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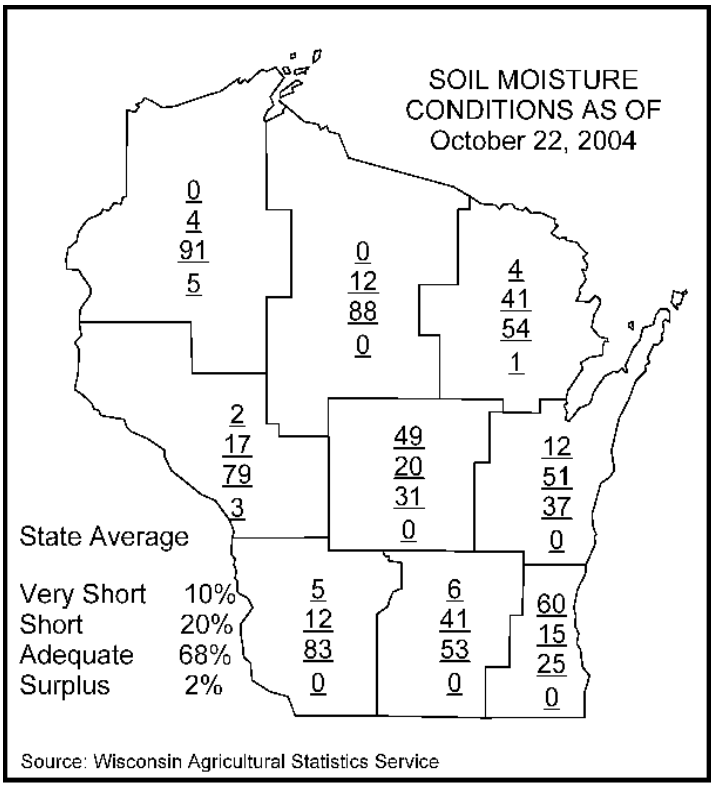
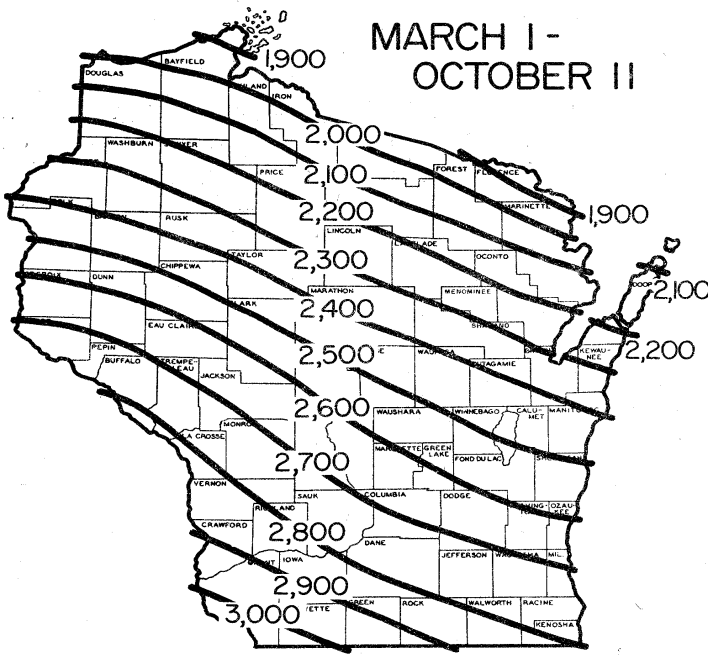




Historical Average Growing Degree-Days Accumulated Since March 1. (Wisconsin Agricultural Statistics Service)

Weather and Pests

The 2004 growing season began on a wet note and ended much the same way. As of this week, harvest continues to be delayed in much of the state because of damp conditions. Farmers are hoping there will be adequate time for corn and soybeans to dry in the field to help reduce drying costs. According to recent reports, yields are highly variable across the state. Southwest and south central Wisconsin crops have apparently fared well, but elsewhere reports are mixed.

Where pests are concerned, 2004 was a relatively uneventful season. The surplus of rain and chilly conditions this spring drastically reduced insect populations. The European corn borer was practically nonexistent this fall and soybean aphid densities were at an all-time low. There were of course a few notable exceptions, including the apple maggot, which emerged in record numbers this season. Soil moisture conditions in most districts apparently proved ideal for the emergence of this pest.

Alerts

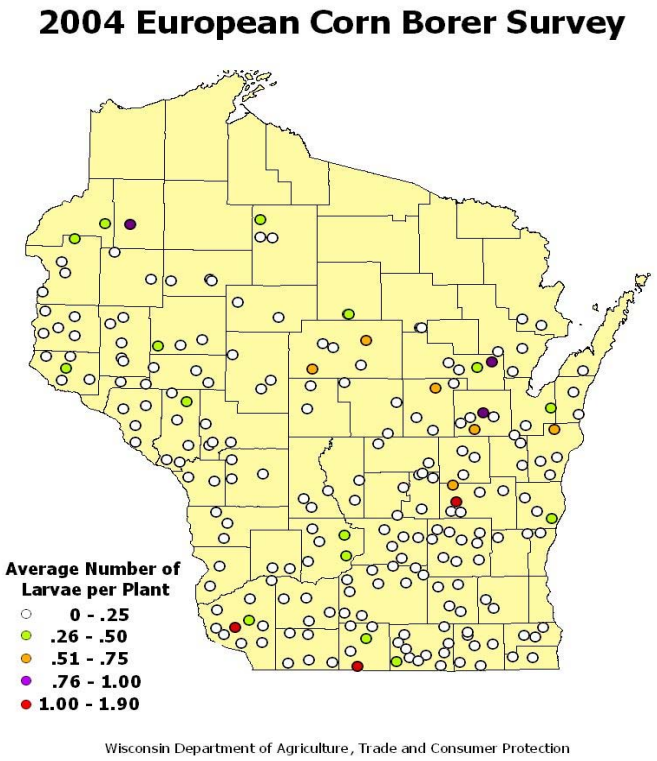
Swede midge - On September 20, 2004, two Cecidomyiidae specimens from Niagara County, New York, were confirmed as *Contarinia nasturtii* (Swede midge). These males were trapped in experimental pheromone traps that Cornell Cooperative Extension Service is field-testing in North America with the Swiss Federal Research Station for Horticulture. These are the first detections in the United States. The Swede midge has been a known pest of crucifers in Canada since 2000; although it was probably established in Ontario several years before it was identified.

The Swede midge (also known as the cabbage midge or crown gallfly) is a Eurasian pest of crucifers. “Blind heads” on broccoli, cabbage, cauliflower and other crucifers are typical of infestation. Larvae damage the terminal growing points of crucifers, causing disruption or cessation of growth in these tissues. In older plants, slarval feeding can cause twisted or missing broccoli or cauliflower heads, split terminals, swollen tissue, and crinkled heart leaves or other distortions. Plants infested as seedlings produce no marketable yield. Symptoms may mimic molybdenum deficiency, hormonal herbicide damage, genetic variability, heat stress, and frost damage.

Damage can resemble other common conditions in these crops, such as mechanical cultivation wounds or feeding by other pests, and leaves a typical "corky" scar.

Adults are 1.5 mm brownish flies similar to the over 60 other Contarinia species in North America. In Ontario, Adults emerge continually from the end of May until the middle of September and apparently produce three to five overlapping generations in a season. The eggs hatch within three days and the larvae live for up to 14 days. Then they drop to the ground to pupate in the top 5 cm of soil. New adults emerge approximately 14 days later. The Swede midge over winters as a larva in the soil; some may stay in the soil for more than one winter making long-term crop rotation important.

Swede Midge New Pest Response Guidelines are completed in draft and are due for publication shortly. A pest alert describing the Swede midge is available on the APHIS website (http://www.aphis.usda.gov/ppq/ep/swedemidge.html). (USDA)



Corn

European corn borer – Wisconsin's 2004 fall European corn borer survey found the lowest overwintering larval population of corn borers in the past six years. Survey findings show that the 2004 statewide average of 0.10 borer per plant 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. A statewide average of 0.10 borer per plant is considered very low. In fact, lower or equivalent statewide averages occurred during only three of the last 50 years of survey. Population declines were found in all but the north central district, where only a very minor increase was documented (0.14-0.20 borer/plant). The biggest declines occurred in the south central (0.52-0.06 borer/plant), southwest (0.35-0.10 borer/plant) and central districts (0.44-0.04 borer/plant).

