Wisconsin Pest Bulletin

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Wisconsin Department of Agriculture, Trade & Consumer Protection

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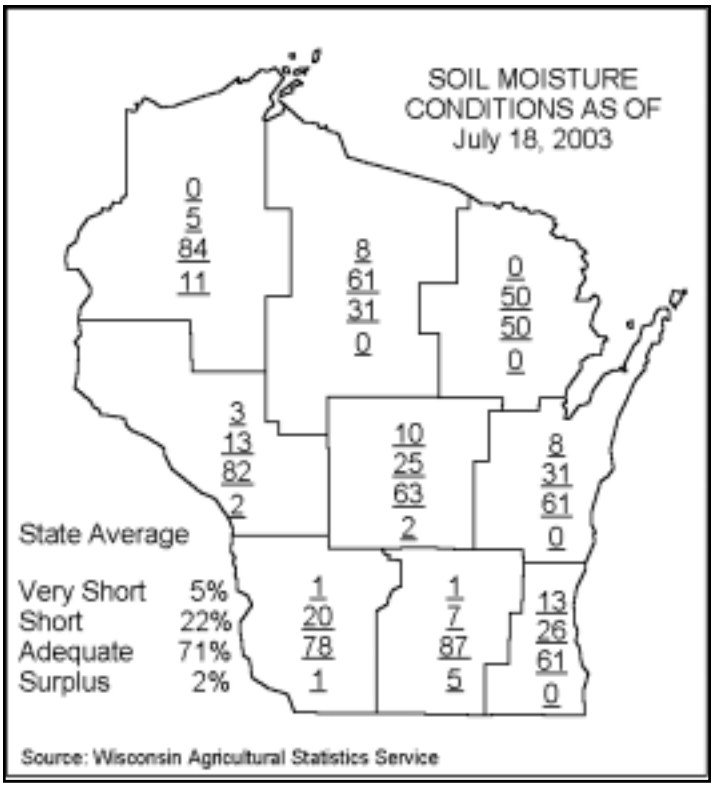
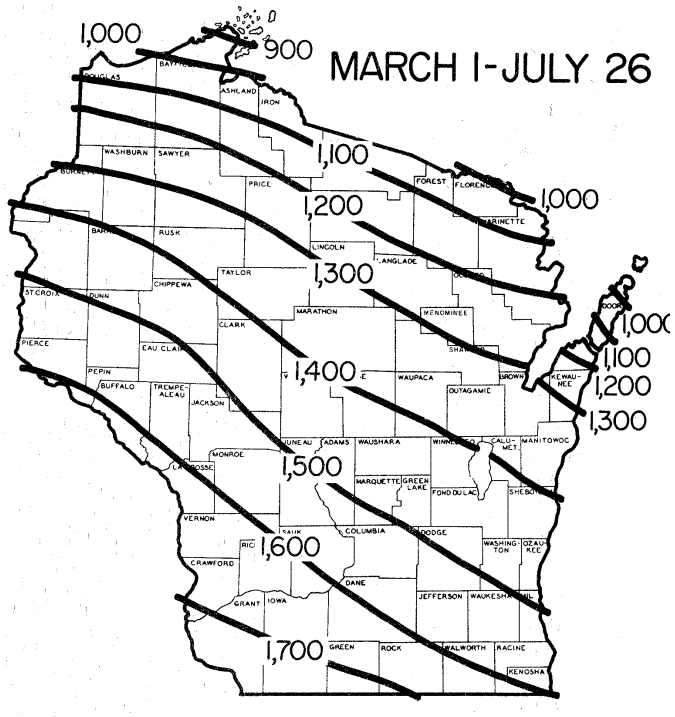




Historical Average Growing Degree-Days Accumulated Since March 1. (Wisconsin Agricultural Statistics Service)

Weather and Pests

Conditions were favorable for field work this week allowing staff to inspect numerous acres of soybeans in the south for virus symptoms and aphids. A majority of the soybean fields surveyed are at the R2 stage of growth, and the beginning pod stage is expected to occur in the next nine to ten days. **Soybean aphid** pressure is intense throughout the south. Fields in Jefferson, Kenosha and Walworth Cos. are averaging 1156 aphids per plant.

