



---

WISCONSIN 2008 REPORT TO THE  
CENTRAL PLANT BOARD

---

PLANT INDUSTRY BUREAU  
DEPT. OF AGRICULTURE, TRADE & CONSUMER PROTECTION  
2008

---

84<sup>TH</sup> ANNUAL MEETING OF THE CENTRAL PLANT BOARD • MARCH 9-13, 2008 • MADISON, WISCONSIN

## TABLE OF CONTENTS

---

Emerald Ash Borer Program .....	1
Gypsy Moth Program .....	1
Pest Survey Program .....	3
Statewide Crop Insect Surveys .....	3
CAPS Exotic Pest Detection Surveys .....	7
Plant Disease Diagnosis & Statewide Crop Disease Surveys .....	8
Plant Parasitic Nematode Surveys .....	11
Nursery Inspection Program .....	13
Christmas Tree Program.....	15
Apiary Program .....	16
Phytosanitary Certification Program .....	18
Seed Control Program.....	22
Biological Control Permit Program .....	24
Biotechnology Program .....	26

## EMERALD ASH BORER PROGRAM

Survey efforts aimed at detecting emerald ash borer in Wisconsin transitioned from visual surveys in previous years to tree sampling in 2007. DATCP survey crews peeled 921 declining ash trees in the winter of 2006-2007 and girdled another 1,240 detection trees in the spring of 2007. Peeling of those detection trees began in November and 275 were completed by the end of the year. Survey efforts focused on using public trees in road rights-of-way, county parks and, in cooperation with municipal foresters, city trees. In addition to DATCP's survey, detection trees were also established by the Wisconsin Department of Natural Resources, the University of Wisconsin Extension, the Forest Service and the Wisconsin Tribal Conservation Advisory Council. Each partner focused on a specific tree situation (state parks, golf courses, national forests and tribal lands, respectively).

During the summer of 2007, DATCP staff set two purple traps in each of 15 locations. Because the traps were without lure, locations for trapping were chosen which would also provide maximum outreach opportunities. Traps were primarily set at wayside rest areas and county parks with campgrounds. Traps were set out beginning June 20 and removed starting August 17. Traps were checked in late July.

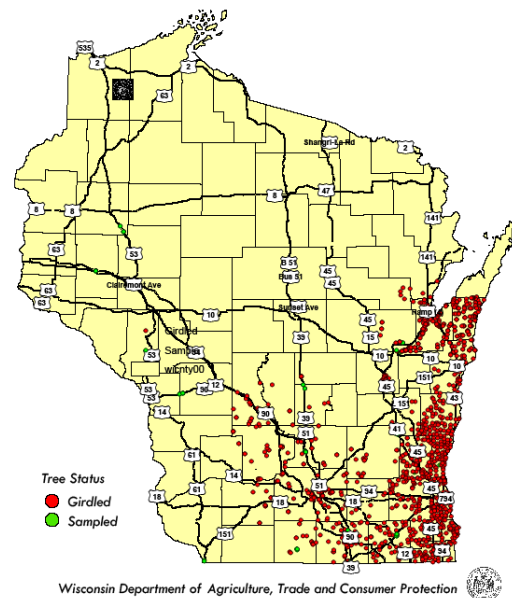
In accord with an increased interest in trapping from the USDA, DATCP is currently creating a risk-based trapping plan which we propose to implement in the summer of 2008. The plan considers EAB-associated risk factors like campgrounds, timber industry facilities and transportation corridors. Under the most recent USDA EAB survey proposal, Wisconsin is expected to set 3,837 traps for infestation delimiting, plus an additional 50 traps in high-risk locations. The delimitation proposal, which covers about one-fourth of the state, requires setting traps in a 1.5 mile by 1.5 mile grid pattern in each grid cell that contains ash trees.

Communication and outreach staff worked a number of conferences and trade shows, targeting crucial stakeholders with the firewood risk message and building public awareness of EAB. A summer-long radio campaign in Wisconsin in 2007 reached millions of residents and visitors statewide. Nearly 300,000 postcards (with the firewood message) were also delivered to out-of-state property owners and to owners of recreational vehicles registered in Wisconsin. To date, emerald ash borer has not been detected in Wisconsin.

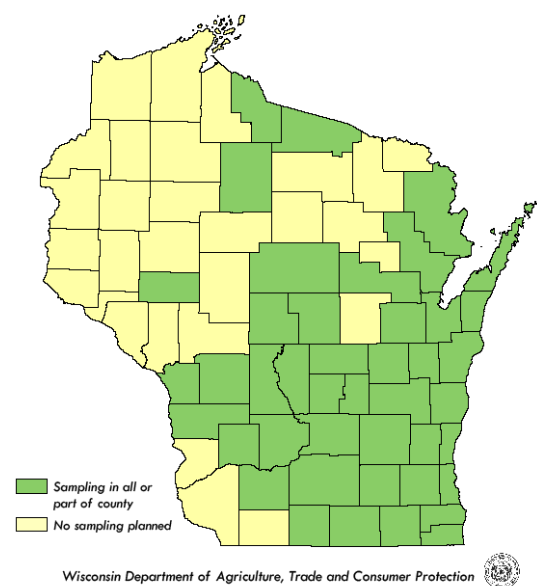
## GYPSY MOTH PROGRAM

The two major events in the gypsy moth program are field surveys to trap male moths and locate egg masses, and the subsequent application of control treatments to kill the young larvae. Statewide trapping and egg mass surveys indicate where significant populations of gypsy moths exist in the state, and the results are used to determine and prioritize treatment sites for the following season. In 2007, a total of 30,836 delta and milk carton traps were

DATCP EAB Detection Trees  
2007-2008



DATCP Emerald Ash Borer  
Detection Survey 2007-2008



set in 52 Wisconsin counties. Egg mass surveyors inspected 389 sites covering approximately 1,600 acres. The program’s objective is to detect and treat potential heavy infestations and to prevent gypsy moth from spreading rapidly through the state for as long as possible.

*SLOW-THE-SPREAD REGULATORY PROGRAM*

Wisconsin’s Slow-the-Spread (STS) program is directed by DATCP. In 2007, the STS Program treated 99,671 acres at 65 sites in 17 counties with Btk, NPV, or pheromone flakes. Aerial treatments of Btk totaled 25,229 acres, NPV treatments totaled 3,501 acres, and pheromone flakes totaled 70,941 acres. Applications began on May 10 and were complete by June 30. The strategy is to eradicate the most critical populations west of the “STS Action Zone” and to slow the spread of the gypsy moth within the “STS Action Zone” to 10 km per year. The average rate of spread across Wisconsin in 2007 was 30.20 km, a considerable increase from 11.45 in 2006, -16.04 km in 2005, and -6.34 km in 2004.

Table 1. Rate of gypsy moth spread in Wisconsin (km/year).

Year	Northern Wisconsin	Central Wisconsin	Southern Wisconsin	State Average
2003	16.04	33.26	57.38	35.56
2004	8.93	-10.52	-9.53	-3.71
2005	-32.72	-14.70	-0.69	-16.04
2006	23.05	3.68	7.62	11.45
2007	63.85	10.46	16.30	30.20

*GYPSY MOTH TRAPPING PROGRAM*

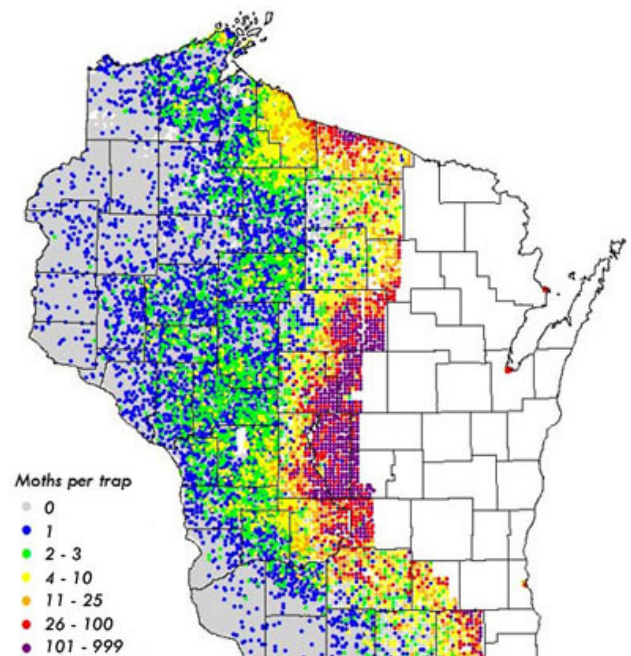
Trapping surveys in 52 counties revealed a population increase for the first time in three years in the counties trapped. The total number of male gypsy moths captured was 293,160, which compares to 121,355 moths in 2006, 316,220 moths in 2005, and 373,656 moths in 2004. The state record of 703,060 moths was set in 2003. A total of 30,836 traps were placed this season. DATCP seasonal trappers set 30,494 traps and captured 230,037 of the total number of moths. Cooperators set 342 traps and captured 63,123 moths. An overwhelming majority of those moths reported by cooperators (50,100) were captured in the Apostle Islands.

Review of the 2007 male moth trap data suggests that 10 counties -- Barron, Buffalo, Burnett, Douglas, Dunn, Pepin, Pierce, Polk, St. Croix, and Washburn -- have a diversity of gypsy moth populations best characterized as low density/isolated infestations. Eradication is the goal in these western counties. For the first time in a decade, no counties reported a zero moth count. Captures of male gypsy moths in 2007 are summarized in the accompanying map.

*GYPSY MOTH SUPPRESSION PROGRAM*

Very favorable habitat and a warm, dry summer resulted in gypsy moth populations increasing dramatically in

Wisconsin Gypsy Moth Catches 2007



Wisconsin Department of Agriculture, Trade and Consumer Protection



south-central, central and northeast Wisconsin in 2007. This was the third consecutive year with favorable weather conditions. Marinette County in the northeast experienced approximately 23,000 acres of light defoliation with small patches of moderate and heavy defoliation intermixed. Central Wisconsin experienced a number of small patches of defoliation less than 40 acres. However, egg mass counts were many times greater than last fall in all three regions of the state, predicting widespread heavy defoliation in 2008.

The 2007 suppression program was very small, and included approximately 1,235 acres at 24 sites in eight counties. A total of 950 acres were treated with Btk and 285 acres were treated with Gypchek during May 2007. Treatments were conducted by AI's Aerial Spraying of Ovid, Michigan, and all treated blocks provided satisfactory foliage protection.

Table 2. Wisconsin gypsy moth surveys and treatments, 2003-2007.

Year	# Traps	# Moths	# Counties Treated	Acres Treated
2003	26,218	691,280	13	47,567 Btk 326,206 MD 6,613 Gyp
2004	30,089	372,058	17	85,972 Btk 225,525 MD 8,230 Gyp
2005	34,122	316,220	19	73,521 Btk 108,140 MD 15,578 Gyp
2006	31,813	121,355	22	38,868 Btk 123,602 MD 6,450 Gyp
2007	30,270	295,338*	17	25,229 Btk 70,941 MD 3,501 Gyp

\* Btk = *Bacillus thuringiensis* var. *kurstaki*; MT = Mass Trapping; MD = Mating Disruption; Gyp = Gypcheck (virus)

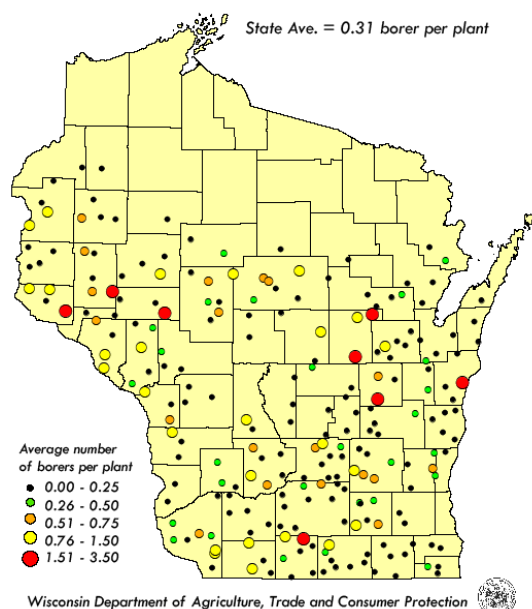
## PEST SURVEY PROGRAM: STATEWIDE FIELD CROP INSECT SURVEYS

The Wisconsin Pest Survey program was established to detect new or exotic plant pests and assess the distribution and abundance of endemic pests affecting Wisconsin agriculture. Plant pest survey data is analyzed and published in weekly issues of the Wisconsin Pest Bulletin, a compilation of timely plant pest information supported by the survey efforts of our entomologists, weed specialists, and plant pathologists. Survey results are important to farmers, county extension specialists, orchardists, agronomists, horticulturalists, and crop consultants who must make appropriate and informed pest management decisions. Accurate pest assessment enhances proper use of pesticides, and contributes to integrated pest management, and best management practices. Survey also provides information needed to certify certain export commodities as pest-free.