A few key variables merged to make 2004 an exceptionally quiet year for the European corn borer. First, the overwintered population of larvae from 2003 going into the growing season was low. The 2003 survey found a statewide average of 0.30 borer per plant, suggesting that the first flight of moths in 2004 would be light. Next, when moths began appearing in black light traps by June 4, weather conditions were less than ideal for mating and egg laying. Heavy, frequent periods of rainfall combined with overall cool weather conditions when the first flight of moths was peaking (June 9 in the Madison area June 24 near Wausau), had the effect of slowing moth activity and increasing mortality rates of newly-emerged corn borer larvae. In turn, the impact of first generation corn borers was light, and mostly very low-level infestations were detected in June and July.

Conditions were also unfavorable for second generation corn borers. When the second flight of moths became

AVERAGE NUMBER OF BORERS PER PLANT

District	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	10 Yr Ave
NW	0.10	0.32	0.03	0.02	0.15	0.24	0.33	0.44	0.20	0.13	0.20
NC	0.17	0.41	0.26	0.01	0.03	0.04	0.05	0.26	0.14	0.20	0.16
NE	0.53	0.47	0.18	0.01	0.18	0.03	0.07	0.75	0.23	0.22	0.27
WC	1.21	0.80	0.15	0.02	0.30	0.31	0.67	0.71	0.16	0.05	0.44
C	1.23	1.02	0.09	0.02	0.30	0.41	0.48	1.21	0.44	0.04	0.52
EC	2.49	0.65	0.26	0.03	0.25	0.19	0.33	0.44	0.22	0.17	0.50
SW	6.31	0.51	0.39	0.17	0.57	0.39	0.87	0.65	0.35	0.10	1.03
SC	2.65	0.83	0.35	0.10	0.61	0.33	0.48	0.86	0.52	0.06	0.68
SE	3.08	0.79	0.35	0.10	0.31	0.16	0.36	0.61	0.17	0.02	0.60
State Ave	1.97	0.64	0.23	0.05	0.30	0.24	0.40	0.66	0.30	0.10	0.49

Figure 2. European corn borer fall survey summary 1995-2004 (by district)

active in late July and August, evening temperatures were abnormally low; research has shown that little corn borer activity occurs when temperatures dip below 60ºF. Low daytime and evening temperatures throughout August severely limited mating and egg laying activity by the second flight of moths. This translated into a low population of second generation corn borers.

In summary, unfavorable weather conditions during mid-June when the first flight of moths was active, then again while the second moth flight was in progress between late July and late August, suppressed mating and egg laying activity and led to a particularly low fall population of corn borers this season. Also, delayed corn planting because of cold weather and wet fields may have meant that host material was not readily available for first generation egg deposition, and this may have accounted for part of the decrease as well. An accurate forecast of the 2005 corn borer population is difficult to make based solely on fall survey findings. Results suggest that while growers can expect a very light first flight of moths in 2005, they should be alert to the possibility that favorable weather conditions in the next growing season could result in a considerable increase of first and second generation borers.

Corn rootworm – This year's larvae were apparently not hindered by June's dismal weather and flooded fields, as corn rootworm beetles appeared right on schedule by July 8. July brought warmer weather and many replanted fields, fields that would later provide fresh silks for an extended period of time. The first western corn rootworms of the season were detected in Green Co., and by the following week, northern corn rootworm beetles were observed in Dane Co. While beetle populations grew in the south, larval hatch continued northward as light lodging and larval activity was observed in Trempealeau Co. during the week of July 16. By July 30 scouting in the southeast revealed beetle populations there were primarily less than the threshold of .75 beetle per plant. During the first week of August, light amounts of silk feeding and an average of fewer than .82 beetle per plant was noted in southern fields. And despite a chilly August, which further hindered corn development, beetles continued to fare well with populations ranging from .3-2.1 beetles per plant in the central sands region. It became evident during the annual statewide corn borer survey, which took place from the first week of September through mid-October, that the most damaging insect observed was not the corn borer, but the corn rootworm beetle. Although no official count was made, it appeared that numerous fields across the state had populations that far exceeded the threshold of .75 beetle per plant or 38 per 50 plants. Additionally, September provided four more weeks of unusually warm weather, perfect conditions for mating and egg laying. Beetles persisted into October as far north as Polk Co., indicating they had plenty of time to lay an abundance of eggs. If winter weather conditions prove favorable for overwintering rootworm eggs, growers replanting to corn can expect heavy larval populations and instances of severe lodging next spring.

Corn earworm – This first official influx of corn earworm moths in 2004 occurred on the evenings of August 22 and 23, following a storm cycle out of the southwest. By August 27 the much-anticipated late summer buildup of corn earworm moths had begun and the flight period was in full swing. During the first week of September unusually high pheromone trap catches were being reported from Sturtevant to Chippewa Falls. The Sturtevant cooperator reported a count of 295 moths from 8/26 to 9/2; 105 of those moths arrived on a single night. Counts at the West Madison Research Station were approximately 300 that same week, and as far north as Bancroft, Coon Valley and Chippewa Falls, counts of 175, 62 and 60 moths were registered, respectively. Based on these high trap counts, it seemed safe to assume that heavy larval infestations were likely to develop in susceptible fields. Later survey observations would support this forecast.

Aside from monitoring black light trap counts, and based on scattered reports from cooperators, DATCP has little way of knowing the outcome of late season development of corn earworm infestations. To remedy this situation in 2004, staff kept track of the number of corn earworm-infested ears at the same time the fall European corn borer survey was in progress, and at the same sites. While 89% of the 220 survey sites were mature fields, 11% of the fields were late to mature and still had ears fresh silks. These late fields, still with fresh silks, were highly attractive to corn earworm. In fact, counts of infested ears in these fields suggested that susceptible


Corn earworm

fields had corn earworm larvae in an average of 41% of the ears. There is no economic threshold for corn earworm in grain corn, but high value corn fields, such as seed corn and sweet corn, are very vulnerable to this

pest. Last, the survey protocol used to assess corn earworm numbers was by no means an exact science, but it does seem probable, based on survey findings, that much of the state's susceptible corn acreage sustained moderate to heavy populations of corn earworm larvae in 2004.

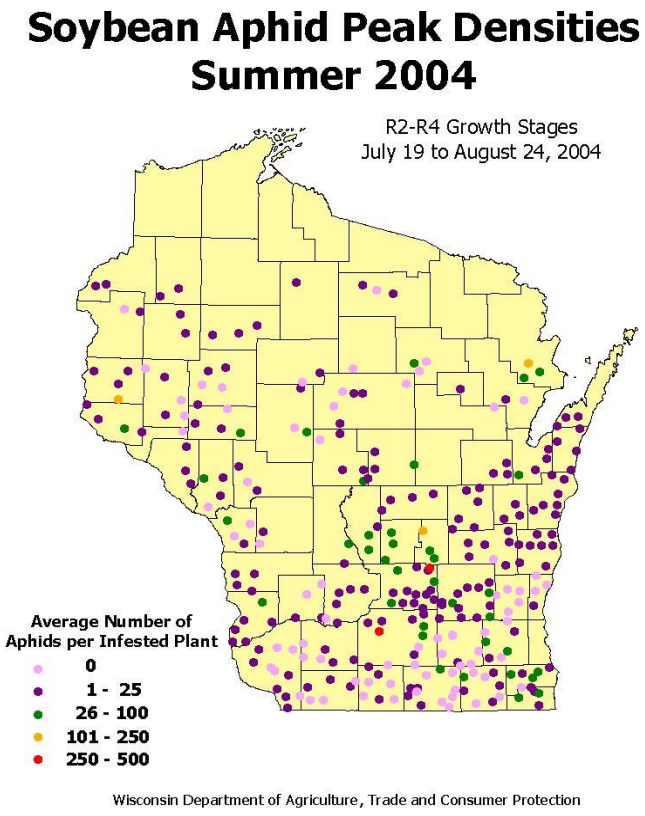
Forages

Alfalfa weevil – Alfalfa weevil, an insect that has been a relatively inconsequential alfalfa pest in recent years, made a surprising comeback during the spring of 2004. Adult activity resumed in late April, and spring-laid eggs began hatching near Madison by May 9. Larvae from overwintered eggs grew increasingly abundant throughout May, and by mid-month, 50%-60% tip injury larvae had become evident in hay fields throughout the southwest and south central districts. Compounding the larval pressure was the fact that alfalfa growth was delayed by temperatures that lagged 4-8 degrees below normal in late May/early June. Moreover, the state received record amounts of rainfall in May, and that prevented many farmers from getting into their fields to harvest first crop hay at the same time larval feeding was most concentrated. By early June, outbreak conditions had developed in a number of southern Wisconsin fields and tip feeding in many uncut fields far exceeded the threshold of 40%. A slight reprieve from the wet weather came around June 7, when farmers finally managed to cut first crop hay between the rain showers; however, by that time numerous fields were beyond harvest stage and most had been exposed to high populations of larvae for approximately two-three weeks longer than normal. Together these factors dramatically lessened the quality of first crop hay. When pupation began about June 16 near Madison, high rates of tip feeding and heavy populations of larvae existed in some fields. Numbers of larvae in second crop regrowth began to decline due to pupation by June 25 and by mid-July larval numbers had decreased to less than 4/10 sweeps. In most districts the potential for damage had passed. Numbers were low during the balance of the summer and through October, and subsequent hay crops fared far better than the first.