Growing degree days from March 1 through July 10 were:

Site	GDD	2002 GDD	Normal 48	Base 40	Base GDD*
SOUTHWEST					
Dubuque, IA	1479	1632	1689	1518	2485
Lone Rock	1465	1552	1589	1469	2455
SOUTHCENTRAL					
Beloit	1448	1611	1622	1474	2464
Madison	1414	1526	1557	1452	2415
Sullivan	1368	1547	1497	1396	2359
Juneau	1348	1510	1433	1385	2339
SOUTHEAST					
Waukesha	1284	1515	1491	1318	2262
Hartford	1285	1483	1428	1332	2261
Racine	1195	1477	1492	1255	2151
Milwaukee	1193	1440	1464	1243	2144
EAST CENTRAL					
Appleton	1266	1379	1409	1331	2212
Green Bay	1112	1264	1255	1196	2022
CENTRAL					
Big Flats	1375	1484	1431	1413	2331
Hancock	1352	1468	1407	1407	2313
Port Edwards	1276	1398	1412	1326	2209
WEST CENTRAL					
LaCrosse	1468	1641	1568	1486	2454
Eau Claire	1417	1505	1442	1462	2394
NORTHWEST					
Cumberland	1263	1317	1354	1312	2165
Bayfield	929	975	896	934	1676
NORTH CENTRAL					
Wausau	1164	1277	1309	1215	2059
Medford	1119	1204	1308	1175	2002
NORTHEAST					
Crivitz	1092	1177	1187	1145	1970
Crandon	1053	1133	1166	1089	1896

** GDD (Growing Degree Days) are synonymous with degree-days above modified base 50° F, with no low temperature below 50° F or above 86° F used in calculation.*

Potato leafhopper pressure is also high, namely in the central and northern regions of the state. Recent weather conditions have been highly favorable to mid-summer insect species.

Looking Ahead

Soybean aphid – Scout now! Populations are reaching peak levels throughout the south. Densities are higher than in recent years, in many cases exceeding 2000 aphids per plant. Check fields two times within a five to seven day period to determine if populations are increasing or on the decline. Where populations decline by the second sampling, spraying is not recommended; however, where populations are on the rise and densities exceed several hundred aphids per plant, control may be necessary.

European corn borer – The second flight of moths has begun in the Madison area. Expect egg laying to begin at 1450 DD (base 50°F). The most effective treatment window for second generation corn borers is between 1550 DD and 2100 DD.

Potato leafhopper – Populations are high and increasing in alfalfa and beans over much of the state. Pressure is highest in the northern and central districts at this time, though substantial levels of hopperburn were also observed in the southeast. Continue to monitor fields closely.

Corn rootworm – Beetles continue to emerge and the potential for silk clipping exists in fields with fresh silks. Scout now to assess levels of silk feeding.

Apple maggot – An increase in apple maggot emergence has occurred at several trapping sites. Our Sheboygan Co. cooperator reported an unusually high red ball trap catch of 18 apple maggot flies this week. An insecticide application for apple maggots should target flies before females have the opportunity to deposit eggs, and is warranted when five apple maggot flies are trapped per red ball.

Forages

Potato leafhopper – Relatively high populations are present in many alfalfa fields. In southeastern fields counts averaged 12 to 18 per sweep, but occasional fields had counts in excess of 25 adults and nymphs per sweep. Hopperburn severity ranged from 10% to 78%. Many acres of second crop regrowth in the north central, central and east central districts required treatment this week to reduce leafhopper pressure and hopperburn symptoms. Potato leafhopper feeding, known as hopperburn, is the distinct, V-shaped yellowing of the leaf tips. It should not be mistaken for boron deficiency, drought stress, summer **black stem** disease or other conditions that cause yellowing of alfalfa leaflets.


