

Wisconsin Department of Agriculture, Trade & Consumer Protection
Report to the Central Plant Board

Division of Agricultural Resource Management

Plant Industry Bureau

2004



TABLE OF CONTENTS

Apiary Program	4
Christmas Tree Program	4
Activities in 2005	4
Christmas Tree Field Inspections	5
Shipping Certificates	5
Plant Pest Survey & Control Program	6
STATEWIDE INSECT SURVEYS	6
European Corn Borer	6
Soybean Aphid	6
Bean Leaf Beetle	7
Exotic Fruit Moths	8
Pine Shoot Beetle	8
Exotic Wood-Boring/Bark Beetle & SWPM Survey	9
STATEWIDE DISEASE SURVEYS	9
Soybean Viruses	9
Soybean Dwarf Virus (SbDV)	9
Soybean Dwarf Virus in Clover	10
Powdery Scab of Potato	10
Ralstonia	10
Brown Root Rot of Alfalfa	11
Soybean Cyst Nematode	11
Plant Industry Laboratory	11
Plant Pest & Biological Control Organism Permits (PPQ 526 Permits)	12
Nursery Program	13
Nursery Grower & Dealer Inspection Findings	13
Daylily Rust	14
Weir's Cushion Rust	14
Sudden Oak Death	14
Hosta Virus X	14

Emerald Ash Borer	14
Pine Shoot Beetle	14
TOP INSECT PESTS & DISEASES FOUND IN 2004	15
Wisconsin Seed Program	15
Activities in 2004	15
Violations	16
Problem Seed in 2004	17
Phytosanitary Certification Program	17
Activities in 2004	18
End-of-Year Summary	18
Potato Rot Nematode Program	21
Wisconsin Gypsy Moth Program	21
Activities in 2004	21
2004 Statewide Moth Catch Summary Map	21
2004 Statewide Moth per Trap Summary Map	21
Slow the Spread Regulatory Gypsy Moth Program	21
Program Mission & Goals	21
STS Activity Evaluations Table	22
Campgrounds	23
Logs and Pulpwood	23
Christmas Trees	23
Outdoor Household Articles	23
Nursery	23
Education	23
Egg Mass Follow-up	23
Poster & Literature Distribution	23
Firewood Dealers	24
STS Summary	24
Update on Giant African Snails in Wisconsin	24

APIARY PROGRAM

Plant Industry Bureau
2004 Central Plant Board Report

Apiary inspection staff inspected 127 apiaries in 2004. Program statistics show a decrease in imported colonies from 41,165 in 2003 to 38,218 in 2004 and a decrease of imported queens and packages from 49,226 to 29,925 in 2004. The statewide fall survey of Wisconsin apiaries shows a marked increase in varroa mite infested bee hives from 77% in 2004 compared to 58% in 2003 and 46% in 2002. High numbers of varroa mite (*Varroa destructor*) were also found in hives treated with the miticide CheckMite indicating that varroa in some hives are now resistant to this control treatment. Since varroa resistance to the miticide Apistan (active ingredient fluvalinate) is already established in the state, this makes control of varroa mites very difficult for beekeepers. Survey data also showed that hives with queens bred for resistance had an overall lower mite load. For an effective mite IPM strategy, testing for varroa in fall is essential. To assess the mite load in an apiary the powdered sugar test is recommended. Fact sheets about this test and control treatment options are available from the Wisconsin Apiary Program.

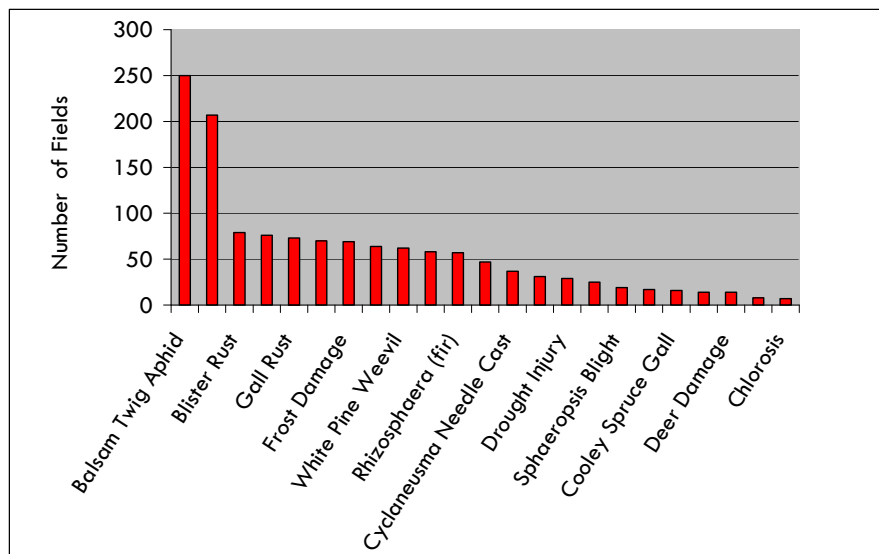
CHRISTMAS TREE PROGRAM

Wisconsin's Christmas tree program licenses Christmas tree growers and 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. The Christmas tree licensing and inspection program is authorized in s.94.10, Wis. Stat., and regulated in ATCP 21, Wis. Adm.Code.

Activities in 2004

In 2004, staff conducted group inspections during a five-week time period, in counties which are currently under quarantine for gypsy moth and the pine shoot beetle. Those five quarantined counties are: Jackson, Langlade, Lincoln, Marathon and Waushara. The remaining counties, those not under quarantine, were inspected by individual inspectors rather than as a group. At each field location GPS readings were recorded. Staff also inspected several wreath and roping producers in the state who requested plant health certificates.

Pest Finds in Christmas Tree Fields in 2004



Field Inspections of Christmas Trees

Christmas tree inspections 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 require a plant health certificate are the focus of high-priority inspections that 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 facilitate inspections and to alert growers. Field inspection report summaries of pest and disease incidence levels, along with any plant sample lab results are subsequently provided to growers.

2001-2004 Fields Inspection Findings

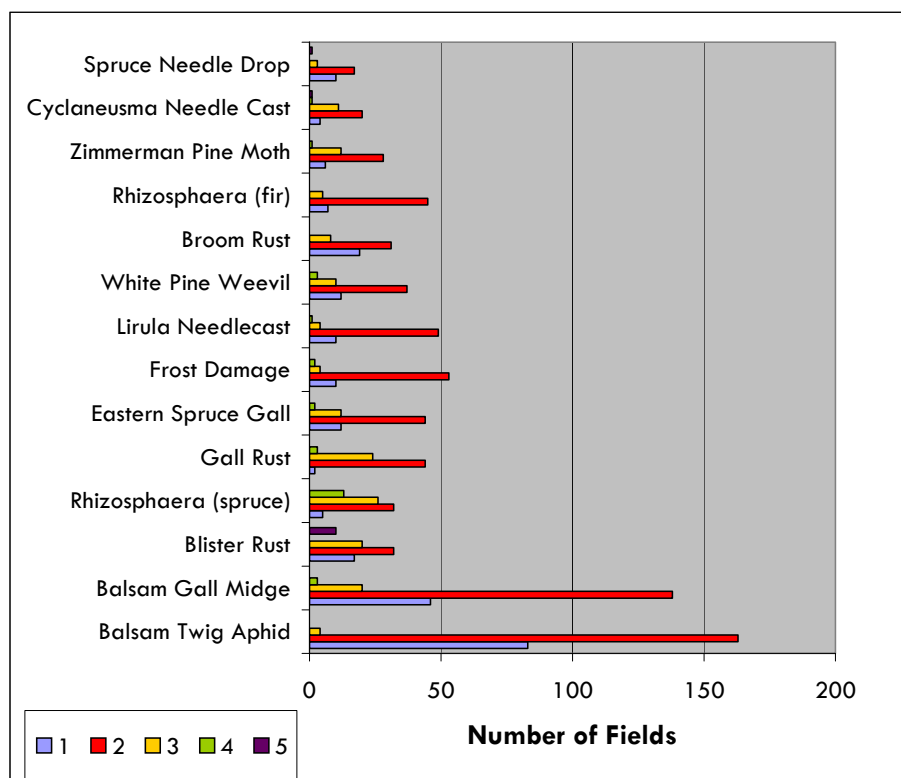
YEAR	# FIELDS INSPECTED	# OF FIELDS WITH GYPSY MOTH FINDS	# OF FIELDS WITH PINE SHOOT BEETLE FINDS
2001	420	9	0
2002	487	35	0
2003	600	61	0
2004	703	20	1

Shipping Certificates

Growers who ship Christmas trees, wreaths or roping out of Wisconsin are required to obtain either a phytosanitary certificate or plant health certificate prior to shipping plant materials. Following is a summary of certificates issued in 2004:

- **84 Phytosanitary Certificates** for Christmas trees shipped to Canada, Barbados and Hawaii; most were shipped to Canada.
- **149 Plant Health Certificates** for Christmas trees shipped to other states.
- **3 Plant Health Certificates** for wreaths, roping and grave blankets shipped to other states.