Potato leafhopper – While some scattered hotspots were reported in the southern and northeastern parts of the state, on the whole, 2004 was not a noteworthy year for the potato leafhopper. Migrants began arriving around May 21, but because of unfavorable weather conditions, leafhoppers got off to a slow start in 2004. Consistent and heavy rainfall throughout May suppressed reproduction early on, and kept counts below 0.5 per sweep in the southern tier of counties throughout May and into early June. The first sighting of nymphs was reported on June 5 by a Dane Co. resident, but it wasn't until June 14-18 that a substantial increase in nymph production began in regrowth alfalfa. In the south central district, counts of 0.8-3.2 adults/nymphs per sweep in 8"-12" fields were commonplace by mid-June. Although populations appeared to be rapidly and steadily increasing, wet conditions prevailed again around mid-month, effectively slowing a potentially damaging population of leafhoppers. Strong southerly winds over the July 4th weekend blew in more migrants, and by July 9, moderate to high populations could be found in many second and third crop alfalfa fields. Populations continued to build throughout July, and between July 16-30, conditions were most ideal of the 2004 season for development and reproduction of potato leafhoppers. Despite escalating leafhopper populations, by early August most alfalfa acreage seemed to be faring well. Shortly thereafter evening temperatures began to decline, significantly slowing potato leafhopper reproduction by mid-August. Nymph production decreased considerably between August 13-20, and only light populations persisted through fall. Although some heavy populations developed in isolated southern and northeastern alfalfa fields, very little economic injury was attributed to this pest in 2004.

Soybean

Soybean aphid – With each passing season, the soybean aphid continues to surprise and elude entomologists, DATCP's pest survey staff and farmers alike. Following



record levels of aphids in 2003, densities dropped to the lowest since soybean aphids were first detected in Wisconsin just five summers ago. 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. Aphid experts had predicted the possibility of lower aphid densities in 2004, but no one expected just how much lower they might be. For the first time since 2000, soybean aphids did not colonize an estimated 27% of the state's soybean fields. 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. The objective, as in past years, was to measure aphid densities during the R2-R4 stages of growth, when they would likely be at the highest levels of the season. Soybean aphids reappeared somewhat later than normal this year and populations grew at an atypically slow pace. Survey staff detected the first aphids of the season during the week of June 29 in Dane Co., compared to June 13 in previous years. As shown on the accompanying map, population densities declined dramatically in all districts. 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. Further, soybean aphids were not detected in 27% (80/293) of the soybean fields surveyed this season. In 2003, soybean aphids were not detected in only 1 of the 289 fields included in the survey.

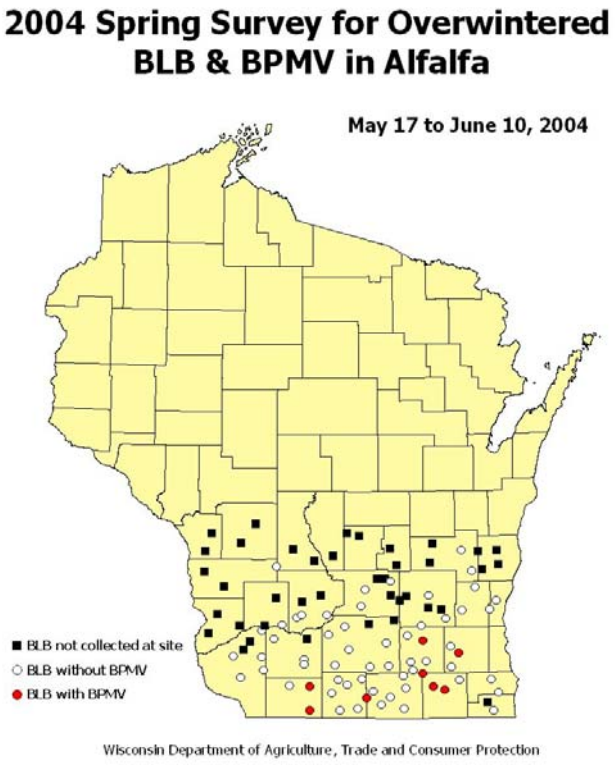
If soybean aphid populations are indeed cyclic, then 2005 may turn out to be another big year for the aphid. To the dismay of soybean growers, there's evidence to support this theory. University of Illinois-Extension entomologists are monitoring the fall migration of soybean aphids from soybeans to buckthorn (the primary host) to determine the potential for soybean aphids in 2005. Fall populations of flying soybean aphids may be indicative of relative densities from one year to the next. Soybean aphid migration is being tracked via nine suction traps that are in place throughout the state of Illinois. Based upon a limited amount of suction trap data from this fall and from previous years, David Voegtlin, entomologist at the Illinois Natural History Survey, warns that the potential exists for significant infestations of soybean aphids to develop in 2005. Fall suction trap catches of soybean aphids have been high enough to suggest that populations could build to economically important levels in 2005.

While 2004 was a light soybean aphid year, this pest has on more than one occasion demonstrated a remarkable capacity to rebound. Growers would be wise to err on the side of caution and expect the soybean aphid situation in 2005 to more closely resemble events of 2003 rather than 2004. 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. Current University of Wisconsin-Extension recommendations are based on an action threshold of 250 aphids per plant from the late vegetative through R3 growth stages, when populations are actively increasing.

Bean leaf beetle – In 2004, DATCP's pest survey staff conducted two separate surveys for bean leaf beetle and bean pod mottle virus (BPMV). The first took place between May 17 and June 10 and targeted overwintered beetles. The second survey was carried out between July 19 and August 24 and targeted second generation beetles. In addition to assessing beetle populations, beetles were collected and later processed using ELISA test kits to screen for the presence of BPMV.

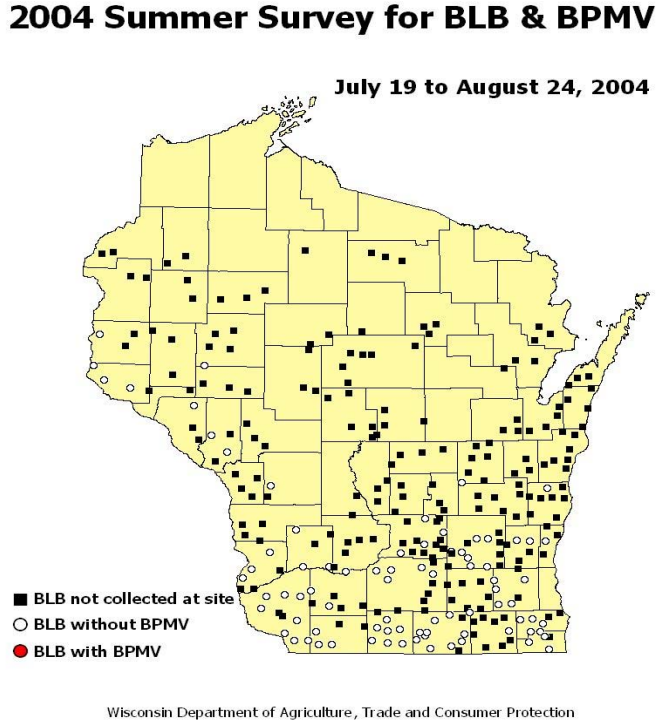
The objective of the spring survey for overwintered bean leaf beetles was to determine where beetles had survived the winter in Wisconsin. The survey found overwintered bean leaf beetles at 64 of 101 survey sites (alfalfa fields) located in the southern four tiers of Wisconsin Cos. When the overwintered beetles collected during the survey were later tested for the BPMV, beetles from eight of the 64 sites tested positive. The BPMV-positive beetles were collected from sites in Jefferson, Lafayette, Walworth and Waukesha Cos. Spring survey results demonstrated that bean leaf beetles were able to survive winter months in the southern one-third of the state, and that a small percentage of that overwintered population were carriers of BPMV. In turn, this indicated that BPMV transmission and direct bean leaf beetle feeding injury could be a problem for southern Wisconsin soybean growers in 2004.