### EUROPEAN CORN BORER

The fall abundance survey of 230 fields of grain corn registered a minor increase in larval populations compared to the fall of 2006. The state average number of European corn borers entering the winter of 2007 increased to 0.31 per plant from 0.29 per plant in 2006. This average is equal to the 10-year average of 0.31 per plant and below the 50-year average of 0.48 per plant. Increases were noted in the southwest (0.20 to 0.28 per plant), west central (0.42 to 0.52 per plant), east central (0.11 to 0.21 per plant), and north central (0.16 to 0.35 per plant) districts. Decreases were documented in the remaining five agricultural reporting districts. Approximately 53% of the fields had no detectable larval

2007 European Corn Borer Survey



population, roughly 23% of the fields had populations exceeding 0.50 borer per plant, and 8% had populations above the economic threshold of 1.0 borer per plant. The state mean percentage of corn plants infested with second generation larvae was 28%. Results of the 2007 survey suggest another light first flight of moths should be expected next spring. Planting Bt hybrids for European corn borer management in 2008 is probably unwarranted in many areas, considering that borer pressure is expected to be very low. The maps below shows the state average and the number of larvae per plant found during the survey.

#### CORN ROOTWORM BEETLE

Analysis of the annual corn rootworm beetle survey revealed a state average population of 1.0 beetle per plant. This represents a decrease from 1.4 per plant in 2006 and 1.6 per plant in 2005. Averages by agricultural reporting district were as follows: northwest 0.4 per plant; north central 0.7 per plant; northeast 0.5 per plant; west central 0.4 per plant; central 0.8 per plant; east central 1.4 per plant; southwest 0.4 per plant; south central 2.2 per plant; southeast 1.0 per plant. About 39% of the 222 corn fields surveyed had economic populations of 0.75 or more beetle per plant. The largest increase from 1.7 to 2.2 beetles per plant was documented in the south central district, while the largest decreases from 2006 to 2007 were noted in the southwest (2.2 to 0.4 per plant), northeast (1.8 to 0.5 per plant), and east central districts (2.2 to 1.4 per plant). An average of 0.75 or more beetle per plant indicates the potential for feeding injury by corn rootworm larvae in multi-year corn.

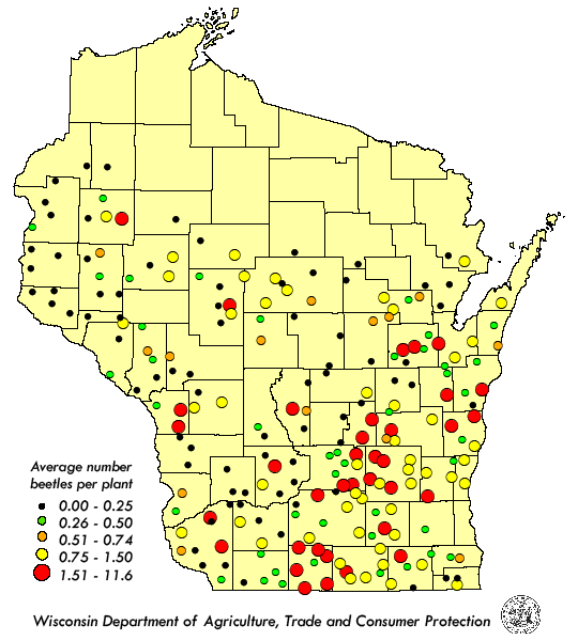
The use of transgenic Bt corn rootworm hybrids was also measured this season. The percentage of survey sites that were Bt corn rootworm fields nearly doubled from 14% in 2006 to 27% in 2007. For the second year, Monsanto's YieldGard was the more prevalent of the two technologies. A total of 23% of the fields tested positive for the YieldGard Bt-Cry3Bb1 protein, while just 4% tested positive for the Herculex Bt-Cry34/35Ab1 protein. More Bt-rootworm corn was planted in the southwest and south central districts in 2006 and 2007 relative to the other districts.

#### WESTERN BEAN CUTWORM

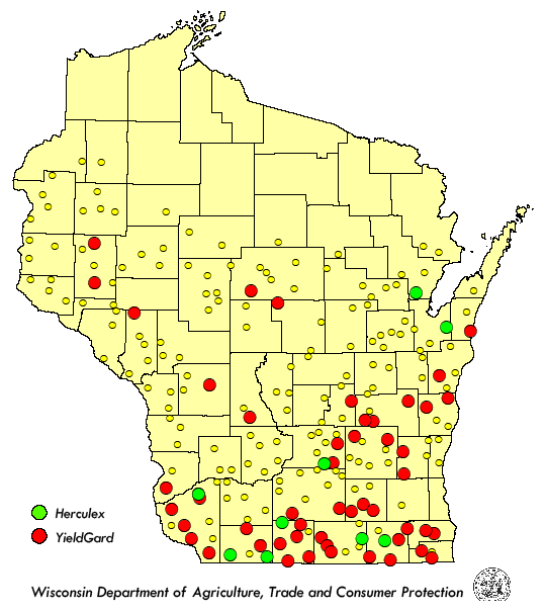
A network of 103 pheromone traps in 27 counties provided data on the distribution, emergence, peak flight, and abundance of the western bean cutworm in 2007. DATCP survey specialists, in collaboration with 15 Pioneer Hi-Bred regional representatives and four cooperators, monitored milk jug traps from mid-June through early August and reported counts weekly as part of a multi-state monitoring network. DATCP has conducted a formalized trapping program for this pest since 2005.

Emergence of western bean cutworm moths was first noted on June 20 near Arcadia in Trempealeau County.

2007 Corn Rootworm Beetle Survey



YieldGard and Herculex Fields  
2007 Corn Rootworm Beetle Survey





Captures in pheromone traps peaked between July 12 and August 7. The highest seasonal cumulative captures were 448 moths at Princeton, 131 moths at Lancaster, and 78 moths at Randolph. The 103 pheromone traps captured a total of 2,178 western bean cutworm moths during the 2007 season, and roughly 21% of these were reported from the Princeton site. A total of 17 traps, primarily those in the east central counties of Brown, Manitowoc and Sheboygan, captured no moths during the trapping program.

The presence of this late-season corn pest in Wisconsin and the Midwest since the late 1990s is evidence of an eastward expansion in its geographic range, which was once limited to Colorado and Nebraska. Consecutive years of trapping have not found populations of adults comparable to those registered in Iowa where cumulative captures have numbered as high as 2,069 moths per site. No heavy larval infestations were reported this season and western bean cutworm does not yet represent a significant threat to corn in Wisconsin.

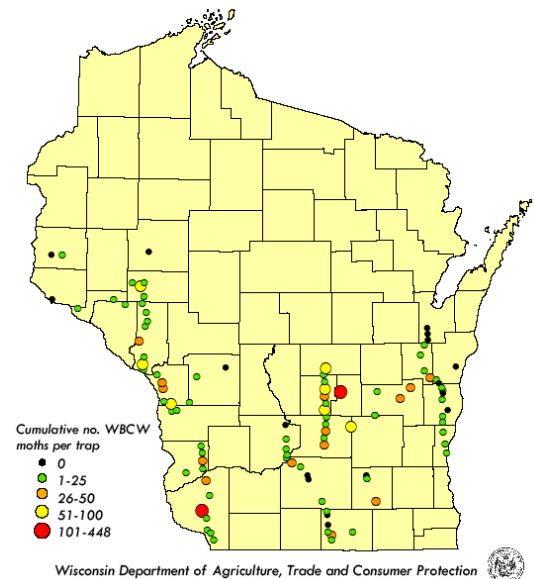
#### SOYBEAN APHID

The annual soybean aphid survey is conducted during the R2 to R4 stages of soybean growth to detect peak seasonal soybean aphid densities and to assess fields while treatment may still be beneficial. Examination of 227 soybean fields between July 12 and 31 found non-economic soybean aphid populations at 83% of the survey sites. High or economic populations were detected at 17% of the sites, located principally in the west central district and portions of the southwest, south central, and central districts. Moderate populations were detected in the central and north central districts, and low populations were found over much of the southeast, east central, northwest, and northeast districts. The 2007 statewide average number of soybean aphids per plant was 164. This compares to 69 aphids per plant in 2006, 118 aphids per plant in 2005, 11 aphids per plant in 2004, and 758 aphids per plant in 2003. The highest average number of aphids per plant recorded was 3,250 in a Columbia County field.

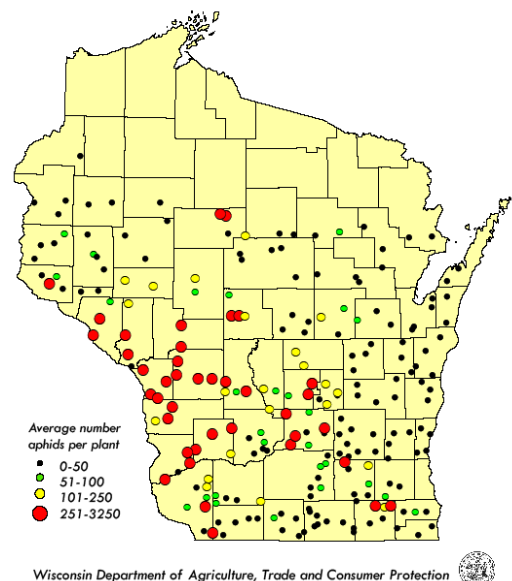
#### SOYBEAN APHID BIOLOGICAL CONTROL

The soybean aphid parasitoid *Binodoxys communis* was released into field cages on August 10 at two Wisconsin sites: the Arlington Agricultural Research Station (Columbia County) and the Shelley farm in Deerfield (Dane County). At each location, a 6 ft x 3 ft field cage was placed over a row of soybean plants. All soybean aphid predators, including the minute pirate bug (*Orius insidiosus*), Asian lady beetle (*Harmonia axyridis*), and mummies of the parasitoid *Lysiphlebus testaceipes*, were removed before potted soybean plants containing soybean aphids and *B. communis* mummies were placed in the cage. Adult wasps were also introduced directly into the cage. After a generation was completed in 10 to 14 days, the cages were removed to allow the adult parasitoids to disperse. Follow-up sampling is planned to determine the establishment, spread, and effectiveness of *B. communis* this year and in subsequent years.

2007 Western Bean Cutworm  
Cumulative Pheromone Trap Counts



2007 Soybean Aphid Survey Results  
R2 to R4 growth stages



The field releases are part of a multi-state effort to introduce this tiny Asian wasp as a biological control agent of the soybean aphid, *Aphis glycines*. Concurrent activities were conducted last summer in Iowa, Minnesota, Illinois, Indiana, Iowa, Michigan, Minnesota and South Dakota. *Binodoxys communis* emerged as the best candidate for release after five potential biocontrol agents were evaluated in laboratory experiments. This parasitoid controls soybean aphids in parts of Asia where both species are native. Based upon four years of laboratory testing, permits for the release of *B. communis* in Wisconsin were approved by the USDA APHIS and DATCP early in June.

#### BEAN LEAF BEETLE

The fifth annual spring survey found the highest number of overwintered bean leaf beetles since surveys began in 2003. Pest survey specialists sampled 183 first crop alfalfa fields in 44 counties between May 9 and June 13, and collected 509 beetles from 86 of the sites. Counts ranged from 0 to 26 beetles per site, with the highest numbers swept from fields in Lafayette, Rock and Walworth counties. Although fewer beetles were found per site as the survey progressed northward, this insect appeared to have wintered well across much of central Wisconsin.

