



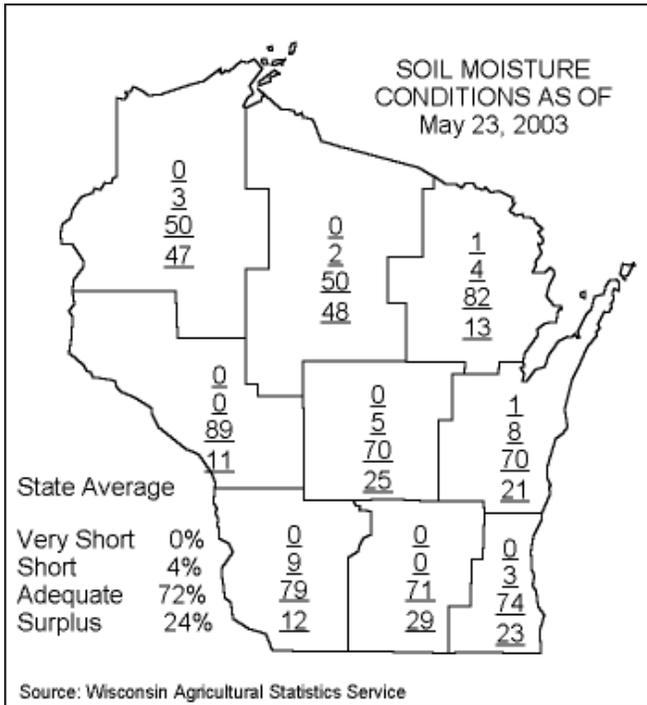
Wisconsin Pest Bulletin

Wisconsin Department of Agriculture, Trade & Consumer Protection

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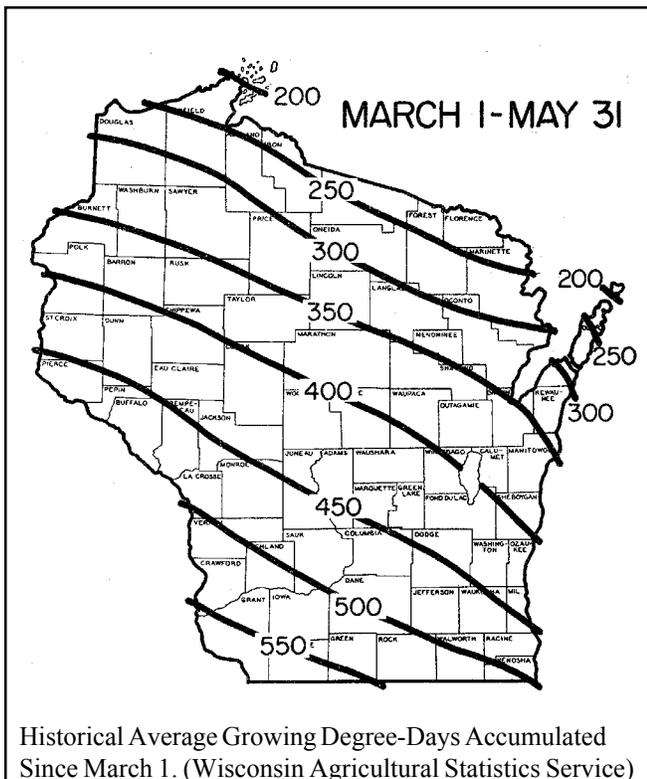


WEATHER AND PESTS

Warm conditions over the Memorial Day weekend favored the development of several insect species and allowed for plenty of field work. Much of the corn planting is finished, and a large acreage of alfalfa has been harvested in the southern region of the state. Nearly ideal harvest conditions over the weekend prompted many growers to cut their alfalfa, and in the process reduce rising numbers of **alfalfa weevil** larvae. **European corn borer** moths are emerging on schedule, but cool evening temperatures have slowed them from showing up in black light traps in significant numbers. Emerging soybeans in western Dane and Sauk Cos. are attracting overwintered **bean leaf beetles** from nearby forage crops. These early-planted fields will likely sustain moderate, possibly even high, levels of defoliation.