Contrary to the above forecast, the bean leaf beetle did not develop into a significant pest in 2004. The summer bean leaf beetle survey, targeting second generation beetles, got underway on July 19 and continued through August. As part of the survey protocol, staff measured bean leaf beetle defoliation levels and collected beetles from 82 of the 293 soybean fields. The 82 individual beetles were tested for BPMV using the same ELISA method used to test beetles from the spring survey; all tested negative for BPMV. In addition to the beetles, 40 soybean leaf samples were collected from each field and tested for BPMV. No BPMV was found in any of the 293 soybean leaf samples collected during the soybean virus survey. Eileen Cullen, Field Crop Extension Entomologist at the University of Wisconsin-Madison, has been conducting similar research on bean leaf beetle and BPMV at the Rock County Farm near Janesville.



Her findings of negligible BPMV detection in 2004 are consistent with DATCP's.

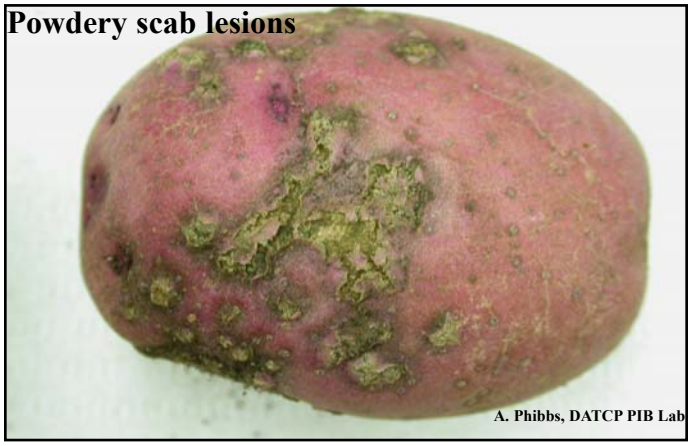
Results from the summer bean leaf beetle/BPMV survey suggest that early season growers should continue to closely monitor beetle activity both early and throughout the season, but that potential for early-season BPMV transmission need not factor into management strategies at this time. This, however, may not be a lasting trend, especially if we continue to see increasingly milder winters. In 2005 growers are strongly encouraged to regularly scout emerging soybean fields for bean leaf beetles and defoliation, especially early planted fields.



Potatoes

Powdery scab of potato – Powdery scab of potato (caused by *Spongospora subterranea f. sp. subterranea*) has been detected in two additional Wisconsin fields. In 2003, the disease was detected in Adams and Waushara Cos., during a survey of 65 potato fields in eight WI counties. The 2004 detections were in Oconto and Portage Cos., bringing the total number of counties in which the disease is known to occur to four, and the total of known infected fields to five.

Powdery scab is widespread in other potato-growing regions of the country and throughout much of the world. Tuber symptoms are similar to those of common scab (caused by Streptomyces scabies), though powdery scab lesions are usually round, and when mature have a fringe



of broken skin around the margin. Symptoms may also include galls on roots and stolons. Little direct yield loss has been documented for powdery scab. Infected tubers may be predisposed to increased postharvest problems. Spongospora is also the vector of potato mop-top virus (PMTV), though PMTV is not known to occur in Wisconsin.

Control measures for powdery scab should begin with planting seed potatoes free of the pathogen. Once the pathogen has been introduced into a field, control measures are only marginally effective. The pathogen produces robust spores, some portion of which will survive composting or passage through animals. Long rotations (ten years) may help reduce the incidence of the disease, but this is hardly a practical measure. Some varietal differences do occur, with russets reportedly much less likely to show symptoms. It is easier to

exclude the disease than to control it. We have information on the presumed origin of one specific infestation, and have detected the disease on seed stock before planting in two other cases. In one case, the disease probably came on Russian Banana tubers from Maine; in the seed stock interceptions, the pathogen was present on Mollis from Colorado. No powdery scab has been found in association with any Wisconsin seed potato producer.

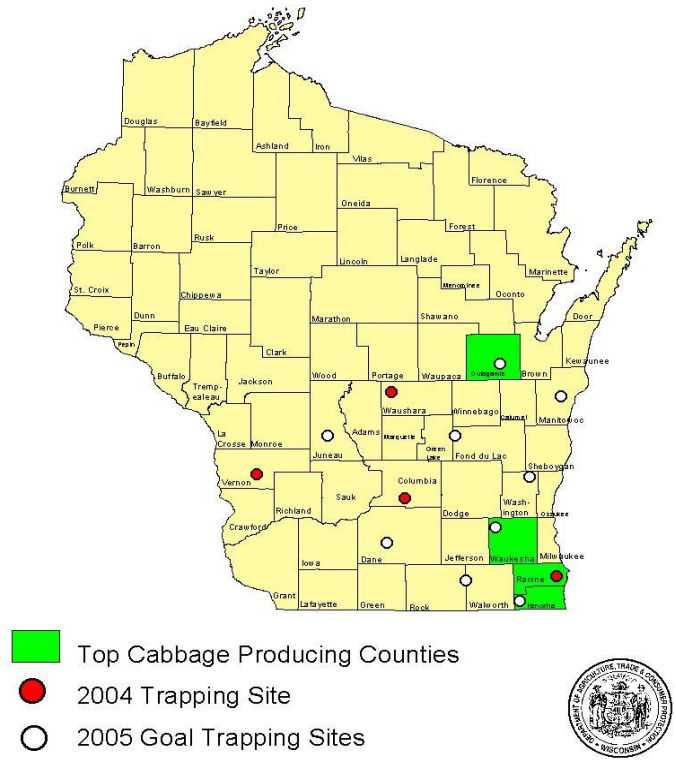
Vegetables

Cabbage looper – Back in November of 2002, a group of growers, processors and technical experts from Wisconsin and Minnesota met to identify key pest management concerns of the cabbage industry, including the need to establish a pest alert monitoring system for cabbage loopers. The Cabbage Looper Trapping Network, the latest cooperator network addition to DATCP's Pest Survey Program, was formed out of this meeting. Following a search for volunteers, a small group of Wisconsin cabbage growers from Columbia, Racine, Waushara and Vernon Cos. were recruited to use pheromone traps to monitor cabbage looper migration and activity in 2004. Cooperators reported their results to DATCP on a weekly basis, and counts and analyses were published in the Wisconsin Pest Bulletin. With this new system in place, growers were alerted to the arrival of loopers in Wisconsin, the peak of the first flight of moths, when to scout for first generation caterpillars, the peak of the second flight of moths, and when to scout for second generation caterpillars.

The first cabbage looper moths migrate to Wisconsin from the south typically around mid-July. This season loopers were greeted with below normal temperatures throughout July and early August. From July 15-22, the first week that counts were reported, loopers were present in Racine and Waushara Cos., with 19 and 4 loopers, respectively. During the last week of July, the highest moth count of the summer occurred in Columbia Co., where 52 moths were reported. In Vernon Co. activity remained light throughout the summer, with no more than 2 loopers reported in any week. As trap catches tapered off in early August, and temperatures dropped even further below normal, larval development of the first generation began. Columbia Co. was the only place where a second flight of moths was documented; during the second week of an unusually warm September, 10-15 moths were trapped every other night. Spraying at the Columbia Co. site prevented significant damage by the second generation larvae. In all other parts of the state, no significant larval damage was observed and no second-flight moths were captured in pheromone traps from mid-August through September. Although unusually warm weather occurred in the last weeks of summer, the cool weather in July and early August probably helped to inhibit mating, egg laying and larval development in most parts of the state.

Thanks to the four new cooperators who helped to get the program underway this year. Their time and effort is greatly appreciated and we look forward to their continued cooperation next season. We are also hoping that the network will grow next year, with a goal of adding nine more cooperators in 2005. If you are, or if you know a cabbage grower who is interested in joining the trapping network next season, please email Rachel Klein-Koth at Rachel.Klein-Koth@datcp.state.wi.us or call (608) 224-4544.