Top Pest Finds in Wisconsin Christmas Tree Fields in 2004



PLANT PEST SURVEY & CONTROL PROGRAM

Plant Industry Bureau
2004 Central Plant Board Report

STATEWIDE INSECT SURVEYS

European Corn Borer

The annual fall European corn borer survey, conducted since 1942, measures the average number of corn borer larvae per plant in grain corn fields throughout Wisconsin. Survey results are used to estimate the density of the fall corn borer population and forecast the potential magnitude of the first flight of moths the following spring. Establishing where heavy corn borer infestations occur in fall indicates where high populations may lead to economic loss next summer.

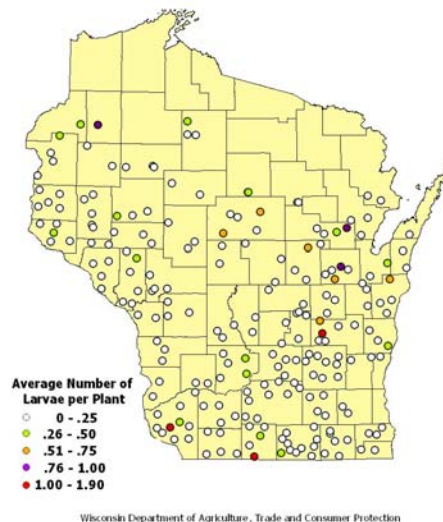
Wisconsin's 2004 fall European corn borer survey documented the lowest overwintering population of corn borers since 1998, and the third lowest in 50 years. Survey results continue to show a pattern of very low overwintering densities of this insect pest. In 2004, the statewide average percentage of plants infested by corn borers was 12%, while the statewide average number of corn borers was 0.10 per plant. The 2004 statewide average is substantially lower than both the 10-year average of 0.49 borer per plant and the 50-year average of 0.48 borer per plant. Population declines were found in all but the north central district, where only a very minor increase from 0.14 borer per plant in 2003 to 0.20 in 2004 was recorded. The biggest declines occurred in the south central (0.51 to 0.05 borer/plant), southwest (0.34 to 0.10 borer/plant) and central districts (0.44 to 0.06 borer/plant). The 2004 fall survey included 222 grain corn fields throughout the state.

Fall survey results suggest growers can expect a very light first flight of moths next spring. With a fall population as low as 0.10 borer per plant it is unlikely that corn borer densities will recover enough to cause significant problems for growers in 2005, though favorable weather during the 2005 growing season could result in a considerable increase of borers near the hotspots where counts exceeded 0.75 borer/plant.

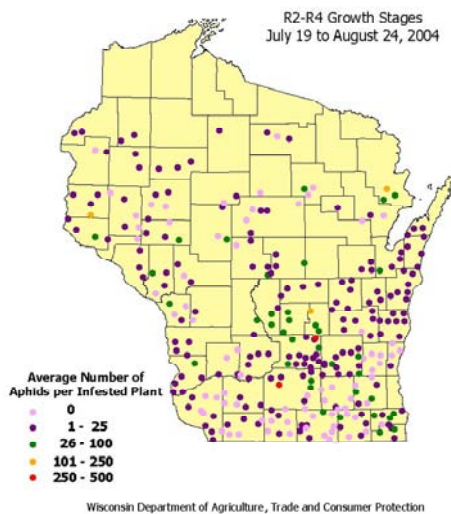
Soybean Aphid

Following record levels in 2003, soybean aphid densities dropped to the lowest levels since soybean aphids were first detected in Wisconsin in 2000. While it appears that soybean aphid populations have been very cyclic in Wisconsin and throughout the Midwest in general, forecasting the extreme fluctuations in the aphid populations from year to year has proven difficult. For the first time since 2000, soybean aphids did not colonize

2004 European Corn Borer Survey



Soybean Aphid Peak Densities Summer 2004



an estimated 27% of the state's soybean fields in 2004; in previous years staff were pressed to find any fields without aphids.

The 2004 summer soybean aphid survey took place between July 19 and August 24 and included 293 sites. Aphid densities were assessed during the R2-R4 stages of growth, when populations were expected to peak. The 2004 survey found that soybean aphid population densities declined dramatically in all districts compared to 2003. The highest density of 53 aphids per infested plant, detected in the central district, compared to an average of 680 aphids per infested plant in that same district in 2003. The statewide average number of aphids per infested plant declined from 770 in 2003 to 15 in 2004.

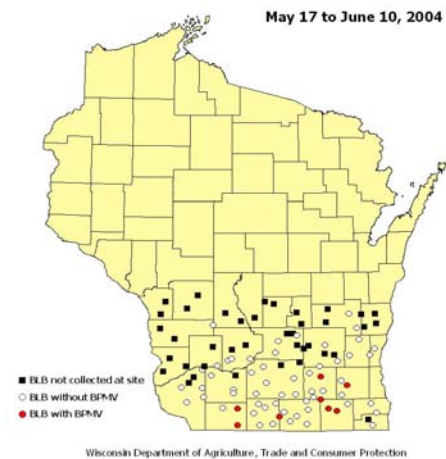
If soybean aphid populations are indeed cyclic, then 2005 may turn out to be the next big year for the soybean aphid; to our dismay, there's evidence to support this premise. University of Illinois-Extension entomologists monitored the fall migration of soybean aphids from soybeans to buckthorn (the primary host) to estimate the potential for soybean aphids in 2005. Based upon a limited amount of suction trap data, entomologists warn that the potential exists for significant infestations of soybean aphids to develop in 2005. As is always the case with fluctuating insect populations, early and regular scouting will be the key to detecting infestations of soybean aphids in 2005.

Bean Leaf Beetle

In the last five or six years, bean leaf beetle and bean pod mottle virus (BPMV) have grown increasingly prevalent in Wisconsin soybean fields. In 2004, DATCP's pest survey team conducted two separate surveys for bean leaf beetle and BPMV. The first took place in spring, between May 17 and June 10, and targeted overwintered beetles. The second survey, carried out between July 19 and August 24, targeted both first and second generation beetles. The 2004 surveys found minimal detection of BPMV in bean leaf beetles collected in spring, followed by no positive detections of BPMV in late season soybean plants throughout the state.

During the spring survey for overwintered bean leaf beetle and BPMV in alfalfa, twenty-eight contiguous counties in the southern third of Wisconsin were visited, with 101 alfalfa field sites total. Sweep net samples were conducted and bean leaf beetle numbers were recorded at each site. Beetles were later returned to the laboratory and tested for BPMV using Enzyme-Linked Immunosorbent Assay (ELISA). Bean leaf beetle BPMV results were negative at 92% (93/101) of the sites. Negative results consisted of zero beetles collected at 37 sites, and bean leaf beetles *without* BPMV collected from 56 sites. BPMV positive bean leaf beetles were recovered from 8% (8/101) of the sites. These eight positive results were restricted to first and second southern tier counties.

2004 Spring Survey for Overwintered BLB & BPMV in Alfalfa

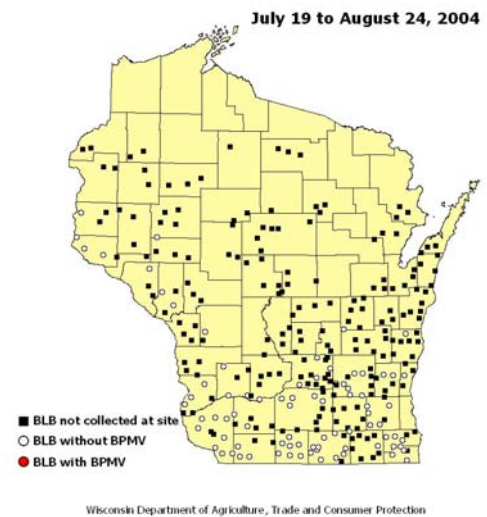


DATCP staff conducted a summer survey of 293 soybean fields throughout Wisconsin between July 19 and August 24, 2004. Bean leaf beetle samples were collected in each field and beetles were returned to the laboratory and tested for BPMV by ELISA. In addition, trifoliolate leaves were collected from 40 plants in each of the 293 soybean fields and returned to the laboratory to assess BPMV in

soybean plants by ELISA. None of the bean leaf beetles collected in the July 19-August 24 soybean survey tested positive for BPMV. Likewise, of the 293 soybean fields sampled in the statewide survey, none of the soybean plants tested positive for BPMV.