Growing degree days from March 1 through May 29 were:

Site	GDD*	2002 GDD	Normal GDD	Base 48	Base 40
SOUTHWEST					
Dubuque, IA	477	426	560	469	927
Lone Rock	474	395	520	453	916
SOUTHCENTRAL					
Beloit	463	401	545	464	925
Madison	431	368	500	434	881
Sullivan	417	376	490	411	857
Juneau	392	357	445	394	833
SOUTHEAST					
Waukesha	359	348	450	358	785
Hartford	354	335	440	356	780
Racine	303	322	475	307	706
Milwaukee	304	306	450	308	705
EAST CENTRAL					
Appleton	356	277	390	353	753
Green Bay	283	224	350	279	649
CENTRAL					
Big Flats	441	352	440	412	853
Hancock	427	339	435	416	844
Port Edwards	401	307	420	373	789
WEST CENTRAL					
LaCrosse	472	406	618	449	905
Eau Claire	468	320	425	443	894
NORTHWEST					
Cumberland	407	249	400	372	769
Bayfield	263	155	200	220	536
NORTH CENTRAL					
Wausau	357	248	375	323	716
Medford	346	218	350	310	693
NORTHEAST					
Crivitz	279	194	325	263	622
Crandon	308	192	310	270	639



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

ALERTS

Phytosanitary certificates now required for imported garden plants- The U.S. Department of Agriculture is amending its regulations to require that many imported garden plants be accompanied by a phytosanitary certificate to prevent the introduction of **potato brown rot** into the United States.

The phytosanitary certificate must certify that all articles of *Pelargonium* spp. (geraniums) and *Solanum* spp. (eggplants, tomatoes, potatoes, tobacco, and flowering plants) are produced in a facility that has been tested and found free of ***Ralstonia solanacearum* race 3 biovar 2**, which causes potato brown rot, or that the disease is not known to occur in the articles' region of origin. Plants imported under the Canadian greenhouse-grown restricted plant program are exempt from this requirement.

***Ralstonia solanacearum* race 3 biovar 2** causes potato brown rot. Because of the danger this strain of *Ralstonia* poses to U.S. potatoes, it is listed in USDA regulations as an agent capable of posing a severe threat to plant health or plant products. Accordingly, the possession, use and transfer of this strain of *Ralstonia* is subject to restrictions. If it were to become established in the United States, it would likely have a devastating impact on potato production.

LOOKING AHEAD

A brief forecast of pest-related events growers can anticipate in the upcoming week

Bean leaf beetle – As soybeans begin to emerge in the next week, overwintered adults will seek out these fields for egg laying. Early planted fields will be highly attractive to bean leaf beetles and could sustain severe defoliation. Growers are strongly encouraged to scout soybean fields for bean leaf beetles and defoliation. During the early seedling stage the threshold for bean leaf beetles is 16 per foot of row. At V2+ the threshold increases to 39 per foot of row. Counting the number of beetles per plant works just as well as counting the number per foot of row, and some scouts may even find it to be an easier method. Guidelines from Iowa State University suggest 2.0 to 4.4 beetles per plant at growth stage VC, 3.1 to 6.8 beetles per plant at growth stage V1, and 4.9 to 10.7 beetles per plant at growth stage V2. Iowa State's economic threshold table is available at <http://www.ipm.iastate.edu/ipm/icm/2003/4-28-2003/blbmanagement.html>.

European corn borer – Moths were detected in the margins of weedy alfalfa fields in Sauk Co. on May 29, indicating the first flight is underway. With nearly all of the state's corn acreage unable to support larvae at this time, alternate hosts such as potatoes, small grains and early snap beans may attract higher than normal egg laying until corn has reached a more suitable growth stage.