2004 Cabbage Looper Trapping Program and Goals



Apiary

Apiary Program – Apiary Program statistics showed a decrease in imported colonies from 41,165 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 showed a marked increase in varroa mite infested bee hives with 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 has also shown 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 Apiary Program (608) 266-7132.

Powdered Sugar Test for Varroa:. Brush bees into a jar with a screened lid and two tablespoons of powdered sugar. Roll the bees around to coat them with sugar. Leave them *bee* for a couple of minutes! Then shake the screened jar upside down over another glass jar to separate the mites from the bees. Pour water into the jar with the mites to dissolve the powdered sugar. Now you can see and count the mites!

Forest and Landscape

Sudden oak death – The final, final results are in: No sudden oak death (SOD) has been found in Wisconsin nurseries sampled in 2004. Staff targeted nurseries receiving nursery stock from California and Oregon because these would be the most likely to harbor the disease. A total of 31 nurseries were sampled for symptoms of what could possibly be SOD. An additional 18 samples were submitted by nursery inspectors during routine inspections and another eight samples were from homeowners or other cooperators. A total of 404 samples were examined and cultured by the Plant Industry Bureau laboratory. Four suspect samples were submitted to the USDA for further analysis but all were negative. Sampling will continue next spring at nurseries and garden centers around the state.

At the national level as of 10/14/2004: Four additional nurseries in Oregon were confirmed to have P. ramorum present. All were being tested as part of Oregon's Clean Stock Program. The USDA APHIS-PPQ Confirmed Nursery Protocol has been implemented at these sites.

Two plants will be added to the associated plant list, *Photinia fraseri* (Red tip or Fraser's photinia) and *Viburnum x rhytidophylloides* (Alleghany or Willowood Viburnum). Photinia was reported to be a host from Poland and the Viburnum species was found positive at one of the Oregon nurseries this week.

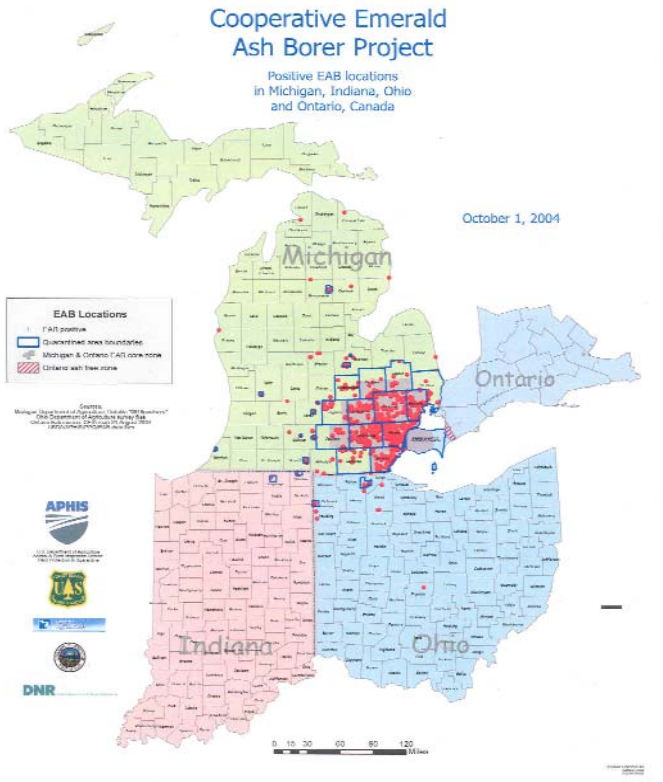
So far, a total of 163 confirmed positive sites have been found in 21 states. The total includes three residential finds; two in Georgia and one in South Carolina and one environs find in New York. The breakdown per State is: AL (3), AR (1), AZ (1), CA (53), CO (1), FL (6), GA (16), LA (5), MD (2), NC (9), NJ (1), NM (1), NY (1), OK (1), OR (18), PA (1), SC (4), TN (2), TX (11), VA (2) and WA (25).

The USDA APHIS-PPQ *P. ramorum* National Survey activities are complete in 21 of 23 participating Western Region States – (AK, AR, AZ, CA, CO, IA, ID, KS, LA, MO, MT, NE, NM, ND, NV, OK, OR, SD, UT, WA, and WY) and 28 participating Eastern Region states, including Puerto Rico (AL, CT, DE, FL, IL, IN, KY. ME, MI, MN, MS.NC, NJ, OH, PA, PR, TN,WI).Hawaii is not conducting surveys. The southern states that suspended their national survey activities until weather conditions were more conducive to *P. ramorum* symptom expression have resumed surveying. As of October 14, 2004, participating states throughout the nation surveyed 3,095 sites and collected 50,820 samples. A total of 15 national survey sites were confirmed positive.

Elm flea weevil – A mystery beetle found feeding on elm this past year has been positively identified as *Rhynchaenus alni*. Thsis is a new state record. Little is known about this particular insect except that it is fairly common in Europe. It spends its larval stage as a leaf miner in elm leaves. As an adult it feeds on the leaves leaving a shot-hole appearance. More survey work will be done next year to determine more precisely in what counties it is found.

Daylily rust – Daylily rust has been confirmed at two nurseries that imported daylilies from nurseries in the southern part of the United States. A survey of out-planted daylilies revealed at least one infected site. This site and several others will be monitored for daylily rust next year to determine if it can overwinter in Wisconsin. The last incidence of daylily rust in Wisconsin occurred two years ago and has not been seen at that nursery since.

Emerald ash borer - Six emerald ash borer (EAB) larvae found in ash trees in an apartment complex in Petoskey, Emmet County, MI were confirmed by Dr. James Zablotny on September 28, 2004. The specimens were collected from established trees planted 2-3 years ago. Eleven of 12 ash trees in the complex plantings show serious damage. Judging by older galleries and



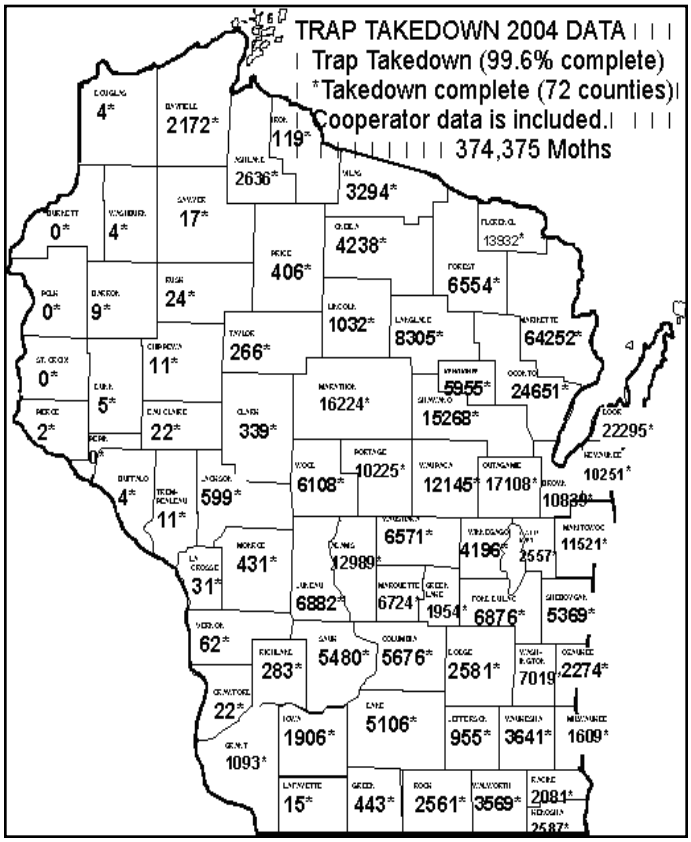
partial healing seen around some of the bark cracks, the infestation is at least two years old. Within 5/10 of a mile from this site are A nature conservancy property with a very large ash component in the natural forest and a commercial nursery that has previously handled ash nursery stock are within a half mile mile from this infestation

One EAB larva was found and confirmed in Pentwater, Oceana County, MI. The larva was found on established ash trees in Charles Mears State Park. The Emerald Ash Borer has not been found in Wisconsin.