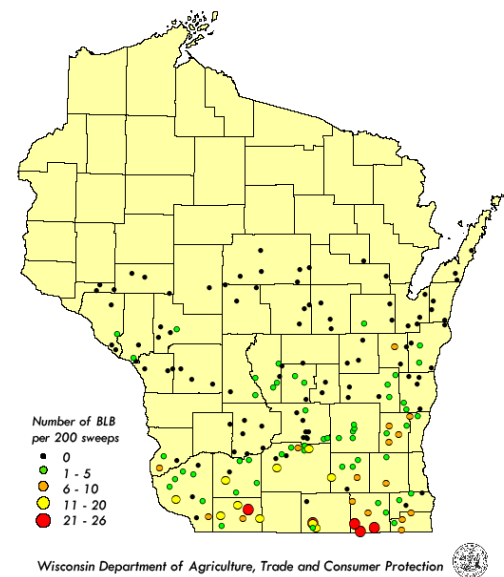
Subsequent to the field portion of survey, the beetles were tested for Bean Pod Mottle Virus (BPMV) at the DATCP Plant Industry Laboratory in Madison. Testing using DAS ELISA determined that overwintered beetles from 11 alfalfa fields in Iowa, Lafayette, Racine, Rock, and Walworth counties carried BPMV. This is the highest number of sites with bean leaf beetles carrying BPMV since 2003. Despite the higher number of surviving beetles, no increase in the incidence or severity of BPMV was noted this season. A follow-up soybean virus survey in August found BPMV in a single Grant County field (of 220 fields tested).

#### POTATO LEAFHOPPER

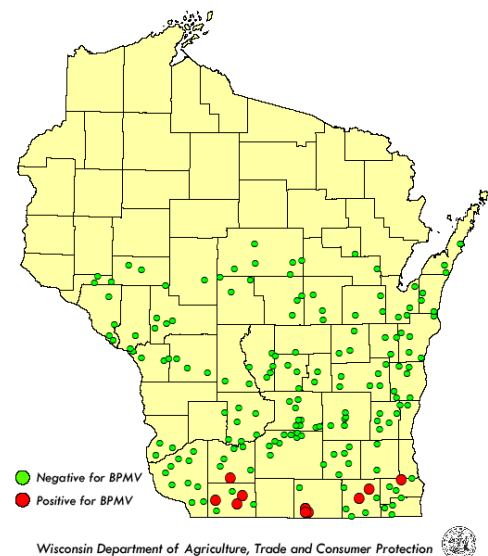
The first wind-blown migrants were detected at lights on the evening of May 9, but counts did not escalate to any appreciable degree until June 1. Populations were sufficient to justify treatment by mid-June, with 2.0 adults per sweep common in the southern and central districts. Numbers escalated throughout June to reach the highest levels of the season by July 13, when averages climbed to 4.3 leafhoppers per sweep in the central and southwest counties, 2.2 per sweep in the east central counties, and 16.8 per sweep in the west central counties. A count of 38 per sweep was recorded in an exceptional field near Madison on July 11.

In the northwest, a crop consultant recommended treatment on nearly every acre of alfalfa, both established stands and new seedings. Heavy populations in apples, beans, and potatoes at this time coincided with a large dispersion from cut alfalfa. During August when counts are perennially the highest, leafhoppers ranged from 1.0 to 12.1 per sweep in untreated fields to about 0.8 per sweep in those fields with spray programs. Populations began to decrease over the state by mid-month due to heavy rainfall although residual populations remained into fall. Potato leafhoppers were a persistent pest in 2007.

2007 Spring Survey for Overwintered Bean Leaf Beetles in Alfalfa



2007 Spring Survey for Overwintered Bean Leaf Beetles and BPMV in Alfalfa



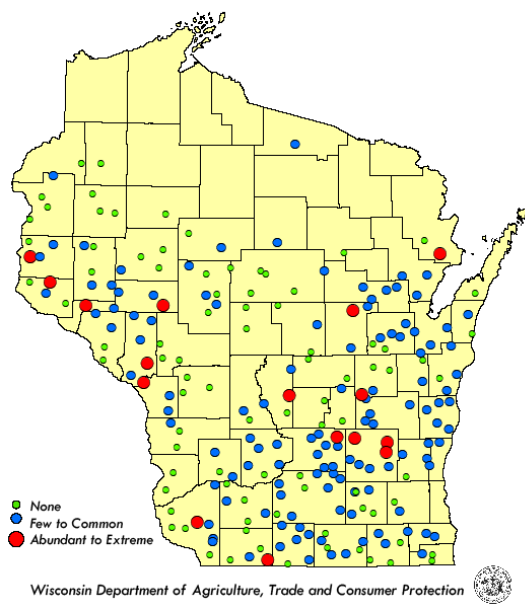


## WEEDS

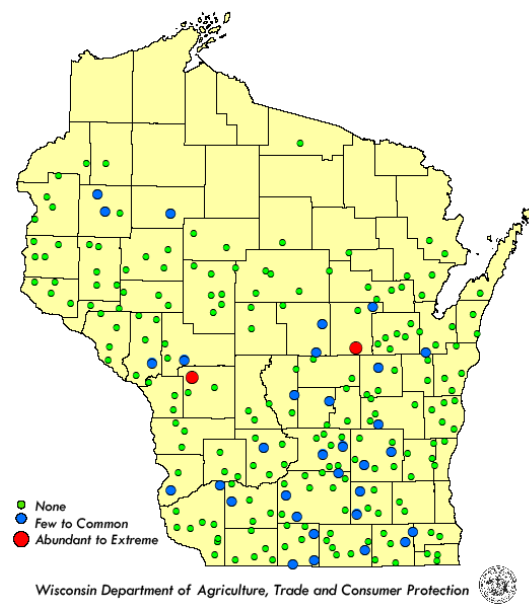
Estimates of five major weed species were made during fall surveys in corn. Incidence and severity ratings were assigned for foxtail (*Setaria* spp.), giant ragweed (*Ambrosia trifida*), velvetleaf (*Abutilon theophrasti*), wild proso millet (*Panicum miliaceum*), and woolly cupgrass (*Erichloa villosa*). The incidence ratings were: 1) none, 2) few, 3) common, 4) abundant, and 5) extreme. The severity ratings were: 1) none, 2) trace, 3) light, 4) moderate, and 5) heavy.

Of the 229 corn fields surveyed, 61% contained foxtail, 15% contained giant ragweed, 14% contained velvetleaf, 5% contained woolly cupgrass, and 4% contained wild proso millet. The foxtail species (giant, green and yellow) were the most prevalent of the weed species assessed. Giant ragweed occurred most often in the central and south central districts, velvetleaf was most common in the south central and southeast districts, wild proso millet was noted in seven of the nine agricultural statistics districts but occurred most often in the northeast, and woolly cupgrass was most prevalent in the southwest, particularly Grant County. Woolly cupgrass was not found in any field in the southeast, east central, northeast or north central districts. Results of the survey suggested that some weed management programs were not entirely effective against foxtail this season, but overall weed control was good.

Foxtail Abundance in Corn - Fall 2007



Giant Ragweed Abundance in Corn - Fall 2007



## CAPS EXOTIC PEST DETECTION SURVEYS

The Cooperative Agricultural Pest Survey (CAPS) is a combined effort by Federal and State agricultural organizations to conduct surveillance, detection, and monitoring of agricultural crop pests and biological control agents. Survey targets include weeds, plant diseases, insects, nematodes, and other invertebrate organisms.

USDA APHIS PPQ provides national and regional coordination, funding, and technical support for Federal and cooperative survey projects. State Survey Committees, comprised of members from various state agencies and scientific disciplines, work with State Survey Coordinators to direct individual State programs.

THE PRIMARY PURPOSES OF CAPS ARE:

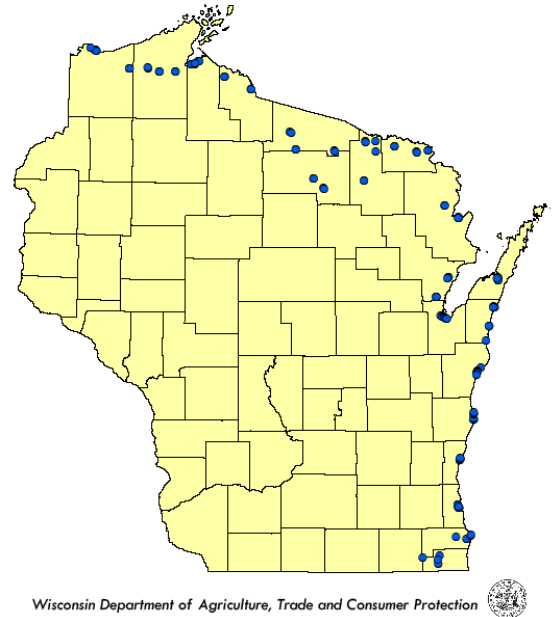
- To detect exotic plant pests before they can become established in U.S. agriculture

- To support the export of U.S. agricultural products
- To facilitate the collection and management of survey data from cooperative PPQ programs

#### *SIREX NOCTILIO WOODWASP*

A survey to detect *Sirex* woodwasp was conducted in Wisconsin in 2007. One hundred and twelve Lindgren funnel traps baited with pine-scented lure (70% alpha pinene and 30% beta pinene) were placed in 19 eastern and northern counties of the state, including Ashland, Bayfield, Brown, Door, Douglas, Iron, Florence, Forest, Kenosha, Kewaunee, Manitowoc, Marinette, Milwaukee, Oconto, Oneida, Ozaukee, Racine, Sheboygan, and Vilas. The regions of Wisconsin closest to the known infestations (in Michigan, New York, Pennsylvania, Ontario, Canada) and with substantial shipping received from Asia were trapped. Placement of Lindgren funnel traps began on May 24 and was complete by July 18. Individual traps were checked every 2-3 weeks through October 26, and the contents examined for foreign woodwasps, longhorned beetles, and bark beetles. A total of 285 samples were collected during the trapping survey, including 81 native siricids. The native species were *Sirex edwardsii* (18), *Sirex nigricornis* (19), *Urocerus albicornis* (5), *Urocerus cressoni* (36), and unknown *Sirex* spp. (3). No *Sirex* woodwasp or woodwasp damage was detected in Wisconsin in 2007.

2007 *Sirex* Woodwasp Survey Sites



Wisconsin Department of Agriculture, Trade and Consumer Protection

#### *LIGHT BROWN APPLE MOTH & EXOTIC FRUIT MOTHS*

The DATCP network of 33 apple growers used pheromone traps to monitor the presence of light brown apple moth (LBAM), fruit tree tortrix (FTT), apple tortrix (AT), and cherry bark tortrix (CBT) in Wisconsin orchards. Trapping for LBAM was conducted for the first time in Wisconsin as part of a nationwide effort following the detection of this pest in several California counties in March 2007. Suspect LBAMs were captured in Bayfield, Dane, Dodge, Fond du Lac, Pierce, and Racine counties in late June and submitted to the DATCP entomologist for identification. All suspects were identified as native tortricids in the genus *Sparganothis*. Trapping efforts for CBT have been carried out intermittently since 1983, while detection surveys for FTT and AT began in 2004. Survey results for all four species were negative.

#### *SWEDE MIDGE*

Delta traps baited with a lure specific to the Swede midge (*Contarinia nasturtii*) were positioned in crucifer cropland and/or cruciferous weeds in Dane, Iowa, Rock, and Walworth counties. The traps were used to detect Swede midge, an introduced, light-brown fly that causes distorted growth and yield loss of broccoli, cabbage, cauliflower, Brussels sprouts, kale, and radishes. Trap liners were collected and replaced by cooperators or survey personnel from mid-July to October. Finds were negative.

### PLANT DISEASE DIAGNOSIS & STATEWIDE DISEASE SURVEYS

The incidence and distribution of exotic, regulated and endemic plant diseases and nematodes in the state is assessed through the Plant Disease Survey and Diagnostic program. A diagnostic laboratory is operated to confirm the presence or absence of disease pathogens for the bureau's regulatory and survey programs. The Plant Industry Laboratory maintains current and historical

records of regulated nematodes and disease occurring in the state. The primary diagnostic focus of the laboratory this year was the continued screening of 1,808 soil samples for pale potato cyst nematode (*Globodera pallida*). In 2007, the diagnostic laboratory's two plant pathologists and three part-time, seasonal employees processed a total of 2,590 samples, including 782 crop and ornamental samples, and diagnosing 61 pathogenic organisms on 80 different hosts.

Table 3. Plant, soil and insect samples received for diagnosis at the PIB Laboratory, 2005- 2007.