Results from the WI DATCP bean leaf beetle and BPMV distribution survey documented that BPMV incidence in Wisconsin remained low (spring 2004 alfalfa survey) to non-detectable (summer 2004 soybean survey) during the 2004 season. Future survey efforts will continue to investigate the relationship between bean leaf beetle population densities, the proportion/distribution of BPMV infected bean leaf beetles, and proportion/distribution of BPMV infected soybean plants in Wisconsin.

2004 Summer Survey for BLB & BPMV



Exotic Fruit Moths

In 2004, a 31-member network of apple growers was enlisted in an effort to detect four species of exotic fruit moths. From April through September, pheromone traps were used to detect apple ermine moth, cherry bark tortrix, apple tortrix, and fruit tree tortrix. These fruit moths are currently established in the Pacific Northwest and could potentially be introduced into Wisconsin on nursery stock. In 2001, live AEM larvae were found at a nursery near Portage, Wisconsin (Columbia Co.). The AEM larvae found in Portage are thought to have hatched from eggs that were brought in on nursery stock from Oregon. In that case, a quarantine zone was established and treatment was ordered. No established populations of AEM have been found in Wisconsin since then.

Of the four exotic moths in the survey, apple ermine moth suspects were trapped at two orchards this season in Racine and Waukesha Cos.; however, positive identification on these suspects has not yet been confirmed. The suspect moths were examined by USDA insect identifiers in Chicago, IL and Beltsville, MD. AEM is almost indistinguishable from several other very closely-related ermine moth species. Further, some of the species respond to the same pheromone, so trapping is not a reliable means of separating species. The only accurate way to differentiate ermine moth species is by host plant. Accordingly, a follow-up survey was conducted in November to look for AEM egg masses at the two southeastern Wisconsin orchards. No AEM egg masses were found, so either the egg masses went undetected or the suspect moths were not apple ermine moth. The exotic fruit moth survey will continue in 2005, and staff will continue to monitor for egg masses at the Racine and Waukesha Co. orchards.

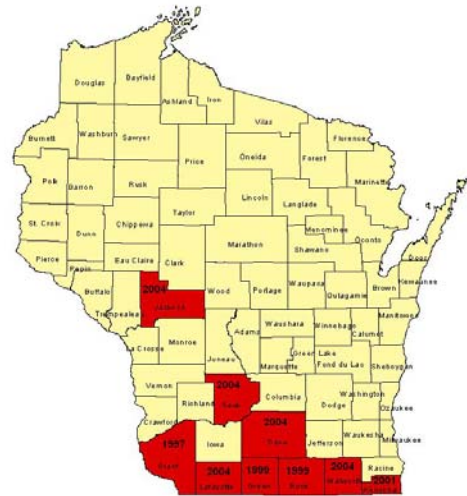
Pine Shoot Beetle

In 2004 staff placed 79 Lindgren funnel traps baited with alpha-pinene and ultra-high release ethanol in an effort to detect pine shoot beetle, *Tomicus piniperda*. Wisconsin's survey efforts are intended to detect, monitor and slow the long-distance migration of this pest to prevent further damage and economic loss. Sites targeted during the survey included: Christmas tree farms and plantations, nurseries, ornamental or commercial plantings of pine trees, saw or pulp mills, lumber yards, pine wind breaks and shelter belts, private pine stands, or areas with an abundance of pine slash. Pine shoot beetles become active once temperatures exceed 53.6°F for at least two consecutive days; therefore, traps were placed before temperatures reached this point, around mid-February. In 2004, beetles were detected in Dane, Jackson, Lafayette, Sauk and Walworth Counties. In previous years beetles had been found in Grant, Green, Kenosha and Rock Counties. Beetles have now been detected in a total of nine Wisconsin counties.

Solid Wood Packing Materials & Exotic Wood-Boring/Bark Beetle Survey

The objective of this survey is to detect exotic wood-boring beetle infestations that may exist in Wisconsin. To accomplish survey objectives, staff have identified, contacted and interviewed more than 90 Wisconsin companies that receive or have received regular shipments with foreign solid wood packing materials since the start of the survey in 2001. Staff also developed, and now maintains, an extensive database detailing survey information and findings. In 2004, three warehouse inspections were conducted and traps were placed at facilities deemed “high risk”. During the course of the 2004 survey, 41 sites were contacted. Further action was taken at 4 sites in 3 counties. A total of 11 Lindgren funnel traps were placed, baited with ultra high release (UHR) ethanol, and/or *Monochamus* lure and/or *S. schevyrewi* lure. No actionable pests were detected during the 2004 Solid Wood Packing Materials Survey.

Wisconsin Counties Infested with Pine Shoot Beetle - 2004



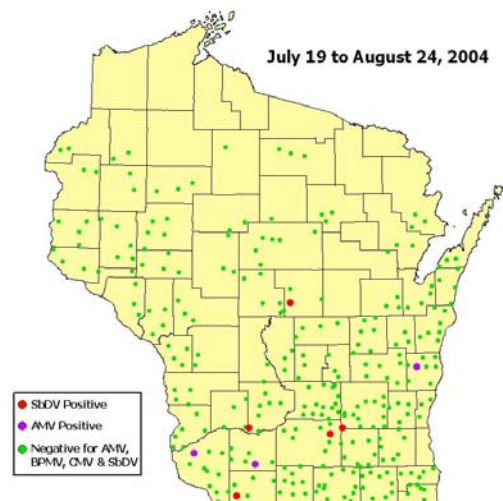
Wisconsin Department of Agriculture, Trade & Consumer Protection

STATEWIDE DISEASE SURVEYS

Soybean Virus Survey

The 2004 soybean virus survey found a surprising lack of viruses. The survey was conducted from July 19 to August 24, targeting fields in the R2-R4 stage of growth. At each field, the topmost fully expanded trifoliolate was collected from 10 plants at four sites in the field. Aphid counts were conducted, an estimate of bean leaf beetle defoliation was made, and apparent virus symptoms were noted. Samples were kept on ice until frozen at -80°C. Leaves were ground and assayed for virus presence using DAS-ELISA (reagents from Agdia, Elkhart, Indiana). Of the 293 fields sampled, three had detectable alfalfa mosaic virus, while five had soybean dwarf virus. No cucumber mosaic virus (CMV) was detected in any field sampled. No bean pod mottle virus (BPMV) was detected either, despite a May-June survey of the bean leaf beetle that indicated the presence of BPMV in beetles in eight fields in four counties in southern Wisconsin.

2004 Soybean Virus Survey Summary



Wisconsin Department of Agriculture, Trade and Consumer Protection

Soybean Dwarf Virus

Soybean dwarf virus (SbDV) was first detected on Wisconsin soybeans in 2003, when two of 286 soybean fields tested were positive by ELISA and RT-PCR. In the 2004 survey, five of 293 fields were positive. Several strains of SbDV are known to occur throughout the world; the strain found in Wisconsin has been determined by RT-PCR to be the Dwarfing (SbDV-D) strain. The virus is vectored by aphids in a persistent fashion. Under laboratory conditions, the soybean aphid (*Aphis glycines*)

has not been shown to be a vector. Recent published research indicates that the clover aphid (*Nearctaphis bakeri*) transmits SbDV at a low efficiency.

SbDV Survey in Clover

To determine if an overwintering reservoir of SbDV exists, DATCP conducted a spring survey of clovers. Red clover (*Trifolium pretense*) is reported to be a host of SbDV-D; white clover (*Trifolium repens*) is not. Leaves were collected from clover plants and kept on ice until frozen at -80° C. Leaves were ground and sap extracts were tested using DAS-ELISA. Thirty-one of 53 red clover samples were positive for SbDV. Two samples of white clover tested positive out of 24 sites sampled; however, it is possible that the host plant in these samples was misidentified. The results show that SbDV is widespread in clover in Wisconsin. The relative low incidence of SbDV on soybeans is likely due to the lack of an efficient aphid vector. Plans are to repeat the clover survey in 2005, with attention to aphid species present.