Gypsy Moth

Gypsy Moth Trapping Program - Trappers have completed taking down all gypsy moth traps in Wisconsin. As of November 1, trappers have caught 372,777 male gypsy moths. Cooperators set an additional 275 traps for DATCP and caught 1,598 moths. The "unofficial" total for 2004 is 374,375 gypsy moths. This total is approximately half of the number of moths caught in 2003. The lower catch totals can be are attributed to heavy spring rains, cooler summer temperatures, a more aggressive treatment program, and optimal conditions for the *Entomophaga maimaiga* fungus, which kills gypsy moth larvae. Counties with the highest totals include: Adams (12,989), Brown (10,839), Door (21, 922), Florence (13, 932), Kewaunee (10,251), Manitowoc (11,183), Marathon (16,224), Marinette (64,252), Oconto (24,651), Outagamie (17,108), Portage (10,225), Shawano (15,268), and Waupaca (12,145). There were four counties with no catches: Burnett, Pepin, Polk, and St. Croix. While most counties saw a decrease in moth catch numbers, some did see an increase, most notably in the Adams/Juneau/Marathon County area. Our data is currently being checked for accuracy and an official total will be available in December.

Egg mass survey crews are now looking for new infestations of gypsy moth in the western part of the state. As of 11/1/04, surveyors have found 10 sites.



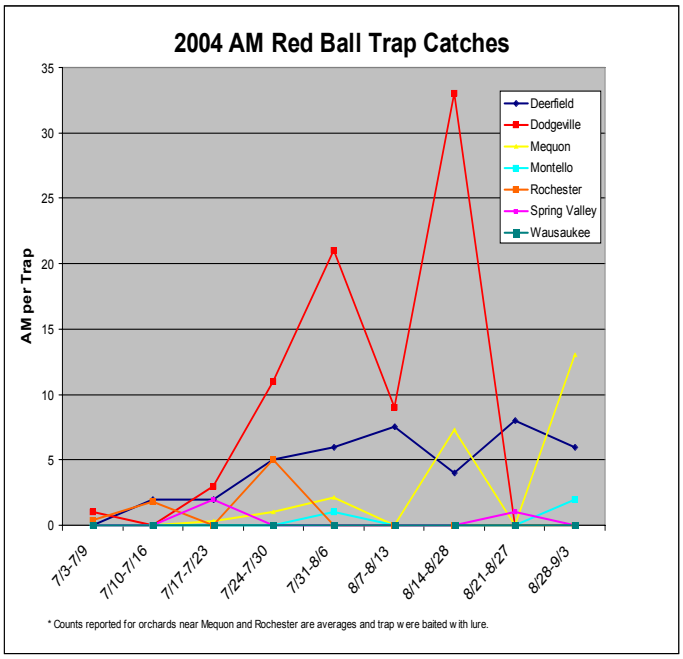
Clark County has 5 sites, Richland County 1 site, and Sauk County 4 sites. Egg mass surveys will continue until November 12.

Once all the trapping and egg mass survey data is processed and finalized, treatment and trapping plan proposals will be discussed for 2005. Information on these proposals should be available in early 2005.

If you have any questions about the GYPSY MOTH PROGRAM, please call our hotline at 1-800-642-MOTH or visit the Department's gypsy moth web site at http://www.datcp.state.wi.us, keyword "gypsy moth".

Fruit

Apple maggot – A number of variables converged to make 2004 an unprecedented year for the apple maggot, and a few theories have emerged to explain the record increase in AM this season. The most obvious and influential variable that promoted AM emergence this

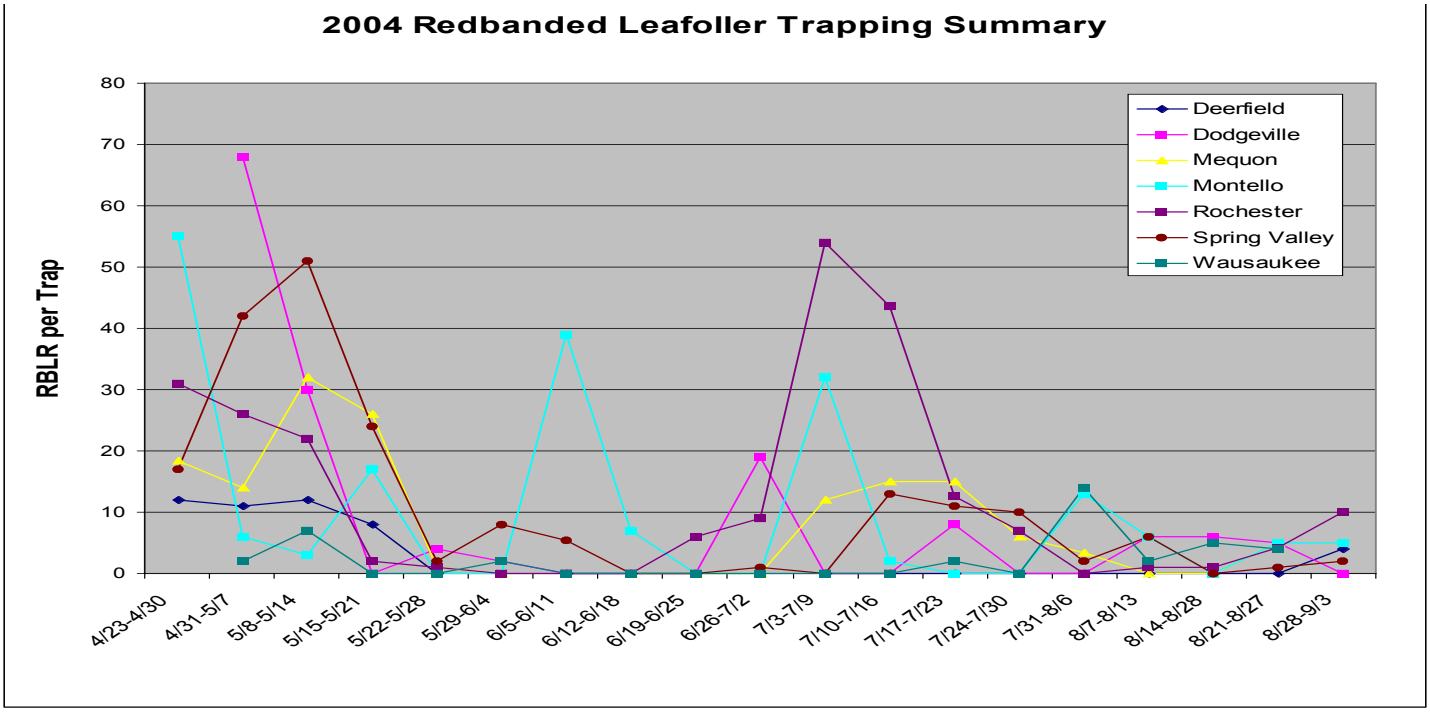


summer was the precipitation. Another theory, suggested by Orchard IPM Specialist John Aue, has to do with the events of 2003. He reminded us that a number of orchards suffered severe hail damage in 2003, and the aromatics released from the wounded fruits in these orchards could have attracted AM from wild trees within a mile or more away. He also noted that the combination of cessation of protectant sprays on severely damaged fruit and leaving these apples on the trees, provided a nice situation for the AM to establish. Another cooperator wondered whether the ammonia bait used to lure AM flies might have been reformulated, making it more attractive this season. All are plausible theories.