Sample Type	2005	2006	2007	Purpose	Target Pest
Exotic root-knot nematodes		173	107	CAPS Survey	<i>Meloidogyne fallax</i> <i>Meloidogyne chitwoodi</i>
Soybean viruses	276	188	227	CAPS Survey	AMV, CMV, BPMV, POTY, SbDV
Soybean rust	3			CAPS Survey	<i>Phakopsora pachyrhizi</i>
Pesticide investigation	3	10	4	Compliance	
Seed corn	44	57	75	Export Certification	Stewart's wilt, HPV, MDMV, WSMV
Soybean cyst nematode	48	24	28	Export Certification	
Soybean seed certification	8	13	20	Export Certification	BPMV, BSMV, TRSV, TRV, SCN, fungal dis.
Potato rot nematode	2	0	5	Export certification- State quarantine	<i>Ditylenchus destructor</i>
SbDV in clover	92	44		New disease detection	SbDV
Powdery scab	13	1		New disease detection	Vector of PMTV
Wheat viruses	82			New disease detection	HPV, MDMV, WSMV
Bean leaf beetle	97	81	69	Pest Survey	BPMV
Flea beetles		40		Pest Survey	Vector of Stewart's wilt
Snapbean viruses	33	62		Pest Survey	BPMV, CMV, Potyvirus, TSV
Christmas trees	76	94	66	Pest Survey	
Nursery stock	202	185	180	Pest Survey	HVX, TRV, CMV
PCN	64	173	1808	USDA APHIS Survey	PCN & GN
SOD	300	13	1	USDA APHIS Survey	<i>Phytophthora ramorum</i>
PMTV ('02) Ralstonia ('03)	20	3		USDA APHIS Survey	
<b>TOTAL</b>	<b>1,299</b>	<b>1,161</b>	<b>2,590</b>		

*SOYBEAN DWARF VIRUS*

Soybean Dwarf Virus (SbDV) was first detected in Wisconsin soybeans in 2003. In 2004, the virus was detected in five of 293 soybean fields sampled. In 2005, SbDV was detected in four of 276 fields sampled. Concurrent surveys in clover (a known SbDV host) found the virus in 33 of 77 samples in 2004, and in 61 of 92 samples collected in 2005. Despite these finds, the actual incidence of SbDV in clover may be less than test result indicated since ELISA is notoriously difficult with clover due to "noise" in the system.

*SOYBEAN VIRUS & ASIAN SOYBEAN RUST SURVEY*

Virus symptoms were detected in 14 of 227 soybean fields sampled as part of the annual soybean rust and virus survey. Results were as follows: bean pod mottle virus (one field positive in Grant County); soybean dwarf virus (seven fields positive: Vernon [1], La Crosse [2], Walworth [1], Grant [2], and Crawford counties [2]); potyvirus group (one field positive in Dane County); cucumber mosaic virus (all negative); alfalfa mosaic virus (five fields positive: Crawford [1], Marathon [1], Monroe [1], Racine [1], and Sauk [1]). All soybean foliage (40 leaves per field) was tested for bean pod mottle virus, cucumber mosaic virus, and potyviruses using DAS ELISA. Testing for alfalfa mosaic virus and soybean dwarf virus was performed using reverse transcription (RT) - polymerase chain reaction (PCR) (1, 2), which can detect lower levels of viral infections than DAS ELISA. No Asian soybean rust was detected in any of the 227 Wisconsin soybean fields surveyed in 2007.

2007 Soybean Virus Survey Results

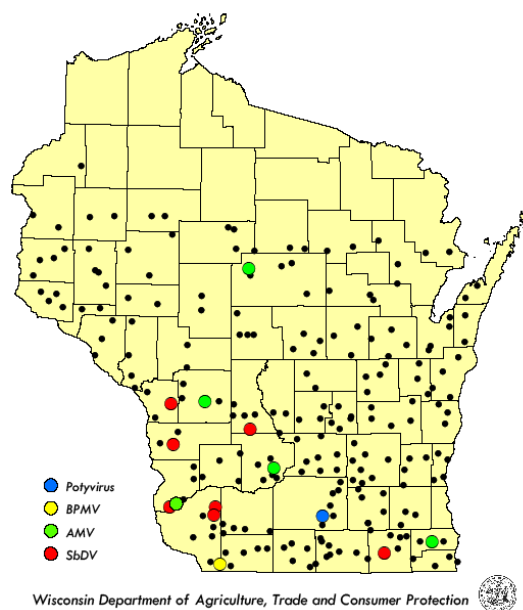


Table 4. Percentage of soybean fields surveyed infected with viruses, 2002-2007.

Year	Total Fields Surveyed	AMV	BPMV	CMV	POTY	SbDV
2002	177	NA	29.9%	NA	NA	NA
2003	286	NA	4.2%	0.3%	0.3%	1.7%
2004	293	1.0%	0.0%	0.0%	0.0%	1.7%
2005	276	NA	0.0%	NA	0.0%	1.4%
2006	188	NA	0.0%	NA	0.0%	3.2%
2007	227	2.2%	0.4%	0.0%	0.4%	3.1%

*TOBACCO RATTLE VIRUS*

Ornamental perennials infected with Tobacco Rattle Virus (TRV) continued to be found in nursery dealers stock throughout the state in 2007. Over the last three years, TRV has been positively identified by molecular methods (RT-PCR) in peony, bleeding heart, barrenwort, coral bells, and astilbe.

*SEED FIELD INSPECTION*

To facilitate certification of seed for export from Wisconsin, crops grown for seed export are inspected during the growing season. Fields are inspected for regulated pests such as Stewart's wilt, High Plains Virus (HPV) and Soybean Cyst Nematode (SCN). The prevalence and severity of non-regulated pests are also assessed in the fields inspected.

Seed production field inspections in 2007 totaled 750 acres, including roughly 588 acres of corn (74 fields), 157 acres of soybeans (10 fields), and 5 acres of cucumber seed production (7 fields). For the third successive year, all inspected corn fields were sampled for *Pantoea stewartii*, the causal agent of Stewarts wilt. At least 23 countries worldwide currently prohibit the export of seed infected with this disease. *Pantoea stewartii* was detected in one of 74 corn fields.

To meet the import requirements of foreign trading partners, all corn fields were also sampled for High Plains Virus (HPV), Maize Dwarf Mosaic Virus (MDMV), and Wheat Streak Mosaic Virus (WSMV). Neither HPV nor WSMV was detected. The vector of HPV, wheat leaf curl mite (*Aceria tosichella*), is not known to occur in Wisconsin. MDMV can be transmitted by more than 20 species of aphids and is known to occur the state. One Dane County field tested positive for MDMV in 2007.

Soybean fields were sampled for Anthracnose, bacterial pustule/blight, bacterial tan spot, bean pod mottle virus, brown stem rot, Cercospora blight and leaf spot, frogeye leaf spot, sudden death syndrome, pod and stem blight, southern bean mosaic virus, soybean cyst nematode, tobacco ringspot virus, tomato ringspot virus, and white mold. Four soybean fields in Rock County tested positive for SCN, and one field had trace levels of frogeye leaf spot. Inspection results were negative for all other diseases.

## PLANT PARASITIC NEMATODE SURVEYS

Every year soil samples are collected from field crops and processed in the Plant Industry Laboratory to certify that a crop was grown in an area that is free of certain cyst forming nematodes. This certification is necessary to allow the export of plants or plant products in other states or foreign countries.

### SOYBEAN CYST NEMATODE

Established populations of the Soybean Cyst Nematode (SCN), *Heterodera glycines*, have been confirmed in 44 Wisconsin counties, as indicated by the red areas in the map to the right. The first detection of SCN in Wisconsin was made in Racine County in 1981. Twenty-eight soil samples were collected at random from soybean fields in counties not known to be infested with SCN. Two samples from Fond du Lac County were positive for SCN in 2007, marking the first detection of SCN on soybean in this county. Soybean cyst nematode is the most serious yield-reducing pest of soybeans in the United States.

### POTATO ROT NEMATODE

Since 1953, when this nematode was first detected in Wisconsin, approximately 3,014 acres of potato lands (108 fields) have been quarantined to prevent its spread to non-infested areas. To date, 992 acres (30 fields) still remain under state quarantine. In 2007, nine potato fields totaling 404 acres were inspected and Potato Rot Nematode (PRN) was detected in two fields in Langlade County. These two fields, totaling 190 acres, were placed under quarantine. Five additional potato fields were inspected and no evidence of PRN was found. Two of the nine fields inspected were released from quarantine. One was released for certified seed potato production after fumigation and two successive potato crops showed no evidence of potato rot nematode. The other was released for table stock and certified seed potatoes (pending) after fumigation and one crop of potatoes showed no evidence of PRN.

Known Distribution of  
Soybean Cyst Nematode - 2007

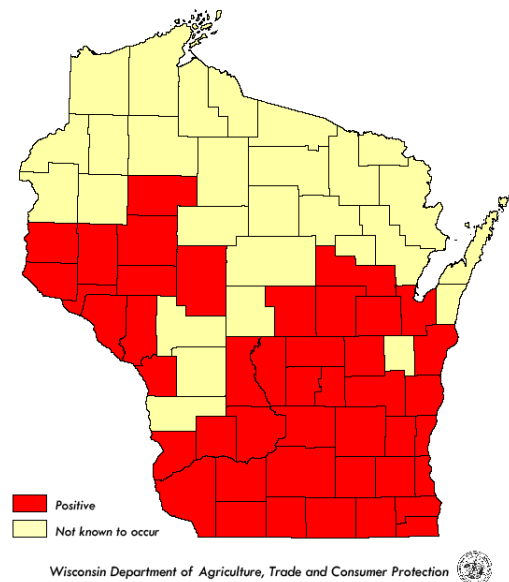
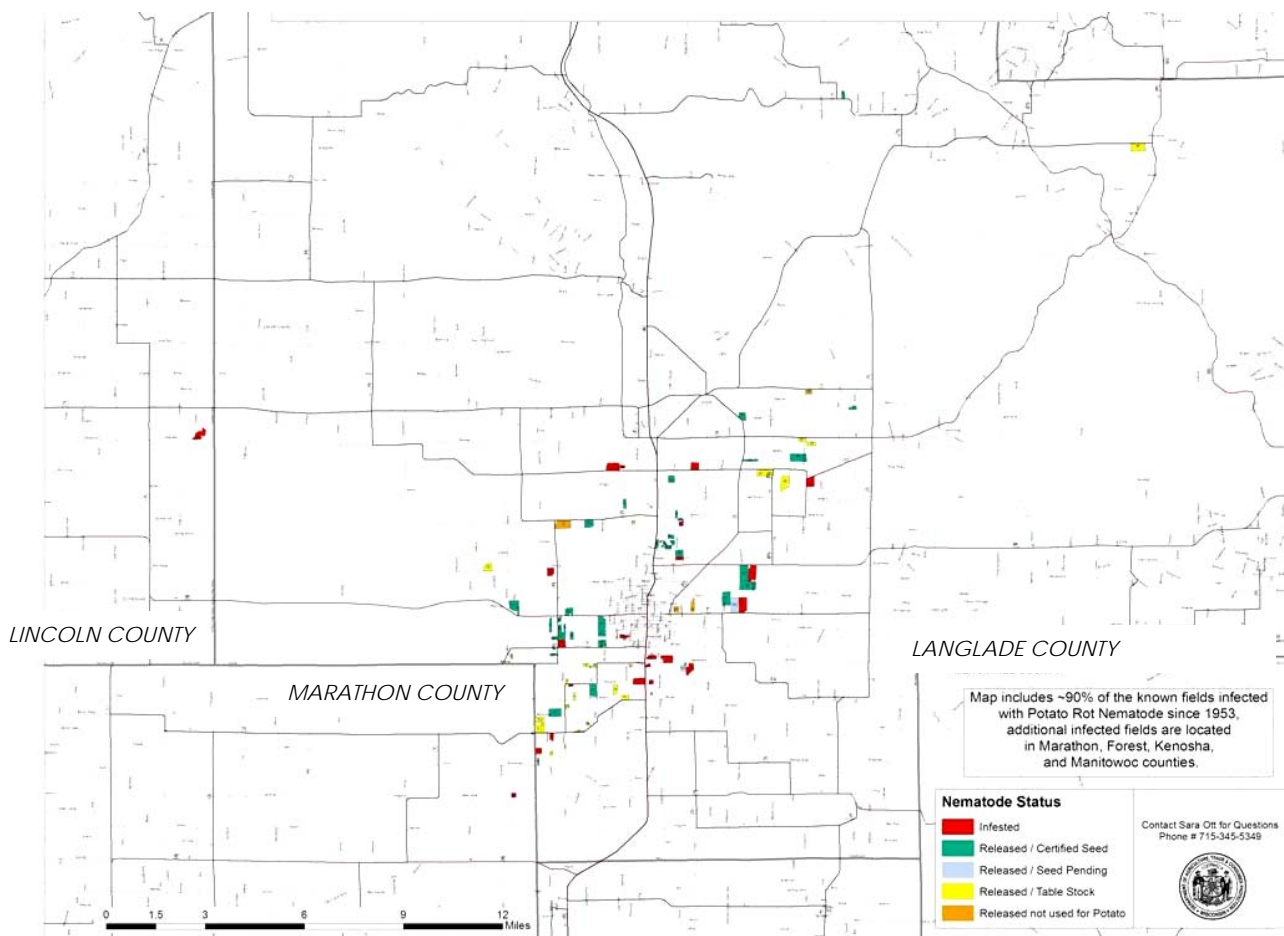




Table 5. Number of PRN acres and fields by county and current status.