Powdery Scab of Potato

Powdery scab (caused by *Spongospora subterranea* f. sp. *subterranea*) was detected in the state for the second year in a row. In 2003, this disease was found in three fields in two counties, out of 65 fields in eight counties surveyed. All the positive fields were in the Central Sands region, and all fields were within about 20 miles of one another.

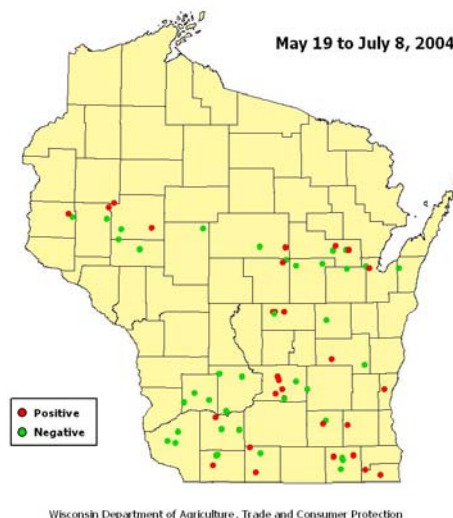
In 2004, the known range of *S. subterranea* in Wisconsin was expanded considerably, with positive fields detected in Oconto and Langlade counties by observant growers and crop consultants. Powdery scab has been common in western states for a number of years, where in some areas it has reportedly caused a shift to less-susceptible cultivars. Infection can increase desiccation and increase decay in storage. It is also the vector for potato mop top virus (PMTV), a virus not known to occur in Wisconsin, or in the United States outside of the state of Maine.

Ralstonia

For the third year in a row, geraniums infected with *Ralstonia solanacearum* race 3 biovar 2 were imported into the United States from Guatemala. *R. solanacearum*, a bacteria, is the causal agent of southern wilt of geraniums—and of brown rot of potatoes. The disease is present in tropical areas of the world and in Europe. *R. solanacearum* is divided into races based upon host range and into biovars based upon carbohydrate utilization. Race 1 of the organism is present in the southern U.S., where it infects tomatoes. Race 3 biovar 2 is not known to occur in the United States. As an aside, R3B2 is listed as a Select Agent in the Agricultural Bioterrorism Prevention Act of 2002, making it a felony punishable by a fine of up to \$250,000 and imprisonment of not more than 5 years for “whoever transfers a biological agent or toxin to a person who the transferor knows or has reasonable cause to believe is not registered” or “whoever knowingly possesses a biological agent or toxin without registering under the regulations....”

For the past several years, the disease has occurred in asymptomatic geranium cuttings propagated in Guatemala and imported into the U.S. for rooting and potted plant production. Geraniums at a number of greenhouses in Wisconsin were quarantined and ordered destroyed in a joint DATCP-USDA

2004 Survey for Soybean Dwarf Virus (SbDV) in Clover



effort, and the facilities disinfected. In 2003, seven WI greenhouses were issued Emergency Action Notifications. In 2004, 24 greenhouses in the state participated in destroying geraniums, with many of those facilities taking action voluntarily. In total, 21,000 plants were removed and taken to landfills for disposal.

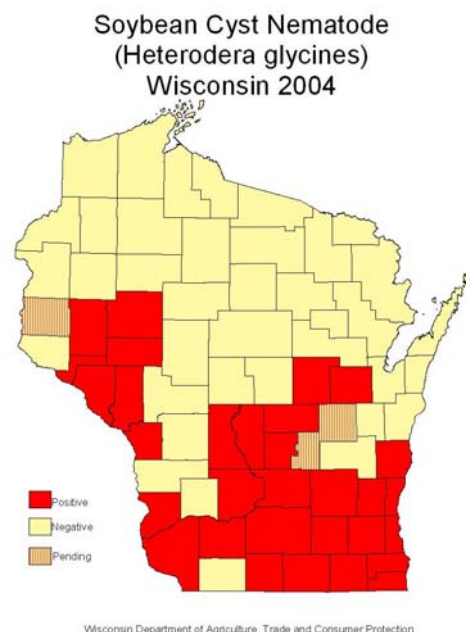
Inspections of propagating facilities in Central America and in Africa by industry plant pathologists and USDA personnel, and the adoption of Best Management Practices for preventing infection by the geranium industry (as well as the costs to the industry associated with continuing quarantine and destruction) should reduce the likelihood of importing infected plant material in the future.

Brown Root Rot of Alfalfa

Another recent disease concern for the state is brown root rot of alfalfa, caused by *Phoma sclerotoides*. Reports from Minnesota (Samac, et. al., 2004) suggest that this disease has been spreading south from Canada. Dr. Samac's work, in cooperation with Dr. Craig Grau of UW-Madison, determined that the disease has been found as far south as Columbia County in Wisconsin. Brown root rot infection may contribute to stand decline, yield loss and increased susceptibility to winter kill. A survey was undertaken to determine the incidence of the disease in the southern part of the state. Survey protocol required the collection of whole symptomatic alfalfa plants for testing. Samples were tested with PCR to detect the fungus. Twenty-three fields were sampled in the southern third of the state, in an attempt to determine the southern range of the disease. No *P. sclerotoides* was detected in any of the samples collected.

Soybean Cyst Nematode

Soybean cyst nematode (*Heterodera glycines*) has been present in Wisconsin since at least 1981. Nematode infestation often goes undetected, and is believed to cost soybean growers a considerable amount of lost yield every year. Soybean cyst nematode may also infest soil contained in pots or in the root ball of trees, and so is a concern for nursery growers in the state. In accordance with plant protection conventions, DATCP maintains a record of Wisconsin counties in which SCN has been detected. Despite sampling several hundred fields in uninfested counties, and sharing results with UW researchers testing soil samples from growers, no new counties have been added to the official SCN map since 2002.



Plant Industry Laboratory

The Plant Industry laboratory performs disease diagnosis for Pest Survey, Nursery, Christmas tree and Phytosanitary Programs, as well as the pesticide section. The plant pathologist provides technical expertise, maintains up-to-date information on the status of regulated nematodes and disease in the state, and documents historical information about plant pest and nematode problems in Wisconsin. The Plant Industry Lab is a USDA-APHIS authorized facility, used to screen for some select agents regulated under the Agricultural Bioterrorism Protection Act of 2002 and other federal legislation.

The lab conducted testing for Sudden Oak Death in 2004, Ralstonia in 2003 and Potato Mop Top Virus in 2002.

In addition to classical methods of plant pathology, immunological methods such as Enzyme-linked Immunosorbant Assays (ELISA) and molecular methods such Polymerase Chain Reaction (PCR) are now being utilized. The newest diagnostic tool is a real time PCR machine for faster more efficient diagnosis of plant pathogens. The majority of these more expensive projects are funded with grants from Cooperative Agricultural Pest Survey (CAPS) and the Department of Homeland Security.

Summary of Samples Submitted to the Plant Industry Lab in 2004

Type of Sample	Number of Samples	Special Survey
Agronomic	82	Bean leaf beetle
Agronomic	6	Golden nematode survey
Agronomic	23	Phoma sclerotoides survey
Agronomic	8	Potato rot nematode
Agronomic	6	Powdery scab survey
Agronomic	10	Seed corn certification
Agronomic	90	Soybean cyst nematode
Agronomic	8	Soybean seed certification
Agronomic	293	Soybean virus survey
Horticulture	2	Pesticide investigation
Horticulture	1	Ralstonia
Ornamental	142	Daylily rust
Ornamental	404	Sudden oak death
Ornamental & X-trees	227	All other samples
Ornamental & X-trees	15	Entomological
GRAND TOTAL	1,317	

The above listed samples can be broken down into the following categories:

Ag Bioterrorism/Federal	405	Subtotal
Compliance	2	Subtotal
New Pest Survey	29	Subtotal
Nursery & X-Trees	242	Subtotal
Agronomic Survey	465	Subtotal
Regulatory Certification	174	Subtotal

In 2004 the Plant Industry lab handled a total of 130 different host species, diagnosing a total of 89 different pathogens including 4 virus screens. We also disposed of 1,501 Giant African Snails (GAS).