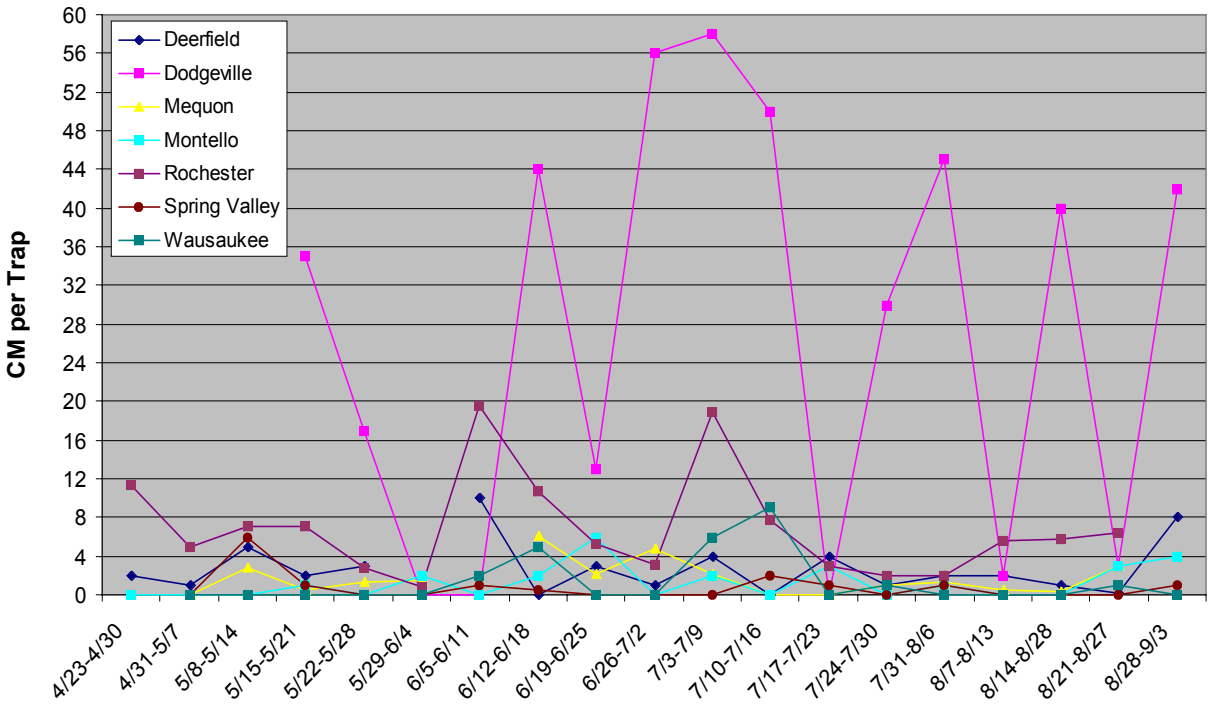
When apple maggot flies began emerging by July 2 there was little indication of what was in store for Wisconsin orchardists. Around July 23 red ball trap counts made a big leap up to 13 per trap at a Richland Co. orchard, and activity continued to escalate through the end of the month. By August 13 counts ranging up to 27 AM per baited red ball trap were being reported. During the week of August 20 the cooperators were reporting counts as high as 46 AM on a single red ball trap! That same week a trap at an orchard near Mequon caught 50 AM flies, while 32 at a site near Richland Center and 28 at Baraboo! Activity declined only slightly by September 3.

The good news is that 2004 populations are not necessarily indicative of things to come. AM generally don't all emerge the next year from their pupation sites in the soil beneath the trees, especially if soil moisture levels are less than ideal. The best defense against AM flies is either to trap them out using many, many traps (a minimum of 1 per tree), or to kill them before the females have the opportunity to oviposit. Bearing in mind the AM events of 2004, apple growers should be prepared to closely monitor AM activity in the season ahead. The threshold for AM on a baited red ball trap is 5 flies/trap/week and 1fly/trap/week on an unbaited trap.

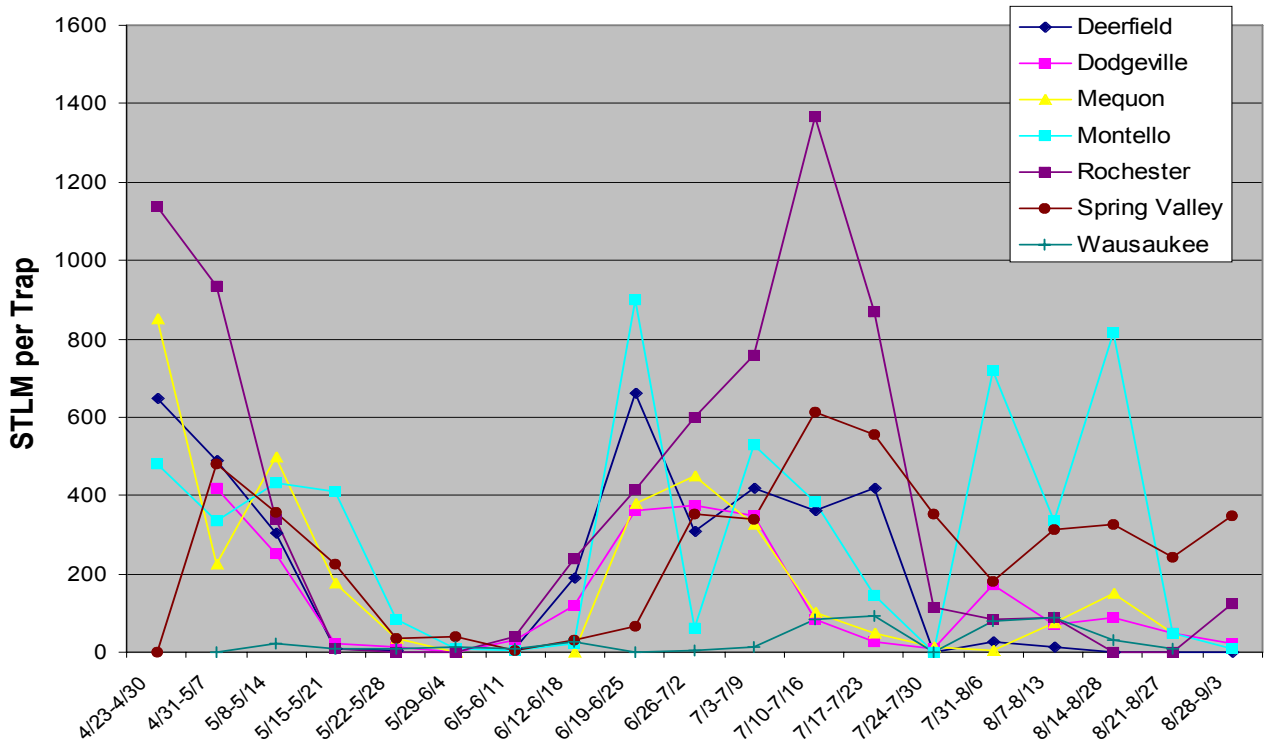
Exotic Fruit Moth Survey – During the 2004 trapping season, the 17-member cooperator network of apple insect trappers was enlisted in an effort to detect exotic fruit moths. From April through September, pheromone traps were used to monitor apple ermine moth (AEM), cherry bark tortrix (CBT), apple tortrix (AT), and fruit tree tortrix (FTT). Apple ermine moth suspects were trapped at two Racine and Waukesha Co. orchards this season; however, positive identification on these suspects has not yet been confirmed. The suspect moths were examined by USDA insect identifiers in Chicago, Illinois and Beltsville, Maryland, but identifying AEM is not a



2004 Codling Moth Trapping Summary

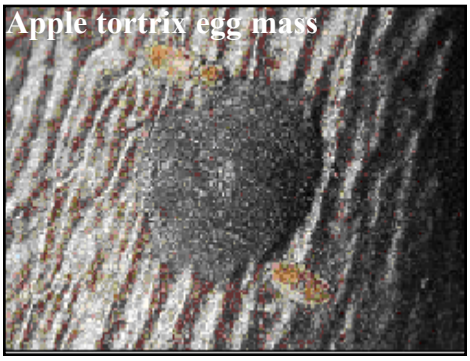


2004 Spotted Tentiform Leafminer Trapping Summary



simple matter. AEM is almost indistinguishable from another very closely related species, the cherry ermine moth. According to the USDA identifier who examined the AEM suspects, the ermine moth species are virtually identical in wing pattern and genitalia. Further, both species respond to the same pheromone, so trapping is not a reliable means of separating the two. The only accurate way to differentiate ermine moth species is by host plant. AEM only lays its egg on apple trees, while CEM only lays eggs on cherry trees. Accordingly, pest survey staff plan to do a November follow-up survey to look for AEM egg masses at the two southeastern Wisconsin orchards. If AEM egg masses are detected, then a positive identification of AEM can be established. If no egg masses are found, more extensive trapping will be needed in 2005.

The exotic fruit moth survey is a key tool in detecting the introduction and spread of these pests into Wisconsin. As demonstrated in 2001, when live AEM larvae were found at a nursery near Portage, Wisconsin, the possibility of accidentally introducing an exotic apple pest is very real. 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 was established and treatment was ordered. No established populations of AEM have been found in Wisconsin since then, but exotic fruit moths are present in parts of the Pacific Northwest and could be shipped here on nursery stock.


Apple tortrix egg mass

The four exotic fruit moths mentioned above are thought to be capable of overwintering in Wisconsin. Monitoring during the winter months, once the foliage has fallen, may be an effective way to detect exotics. The visible overwintering stage of AEM and AT is an egg mass, of FTT is a cocoon, and of CBT is a frass tube. AEM overwinter as young larvae inside the egg mass. Freshly laid egg masses are yellow, turn red two weeks later, then fade to dark gray. Egg masses are a flattened oval about ½ inch in diameter and are usually laid on a new shoot or an axil near a bud. CBT overwinter as larvae in various lifestages feeding on tissue inside the host tree. Reddish-orange frass tubes, about ¼ inch long, protrude from the bark of CBT infested trees, often near graft or wound sites. AT overwinter as an egg in a black egg mass on the tree branch or trunk. The egg mass is circular and 1/8 to ¼ inch in diameter. FTT overwinter as 3rd instar larvae in a cocoon woven at the base of the leaves or at a branch axil. Closely monitor any overwintering signs.