Alfalfa weevil – Outbreak conditions exist in some fields. Tip

feeding of approximately 65% was observed in some Sauk, Richland and Vernon Co. fields. Fields on sandy soils appear to be most affected at this time. Scouting should begin now.

CORN

European corn borer – Finding six more moths in the Mazomanie blacklight trap this week, combined with the sweeping of moths from alfalfa field margins and scattered moth sightings, all indicate the beginning of the first moth flight in Wisconsin. Egg laying may occur first in potatoes, as this is the most developmentally advanced host available at this time. Based on fall abundance survey results (0.66 borers/plant) we are anticipating a moderately-sized first flight of moths.

Stalk borer – Light damage was visible in scattered south central corn fields. Feeding damage was observed on 8-12% of plants in the fields surveyed. At present the foliar damage is minimal. Corn plants under 24" tall are most susceptible to stalk borer injury. It's still too early for scouting, but plan to initiate efforts once 1,400 heat units have accumulated. Begin by examining field margins, where damage is likely to be the most severe, then move inwards. For current control recommendations see University of Wisconsin-Extension Bulletin #A3646, *Pest Management in Wisconsin Fields Crops*.

FORAGES

Alfalfa weevil – Up to 65% tip feeding was found in the south central and southern west central districts, just as harvest is getting underway. Counts of 1st-4th instar larvae ranged from 0.25 to 3.6 per sweep. Growers should begin examining their fields now to determine the percent of tip damage and the possible need for control. Assessing tip damage is simple. Collect 30 stems at random, count the number of stems that show obvious signs of feeding, divide by 30 and calculate the percent of tip feeding. Control is warranted when 40% tip damage is observed more than 7-10 days in advance of cutting. Fields that have been recently cut should be checked for feeding on the regrowth. Conditions are right in some areas for heavy damage of regrowth to occur where weevils continue to hatch after harvest. The presence of adults in the fields surveyed suggests mating and egg laying is still occurring.

Pea aphid – Adults were found in peas in southern Sauk Co. at the rate of 9 to 16/25 sweeps. Populations in alfalfa in the southern part of the state have increased gradually in the past week, and winged adults are more numerous now.

Potato leafhopper (PLH) – Adults were conspicuously absent in the Sauk, Richland, Vernon and Crawford Co. alfalfa fields surveyed this week. This is surprising considering migrants were widespread in the southeastern part of the state last week. One Sauk Co. field surveyed was a potato leafhopper-resistant variety, which explains why PLH was not

present in that particular field, but it is not clear why leafhoppers were not observed in the other southern fields surveyed. The areas that remained PLH-free this week can certainly expect more to arrive by next week. The threshold for potato leafhopper in alfalfa is listed below:

Alfalfa plant bug – Nymphs were numerous in Richland and Vernon Co. alfalfa fields. Counts ranged up to 7 per sweep. It was difficult to get an accurate count since the nymphs were so abundant and active. Combined with **tarnished plant bug** adult and nymphs, counts increased to 7.5 and 8.5 plant bugs per sweep.

The threshold in alfalfa three inches or shorter is 3 per sweep, and increases to 5 per sweep in alfalfa that is taller than three inches. The fields surveyed were within a few days of being cut, which should help to lower plant bug numbers.

Height of Alfalfa (inches)	Ave. # PLH per sweep
<3	0.2 adult
3-6	0.5 adult
6-12	1.0 adult or nymphs
12-14	2.0 adults or nymphs

Meadow spittlebug – Numbers are rapidly rising and just about every field surveyed was littered with their characteristic, frothy spittle masses. No fields exceeding the threshold of one per stem were encountered though a few Richland Co. fields were fairly close, averaging 0.75 nymphs/stem. Fortunately meadow spittlebug seldom reaches economically important levels, and there is only one generation per year in Wisconsin. Once the nymphs are done feeding, most likely within the next two or three weeks, we won't have to worry about this pest for the remainder of the season. Adults will continue to be present in all alfalfa fields through fall, but the adults are not economically important.