Severe hopperburn damage
Marlin E. Rice

Spotted alfalfa aphid (***Therioaphis maculata***) – Reports from the central part of the state indicate counts in some fields are in the range of 40 aphids per sweep. Spotted alfalfa aphid usually appears in heaviest concentrations on dry, sandy sites. A count of 200 per sweep is considered the economic threshold for damage.


Spotted alfalfa aphid
http://info.ag.uidaho.edu/keys/plates/plate16.htm

Corn

Corn rootworm – The emergence of corn rootworm beetles continues. High counts of adults (six to 12 per plant) have been noted in individual corn fields, and light amounts of silk damage were evident in some southeastern and south central fields. In the southern part of the state the threat of silk clipping associated with adult feeding may become an issue in the next week or two. Where heavy populations of corn rootworm beetles occur, the amounts of silk feeding/clipping is sometimes substantial enough to disrupt the pollination process. Scout now to assess levels of silk feeding.

Once plants are pollinated, the aim of scouting is to estimate the potential density of next year's population of beetles. Beginning in early August, check fields at least three times at seven to ten day intervals, and continue through mid-September. Examine 50 plants and count the number of beetles per plant. Corn rootworm beetles often hide in the silks and axils so examine plants closely. Be sure to place your hand over the silks and count the beetles on the other areas of the plant first, to prevent beetles in

the silk from escaping while you count. Calculate the number of beetles per plant during each of the three samplings. If the field average exceeds the economic threshold of 0.75 beetle per plant (38 beetles per 50 plants) during any one of the three scouting trips, growers will probably need to treat with a soil insecticide the following year, or rotate out of corn.

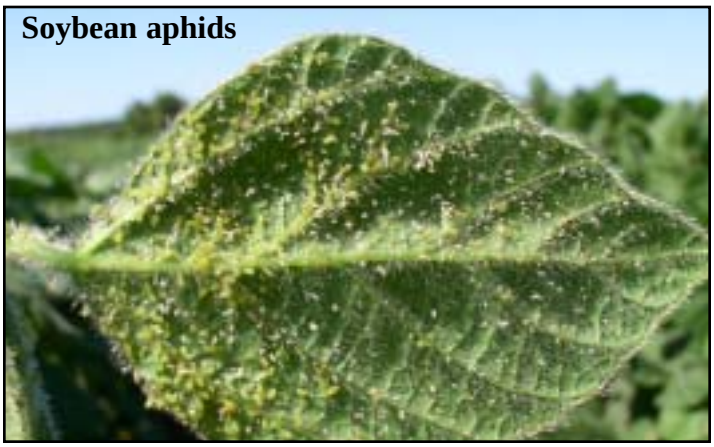
European corn borer – The second flight of moths has begun in the south central and west central districts. Expect the first eggs at 1450 DD (base 50°F) and egg hatch at 1550 DD. A somewhat prolonged second flight of moths may be in the forecast if the warm, humid conditions expected over the weekend continue.

The most effective treatment window for second generation corn borers is between 1550 DD and 2100 DD.

Soybeans

Soybean aphid – Aphid pressure in the south has intensified considerably in the last two weeks, reaching levels reminiscent of 2000 and 2001. Most fields in Jefferson, Walworth and Kenosha Co. fields are saturated with aphids. In the most severely infested fields, plants have become glossy and sticky from aphid honeydew secretions. Ten Walworth Co. fields were inspected closely during this week's survey efforts, and the number of aphids per infested plant ranged from 127 to 3880. Ten fields were also surveyed in Jefferson Co. where levels ranged from 75 to 1515 aphids per infested plant. The only region with fields that were not severely infested with soybean aphids was northern Jefferson Co. where the counts fell below 251 aphids per infested plant. Densities in Kenosha Co. were also quite high, ranging from 424 to 1203 aphids per infested plant.