DATCP thanks the seventeen growers who took part in 2004 exotic fruit moth survey. Their time and efforts are greatly appreciated and we look forward to their continued exotic fruit moth survey efforts in the year ahead.

For information on the life cycle, appearance and damage symptoms of the exotic moths, refer to the April 2 edition of the Wisconsin Pest Bulletin.

Program Information

CHANGES IN DATCP PESTICIDE PROGRAMS — *(from Lori Bowman, Section Chief, Pesticide, Feed and Fertilizer Programs)*..Over the last several years, there have been many changes to the DATCP pesticide program staff and we are still in the process of change. It seems like a good time to update you on some of these changes.

We are currently in the process of recruiting for our Certification and Licensing Program Specialist. Applications for this position were accepted through mid-October, 2004. If all goes well, we will have a new specialist on staff in December, just in time for our busy licensing and certification time. I am the primary backup for questions for the Certification and Licensing program until the position is filled. Our Certification and Licensing program assistants, Bonnie Bruns and Shelby Richardson, are also here to assist you with licensing and certification questions.

The current directory of staff, contact information and program areas:

Pat Kandziora (608/224-4547): Special Registrations (special local needs, emergency exemptions, experimental and emergency use permits), ATCP 29 rule interpretations, integrated pest management and pesticide use in schools

Bonnie Bruns (608/224-4548) and Shelby Richardson (608/224-4552): pesticide applicator certification, pesticide business licenses, individual applicator licenses, restricted use dealer licenses, vet clinic licenses

Jean Kohlman (608/224-4536): manufacturer and labelers licenses and pesticide product registration

Roger Springman (608/224-4545): Wisconsin Clean Sweep Program and Worker Protection Program

Lorett Jellings (608/224-4541): private applicator record keeping

Ursula Petersen (608/224-4538): Endangered Species and Habitat program

Deb Viedma (608/224-4616): Landscape registry coordinator

Lori Bowman (608/224-4542): Pesticide, Feed and Fertilizer Programs Section Chief, chair of the ATCP 29 (Pesticide Use and Control) Rule Revision Committee, chair of the ATCP 30 (soil fumigation) Rule Revision Committee

NEW SOIL TEST AVAILABLE-- The Plant Disease Diagnostics Clinic (PDDC) at the University of Wisconsin-Madison is now offering additional tests for a variety of soilborne pathogens.

The PDDC currently offers soil testing for Aphanomyces euteiches, the cause of Aphanomyces seedling blight of alfalfa. This test requires a two gallon soil sample and entails growing four alfalfa varieties/breeding lines in the soil over a four week period and evaluation of the seedlings for disease symptoms. This test can identify whether Aphanomyces euteiches race 1 and/or race 2 are present in the soil and also provides information on the presence of Phytophthora megasperma, the cause of Phytophthora seedling blight. This test takes approximately six to eight weeks to complete (depending upon space availability) and costs $100.

The PDDC also offers a more general, non-specific test for oomycetous root rot pathogens (including Pythium, Phytophthora and Aphanomyces). This test requires two cups of soil and entails flooding approximately one cup of the soil with water (a 1:1 mix of sterile deionized water and filtered/sterilized Lake Mendota water), then floating citrus leaf pieces in the water. The citrus pieces bait oomycetous fungi. This test takes approximately two weeks to complete and costs $30.

This fall, the PDDC has begun offering soil testing for Verticillium, the cause of Verticillium wilt. This test requires two cups of soil and involves spreading the soil onto a specialized growth medium that preferentially grows Verticillium and allows for its identification and quantification. This test takes approximately four to six weeks to complete and also costs $30s.

If you have any questions regarding these or any other tests provided by the PDDC, feel free to call Clinic staff at (608) 262-2863 or email bdh@plantpath.wisc.edu.

BLACK LIGHT TRAP COOPERATORS NEEDED FOR 2005 - DATCP is looking for volunteers to operate black light traps during the 2005 and following seasons. Cooperators will be supplied with a trap, pest strips and moth identification materials. Those who are unfamiliar with the insects monitored using black light traps may be trained to identify 12-14 economically important moth species. Cooperators must be able to place the trap in a rural area within reach of electricity as the traps run on AC, and must be willing to report counts on a weekly basis to the Wisconsin Pest Bulletin. Anyone who is interested in participating in the 2005 black light trapping network should contact:Krista Lambrecht, Plant Pest & Disease Specialist, WDATPC-ARM, 2811 Agriculture Drive, Madison, WI 53708 or email krista.lambrecht@datcp.state.wi.us

Calendar

November 4-6 2004 Wisconsin Honey Producers Association Annual Fall Convention. Holiday Inn, Manitowoc, WI

December 1-2 100th Midwest Food Processers Association Convention & 77th Annual Processing Crops Conference. LaCrosse Center in LaCrosse, WI. Find registration information at http://www.mwfpa.org/events.html or contact MWFPA at 608-255-9946. Discount registration rates end November 12

January 9-11 Wisconsin Fresh Fruit & Vegetable Growers Conference Holiday Inn Conference Center, Stevens Point, WI. Cost $110 for 2 people from a farm, $85 for Association member. Contact WFMVGA at 920-478-3852

January 18-19 Wisconsin Cranberry School Wisconsin State Cranberry Growers Association. Chula Vista Resort, Wisconsin Dells, WI. Contact WSCGA at 715-423-2070 or wiscran@wctc.net

January 18-20 Wisconsin Fertilizer, Aglime & Pest Management Conference. Alliant Energy Center in Madison, WI

January 21-22, 2005 Wisconsin Christmas Tree Producers Association Winter Convention & Trade Show. Fox Hills Resort, Mishicot, WI. Contact WCTPA at 608-742-8663 or info@christmastrees-wi.org

February 11-13 Garden Expo sponsored by Wisconsin Public Television. Alliant Energy Center, Madison, WI

February 15-17, 2005 Wisconsin Potato and Vegetable Grower Association 2005 Grower Education Meetings. Holiday Inn, Stevens Point, WI. If you have any questions, or would like more information please contact the WPVGA at 715- 623-7683

February 25-26 Upper Midwest Organic Farming Conference. At the La Crosse Center in LaCrosse, WI. Cost $150, includes meals. Contact MOSES 715-772-3153.

Department of Agriculture,
Trade & Consumer Protection
Division of Agricultural Resouces Management
PO Box 8911
Madison WI 53708-8911

Web Site of the Week

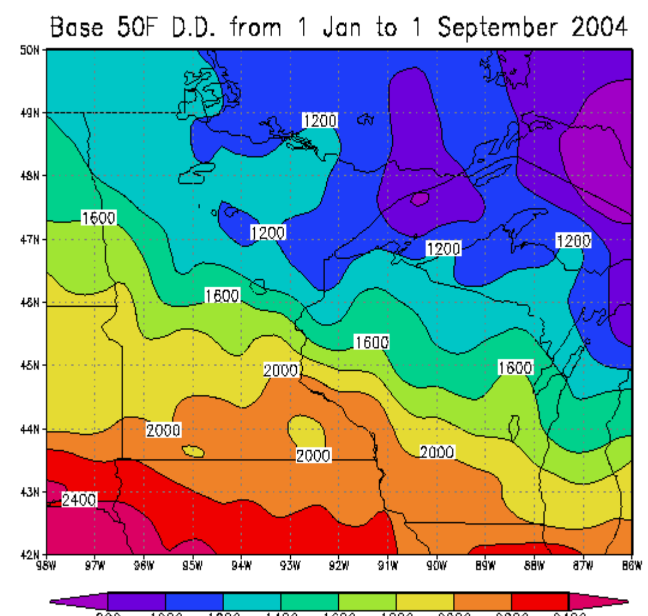
Healthy Farmers, Healthy Profits Project

http://bse.wisc.edu/hfhp/backgroundpage.htm

Ouch! My back! Tools and methods to help farmers prevent pain and injury, cost effectively of course.

Quote of the Week

Mud is the most poetical thing in the world. -R.H. Blyth



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