County	Current Status	Sum Of Acres	Count Of Field #
Forest	Released not used for potato	15	1
Kenosha	Released not used for potato	1	1
Langlade	Infested	736.8	23
Langlade	Released not used for potato	197.77	9
Langlade	Released/certified seed	1214.94	42
Langlade	Released/tablestock	495.04	22
Langlade	Released/tablestock/seed pending	196	4
Lincoln	Released/tablestock/seed pending	37	1
Manitowoc	Released/certified seed	9.3	1
Marathon	Infested	8.4	1
Marathon	Released/certified seed	64.5	2
Portage	Released/tablestock	38.2	1

Figure 1. History of potato rot nematode in Wisconsin.

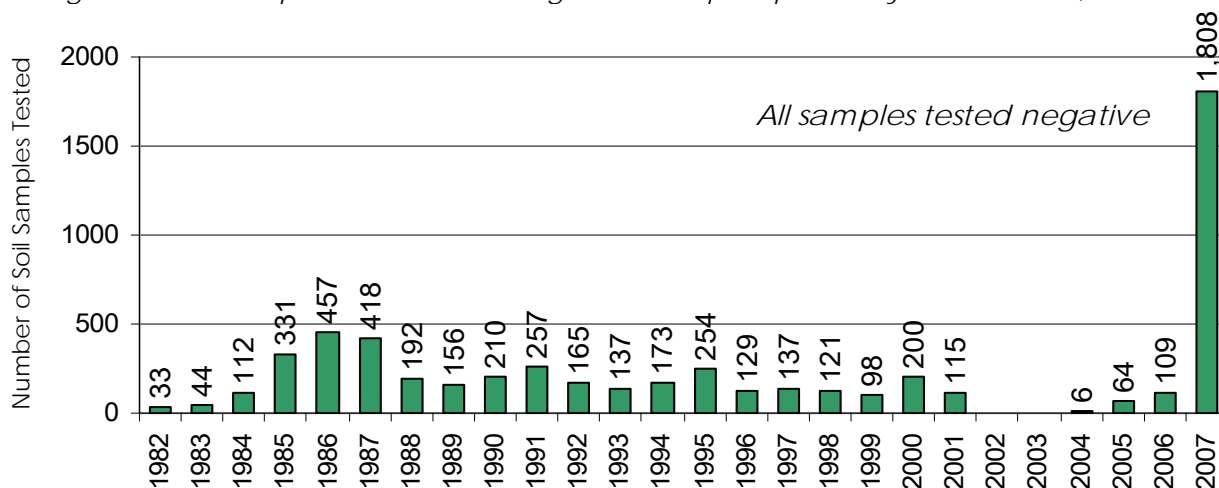


### POTATO CYST NEMATODES

A national survey for pale potato cyst nematode (*Globodera pallida*) and golden nematode (*Globodera rostochiensis*) was started in 2006 by the USDA Animal and Plant Health Inspection Service (APHIS) in response to finds of pale potato cyst nematode in Idaho and golden nematode in Quebec, Canada earlier that year. The objectives of the survey were to detect possible infestations by Pale Potato Cyst Nematode (PCN) in potato fields and to certify U.S. potatoes were grown in areas free of the cyst-forming nematodes. In Wisconsin, the survey targeted 8,625 acres of seed potato fields and a small subsample from 66,000 acres of potatoes grown for consumption. DATCP inspectors sampled “piler dirt” (i.e. soil from potatoes moving on conveyor belts at loading) from warehouses in the spring prior to shipment or planting. One 5lb bag of piler dirt was collected for every five acres of seed potatoes. During the fall harvest, seed potatoes fields intended for export were sampled at a rate of 1lb of soil per acre.

As of January 2008, DATCP personnel have collected and processed a total of 1,808 soil samples from 42 Wisconsin counties for PCN (over four tons of piler dirt and soil), exceeding the goal of 1,800 samples by April 2008. Wisconsin has conducted surveys for golden nematode periodically in the past (Figure 2). Neither the pale potato cyst nematode nor golden nematode has been found in the potato growing areas of the state. Wisconsin’s potato industry contributes \$229 million to this state and the continued export of potatoes relies on the certification of potato fields and tubers as being free from these regulated pests.

Figure 2. Soil samples for detection of golden and pale potato cyst nematodes, 1982-2007.



### NURSERY INSPECTION PROGRAM

The Nursery Stock Dealer and Grower Inspection program requires the inspection of the state’s nursery growers and dealers to assure the production and sale of healthy nursery stock. Inspectors monitor the nursery industry to confirm nurseries are licensed and complying with the law and regulations. Program personnel also certify nursery stock to prevent the spread of significant pests and allow the interstate movement of stock.

Nursery program personnel inspected 360 of the 789 (46%) licensed nursery growers in the state in 2007, an increase from 322 growers inspected in 2006. A total of 497 of the 1,296 (38%) licensed nursery dealers in the state were inspected in 2007 compared to 447 nursery dealer inspections in 2006 (See Table 6 Page 14).

### JAPANESE BEETLE

One hundred fifty two Japanese beetle traps were set in Wisconsin in 2007. Of these, 114 were

positive. Captures were documented in 22 of 32 counties. The highest counts of 51-291 beetles per trap were recorded in Chippewa, Dodge, Grant, Iowa, Kenosha, Ozaukee, and Rock counties, while Brown, Dane, Eau Claire, Jefferson, Manitowoc, Walworth, and Waukesha counties averaged 16-50 beetles per trap. The remaining 18 counties averaged fewer than 15 beetles per trap.

Table 6. Acres of nursery stock and number of nurseries inspected, 2001-2007.

Year	Acres Inspected	Increase	# of Nurseries Inspected	Change
2001	8100	800	446	94
2002	9577	1477	400	-46
2003	16, 669	7092	398	-2
2004	*	*	426	28
2005	*	*	312	-114
2006	*	*	322	10
2007	*	*	360	38

\* Numbers no longer available due to change in database.

#### ORIENTAL BEETLE

The Oriental beetle (*Exomala orientalis*) is similar to the Japanese beetle in that it feeds on the roots of turf grasses, perennial plants, and nursery stock. Unlike the Japanese beetle, Oriental beetle also infests containerized or potted plants; this is its principal means of long-distance travel. Oriental beetle is not a federally quarantined pest so little has been done to stop it from spreading westward. To date, it has been found as far west as Wisconsin and as far south as South Carolina. Indiana recently reported its first find of Oriental beetle in October 2007. Wisconsin has monitored this pest with pheromone traps since 1999. Companies included in the trapping program are those nursery dealers receiving stock from the eastern U.S. In 2007, Oriental beetle was captured in all nine counties trapped, including Brown, Kenosha, Milwaukee, Outagamie, Ozaukee, Racine, Washington, Waukesha, and Winnebago. The highest average counts of 5-10 beetles per trap were obtained in Kenosha and Racine counties.

#### HOSTA VIRUS X

This highly infectious hosta virus has become an increasing problem for Wisconsin nursery stock growers and dealers since it was discovered in 2004. The first HVX-infected plants were found at several garden centers in the state that year; the plants originated in the Netherlands and received USDA certification. This season inspectors from all regions of the state submitted hosta samples which tested positive for HVX. Of the 73 samples, 29 (40%) from nurseries in Clark, Dane, Douglas Eau Claire, Kenosha, Pierce, Polk, Racine, St. Croix, Walworth, and Washburn counties were confirmed as HVX-positive. The infected cultivars were 'Aureo marginata', 'Gold Standard', 'Golden Tiara', 'Honeybells', 'Janet', 'Krossa Regal', 'Midwest Magic', 'Niagara Falls', 'Pauls Glory', 'So sweet', 'Sum and Substance', 'Sum of all', and 'Summer breeze'.

#### DAYLILY RUST

This disease was detected for the first time in Wisconsin in 2001 at two sites, a commercial daylily facility and a residence. In subsequent years, daylily rust has been found at garden centers receiving stock from Georgia (2004) and at a single retail outlet in Vilas County (2006). The disease was not detected in any Wisconsin nursery or garden center in 2002, 2003 or 2005. Daylily rust cannot overwinter in Wisconsin, thus its spores enter the state on infested nursery stock or southerly winds. In 2007, this rust was observed on 'Burgundy Velvet' daylily in Racine County and was found at two retail outlets in Milwaukee and Kenosha counties. The infected stock originated from Oklahoma and Illinois, respectively.

### SUDDEN OAK DEATH

Standard nursery inspections since 2003 have included a search for symptoms of *Phytophthora ramorum*, a fungus-like pathogen that has killed thousands of oaks and tanoaks in the coastal counties of California and Oregon. The most extensive detection program in Wisconsin was conducted in 2005 when 54 nurseries importing stock from these states were surveyed and 300 samples were collected and processed. In 2006 and 2007, inspectors continued surveillance for *P. ramorum*. In addition, UW-Stevens Point researchers were contracted by the WDNR to conduct a stream-baiting survey for symptoms of *P. ramorum*. None of the samples tested positive for *P. ramorum* and there has been no indication that it exists in the state.

PLANT INDUSTRY BUREAU NURSERY INSPECTION REPORTS SHOW THE FOLLOWING **TOP TEN** INSECTS AND DISEASES WERE THE MOST FREQUENTLY ENCOUNTERED IN 2007.

#### INSECTS

1. Potato leafhopper
2. Ash plant bug
3. Fletcher scale
4. Leafminers
5. Aphids
6. Spider mites, eriophyid mites
7. Bronze birch borer
8. White pine weevil
9. Eastern spruce gall adelgid
10. Zimmerman pine moth

#### DISEASES

1. Apple scab
2. Anthracnose
3. Powdery mildew
4. Shothole disease
5. Septoria
6. Cedar quince/hawthorn rust
7. Phyllosticta
8. Blackspot
9. Botrytis
10. Hosta Virus X/Tobacco Rattle Virus

### CHRISTMAS TREE PROGRAM

Wisconsin's Christmas tree program licenses Christmas tree growers, inspects and certifies Christmas trees as being reasonably free of injurious insects and diseases. This program provides a service to interstate and international shippers of Christmas trees who require an inspection certificate prior to shipping. Growers who sell Christmas trees locally also benefit from the program by receiving inspections to inform them of pests and diseases affecting their trees.

In 2007, staff conducted group inspections during a five-week period in counties currently under quarantine for gypsy moth and with a large acreage of Christmas tree fields. The five quarantined counties are Jackson, Langlade, Lincoln, Marathon, and Waushara. The remaining counties, both counties under quarantine and not under quarantine, were inspected by individual inspectors. Staff also inspected several wreath and roping producers in the state who requested plant health certificates.

Table 7. Christmas tree field inspection finds, 2001-2007.

Year	# Fields Inspected	# Fields with Gypsy Moth	# Fields with Pine Shoot Beetle
2001	420	9	0
2002	487	35	0
2003	600	61	0
2004	703	20	1
2005	661	34	0
2006	836	13	0
2007	814	45	9

Inspections of Christmas trees begin once the gypsy moth egg mass deposition is complete, typically after September 1. In addition to Christmas trees, staff inspect fence rows and wood lots adjacent to each field for evidence of gypsy moth life forms as well as indicators of pine shoot beetle. Christmas tree growers who plan to ship trees interstate and/or request a plant health certificate are the focus of high-priority inspections which must be completed by October 15.

Field location information is collected from growers and entered into a database. Support from the Gypsy Moth Trapping program provides county-level gypsy moth trap count maps that are used to prioritize inspections and inform growers of gypsy moth populations in the area. Field inspection reports of pest incidence and severity levels, along with diagnoses for symptomatic plant samples submitted to the Plant Industry Lab, are provided to growers.

Figure 3. Christmas tree disease finds in 2007.