All fields included in this week's survey were in the R2 stage of growth. Populations may continue to build through the R4 stage, which could take approximately 19 days to reach for fields currently at the R2 stage. From our survey observations, it appears that populations in the southeast are reaching peak densities, which is encouraging since many plants have little surface area left to support additional aphids. With the exception of the northern Jefferson Co. fields, all fields surveyed this week would be good candidates for control. Again, management decisions for this pest are particularly difficult to make because spraying an insecticide will not kill all the aphids. It is likely that at least 10% of the existing population will be left behind with the potential to rebound, especially if the natural enemies are also eliminated by the insecticides. Treatment guidelines for soybean aphids are 200 aphids per plant at full bloom, 1000 aphids per plant at 3/16" pod stage, and 1500 aphids per plant at ¾" pod stage (UW-Madison).


Soybean aphids

Intense survey efforts for soybean aphids will continue over the next 2-3 weeks, so by mid-August we will have a better picture of peak densities throughout the state. If densities in the southeast are at all indicative of densities elsewhere, it's going to be a big year for this soybean pest.


Japanese beetle feeding

Japanese beetle – Adults were noted in nearly all Jefferson, Kenosha and Walworth Co. soybean fields surveyed this week. While the incidence of foliar injury was relatively light and seldom affected more than 2% of the plants in a given field, some individual plants were severely skeletonized. The foliar injury resulting from Japanese beetle feeding is lacy in appearance, and much different from the injury caused by other defoliators like the **bean leaf beetle** and **grasshoppers**. None of the fields surveyed had levels of defoliation severe enough to cause concern.

Potatoes

There are no reports of **late blight** in Wisconsin as of July 21. Conditions in the southern half of the state continue to be favorable for late blight development as evidenced by the continued increase in severity values over the past week. Northern Wisconsin is very dry, however, and conditions are much less conducive to disease development in these areas. Canopies are dense in most fields and the foliage remains wet for extended periods after irrigation

and rainfall. Growers should remain alert for the early symptoms of late blight since there is still a long way to go before vinekill. Most growers are treating their fields every seven to ten days as a preventative measure for foliar disease control.

Early blight continues to progress a bit more rapidly than last year and faster than what would be considered a normal year. Many potato fields are about a week ahead of normal maturity. Early blight susceptibility increases as the vines mature. Continued use of protectant sprays will help to slow disease development.

Last week I reported that some growers were experiencing **white mold** in a few production fields. During the past week, growers indicated that bacterial stem rot is now appearing in fields where vines have been kept continuously wet with irrigation and rainfall during the past few weeks. Vines at the base of the dense canopy are soft, mushy and often have a foul odor. This is nothing new, but it is a reminder that vines need to dry between irrigations if at all possible. Keeping the leaves and stems bathed in a film of water day after day, week after week, is conducive to a buildup of soft rotting bacteria that find their way into wounds on the stem and leaves. Copper sprays at this point are probably pointless for control. Careful irrigation that matches water to crop needs appears to be the most reasonable approach to managing this disease problem. (UW-Madison)

Current P-Day and Severity Value Accumulations for 2003
(http://www.plantpath.wisc.edu/wivegdis/index.htm)

Location	Calculation: Date	P-Day Total	Severity Value Total
Antigo emerging June 4	7/20	336	26
Antigo emerging June 14	7/20	265	8
Antigo emerging June 24	7/20	194	8
Grand Marsh emerging 5/19	7/20	437	37
Grand Marsh emerging 5/2	7/20	413	37
Grand Marsh emerging 5/28	7/20	391	37
Hancock emerging 5/13	7/20	485	25
Hancock emerging 5/17	7/20	461	25
Hancock emerging 5/25	7/20	415	23
Plover emerging 5/13	7/20	478	12
Plover emerging 5/24	7/20	418	12
Plover emerging 6/3	7/20	355	12

Vegetables

Carrots- **Alternaria and Cercospora leaf blights** continue to progress on the most susceptible cultivars. Protective sprays with chlorothalonil or chlorothalonil alternated with a strobilurin fungicide such as Quadris or Cabrio are effective control measures. We have extensive trials out in the state this year looking at how disease forecasting programs combined with pest scouting and cultivar susceptibility can affect overall disease control efficacy and the economics of production. Small field plot research at the Hancock Ag Research Station during the past two years demonstrated the usefulness of this approach on carrots. We are now taking this to the next level on commercial grower acreage. Results so far are promising.(UW-Madison)