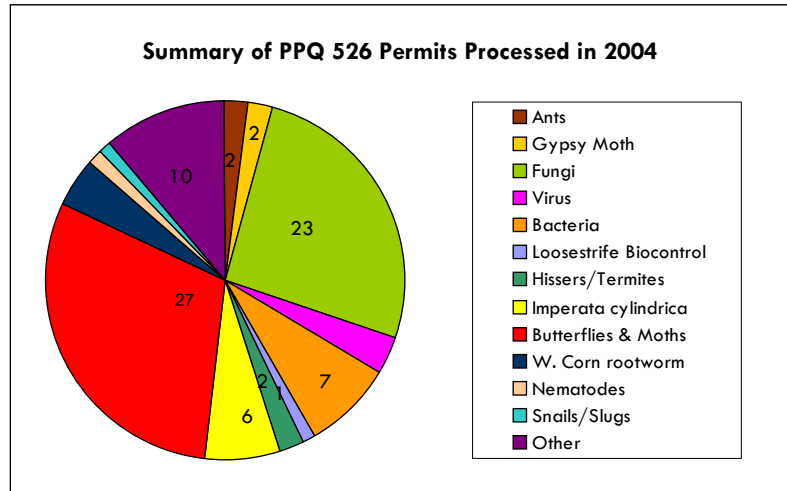
PLANT PEST & BIOLOGICAL CONTROL ORGANISM PERMITS

Plant Industry Bureau
2004 Central Plant Board Report

With authorization from Chapter 94 of WI statutes and Chapter 3 of ATCP regulations, DATCP issues permits to applicants who intend to move plant pest and biological control organisms into Wisconsin or distribute them within the state. Permits are issued only if the organism in question is widely

established in Wisconsin or an environmental risk assessment indicates little risk of adverse effect from the importation will result. Conditions on containment and disposal methods may be imposed to allow laboratory research to be conducted. USDA/APHIS/PPQ staff also prepares assessments and can impose conditions; state and federal parties must concur to allow importation. Under the laws and regulations, DATCP staff may conduct inspection of facilities to assure that permit conditions are being met. In 2004, DATCP received and processed 87 permit applications, up from 79 in 2003.

Twenty seven of the permits issued were for any combination of the following USDA-approved species of butterfly: *Danaus plexippus*, *Cynthia cardui*, *Vanessa atlanta*, *Vanessa virginiensis*, *Papilio polyxenes*, and *Nymphalis antiopa*. The “other” category includes organisms such as the milkweed bug, European corn borer, black cutworm, armyworm, etc. Interestingly, only one permit was received in 2004 for an invasive weed species biological control agent, *Galerucella* spp., for control of purple loosestrife.



NURSERY PROGRAM

Plant Industry Bureau
2004 Central Plant Board Report

Nursery Grower & Nursery Dealer Inspections

During the 2004 season staff inspected 371 growers of the 776 licenses issued, which is 47.8% of the licensed growers. Also this year, program staff inspected 514 dealers of the 1091 licensed, which is equivalent to 47% of the licensed dealers in the state. Nursery inspections are carried out by six inspectors who look for regulated and non-regulated pests during the inspections at licensed nursery growers and nursery dealers within the state. A portion of the nursery inspection process facilitates the process of certifying plant material for shipments to other states and countries. Nursery staff issued 272 Plant Health Certificates for nursery stock and 12 for sod in 2004. A total of 1100 acres of sod were inspected at 12 sod grower locations.

Nursery Acreage and Number of Nurseries Inspected, 1998-2004

Year	Acres	Increase	Number	Increase
1999	10,200	+300	575	+15
2000	7,300	-2900	350	-225
2001	8100	+800	446	+94
2002	9577	+1477	400	-46
2003	16,669	+7092	398	-2
2004	14,976	-1693	371	-27

Additional pests of importance that staff are alert to during routine inspections are Chrysanthemum white rust, southern blight, sudden oak death and viburnum leaf beetle. The State of Wisconsin has in place a quarantine for HWA that requires certification to receive host material from an area known to have established populations of this pest. HWA has not been detected in Wisconsin.

Daylily rust (*Puccinia hemerocallidis*)

Found at two dealers late in the season in 2004; both had shipments from a nursery in Georgia. All daylilies were pulled from sale and treated before being released. Currently, dealers with infected plants are required to pull plants from sale, treat, cut back plants to top of soil, wait for re-growth, treat again and then undergo an inspection to ensure plants are rust-free before release. It is not clear at is time whether daylily rust overwinters in Wisconsin.

Weir's cushion rust (*Chrysomyxa weirii*)

Staff continue to look for and find spotty locations which show or have symptoms consistent with Weir's rust. To date, the rust has primarily been found in Colorado spruce. It is recommended that fields infected with Weir's rust be treated with a fungicide three times early in the growing season. Program staff plan to continue checking susceptible materials in the state to confirm the presence or absence of this rust. Currently Weir's rust is found throughout Canada, the Northwest and eastern seaboard of the U.S. as well as in Tennessee, but has not been reported in the lake states.

Sudden Oak Death (SOD)

In 2004 Wisconsin participated in the national survey for SOD; all plant samples submitted from the state tested negative. As part of the survey staff reviewed which nurseries had received stock from the west coast and sampled of plants from those locales known to carry SOD. Also as part of the survey, Wisconsin Department of Natural Resources staff sampled oak wood lots near nurseries in the state to determine the presence or absence of this pathogen.

Hosta virus X:

This virus was found at several nursery dealers within the state during regular inspections in 2004. Symptomatic plants were sampled and sent to Agdia for testing, and all samples submitted were found to be positive. Host virus X was found on the following varieties: 'Blue edger', 'Grand Canyon', 'Richland Gold', 'Golden Tiara', 'Daybreak', 'Blue Cadet', 'Sum & Substance'. Follow-up investigations found that the plants came either directly or indirectly from the Netherlands to the point of sale. Hosta virus X is potentially a devastating pathogen because of its ability to infect a plant that may remain asymptomatic. This virus is spread through divisions, as well as through cuttings or transfer of sap by handling or by pruners.

Emerald Ash borer (EAB)

Staff conducted basic surveys at licensed nurseries within the state, and are fortunate to not have found any signs of EAB. The Wisconsin Department of Natural Resources also continues to look for EAB in the state park system. Work is underway to change laws to protect and manage this pest if indeed it turns up in Wisconsin. EAB survey and inspection work within the state is scheduled to continue in 2005.

Pine Shoot Beetle (PSB)

In 2004 five new counties were added to the list of quarantined counties in Wisconsin, bringing the total to nine counties. While staff do inspect for this pest during all routine inspections, PSB has never been found in a nursery within the state. Currently the new federal compliance agreement is being

arranged and updated with nurseries in the state. The list of counties currently known to be infested with PSB are as follows: Jackson, Sauk, Lafayette, Dane, Green, Kenosha, Walworth, Grant and Rock.

TOP INSECT PESTS-2004
Leafhoppers
Spider mites
Thrips
Aphids
Spruce gall midge (<i>Mayetiola piceae</i>)
Linden Borer
Scales (many types)
Leaf miners (birch and hawthorn)
Slugs
Balsam gall midge

TOP DISEASE PESTS-2004
Rose mosaic virus
Septoria leaf spot
Apple scab
Black spot
Powdery mildew
Anthraxnose
Shot hole disease
Root rots (all types)
Verticillium wilt

WISCONSIN SEED PROGRAM

Plant Industry Bureau
2004 Central Plant Board Report

Overview & Mission

Wisconsin's Seed Program ensures that only quality seed is sold in the state 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 ch. ATCP 20 Wis. Adm. Code.

Activities in 2004

During the 2004 season, WDATCP focused its attention on seed labelers with poor compliance records or histories that showed they were moving in the wrong direction. Twelve companies were targeted for priority sampling. Also targeted for the 2004 season were companies who were not sampled in two years, mixtures and lawn grasses. Last season WDATCP worked with 700 licensed labelers and sampled/tested seed from 100 licensed labelers, for a total of 402 samples.

Violations

Compliance to the violation notices and stop sales were 100% based on the return of corrective actions or releases. Fifty-two or 13% of the samples taken were found to be in violation of the state seed law.

