.state.wi.us

Kevin Cain

www1.uwex.edu/ces/cty/ in the county government section of your phone book. You can find contact info. for county agents on-line at http:// Your local county horticulture or agriculture extension agent Usually found at your local courthouse or county administrative building. Contact numbers are located under UW-Extension Department of Agriculture, Trade and Consumer Protection (DATCP) Plant Industry Bureau Contact List

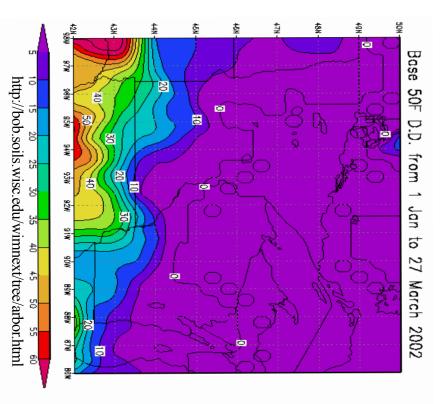


Department of Agriculture, Trade & Consumer Protection Agricultural Resource Management Division

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Website of the Week:

The Extension X-files from UW Extension. One or two page sheets about a variety of garden and hort insects and diseases in pdf or Word format are available at http://www.uwex.edu/ces/wihort/ GardenFacts.html