Green cloverworm – Light populations of 2nd and 3rd instar larvae were detected in Sauk, Richland and Vernon Co. alfalfa fields. They were found at a rate of 1-3 per 25 sweeps.

SOYBEANS

Bean leaf beetle – Overwintered adults were observed feeding on young soybean seedlings in newly-emerged fields in Sauk Co. this week. Defoliation was less than 5%, but is likely to escalate fast, as these early-planted fields are virtually magnets for bean leaf beetles. Overwintered adults began emerging around mid May. Since then, we've been finding varied numbers of beetles in alfalfa fields throughout the southern third of the state. In most cases mating has already occurred, and these overwintered beetles are

anxiously awaiting the emergence of soybeans to lay eggs and complete the rest of their life cycle. Typically the greater the length of time between beetle emergence and soybean emergence, the more overwintered bean leaf beetles are expected to perish; however, planting soybeans earlier and earlier means this window has now been narrowed, so food and egg laying sites are available to the beetles earlier. At present all overwintered beetles have few options for egg laying sites, so they'll seek out the earliest emerging fields, such as the few newly-emerged fields surveyed in Sauk Co. These fields may sustain high levels of defoliation and potentially high levels of 1st and 2nd generation beetles. Growers with early-planted soybean are encouraged to watch fields closely and stay on top of the bean leaf beetle situation this season. Last year we saw historically high numbers of beetles throughout the Midwest, and this trend is likely to continue as long as our winters are relatively mild. (from the Pest Management and Crop Development Bulletin-University of Illinois Extension.)

VEGETABLES

Asparagus beetle – With 72°F temperatures over the weekend, a flurry of breeding and egg-laying activity was observed in Dane Co. Most asparagus stalks had 3 to 4 beetles on them, and one mating pair.

Cutworm- Two-inch larvae were reported feeding on onions, potatoes, and other vegetables in Western Dane Co. (UWEX)

Flea beetles- These small pests were noted in crucifers in Iowa Co. (UWEX)

Potato report- Most early planted fields are now emerging and some of the earliest planted fields are now approaching 10" tall. Emergence for the most part looks good. In spite of exceptionally dry conditions at planting, many growers took steps to minimize seedpiece decay by irrigating their fields before planting. Planting suberized seed into moist soil is a good recipe to avoid seedpiece decay. Many growers have treated their seedpieces with fungicides such as Maxim MZ, Tops MZ or Moncoat MZ to aid control of **Rhizoctonia stem canker**. Still other growers have used in-furrow treatments such as Moncut, Blocker or Quadris to help control this fungus-incited disease that can lead to delayed emergence, brick-red lesions on below-ground stems, and weak plants. Some growers are also interested in reducing infection of black dot disease by using seedpiece or in-furrow treatments with fungicide.

It won't be too many weeks before we begin to turn our attention to treatment for **early and late blight** control. Our weather network with stations in the potato canopy at Grand Marsh, Hancock, Plover and Antigo is up and running. Our website at <http://www.plantpath.wisc.edu/wivegdis/index.htm> is updated every 2-3 days with the most recent weather data and current summation of Severity Values and P-Days. At the

moment, for fields emerging in the Hancock area on May 13, we've accumulated 76 P-Days and 2 Severity Values. No late blight was reported in the primary areas where Wisconsin growers purchase their seed last year, and very little late blight was observed or reported in storages this winter. If anyone knows of possible cull piles, they need to be destroyed immediately so that they are not potential inoculum sources. By state administrative rule, all cull piles must be destroyed by May 20. **(Walt Stevenson, UW-Madison)**

APIARY

Honey bee winter mortality – Apiary Program survey and reports from Wisconsin Honey Producers Association meetings show that beekeepers lost on average 37% of hives during the winter of 2002/2003. The southern half of the state fared better with an average of 29% of hives lost while northern Wisconsin's hives beekeepers lost on average 46%. Beekeepers with more than 20 hives experienced better overwintering with on average 22% winter mortality.