- A total of 2 "Stop Sales" were issued; both were released after the department was satisfied with the disposition of the seed
 - a. 1 - Ground for Feed
 - b. 1 - Returned to Labeler

- A total of 11 "Serious Warning Notices" were issued
 - a. 1 - Voluntarily Removed from Sale
 - b. 5 - Relabeled
 - c. 5 - Returned to Labeler

- A total of 25 "Minor Warning Notices" were issued
 - a. 1 - Voluntarily Removed from Sale
 - b. 5 - Lot sold - none remaining
 - c. 17- Relabeled
 - d. 2- Returned to Labeler

- A total of 14 "Technical Violations" were issued and all were relabeled

Sampling/Violation History

Year	Licensed Labelers	Labelers Sampled	% of Labelers Sampled	% of Labelers Inspected	Total Samples	Total Violations	Violation Percentage for Year
2004	700	100	14%	38%	402	52	13%
2003	696	76	11%	33%	349	66	19%
2002	697	85	12%	25%	319	66	21%
2001	721	90	12%	-	456	94	21%
2000	789	96	12%	-	406	83	20%
1999	786	93	12%	-	341	62	18%
1998	-	-	-	-	341	74	22%
1997	-	-	-	-	436	80	18%
1996	-	-	-	-	-	-	26%

Violations for Class of Seed - 2003 & 2004

Crop	Germination 2003	Germination 2004	Purity 2003	Purity 2004	Noxious Weed 2003	Noxious Weed 2004	*Tag 2003	*Tag 2004
Cereals	1	0	2	1	8	0	2	2
Large Grains	3	1	1	2	0	0	0	1
Lawn Grasses	8	10	8	6	0	0	5	8
Mixtures	16	8	0	0	1	2	3	4
Small Seeded Legumes	0	0	7	4	0	0	0	2
Vegetable	1	1	0	0	0	0	0	0
Total	29	20	18	13	9	2	10	17

*Tag violations include: percentages not adding up to 100% purity, no lot number, kind of seed misrepresented, germination date older than one year, no labeler name or address, not licensed and other information missing.

Types of violations in each seed type

Violation	Kind of Seed	Problem	Violations	Kind of Seed	Problem
1	Alfalfa	Incomplete Label	1	Oat	Purity
2	Alfalfa	Purity	4	Orchardgrass	Purity
1	Barley	Label Statement	3	Pasture Mix	Adding % error
1	Birdsfoot Trefoil	Purity	5	Pasture Mix	Germination
1	Red Clover	Incomplete Label	2	Pea	Purity
1	Red Clover	Purity	1	Pea/Barley	Germination
1	Corn	Adding % error	1	Pea/Oat	Adding % error
1	Fescue	Germination	1	Pea/Oat	Prohibited
1	Kentucky Bluegrass	Germination	1	Pea/Oat	Restricted Weed
1	Kentucky Bluegrass	Purity	2	Pea/Triticale	Germination
6	Lawn Grass Mix	Adding % error	1	Perennial Rye Grass	Adding % error
8	Lawn Grass Mix	Germination	1	Pumpkin	Germination
1	Lawn Grass Mix	Test Date Expired	1	Smooth Bromegrass	Purity
1	Oat	Adding % error	1	Soybean	Germination

Problem Seed in 2004

Crop	Samples	Technical	Minor	Serious	Violation %
Pasture Mixes	33	3	3	2	24%
Orchardgrass	9	0	3	1	44%
Lawn grass mix	100	6	7	2	15%
Pea	4	0	0	2	50%
Pea/Oat	11	1	1	1	27%
Pea/Triticale	5	0	1	1	40%
Birdsfoot Trefoil	2	0	1	0	50%
Kentucky Bluegrass	3	0	1	1	66%

PHYTOSANITARY CERTIFICATION PROGRAM

Plant Industry Bureau
2004 Central Plant Board Report

Overview

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 a vital service to shippers of plants and plant commodities by certifying that their shipments are free of regulated pests before they move 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 2004, this program was responsible for the export of over \$61,431,193 of plant products in Wisconsin (Figure 1).

The phytosanitary certification program is a service program driven by demand, and is authorized in section 93.07(12), Wisconsin Statutes, and regulated in chapter ATCP 21, Wisconsin Administrative

Code. It is partially supported by program revenue funds according to a fee schedule in s. ATCP 21.05, Wis. Adm. Code as authorized in s. 94.11, Stats.

Activities Planned for 2004

- Process 1,240 applications and issue state or federal certificates. (based on an 8-year average)
- Conduct special inspections
- Respond to applicants requests for import requirements of state or foreign countries

End-of-Year Summary

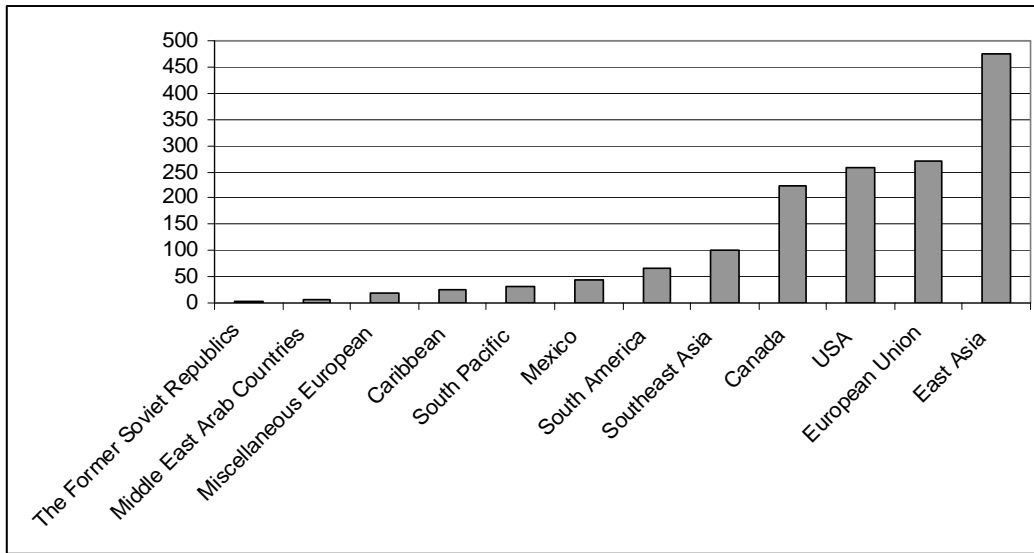
- 1,518 certificates were issued in 2004
 - 1,240 Federal Certificates
 - 127 Processed Plant Product Certificates
 - 1,113 Phytosanitary Certificates
 - 278 State Certificates
 - 74 Phytosanitary Certificates
 - 204 Plant Inspection Certificates

Phytosanitary Certificates Issued in 2004 and Estimated Product Values

Number Certificates Issued	Total Commodity and Unit	Estimated Value Per Unit	Estimated Total Value of Commodity
3	124 miscellaneous Agricultural plants	\$2.00	\$248
10	3,804 pounds miscellaneous Agricultural seed	\$0.96	\$3,652
84	64,638 cut Christmas trees	\$14.38	\$929,494
105	211,157,430 pounds of Corn grain	\$0.05	\$10,557,871
84	978,442 pounds Corn for seed	\$0.94	\$919,735
17	509,475 pounds of Cranberry fruit	\$0.90	\$458,527
16	572,060 pounds of Cranberry vine cuttings	\$0.75	\$429,045
5	178,250 pounds of Kidney beans for grain	\$0.29	\$51,692
507	8,357,745 board feet of Lumber	\$1.35	\$11,282,955
81	56,845 miscellaneous nursery plants	\$2.00	\$113,690
3	22.30 pounds of miscellaneous nursery seed	\$4.00	\$89
2	95,000 pounds of Onions for consumption	\$0.10	\$9,500
13	250 pounds of Ginseng seed	\$45.00	\$11,250
9	55,185 Potato plants	\$0.96	\$52,977
98	4,373,683 pounds of Potatoes for seed	\$0.08	\$349,894
18	758,500 pounds of table stock Potatoes	\$0.07	\$5,495
10	179,500 pounds of Decorative Moss	\$1.20	\$215,400
73	67,778,386 pounds of Soybean grain	\$0.12	\$8,133,406
41	4,204 pounds of Soybean seed	\$0.36	\$1,513
111	5,850,847 board feet of veneer lumber	\$4.65	\$27,203,244
8	7,015,160 pounds of Wheat grain	\$0.10	\$701,516
		TOTAL	\$61,431,193

* The table above represents 86% of the certificates issued in 2004, the remaining 14% were “Plant Inspection Certificates” which were not specific to 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 representatives for whom we issued the certificates to.

Total Certificates Issued and Country Destinations



* Figure 2 represents the total number of certificates issued in 2004 and the final destinations of the commodities.