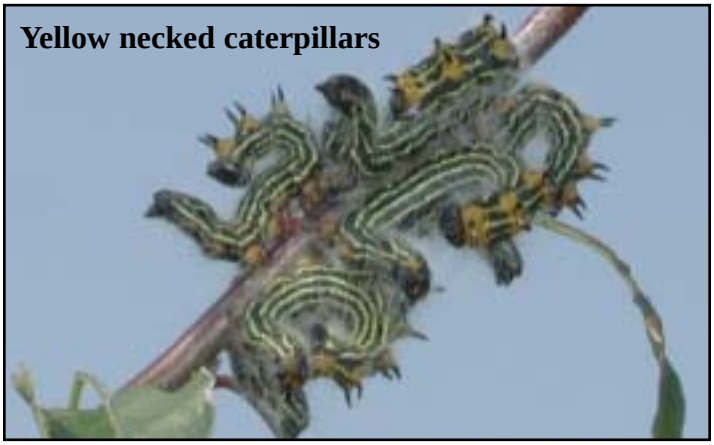
Processing Beans- The presence of **white mold** on potatoes is a good reminder to processors and growers that conditions are also favorable for white mold infection on processing beans. The most susceptible stage of crop development is the period of open bloom. Careful irrigation from bud stage through the bloom period can reduce the risk of this disease. Fungicide sprays, if applied, should be used during the bloom period for best control of white mold. Careful attention should be given to management of white mold in the week ahead. Also, as a gentle reminder, there is a biological control measure available (Intercept) for the management of white mold. This material needs to be applied prior to planting (ideally the fall ahead) in any field with a white mold susceptible crop. Disk immediately into the field. The fungus in this biocontrol will attack and rot the sclerotia of the white mold fungus, thus reducing the primary inoculum. Measures such as these combined with careful irrigation and crop rotation can make a big difference in the management of white mold.(UW-Madison)

Forest, Shade Trees, Ornamentals and Turf

Cottony maple scale — This late summer scale, *Pulvinaria innumerabilis*, is starting to become active during our grower inspections in Calumet and Sauk Cos. in trace amounts on birch and linden. Contrary to its common name, this scale is not always found on maple; it can be found on beech, willow, linden, elm, hawthorn, alder, hackberry, honeylocust and oak, to name a few. Unlike the cottony maple leaf scale *(P. acericola*), cottony maple scale is found on the twigs and branches. During this time of year the scales open up and expose the white, cottony mass of crawlers that gives the pest its name. These crawler move to the foliage of the plant and begin to feed. Before the leaves fall from the tree the females return to the twigs and overwinter. This scale has only one generation a year. Control of this scale should be directed at the crawler stage, when *Hydrangea arborescens* is starting to bloom.

Fall webworm - Webs are becoming noticable on branches of various tree species in Chippewa, Clark, Eau Claire, Jackson, Juneau, and Monroe Cos. The branches appear to have large spider webs covering them. (UW-Madison)

Flea beetle — These small insects jump when disturbed. Many times you will only find the injury they have done. These insects chew small holes in leaves, leaving a shothole appearance when feeding is heavy. Columbia and Milwaukee Co. nurseries showed light amounts of feeding on deutzia and weigela. The damage is generally not serious and treatment is not needed unless the populations



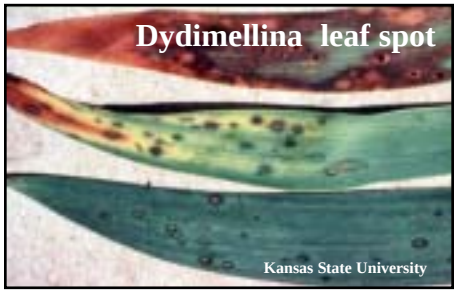
get high.

Yellow necked caterpillar — A first find for this season, these caterpillar were about ½" long and feeding on linden in a Sauk Co. nursery. The larvae have a black head and a yellow band behind the head with alternating yellow and black stripes running the length of the body. These caterpillars feed in groups, stripping a limb of foliage before moving on to the next limb. This caterpillar has a large host range and is found almost everywhere in the United States. When these caterpillars are disturbed they curl into a circle with their head coming over the back and tail curling up to meet the head.