The ability of honey bees to overwinter in Wisconsin is largely due to winter conditions and **varroa mite** (*Varroa destructor*) predation of honey bees during the previous fall. Providing an adequate food supply, a young prolific queen and control treatments for varroa and **American foulbrood** is equally important to prepare bees for winter. For information on overwintering and control treatments call the Apiary Program at (608) 266-7132.

Honey bee - Swarms were reported in Green, Dane, and Waukesha Cos. **(UWEX)**

FOREST, SHADE TREE, ORNAMENTALS AND TURF

Bronze birch borer – This native pest of birch trees has limited the tree's use in landscape situations for quite a while. Bronze birch borer, *Agrilus anxius*, attacks several birch species but is most severe on paper birch, *Betula papyrifera*. It ranges from the eastern U.S. to Colorado and Idaho. Although bronze birch borer will attack healthy trees the larvae will only complete development in trees in a weakened condition.

the spring, larvae start feeding again. Larvae feed at the interface of the xylem and phloem making sinuous trails under the bark. This feeding essentially girdles the tree, interrupting the flow of water and nutrients. The tree reacts to this feeding by producing callus growth around the feeding galleries. Callus growth exhibits itself as raised, bumpy ridges on the bark. If the larvae overwintered as fourth instars they will emerge as adults that summer. Younger larvae will emerge as adults the following summer. Mature larvae pupate in late spring and adults emerge in mid to late June. The flight period can last until mid to late August with adults living an average of about three weeks. The adult female feeds on the leaves of birch, poplar and alder for about a week before egg laying begins. The female lays eggs in cracks in the bark or other areas on the trunk or branches that are damaged. She may lay a single egg or a clutch of eggs depending on the size of the crack. Upon hatching the young larvae bore through the bark into the cambial region and begin feeding. As cold weather approaches larvae cease feeding until next spring.

The borer has a one or two year life cycle, mostly the latter. Life cycle length is determined mainly by host condition and time of egg laying.

At least two egg parasites and five larval parasites have been recovered from bronze birch borer. The egg parasites seem to provide some degree of control but the larval parasites provide very little. In heavy infestations woodpeckers can have some impact on borer populations.

Chemical control is aimed at killing the newly hatched larvae. This control generally consists of trunk sprays using insecticides with long residual action. Systemics may be effective on newly hatched larvae in recently attacked trees but translocation of insecticide in chronically attacked trees may be compromised.

Growers can encourage their customers to buy and plant birch species that are less susceptible to bronze birch borer, such as river birch. Homeowners can lessen the risk of infestation in their birches by planting trees in cool, moist areas with rich soil, and protecting their trees from salt, soil

Bronze birch borer overwinters in the tree in one of several larval instars. When sap flow begins in

Colonies testing positive for Varroa mite 1997-2002						
	Spring 1997	Fall 1998	Fall 1999	Fall 2000	Fall 2001	Fall 2002
Total surveyed colonies incl. some migratory	133	161	199	257	283	424
Varroa mite infested colonies	73%	73%	60%	47%	27%	46%
Varroa mite >1% infestation *	45%	49%	43%	33%	18%	27%
Mortality of colonies by following spring	29%	27%	23%	55%	12%	37%

compaction, construction, and other common urban stressors.

Ash leaf drop- Each year at the end of May we receive reports of ash leaf drop, with no singular cause determined. This year it has been noted in Dane, Jefferson, Waukesha, Lacrosse, and Sauk Cos. (UWEX)

Aphids — Inspections at nursery dealers are starting to find aphids in greater numbers. We are finding them on ash, burning bush, annuals of all types, spirea, and verbena to name few. They were in light to moderate amounts in Dane, Ozaukee, Rock and Washington Cos.

Columbine leaf miner — This insect, which tunnels inside the leaves of columbine, is starting to be found during our inspections of dealers. So far it has been found in La Crosse and Washington Cos. in light to moderate levels. The larva mines tunnels in the leaves making a serpentine pattern with a whitish appearance. The adult is a small fly that lays eggs into the leaf of a host plant to start the cycle again. There are multiple generations. Control for this pest is usually just removal of the leaves with mines. Chemical control for this pest is rarely warranted.