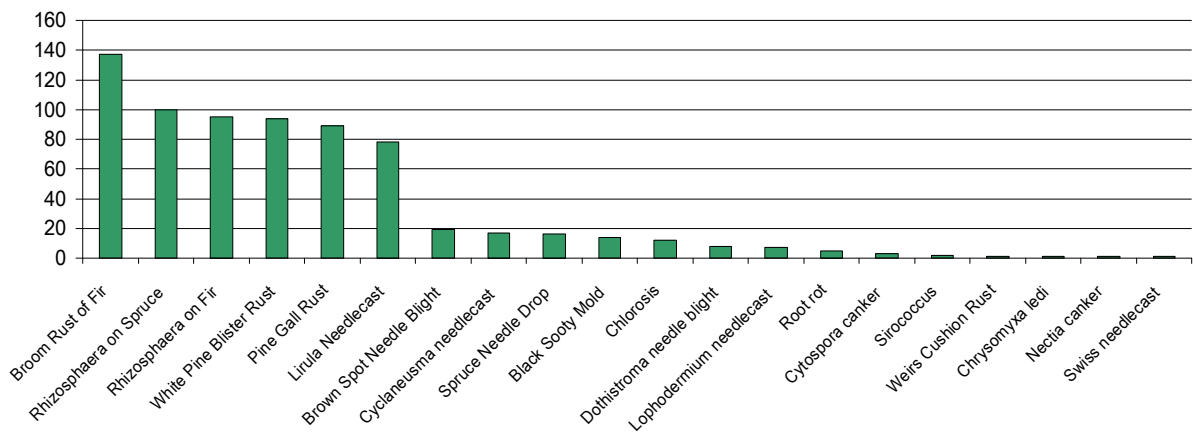
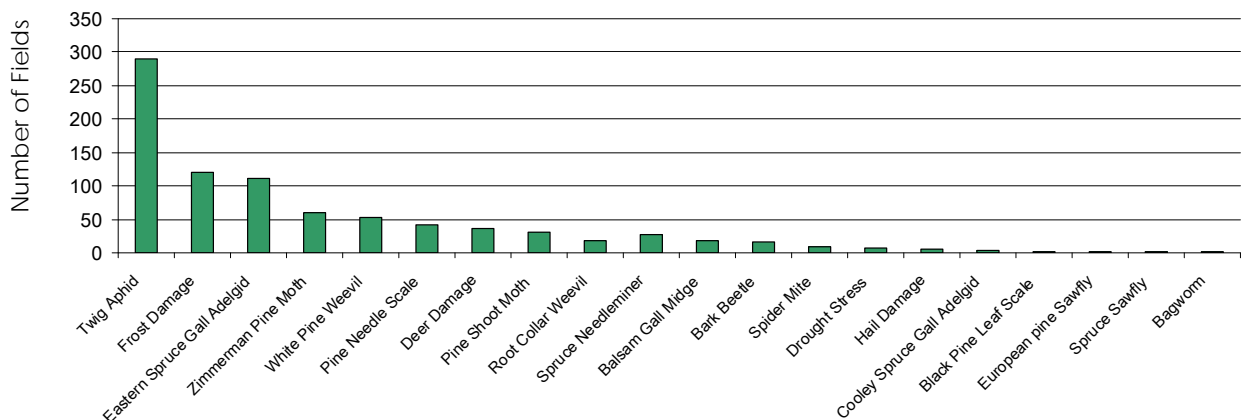


Figure 4. Christmas tree pest finds in 2007.



## APIARY PROGRAM

The Apiary program monitors the beekeeping industry to prevent and/or control honeybee pests and diseases. Inspectors examine migratory bee colonies entering Wisconsin from such states as Alabama, California, Florida, Georgia, Michigan, Mississippi, and Texas, as well as those leaving Wisconsin if they are destined for states that require colonies to be certified pest-free.

Apiary Program statistics showed a dramatic decrease in imported colonies and nucleuses from 23,536 in 2006 to 11,410 in 2007, and an increase in imported queens and packages from 22,250 in 2006 to 30,186 in 2007 (Figure 5). The annual statewide survey of Wisconsin apiaries found an



increase in varroa mite-infested hives, from 75% in 2006 to 79% in 2007 (Table 9). A total of 971 hives were inspected.

Four hundred and fifty two hives were opened and visually inspected for the Small Hive Beetle (SHB), *Aethina tumida*. Of the 452 hives examined, SHB was found in a total three hives from two counties. Small hive beetle was detected for the first time in Brown County in 2007.

Inspectors also surveyed for Colony Collapse Disorder (CCD) this season by asking beekeepers to fill out a questionnaire. Of the 88 beekeepers who participated in the spring survey, five described having bee hives with symptoms consistent with CCD. The symptomatic hives were located in Adams, Waupaca, Lafayette, Milwaukee, and Barron counties.

In addition, hives were inspected for a number of honeybee pests and diseases, including American Foulbrood (AFB), European Foulbrood (EFB), chalkbrood, sacbrood, Deformed Wing Virus (DWV), as well as Africanized honeybees. American Foulbrood was found in 4.5% of hives, EFB was found in 1.4%, chalkbrood was found in 8.1%, sacbrood was found in 2%, and DWV was found in 8.1% of hives (Table 9). No Africanized honeybees were found during the annual survey.

Figure 5. Honeybee imports into Wisconsin, 1998-2007.

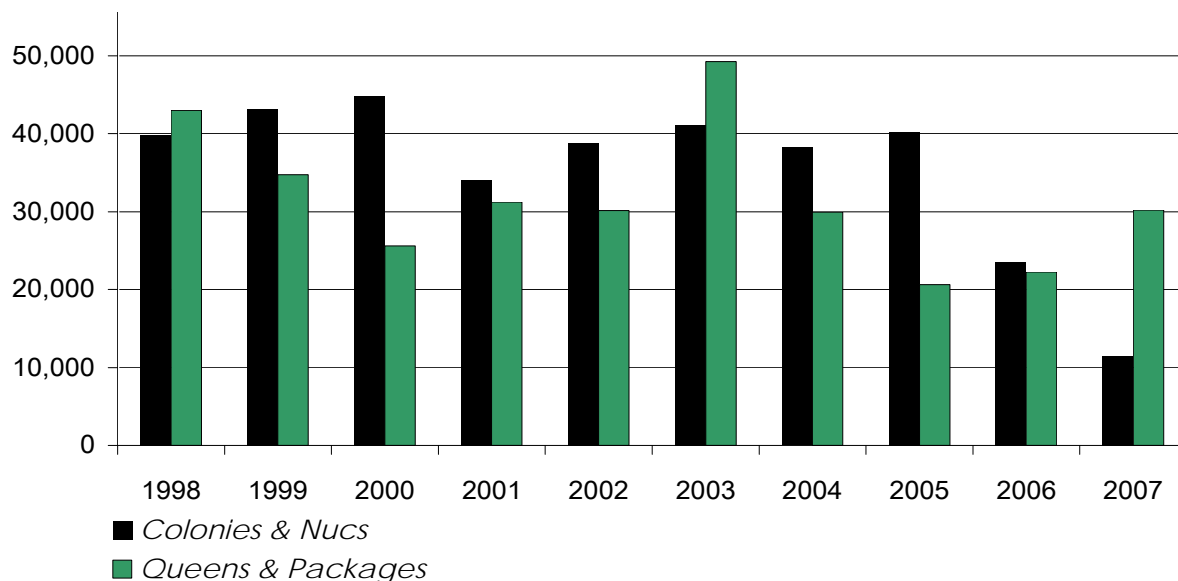


Table 8. Prevalence of honeybee diseases in Wisconsin, 2003-2007.

Year	2003	2004	2005	2006	2007
Total Colonies Opened in Spring 2007	349	392	434	521	443
American Foulbrood	.3%	3%	4.4%	2.7%	7.6%
European Foulbrood	.3%	.5%	.5%	.6%	2.8%
Chalkbrood	16%	17%	14%	19.9%	13.8%
Sacbrood	NA	NA	NA	NA	2.0%

Figure 6. Honeybee pests and diseases detected during apiary inspections in 2007.

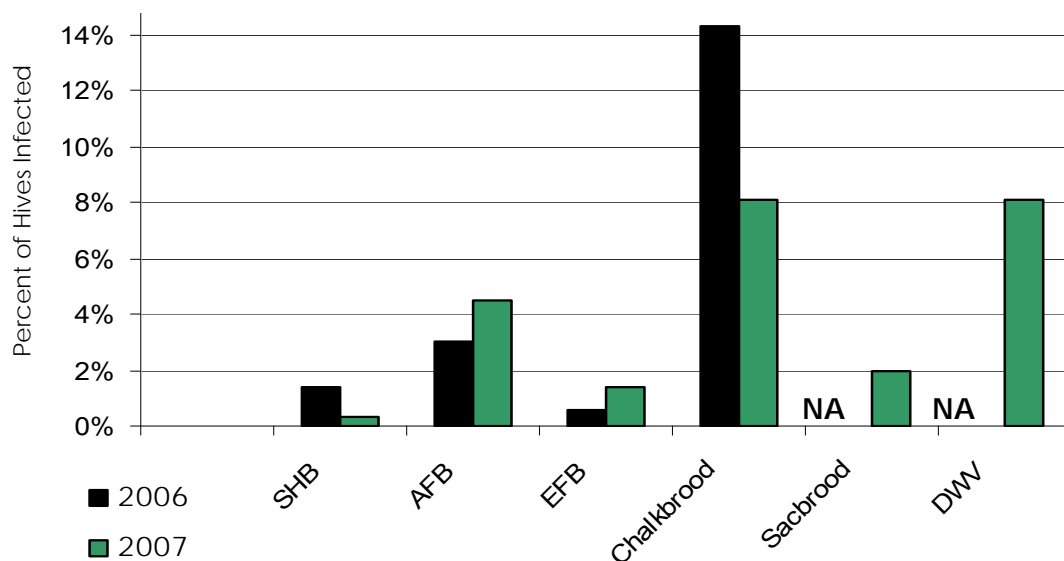


Table 9. Annual apiary inspection results, 2003-2007.

Year	2003	2004	2005	2006	2007
# Hives Checked	1555	896	918	999	971
Varroa mite	54%	54%	85%	75%	79%
Small hive beetle	.7%	.3%	.1%	1.4%	.3%
American foulbrood	1.2%	2.6%	3.5%	3.0%	4.5%
European foulbrood	.07%	.9%	.2%	.6%	1.4%
Chalkbrood	6.1%	10%	10%	14.3%	8.1%
Sacbrood	NA	NA	NA	several	2%
Crippled wing virus	NA	NA	NA	NA	8.1%

### PHYTOSANITARY CERTIFICATION PROGRAM

The phytosanitary certification program is a cooperative program with the United States Department of Agriculture (USDA) and with other states in the Union. It provides an integral service to shippers of plants and plant commodities by certifying their shipments are free of regulated pests before moving into international or interstate commerce. The program helps to prevent the spread of injurious plant pests from Wisconsin to other states or countries while serving the general public. In 2007 the program was responsible for the export of over **\$588,529,679** of plant products from Wisconsin (Table 10 Page 20).

Demand for phytosanitary certification escalated to record levels in 2007, primarily due to increases in shipments of grain, distiller dried grain (a by-product of ethanol production), and veneer log sales to Asia. The number of phytosanitary certificates (phytos) issued in 2007 was 6,641, more than double the number issued in 2006 (2,627), and more than triple the number issued in 2005 (1,830)

(Figure 9). Revenues from this program have also increased markedly. There was a seasonal variation in demand for phytos, with peaks in March, and later in September, October, and November (Figure 10). Increases in the production of distillers dried grains, and gluten meal are expected to contribute to a high demand for certificates in the near future. No commodities were rejected or destroyed at destination ports in 2007.

Taiwan, Southeast Asia (Indonesia, Malaysia, Philippines, Thailand, Vietnam) and China were the destination countries for more than 81% of the phytos issued in 2007 (Figure 7). The 26 countries in the European Union (Austria, Belgium, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Holland, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, Monaco, Netherlands, Poland, Portugal, San Marino, Spain, Sweden, United Kingdom, Vatican City State) were the destination countries for roughly 7% of the phytos. Corn grain accounted for the largest percentage of phytos issues (35%), followed by soybean grains (33%), lumber (14%), and veneer (4%) (Figure 8).