Tar spot – Light amounts of this foliar pathogen were observed on silver maple at nurseries in Dane and Racine Cos. Although the leaves were infected earlier in the spring, the signs and symptoms of the disease are now becoming noticeable. The tar spot fungus, *Rhytisma spp.*, overwinters in fallen leaves. Sanitation is, therefore, important in reducing the level of inoculum for the following year.

Fire blight – Several varieties of crabapple trees at a nursery in Sauk Co. had heavy amounts of injury from this bacterial disease. Infection occurred earlier in spring but the damage was still evident at the time of inspection.

Dydimellina leaf spot – Iris at nurseries in Columbia, Milwaukee and Sauk Cos. had light to moderate amounts of this foliar fungus affecting the leaves. This disease is usually found on the distal half of the leaf and may weaken the rhizomes if there are heavy amounts of leaf spotting.



Frog eye leaf spot (***Botryosphaeria obtusa***)– This foliar disease was found in light to moderate amounts on crabapples in Milwaukee and Ozaukee Co. nurseries. This disease, also known as black rot on apple, is most damaging in the southeastern U.S. where it can also cause trunk and branch cankers.

Anthracnose – Damage from this spring is still being seen on oak, ash and maple at nurseries in Columbia, Dane, Milwaukee, Ozaukee and Sauk Cos.

Needle rust – Damage from what is thought to be Weir's cushion rust was observed on Colorado spruce at nurseries in Barron, Dane and Lincoln Cos. This disease has become more widespread from last year. Symptoms on needles at this time of year can be confused with spruce needle drop and follow-up inspections should be done in spring to early summer when the rust is fruiting.

State/Federal Programs

Gypsy moth trapping program - Trappers have begun checking traps and have caught 530 male gypsy moths as of 7/23/03. Moth flight has been reported as far north as Taylor, Marathon, and Florence Cos. Counties with the highest totals so far are Marquette (179) and Racine (104). Moth check will continue south of Highway 10 until August 8th. Trappers north of Highway 10 will start checking traps on Monday, July 28 and finish by August 15. For more information on the gypsy moth program, please call our hotline at 1-800-642-MOTH.

Odds -n- Ends

International news: Slovakia recently reported the first findings of ***Erwinia amylovora***. The first outbreaks of

fireblight on the territory of the Slovak Republic were detected in mid-June. These outbreaks were detected at eight sites in southern Slovakia, mainly in regions bordering Hungary.

Germany— Brown rot of potato—During the production season potato inspections in 2002, 16,684 samples were tested for brown rot. Samples were taken from seed potatoes (10,837 samples), ware potatoes (4,555 samples), from gene banks and breeding material, and from potatoes in trade. In seven Federal States, a total of 146 samples from watercourses were tested for contamination with brown rot. Seed potatoes were not found to be infected with *Ralstonia solanacearum* Infection was found in one case in ware potatoes. Thorough analyses were carried out in order to trace back the origin of infection; however, it could not be clarified. Contamination of watercourses was found at four sampling sites that had already been found positive during the previous sampling in 2001.

Brazil—Citrus Sudden death— Citrus sudden death is a new lethal disease of unknown etiology which has recently emerged in Brazil. First symptoms were observed in 1999 in Minas Gerais (in Triangulo Mineiro), and then spread to northern São Paulo which is a major citrus-growing area. It is estimated that 500 trees were affected in 1999, 300,000 at the beginning of 2002. The disease has killed approximately 1 million citrus trees within 20 months. So far, all attempts to detect fungi, bacteria, phytoplasmas and viroids failed.

Calendar of Events

Agronomy Crops Field Day
July 29, 2003
Hancock Agricultural Research Station
Contact the research station at (715) 249-5961 or| *hancock@calshp.cals.wisc.edu*.