Fletcher (Lecanium) scale — Infestations are being found in Barron, Jackson, Sauk, and St. Croix Cos. on capitata and tauton yews at nursery dealers in light to moderate levels. This insect is usually found in the interior of the plant anchored to the stems. When scouting for this pest, look for black, sooty coating of the stems and needles. Also, look for tan-colored bumps on the stems which, when pulled off, reveal a white, sand-like substance underneath. That substance is the eggs that will hatch and produce new scales. The newly hatched eggs are called crawlers and will move out from under the protective covering and begin feeding on new areas of the plant. At this stage they do not have a protective wax covering and chemical controls will be effective at this time. Control is aimed at when Annabelle hydrangea is blooming (900-1000 degree days base 50°F).

Anthraxnose — This disease was found on daylilies and red maple in Rock and Winnebago Cos. in trace to moderate amounts. This fungal pathogen could become a bigger problem if warm, wet weather continues. It affects many different hosts and each host a little differently. For example, on daylilies it is a small blotch that is dead in the middle and surrounded by a yellow halo. On maple it's a dead blotch on the leaf that may become larger. The only effective measure to help with anthracnose is to keep the plant healthy. By the time anthracnose is noticeable it is too late for chemical control.

Gall rusts- Gall rust is a common fungal affliction of Scotch pine Christmas trees throughout Wisconsin. There are actually two kinds of rust- Eastern gall rust (*Cronartium quercum*) which alternates between oak and pine, and

Western gall rust (*Endocronartium harkenssii*), which has no alternate host. Both form round or oblong swellings on trunks or branches which range in size from just barely larger than the diameter of the branch to larger than softballs. These infections slow growth and gradually kill branches. Damage may be noted by red needles and individual branch death, or occasionally death of the top portion of tree above a trunk gall. Galls fruit from April to June, when they develop cream to orange fruit bodies on their surface.

Control includes scouting for gall damage. Choose 50 trees throughout your plantation, and if trees at least seven years old average more than three galls per tree, consider treating your entire field. Removing oak brush in your plantation may reduce reproduction on alternate hosts. Prune galls from all trees before they sporulate in spring. One of the most important steps a grower can take is to not plant new Scotch pine near older, infected plantations. (Christmas Tree Pest Manual, Michigan State Extension)

Pseudomonas leaf spot — This fungal pathogen is also on the rise due to the current weather. We are finding it at nursery dealers on impatiens, mock orange and veronica in Jefferson, Milwaukee, Rock and Washington Cos. in light to moderate amounts. On most annuals it appears as a tan colored necrotic circle which has a purplish halo. On woody plants it generally appears as dark necrotic patches that are more angular. Air circulation and keeping the foliage dry are the best control methods, but chemical controls can be used as a protectant or to reduce the infection rate. Several applications will be needed during the growing season.

Shot hole disease — This fungal leaf problem gets its name from the damage it causes to the leaves. The leaves appear to have been shot by a shotgun. Lesions start out as small, tan, circular dead area on the leaf that begins to break loose at the edge of the dead area and drop out of the leaf, leaving a circular hole. When many of these lesions are on the same leaf it gives the affect that the leaf had been riddled by a shotgun blast. Once again, air circulation and keeping the leaves as dry as possible will help to control or reduce this fungus. Chemical controls can be applied as a protectant if the problem is perennial and persistent.

STATE/ FEDERAL PROGRAMS

Gypsy moth spray program- The Cooperative gypsy moth program has sprayed approximately 68,000 acres with *Btk* (*Bacillus thuringiensis* var. *kurstaki*) since May 21st. Treatment areas in Rock, Dane, Green and Columbia Co. are finished.