END-OF-YEAR SUMMARY

6,641 certificates were issued in 2007

TOTAL of 6,251 Federal Certificates

- 403 Processed Plant Product Certificates
- 5,848 Phytosanitary Certificates

TOTAL of 390 State Certificates

- 46 Phytosanitary Certificates
- 344 Plant Inspection Certificates

Figure 7. Total number of phytosanitary certificates issued by DATCP and country destinations.

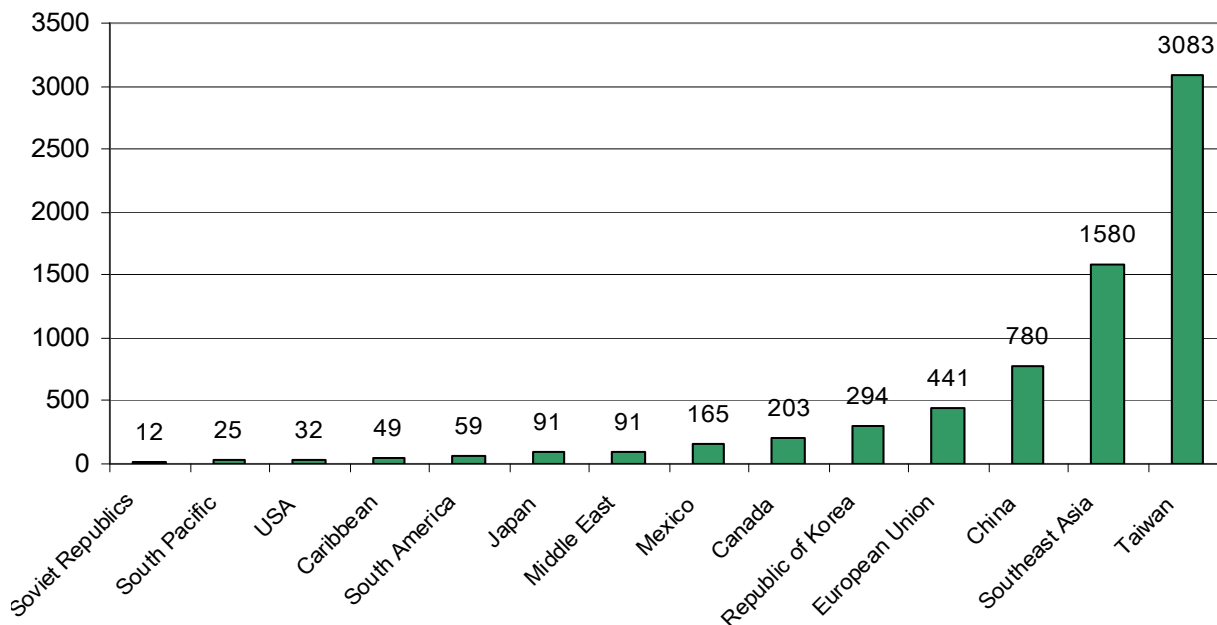


Table 10 (Page 20) represents 96% of the certificates issued in 2007; the remaining 4% were “Plant Inspection Certificates” which are not specific to a commodity or were shipments with no value. The table shows the total number of plant products and the estimated dollar values of those products for the certificates issued. The estimated values were collected from the industry representative to whom the certificates were issued.

Table 10. Phytosanitary certificates issued in 2007 and estimated product values.

Quantity	Unit	Est. Price per Unit	Estimated Total Values
12,810,350.00	board feet lumber	\$1.35	\$17,293,973
3,757,049.00	board feet veneer	\$4.65	\$17,470,278
50,456.00	cut Christmas trees	\$16.00	\$807,296
45,013.00	nursery plants	\$2.00	\$90,026
874,275.00	pounds animal bedding	\$0.05	\$43,714
14,886.00	pounds blueberry fruit	\$0.90	\$13,397
26,723,580.00	pounds corn gluten meal	\$0.07	\$1,870,651
2,136,778,000.00	pounds corn grain	\$0.08	\$170,942,240
11,393.62	pounds corn seed	\$1.20	\$13,672
1,170,886.00	pounds cranberry fruit	\$0.90	\$1,053,797
707,000.00	pounds cranberry vines	\$0.75	\$530,250
10,606,560.00	pounds DDG	\$0.07	\$742,459
176,000.00	pounds kidney beans	\$0.33	\$58,080
44,032.91	pounds miscellaneous seed	\$0.96	\$42,272
117,500.00	pounds oats grain	\$0.13	\$15,275
3,526,365.00	pounds potato seed	\$0.10	\$352,637
201,388.00	pounds potato table stock	\$0.09	\$17,118
40,875.00	pounds preserved plant	\$1.20	\$49,050
1,954,172,000.00	pounds soybean grain	\$0.19	\$371,292,680
3,330.00	pounds soybean seed	\$0.60	\$1,998
34,305,980.00	pounds wheat grain	\$0.15	\$5,145,897
9,756.00	veneer logs	\$70.00	\$682,920
<i>Estimated total dollars in exports</i>			<i>\$588,529,679</i>

Figure 8. Commodities for which phytosanitary certificates were issued by DATCP in 2007.

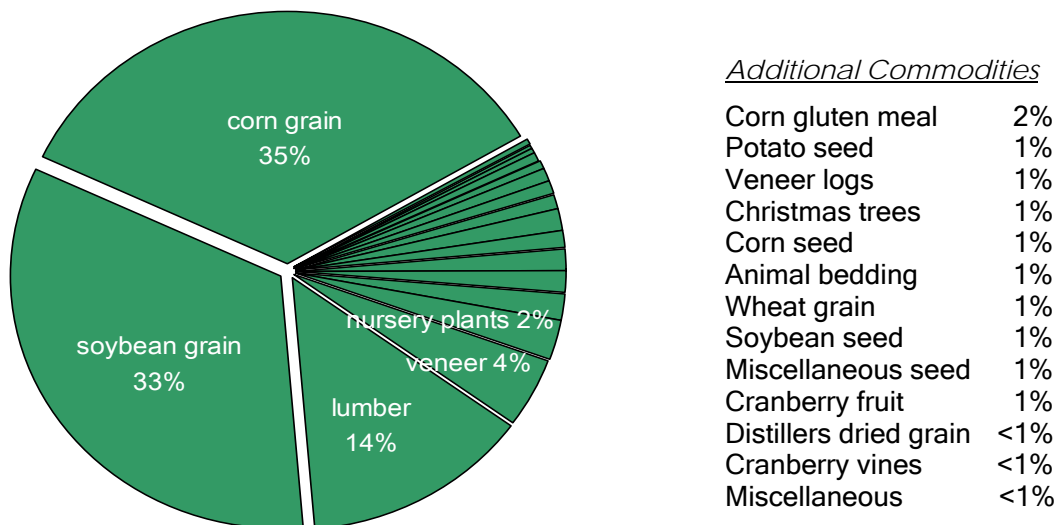


Table 11. Estimated total value of exports by country/region.

Country	Value	Country	Value
Caribbean	\$73,787	Japan	\$2,014,347
The Former Soviet Republics	\$82,035	European Union	\$7,203,256
South America	\$140,729	Republic of Korea	\$11,247,260
South Pacific	\$337,439	China	\$57,947,632
Middle East	\$574,131	Southeast Asia	\$158,572,427
Mexico	\$1,551,731	Taiwan	\$346,821,459
Canada	\$1,733,342		

Figure 9. Number of federal and state phytosanitary certificates issued over 10 years.

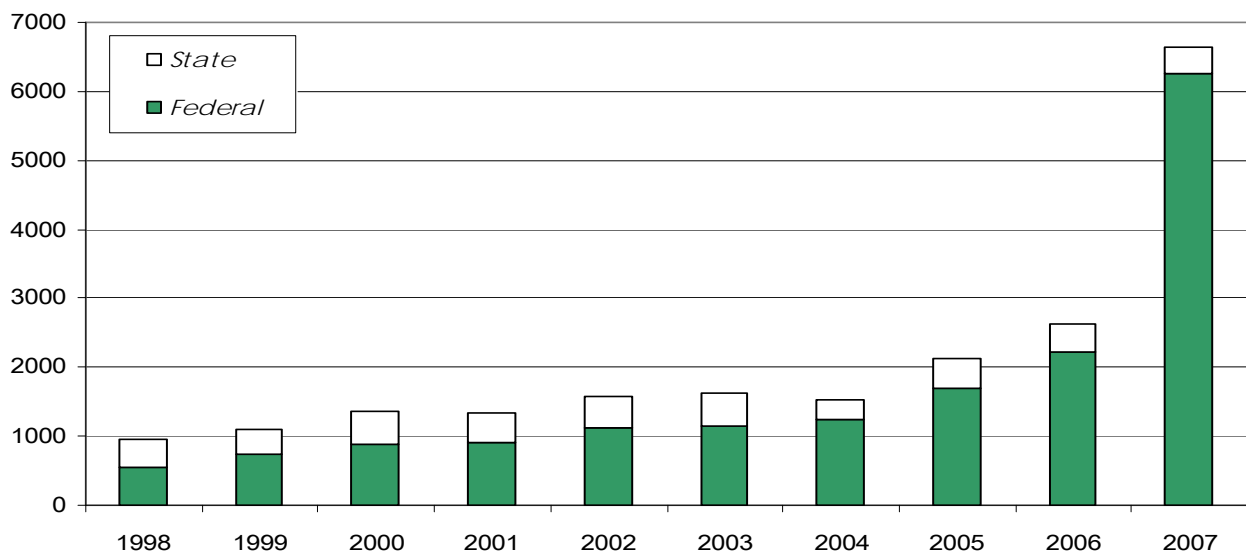
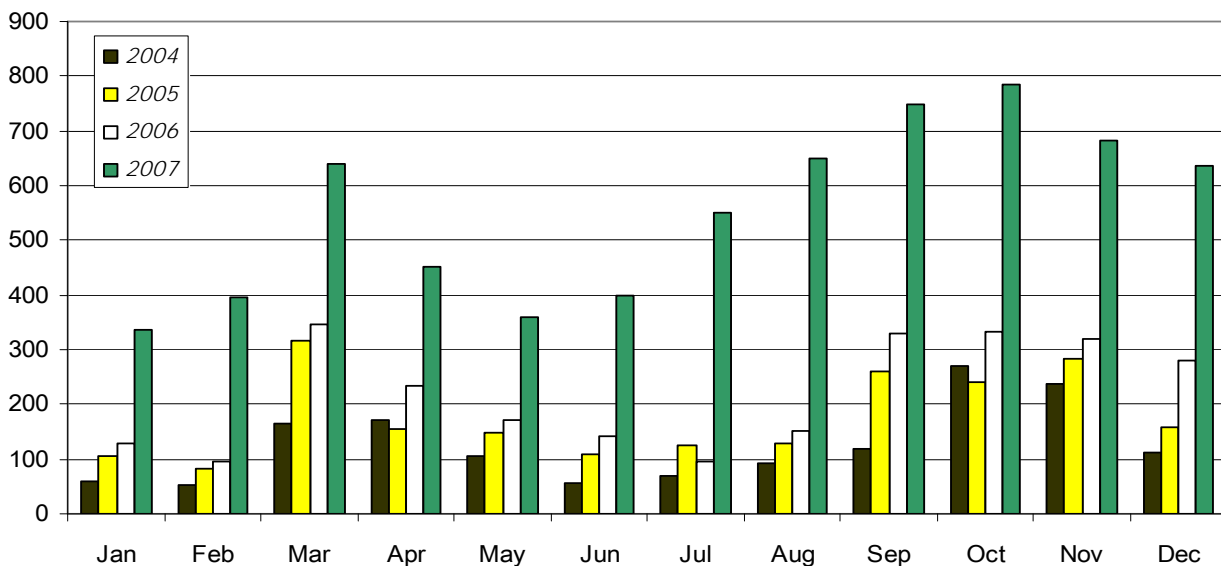


Figure 10. Total Number of phytosanitary certificates issued by month 4-year trend.





## SEED CONTROL PROGRAM

The objective of this program is to assure quality seed is sold in Wisconsin by monitoring and enforcing the labeling, germination, and purity requirements including noxious weed content under the Wisconsin Seed Law and Rule, s. 94.38 - 94.46, Wis. Stats. and ATCP 20, Wis. Adm. Code. Field inspectors evaluate labels for compliance, issue stop sale orders, and collect official samples for analysis. In 2007, inspectors collected a total of 332 samples from 119 of 685 licensed labelers. Attention was focused on seed labelers with poor compliance records or an increasing number of violations. Eight companies were targeted for priority sampling. Also targeted for the 2007 season were companies not sampled for two years and those supplying mixtures and lawn grasses. The overall violation rate was 12%, a minor increase from 11% last season. Of these violations, 21 were rated as *SERIOUS* while 14 were rated as *MINOR*.