Wisconsin Crop Diagnostic Training Center 2003 Workshops
July 30, 2003- Corn & Soybean Management Workshop
August 6, 2003- Insect Management Workshop
August 20, 2003- Diagnostic Troubleshooting Workshop
Contact Dan Heider at (608)262.6491 or via email at *djheider@facstaff.wisc.edu*

American Phytopathological Society Annual Meeting
Aug 9-13, 2003. Charlotte, NC

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

West Madison Horticultural Field Day featuring a Mexican Garden
August 16, 2003.
Contact: Judy Reith-Rozelle at West Madison 608-262-2257

XII World Forestry Congress, A Focus on Forests
September 21 - 28, 2003
Quebec City, Canada
http://www.wfc2003.org

Invasive Alien Species and the International Plant Protection Convention Conference
22-26 September 2003
Braunschweig, Germany
http://www.ippc.int/IPP/En/Archive/IAS2003/IAS-WORKSHOP-Home.htm

Black Light Trapping Results

through July 24

Trap Site	European corn borer	Armyworm	Black Cutworm	Variegated Cutworm	Spotted Cutworm	Celery Looper	Corn Earworm	Dingy Cutworm	Corn earworm Pheromone
South Central									
Mazomanie	14	9	17	2	8		22		
Reedsburg	147								
West Central									
Coon Valley									3
East Central									
Manitowoc	15	10	7		1			22	
Northwest									
Chippewa Falls	5			1					1
New Richmond	3								9
Cameron	18								

Apple Insect Trapping Results

County City	Date	STLM	RBLR	CM	OBLR	AM red ball	AM sticky
Crawford Co.							
Gays Mills-E2	7/16-7/23	40	124	8	11	2	0
Richland Co.							
Hill Point	7/18-7/23	150	7	0	1		0
Richland Center -W	7/16-7/23	130	34	1	2	0	0
Richland Center-E	7/16-7/23	130	105	4	14	0	0
Sauk Co.							
Baraboo	7/16-7/23	110	10	1	1	0	0
Dane Co.							
Deerfield	7/14-7/21	336	23	0	0	0	0
Green Co.							
Brodhead	7/16-7/23	22	3	0	0	0	0
Iowa Co.							
Dodgeville	7/17-7/24	490	0	0	2	1	0
Pierce Co.							
Beldenville	7/17-7/24	55	1	0	0	0	0
Bayfield Co.							
Washburn	7/14-7/21	700	0	0	0	0	0
Fond du Lac Co.							
Rosendale	7/7-7/14	18	5	3	1	0	2
Malone	7/17-7/24	20	17	2	5	0	0
Marquette Co							
Montello	7/13-7/20	802	0	0	0	0	0
Door Co.							
Sturgeon Bay	7/16-7/22	620	37	22	8	0	0
Brown Co.							
Oneida	7/14-7/21	60	6	4	5	0	0
Marinette Co.							
Wausaukee	7/17-7/24	8	5	0	0	0	0
Ozaukee Co.							
Mequon	7/16-7/21	175	17.5	1.3	3	0.8	0
Waukesha Co.							
Waukesha	7/12-7/18			7			
Racine Co.							
Rochester	7/17-7/25	1476	0	3.5	0	0.25	0
Sheboygan Co.							
Plymouth	7/17-7/25					18	

STLM--Spotted tentiform leaf miner; RBLR--Redbanded leaf roller;CM--Codling moth;OBLR--Oblique banded leaf roller AM--Apple maggot

Department of Agriculture,
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Division of Agricultural Resources Management
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Web Site of the Week

UMASS Berry Notes

http://www.umass.edu/fruitadvisor/berrynotes/index.html

The University of Massachusetts produces this newsletter for berry producers during the season. Lots of good information, though not all of it may be applicable to Wisconsin conditions. The latest issue (July 22) has a good write-up on summer management of foliar diseases of strawberries and bird control options for blueberries.

Quote of the Week

The miller believes that all the wheat grows so that his mill keeps running.

Johann Wolfgang Von Goethe (1749–1832), German poet, dramatist.

http://www.soils.wisc.edu/wimnext/tree/arbor.html