Gypsy moth trapping program - Trappers are currently setting traps statewide. A table showing the number of traps set each year since 1971 is located on page 61. It also shows the number of moths caught, the number of moths per trap for each year, and the number of acres and counties treated. See

how gypsy moth populations have grown in Wisconsin over the past 30 years.

FRUIT

Meadow spittlebug – Meadow spittlebugs are generally only a nuisance in strawberries because pickers dislike getting their hands smeared with the spittle masses, but when present in large numbers, the nymphs can weaken plants and distort the leaves and berries. Symptoms can be exacerbated when conditions are dry. In strawberries the nymphs are most commonly often found between clusters of flower buds, on leaf stems, and on young growth within the crown. At early bloom they are usually still small, but during the picking season the frothy spittle masses become more evident. To monitor meadow spittlebugs in strawberries, check fields on a biweekly basis. Look for the spittle masses and the nymphs inside. Sometimes more than one nymph may be hidden inside the froth. There are no economic thresholds for strawberries, but some growers use an aesthetic threshold of 1 spittle mass per square foot. Meadow spittlebugs tend to be more abundant in weedy strawberry fields, so good weed control practices will help to prevent serious infestations from occurring.

Plum curculio – Adults are active in unsprayed apple orchards, particularly in the southeastern part of the state.

Codling moth - Counties in southwest and southern Wisconsin are seeing unusually high numbers of this pest in apple orchards.

European red mites - Occasional spots with high numbers, even where oil was applied at pink. Mites at this time are localized on the first (oldest) leaves, but will disperse in the next couple of weeks.

San Jose scale - Crawlers, immatures of this usually sedentary pest can now be monitored moving along scaffold branches of apple trees.

(Data from John Aue – Threshold IPM Services)

Apple scab monitoring. – Apples are between 5.5 and 9.0 mm. On 5/27 degree days exceeded 910 starting at first green tip on 4/14/03 in Pierce Co. Primary scab infection period should be over (Circle K Orchard).

ODDS-N-ENDS

Black fly- Complaints were received from Portage and Waukesha Cos. (UWEX)

CALENDAR OF EVENTS

Wisconsin Apple Growers IPM Field Day
Thurs. June 5, 2003. North Freedom, WI
Info at <http://waga.org/> or (920) 478-4277

Greenhouse IPM seminars:

America's Best Flowers in Cottage Grove
June 10, 2003. 9:00 am - 4:00 pm \$10

Karthausers in Cedarburg
June 11, 2003. 9:00 am - 4:00 pm \$10

Natural Beauty Greenhouses in Denmark
June 24, 2003. 9:00 am - 4:00 pm \$10

Tropical Gardens, Inc. in Mosinee
June 25, 2003. 9:00 am - 4:00 pm \$10
FMI call Karen Delahaut 608-262-6429 or email
kadelaha@facstaff.wisc.edu

Rhineland Potat Grower Field Day
July 12, 2003. UW Rhineland Research Station
(715) 369-0619

Central WI Potat Field Day
July 16, 2003. Hancock Research Station
(715) 249-5961

Northeast Wisconsin Potat Field Day
July 17, 2003. Langlade County Airport
Contact: Ken Williams, UWEX (715) 627-6236

Wisconsin Fresh Market Vegetable Growers and Berry Growers Field Day

Country Bumpkin Farm in Wisconsin Dells
July 18, 2003. 9:00 am - 3:00 pm
Contact: Karen Delahaut 608-262-6429 or email
kadelaha@facstaff.wisc.edu

American Phytopathological Society Annual Meeting

Aug 9-13, 2003. Charlotte, NC
www.apsnet.org/meetings/2003/

West Madison Horticultural Field Day featuring a Mexican Garden

August 16, 2003.
Contact: Judy Reith-Rozelle at West Madison 608-262-2257

WI Christmas Tree Producers Association Summer Convention

Aug. 15-16, 2003
Menominee Casino-Bingo-Hotel, Kesheena
Tour Hanauer's Tree Farms, Shawano
Contact: Cheryl Nicholson, Executive Secretary
www.christmastrees-wi.org
Phone (608)745-5802

WEBSITE OF THE WEEK

USDA Agriculture Research Service Acronym Mania

Ever wonder what USDA documents mean when they refer to someone as an ADODR, or to WOCC acreage? Is it a new Muppet character? Some strange religious ritual? Words from the language of Oceania?