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

Caribbean: Barbados / Dominican Republic / Puerto Rico

East Asia: Hong Kong / Japan / Macau / People's Republic of China / Republic of Korea / Taiwan

Middle East Arab Countries: Saudi Arabia / United Arab Emirates

Miscellaneous European: Bulgaria / Norway / Romania / Switzerland / Turkey

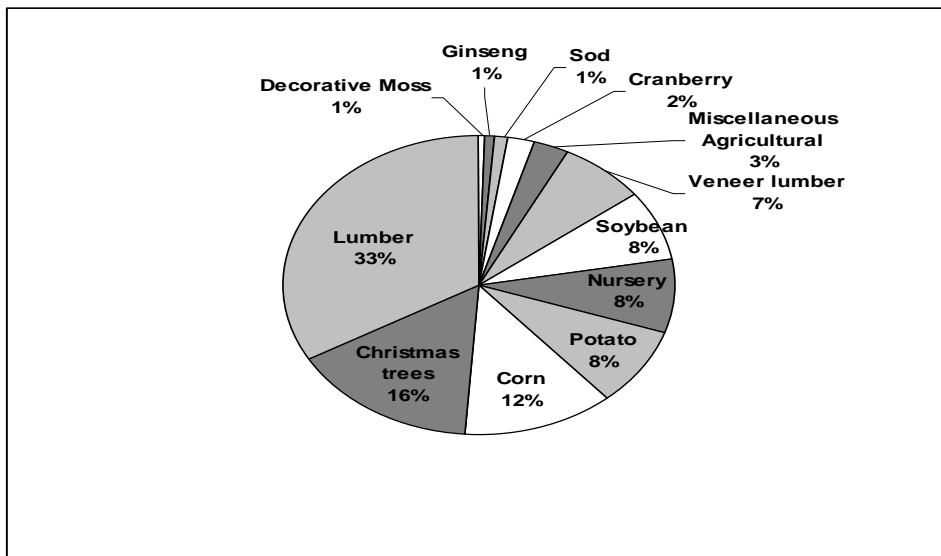
South America: Argentina / Belize / Brazil / Chile / Costa Rica / Honduras / Nicaragua / Republic of Panama

South Pacific: Australia / New Zealand

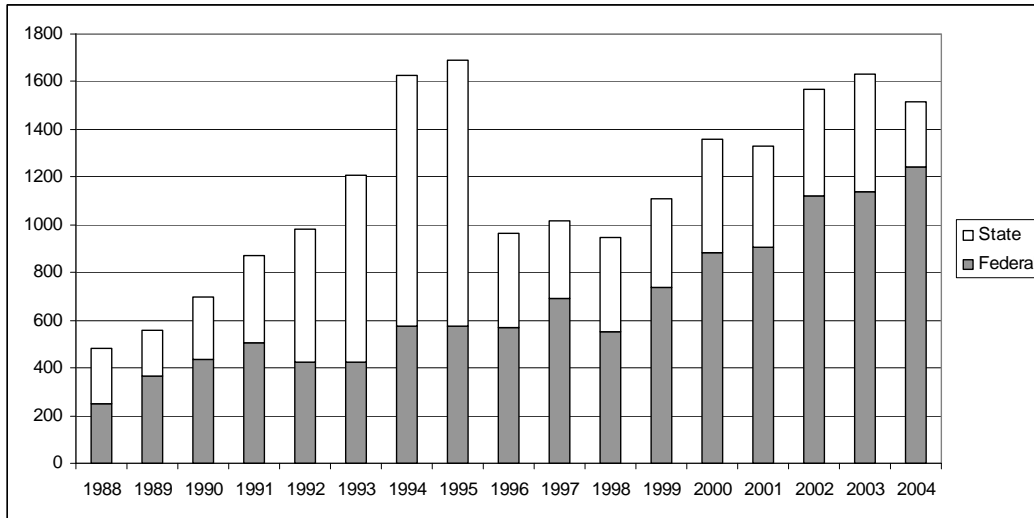
Southeast Asia: Indonesia / Malaysia / Philippines / Thailand / Vietnam

The Former Soviet Republics: Belarus / Russian Federation

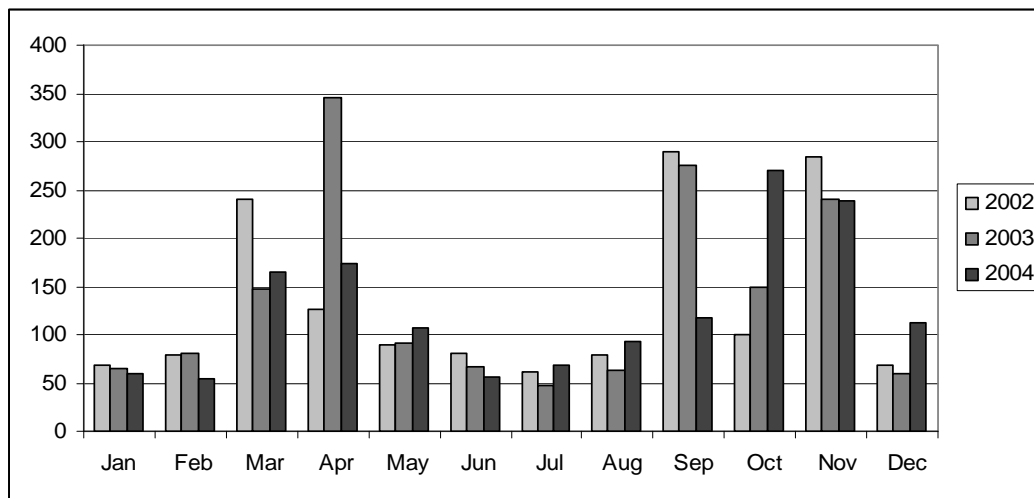
Commodities & Certificates Issued in 2004



Federal and State Phytosanitary Certificate 5-Year Trend



Number of Phytosanitary Certificates Issued by Month, 3-Year Trend



POTATO ROT NEMATODE PROGRAM

Plant Industry Bureau
2004 Central Plant Board Report

Potato Rot Nematode (PRN), *Ditylenchus destructor*, is an economically significant pest of potatoes in temperate regions. It occurs in localized areas in North America and many parts of Europe and Asia. Wisconsin is one of 13 states where infestations of PRN occur. Wisconsin began quarantining fields infested with PRN in 1953. Other states and nations have stringent regulations against movement of PRN. Wisconsin's inspection and quarantine program has been successful in allowing the continued certification and export of Wisconsin-raised potatoes.

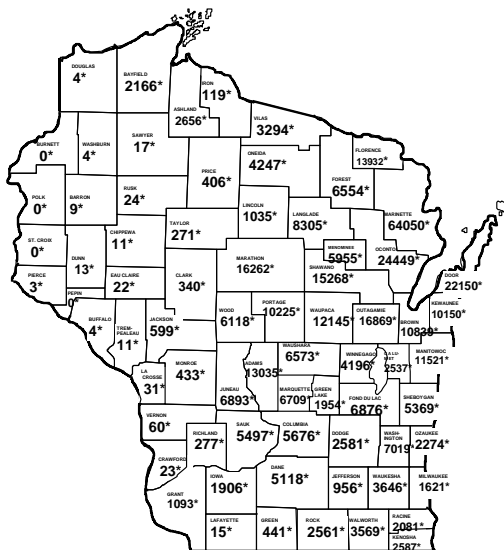
WDATCP inspected nine fields totaling 405 acres for Potato Rot Nematode. There were three fields with prior Potato Rot Nematode history totaling 190 acres; all were found to be negative. Two of

these fields were released for certified seed potato production based on fumigation and two successive potato crops in which there was no evidence of Potato Rot Nematode. The third field was released for tablestock/certified seed potato production pending based on fumigation and one potato crop in which there was no evidence of Potato Rot Nematode. There were four fields that were new to seed potato production, totaling 172 acres; all were found negative. Two fields in potato production prior to 2004 were found positive for Potato Rot Nematode, totaling 43 acres.

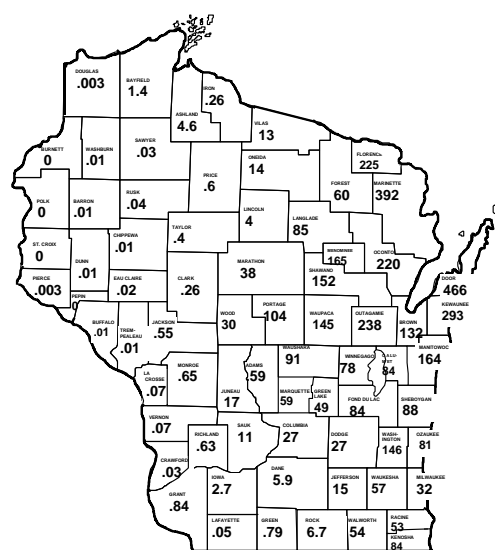
GYPSY MOTH TRAPPING & EGG MASS SURVEY PROGRAM

Activities in 2004

The WDATCP gypsy moth trapping team set 30,089 traps statewide. Trap densities of 1, 4, and 9 per square mile, 1 trap per 2 square miles, 1 trap per 4 square miles, and 1 trap per 9 square miles were set to detect and delimit populations, identify new infestations, and determine treatment efficacy. A total of 373,656 male gypsy moths were caught by trappers and cooperators. Egg mass surveyors inspected a total of 336 sites covering 975 acres. Thirty-five positive sites were found outside the regulated counties.