*THE FOLLOWING COMPLIANCE ACTIONS WERE TAKEN:*

- Eighteen seed lots were relabeled in order to meet compliance standards
- Seven lots were removed from sale by the labeler
- Three lots were returned to the labeler
- Three lots were ground for feed
- Six lots were sold and planted before compliance actions could be taken

*Table 12. Seed violations by class of seed in 2007.*

<i>Seed Class</i>	<i>Germ</i>	<i>Purity</i>	<i>Noxious Weed</i>	<i>Technical</i>
Cereals	3	0	3	0
Grasses	7	6	3	2
Large Grain	1	0	0	0
Mixtures	7	0	1	4
Small Seeded Legumes	3	2	2	1
<i>Total</i>	21	8	9	7

Based on the following tables and compliance records, seed sampling efforts in 2008 will be directed toward cereals, lawn grasses and mixtures. Inspectors will again focus on labelers with poor compliance records and those who have not been sampled for two years.

*Table 13. Problem seed in 2007.*

<i>Crop</i>	<i>Samples</i>	<i>Violation %</i>	<i>Tech</i>	<i>Minor</i>	<i>Serious</i>
Clover	23	21.74%		4	1
Lawn Grass	85	10.58%	2	3	4
Oats	24	20.83%		1	4
Orchardgrass	10	50.00%		1	4
Pasture Mix	16	18.75%	1		2
Rye	3	66.67%			2
Smooth Bromegrass	6	50.00%		1	2

Table 14. Number of germination, purity, noxious weed, and technical violations by major crop sampled.

<i>Class of Seed</i>	<i>Kind of Seed</i>	<i>Samples</i>	<i>Violations</i>
Cereals	Barley	6	1
	Japanese Millet	3	0
	Oats	24	5
	Rye	3	2
	Sorghum	3	1
	Wheat	4	0
	Buckwheat	1	0
	Rape	2	0
	Flax	1	0
Total Samples/Violations for Class		47	9
Violation Percentage for Class			19%
% of Total Samples/%Violations for Year		14%	23%
Large Grains	Corn	43	1
	Soybean	18	0
	Pea	5	0
	Kidney Bean	2	0
Total Samples/Violations for Class		68	1
Violation Percentage for Class			1%
% of Total Samples/%Violations for Year		20%	3%
Grasses	Fescue	6	1
	Annual Ryegrass	6	0
	Kentucky Bluegrass	9	1
	Lawn Grass (Mix)	76	8
	Orchardgrass	10	5
	Pasture Mix	16	3
	Perennial Rye Grass	8	0
	Smooth Bromegrass	6	3
	Festulolium	2	0
	Timothy	5	0
	Switchgrass	1	0
Total Samples/Violations for Class		145	21
Violation Percentage for Class			14%
% of Total Samples/%Violations for Year		44%	53%
Mixtures	Pea/Barley	4	1
	Pea/Oat	5	0
Total Samples/Violations for Class		9	1
Violation Percentage for Class		-	11%
% of Total Samples/%Violations for Year		3%	3%
Small Seeded Legume	Alfalfa	30	3
	Clover	23	5
Total Samples/Violations for Class		53	8

Violation Percentage for Class		-	15%
% of Total Samples/%Violations for Year		16%	20%
Vegetable	All Veggies	10	0
Violation Percentage for Class		-	0%
% of Total Samples/%Violations for Year		3%	0%
Total Samples/Violations		332	40
Violation Percentage Total			12.05%

## BIOLOGICAL CONTROL PERMIT PROGRAM

Biological control of weeds is defined as the deliberate use of living organisms to limit the distribution and abundance of a target weed. In 2007, a total of 15 federal permits and/or state permits were issued for the release of biological control agents on 38 sites in 11 Wisconsin counties (Note: Bio-agents were not released on three of the 38 sites in two separate counties). The agents were those specific to leafy spurge (*Euphorbia esula*) or spotted knapweed (*Centaurea maculosa*) and the releases were intended to minimize local populations of these highly invasive weeds.

### *APHTHONA SPP.* (Coleoptera: Chrysomelidae)

Permits were issued for release of the flea beetles *Aphthona lacertosa*, *Aphthona nigricutis*, *Aphthona czwalinae*, *Aphthona flava*, and *Aphthona cyparissiae* at the Fort McCoy military base in Monroe County. Releases were also made at several different sites in Monroe County using established bio-agents collected at Fort McCoy. Approximately 4,150 agents were released on six new locations.

In addition to Monroe County, releases of *A. lacertosa* and *A. nigricutis* were made in Oconto County in northeast Wisconsin. The beetles were provided by the Minnesota Department of Agriculture from collectable sites (i.e. sites with established populations) in Minnesota. Approximately 5,000 individuals were released in Oconto County.

### *OBBEREA ERYTHROCEPHALA* (Coleoptera: Cerambycidae)

Permits were issued for release of the stem borer *Oberea erythrocephala* on the Fort McCoy military base in Monroe County. The beetles were obtained from two sources: Integrated Weed Control in Bozeman, Montana (Bio-control Station, USDA ARS, APHIS) and from a collectable site on the military base. Approximately 2,000 stem borers were released on two Fort McCoy sites.

### *LARINUS SPP.* (Coleoptera: Curculionidae)

The weevils *Larinus minutus* and *Larinus obtusus* were permitted for release on five sites in Burnett County, three sites in Juneau County, two sites in Marinette County, six sites in Monroe County, one site in Outagamie County, one site in Washburn County, one site in Waushara County, and four sites in Wood County. Permits were also issued for releases on additional sites in Grant, Polk and Waushara Counties, but the applicants were unable to obtain any beetles. The source of all the released *Larinus* weevils, except those released in Monroe County, was Wade Oehmichan (WDNR), who collected them from sites in Minnesota. The weevils released in Monroe County were collected at the Fort McCoy military base and obtained from Integrated Weed Control.

### *CYPHOCLEONUS ACHAETES* (Coleoptera: Curculionidae)

Permits were issued for release of the weevil *Cyphocleonus achabetes* at three sites in Burnett County, two sites in Juneau County, two sites in Marinette County, seven sites in Monroe County, and three sites in Wood County. As was the case with the *Larinus* spp., permits were issued for releases in Grant, Juneau, Polk, Waushara, and Wood counties, but the applicants were unable to obtain any beetles. Wade Oehmichan (WDNR) and Integrated Weed Control supplied the beetles.

AGAPETA ZOEGANA (Lepidoptera: Cochylidae)

Permits were issued for release of the root weevil *Agapeta zoegana* at three sites in Burnett County, two sites in Juneau County, two sites in Marinette, one in Waushara and three sites in Wood County. No releases were made on these sites due to the difficulty of collection methods. Additional sites in Grant and Polk County were permitted for release but agents were not obtained.

PERMITS ISSUED FOR DISTRIBUTION OF ORGANISMS

One permit was issued to Biological Control of Weeds, Inc. in Bozeman, MT. The agents approved for shipment into Wisconsin were *Aphthona czwalinae*, *Aphthona flava*, *Aphthona lacertosa*, *Aphthona nigriscutis*, *Oberea erythrocephala*, *Spurgia esulae*, and *Aphthona cyparissias*. Two agents, *Chrysolina quadrigemina* and *Aplocera plagiata*, were denied entry into the state.

Table 15. Wisconsin biological control agent releases in 2007<sup>1</sup>.

County	# Released	Species	Source
Burnett	50	<i>C. achaetes</i>	Becker Co., MN
Burnett	50	<i>C. achaetes</i>	Becker Co., MN
Burnett	50	<i>C. achaetes</i>	Becker Co., MN
Juneau	50	<i>C. achaetes</i>	Becker Co., MN
Juneau	50	<i>C. achaetes</i>	Becker Co., MN
Marinette	50	<i>C. achaetes</i>	Becker Co., MN
Marinette	50	<i>C. achaetes</i>	Becker Co., MN
Monroe	30	<i>C. achaetes</i>	Fort McCoy, Monroe Co., WI
Monroe	100	<i>C. achaetes</i>	Fort McCoy, Monroe Co., WI
Wood	50	<i>C. achaetes</i>	Becker Co., MN
Wood	50	<i>C. achaetes</i>	Becker Co., MN
Wood	50	<i>C. achaetes</i>	Becker Co., MN
Monroe	50	<i>C. achaetes</i>	Integrated Weed Control, Bozeman, MT
Monroe	50	<i>C. achaetes</i>	Integrated Weed Control, Bozeman, MT
Monroe	50	<i>C. achaetes</i>	Integrated Weed Control, Bozeman, MT
Monroe	50	<i>C. achaetes</i>	Integrated Weed Control, Bozeman, MT
Monroe	50	<i>C. achaetes</i>	Integrated Weed Control, Bozeman, MT
Burnett	300	<i>Larinus spp.</i>	Becker Co., MN
Burnett	220	<i>Larinus spp.</i>	Becker Co., MN
Burnett	400	<i>Larinus spp.</i>	Becker Co., MN
Burnett	400	<i>Larinus spp.</i>	Becker Co., MN
Burnett	220	<i>Larinus spp.</i>	Becker Co., MN
Juneau	200	<i>Larinus spp.</i>	Becker Co., MN
Juneau	200	<i>Larinus spp.</i>	Becker Co., MN
Juneau	200	<i>Larinus spp.</i>	Becker Co., MN
Marinette	400	<i>Larinus spp.</i>	Becker Co., MN
Marinette	300	<i>Larinus spp.</i>	Becker Co., MN
Monroe	800	<i>Larinus spp.</i>	Fort McCoy, Monroe Co., WI
Monroe	300	<i>Larinus spp.</i>	Fort McCoy, Monroe Co., WI
Outagamie	300	<i>Larinus spp.</i>	Burnett Co., WI
Washburn	400	<i>Larinus spp.</i>	Becker Co., MN
Waushara	150	<i>Larinus spp.</i>	Becker Co., MN
Wood	300	<i>Larinus spp.</i>	Becker Co., MN

Wood	250	<i>Larinus spp.</i>	Becker Co., MN
Wood	400	<i>Larinus spp.</i>	Becker Co., MN
Wood	400	<i>Larinus spp.</i>	Becker Co., MN
Monroe	100	<i>Larinus spp.</i>	Integrated Weed Control, Bozeman, MT
Monroe	100	<i>Larinus spp.</i>	Integrated Weed Control, Bozeman, MT
Monroe	100	<i>Larinus spp.</i>	Integrated Weed Control, Bozeman, MT
Monroe	100	<i>Larinus spp.</i>	Integrated Weed Control, Bozeman, MT
Oconto	2500	<i>A. lacertosa</i>	MN
Oconto	2500	<i>A. nigriscutis</i>	MN
Monroe	1000	<i>Aphthona spp.</i>	Fort McCoy, Monroe Co., WI
Monroe	1000	<i>Aphthona spp.</i>	Fort McCoy, Monroe Co., WI
Monroe	500	<i>Aphthona spp.</i>	Fort McCoy, Monroe Co., WI
Monroe	1500	<i>Aphthona spp.</i>	Fort McCoy, Monroe Co., WI
Monroe	150	<i>Aphthona spp.</i>	Fort McCoy, Monroe Co., WI
Monroe	1000	<i>O. erythrocephala</i>	Fort McCoy, Monroe Co., WI
Monroe	1000	<i>O. erythrocephala</i>	Fort McCoy, Monroe Co., WI

<sup>1</sup>All releases made for management of *Centaurea maculosa* or *Euphorbia esula*.

## BIOTECHNOLOGY PROGRAM

The Biotechnology program is responsible for three general areas concerning genetically engineered organisms: to assess environmental impact of field trials, to fulfill the requirements of the Wisconsin Notification Act (s. 146.60, Wis. Stats.) and to serve as a source of technical information. The primary regulatory responsibility resides with federal agencies, particularly the USDA APHIS and the EPA.

In 2007, the department issued concurrence for 224 notifications and 14 permits for genetically engineered plants. All permit holders were inspected by the USDA APHIS, often with the assistance of a DATCP Plant Industry Bureau representative. Herbicide tolerance and insect resistance continue to comprise most of the notification applications. Permit requests are on the increase for other altered plant qualities, including drought tolerance, increased yield, and altered seed qualities.

\* \* \* \* \*