Translation is available through *http://www.pswcrl.ars.usda.gov/AdminLAO/acronyms.htm* , a list of acronyms used by USDA/ARS.

(AUTHORIZED DEPARTMENTAL OFFICER'S DESIGNATED REPRESENTATIVE and WHEAT AND OTHER CEREAL CROPS....)

Apple Insect Trapping Results					
County					
City	Date	STLM	RBLR	CM	OBLR
Crawford Co.					
Gays Mills-W2	5/20-5/26	0	0	0	3
Gays Mills-E2	5/21-5/28	115	4	23	0
Richland Co.					
Richland Center-W	5/21-5/28	25	4	2	0
Richland Center-E	5/21-5/28	23	6	3	0
Iowa Co.					
Dodgeville	5/22-5/29	10	0	26	13
Sauk Co.					
Baraboo	5/21-5/28	40	11	1	0
Dane Co.					
Deerfield	5/19-5/26	73	3	4	0
Green Co.					
Brodhead	5/21-5/27	2	7	2	0
Pierce Co.					
Spring Valley	5/22-5/29	52	31	0	0
Beldenville	5/21-5/28	3	10	2	
Trempealeau Co.					
Galesville	5/20-5/27	0	0	4	0
Jackson Co.					
Hixton	5/19-5/26	21	1	2	0
Fond du Lac Co.					
Rosendale	5/19-5/27	113	15	4	
Malone	5/22-5/29	25	20	1	0
Ozaukee Co.					
Mequon	5/21-5/27	900	2.5	0.8	
Racine Co.					
Rochester	5.24-5/30	812	6	15	0
	8/16-8/23	462	7	1	1
Sheboygan Co.					
Plymouth	5/23-5/30	410	31	7	0
Waukesha Co.					
Waukesha	5/17-65/23			2	
Door Co.					
Sturgeon Bay	5/21-5/27	625	20	0	0
Brown Co.					
Oneida	5/19-5/26	11	26	1	0

Apples between 5.5 and 9.0mm.

Bloom nearly over

McIntosh @petal fall +4 days

Apples at early bloom

History of Gypsy moth Trapping and Treating in Wisconsin					
Year	# of Traps	# of Moths	# of Moths per Trap	# of Counties Treated	# of Acres Treated
1971	100	1	0.01	0	0
1972	142	0	0	0	0
1973	700	0	0	0	0
1974	2616	0	0	0	0
1975	900	7	0.008	0	0
1976	5678	11	0.002	0	0
1977	8270	32	0.004	0	0
1978	7619	666	0.087	0	0
1979	11000	11	0.001	2	1397
1980	5300	41	0.008	1	320
1981	6900	365	0.053	2	460
1982	9000	280	0.031	2	820
1983	13000	173	0.013	4	607
1984	11480	79	0.007	4	950
1985	8298	13	0.002	3	139
1986	7523	33	0.004	0	0
1987	7728	73	0.009	0	0
1988	9830	599	0.061	0	0
1989	13604	5616	0.413	0	0
1990	27213	15642	0.575	2	490
1991	22765	11348	0.498	3	5875
1992	68246	9949	0.146	5	40765
1993	38910	36063	0.927	8	35270
1994	49420	9959	0.202	12	51800
1995	48577	104454	2.15	11	20304
1996	48543	87748	1.808	19	35280
1997	54431	95039	1.746	24	40250
1998	44651	108704	2.434	20	34875
1999	33750	126432	3.746	17	54420
2000	29366	215502	7.338	18	80558
2001	28319	378939	13.381	25	176113
2002	26196	623798	23.813	20	329009
TOTALS	650075	1831577	2.8	202	909702