2004 Moth Catch - 373,656 moths



Moths per Trap in 2004



Slow-the-Spread Regulatory Program

Mission & Goals

To Slow the Spread of the Gypsy Moth, *Lymantria dispar*, from “generally infested” areas of Wisconsin and other states, to “non-infested” areas of Wisconsin.

- Identify pathways of gypsy moth movement and propose ways to control that movement
- Educate the public and affected industries on the threat of gypsy moth, the implications of gypsy moth establishment, regulations regarding gypsy moth, and what they can do to help slow-the-spread

- Determine if current gypsy moth regulations are being followed and report any violations to permanent DATCP regulatory staff.

Summary of 2003-2004 STS Program Activities		
Activity	Proposed Number	Number Accomplished
Campgrounds		
- Visits	100	117
- Target Traps	--	55
- Mailers	295	295
Christmas Trees		
- Fields	40	50
- Lots	25	8
- Target Traps	--	35
Lumber/Pulp Mills		
- Visits	6	--
- Target Traps	--	39
Construction		
- Mailers	847	847
Outdoor Household Articles		
- Mailers	310	310
Educational Appearances		
- Logging	5	4
- RV Clubs	1	1
- Youth	1	1
- Christmas Trees	5	2
- Nurseries	5	5
- Trade Shows/Conferences	5	5
Egg Mass Follow-ups	--	--
Media		
- Radio Advertisements	--	--
- Radio Interview	--	1
- Press Releases	--	4
Nursery		
- Nursery Growers	10	10
- Nursery Dealers	1237	1237
Poster/Literature Distribution		
- Snowmobile/ATV Inserts	78,304	78,304
- Truck Rental Countertop Display	25	50
- Boat Inserts	800,000	800,000
- Wayside Displays	200	200
Resorts		
- Mailers	538	538
Ryker Mounts	12	8
Firewood Dealers		
- Mailers	121	121
Weigh Stations	2	--

Activities in 2004

Campgrounds

Staff placed 58 target traps at campgrounds in the STS Action zone and west of the action line. A total of 107 moths were trapped. Literature was also distributed at these locations. Staff visited another 70 campgrounds to distribute literature and inspect camping articles for gypsy moth life stages. They also mailed and updated quarantine notice to all campgrounds in the state.

This was the first year target traps were implemented, and overall, they appeared to be successful. With the data collected we were able to see trends in areas where we were getting higher trap counts. Using that information, we plan to go back to those sites and further investigate possible means of introduction to that area.

Christmas Tree Fields

A total of 50 Christmas tree fields were inspected and egg masses were found at ten fields. Owners of these fields were contacted by the Christmas Tree Program Coordinator and instructed on treatment or quarantine options. One egg mass was found at a Christmas tree lot. This lot was located in quarantine. Egg mass removed and destroyed. Thirty-three target traps were set at Christmas tree fields in the STS Action Zone. A total of five moths were trapped.

Construction

A mailer was sent to construction firms throughout the state for a total of 834 contacts. The mailer consisted of gypsy moth literature, quarantine maps, regulations and posters. Two companies called back for more information.

Education

We continued to spread the word about gypsy moth, this year focusing on trade shows for outdoor enthusiasts and giving presentations to seasonal campground visitors.

Egg Mass Follow-Up

Twenty-one sites were followed up on. Of these sites, egg masses and alternate life stages were found at all sites. Possible means of introduction were examined and determined to be the causes at five sites. More literature was given to people in the surrounding areas.

Lumber & Pulp Mills

Thirty-six mills were target trapped in the STS Action zone. Several areas attracted attention and will be followed up on. All mills in the state also received an updated quarantine notice.

Media

One radio interview was done on gypsy moth and recreational vehicles. Four press releases were done regarding gypsy moth and regulations.

Nursery

The STS Regulatory program assisted the Nursery program with ten egg mass inspections at regulated nurseries. We also followed up on a suspected violation of the intrastate gypsy moth law. All licensed nursery dealers in the state received an updated quarantine notice.

Outdoor Household Articles

A bulk mailer was sent to 258 home movers in the state. The mailer consisted of literature on gypsy moth, quarantine maps, regulations and poster. The mailer also offered identification training to all employees. Six movers called back for more information.

Poster/Literature Distribution

We cooperated with the Department of Natural Resources- Licensing and Registration to include 1/3 page inserts with our logo, website and hotline number in the snowmobile and ATV renewals mailed

out in 2003. We also put the insert in the boat renewal application. Both of these renewals went to over 900,000 households. We continued to work with waysides in the state and distributed literature to 200 waysides throughout the state. We received requests for more literature from two truck rental companies.

Firewood dealers

An updated quarantine notice was sent to 121 firewood dealers in the state. One dealer contacted us for more information.

Summary

Despite major personal changes in the program in the last year, many program goals were met. Program staff continue to rely on cooperation with other state and federal agencies to increase awareness of the gypsy moth and regulations that follow. Staff will continue to work on outreach to regulated industries through education and inspections.

Update: Giant African Snails (GALS) in Wisconsin

Giant African Snails were first encountered in Wisconsin in November 2003 when a pet store owner contacted the Madison PPQ office about the legality of selling them. In cooperation with SITC, PPQ staff tracked down various other establishments that had GAS either as pets or for sale. In total over one hundred GALS were seized during the fall of 2003--this was only the tip of the iceberg.

On March 13, 2004 DATCP staff and a PPQ SITC representative attended an animal swap at a local county fairgrounds. Staff had been tipped off by a swap meet attendee that GAS had been sold at the at a previous swap event at that same location. DATCP and SITC representatives were in attendance to disseminate information and to accept any GAS that were anonymously turned in by citizens. They received an incalculable amount of snails, including 25 adults in the one to three inch range, numerous eggs and very small snails. Samples were sent to Dr. David Robinson for confirmation.

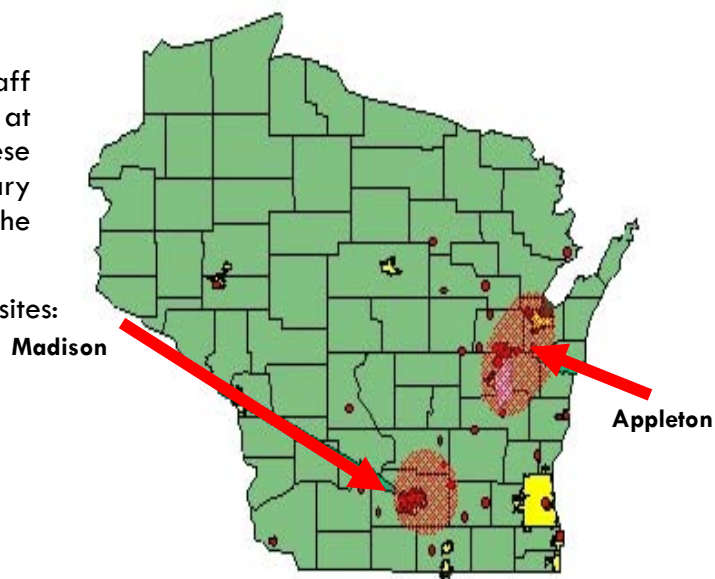
Following that event, DATCP and APHIS PPQ staff mounted an aggressive outreach campaign aimed at collecting GAS and educating the public that these snails are not harmless pets. Following is a summary of Wisconsin GAS finds in 2004. Most of the collections were made in March and April.

Approximately 1400 GAS were collected from 82 sites:

- 29 homeowners
- 18 schools
- 13 pet stores
- 12 day cares/preschools
- 9 swap meets
- 1 interstate sale

It is doubtful that this situation is limited to Wisconsin. The following web site contains a list of animal swaps being held in the Midwest in (<http://www.cacklinquackers.com>).

Please note that swaps in 8 different states (IA, IL, IN, KS, MI, MN, MO & WI) are listed.



Wisconsin GAS Confiscations in 2004

