

Weather and Pests

Weather conditions moderated this week after what has been a decidedly unpredictable spring. Recent daytime temperatures have been warm and pleasant, though nighttime temperatures remain chilly throughout the central and northern regions of the state. Favorable planting conditions paired with unfavorable growing conditions have resulted in slow emergence and growth of both corn and soybeans. In contrast, alfalfa growth has progressed rapidly this season, and harvesting of first crop hay has begun in the southwest and south central districts. The timing couldn't be better. Levels of alfalfa weevil tip feeding injury are beginning to

Growing degree days from March 1 through May 26:

SOUTHWEST

Dubuque, IA	487	529	504	948
Lone Rock	456	484	459	883

SOUTH CENTRAL

Beloit	480	520	483	909
Madison	452	447	462	884
Sullivan	468	475	464	888
Juneau	442	437	446	861

SOUTHEAST

Waukesha	402	439	398	806
Hartford	388	407	389	791
Racine	322	392	324	709
Milwaukee	316	370	316	702

EAST CENTRAL

Appleton	340	298	332	704
Green Bay	280	255	276	639

CENTRAL

Big Flats	416	392	411	812
Hancock	400	362	395	787
Port Edwards	384	339	376	754

WEST CENTRAL

LaCrosse	461	482	481	907
Eau Claire	416	362	425	820

NORTHWEST

Cumberland	339	261	339	705
Bayfield	204	145	189	505

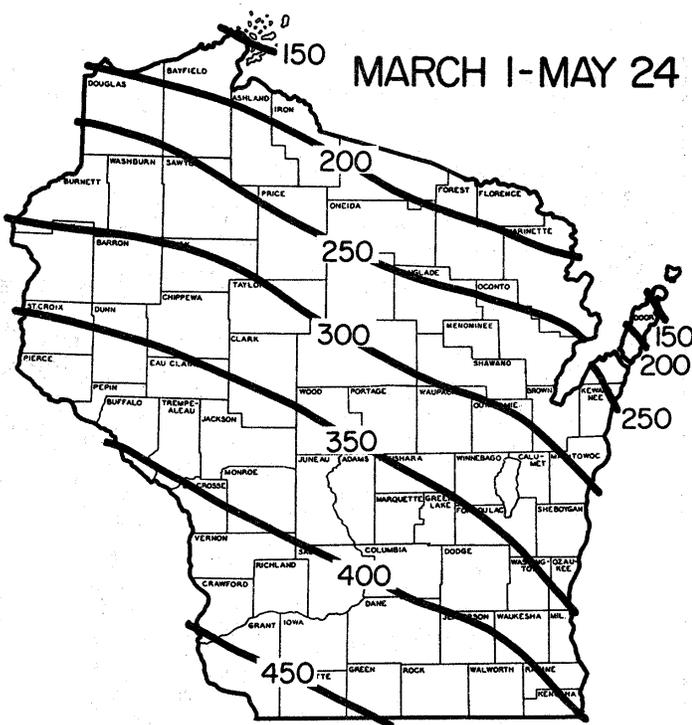
NORTH CENTRAL

Wausau	335	280	319	673
Medford	319	253	316	661

NORTHEAST

Crandon	296	232	269	607
Crivitz	266	210	249	601

*GDD above modified base 50° F, with no low temperature below 50° F or above 86° F used in calculation.



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

approach and even exceed the economic threshold in many southern Wisconsin fields. Although a well-timed harvest may temporarily reduce weevil populations, injury to second crop regrowth is highly probable.

Alerts

Apple growers – (*Words of caution from Orchard IPM Specialist John Aue*) For decades apple growers have been advised that the two most important sprays should be applied at petal fall and first cover; that may not be the case this season. Fluctuating temperatures have slowed development considerably, and it appears that this is one of those years when the movement of plum curculio into orchards may occur over an extended time period. John recommends keeping a watchful eye on fruits for oviposition scars, particularly in orchard perimeters, and holding off on spraying until treatment scarring is detected (assuming one does not need to spray for codling moth).

Aster leafhopper – The infectivity rate of the 2005 migratory aster leafhopper population has been determined. Approximately 2% of the aster leafhopper population are carrying the aster yellows phytoplasma. Aster leafhopper thresholds in carrots and lettuce are below.

Crop	Threshold
Lettuce	12-15 per 100 sweeps
Susceptible carrot varieties	25 per 100 sweeps
Resistant carrot varieties	50 per 100 sweeps

Looking Ahead

New Pest Bulletin Format – Readers can look forward to a noticeably different Wisconsin Pest Bulletin next week. The new and improved bulletin will contain the same forecasts and first alerts long-time readers have come to rely upon, but in a contemporary, more reader-friendly format. The new layout is a vast improvement over the old version, particularly for readers who view weekly issues on screen. Authors of the Wisconsin Pest Bulletin strongly encourage all readers to look to the new Web version, and as always, we welcome your comments and suggestions (especially the positive ones).

European corn borer – The first eggs of the season will be laid over the Memorial Day weekend in locations where 450 GDD₅₀ have accumulated. 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 are likely to attract higher than normal egg laying until corn grows at least 18 inches tall.

Potato leafhopper – Counts are running fewer than 0.25 adults per sweep throughout the southwest and south central portions of the state. Potato leafhoppers only recently arrived in Wisconsin, and we have yet to see

how quickly populations will build. A few days of high temperatures will accelerate leafhopper activity.

Although densities are low at this time, injury to second crop hay is always a distinct possibility.

Alfalfa blotch leafminer – Look for the characteristic comma-shaped mines to appear on alfalfa leaflets in the week ahead. High sweep net counts of adults (2-3 flies per sweep) suggest 2005 may be a big year for this occasional alfalfa pest.

Black cutworm – Reports of cutworm injury to corn from Sparta this week, combined with an escalation in pheromone trap captures, signal it is imperative for scouting to begin now. Before the guests arrive for the weekend cookout, make an effort to scout fields to ensure that cutworms aren't severing your corn seedlings. Corn is most susceptible to cutting by black cutworm larvae during the 10-14 days following emergence.

Codling moth – Southwestern and south central Wisconsin apple growers can expect codling moth eggs to begin hatching next week, once 491 GDD₅₀ have accumulated. Several light to moderate catches of moths occurred in orchards this week near Dodgeville, Gays Mills, Malone, Mequon, New Berlin, Oneida, West Madison and Rochester. The *biofix*, a sustained capture of five moths, has already occurred at several of these sites. Apple growers elsewhere should look for the *biofix* to take place in the coming week.

Proteoteras aesculana Riley – This codling moth imposter continues to invade codling moth pheromone traps in southeastern Wisconsin. Apple insect trappers are urged to be on the lookout for *Proteoteras* and other fruit moth contaminants in the coming weeks. See FRUIT section for additional information on codling moth imposters that may be trapped in orchards.

Eastern tent caterpillars – Abandoned tents in roadside wild cherry trees suggest that full-grown caterpillars have left the foliage of host trees and scattered in search of suitable sites to spin cocoons and pupate. Adults can be anticipated at 750 GDD₅₀.

Corn

European corn borer – According to the corn borer degree day model, the first flight of moths is in progress as far north as Wood Co. in the central region of the state. The number of moths captured in black light traps in the next few weeks will either substantiate or debunk the forecast for an exceptionally light first flight of moths this season. Based on last fall's record low population (0.10 borer per plant) we are anticipating a very light first flight of corn borers. The current moth flight is expected to peak around 631 GDD₅₀, or June 15

ECB	Black Light Catch (1 night)
10	a flight
25	a significant flight
100	re-infestation

in the Madison area. Egg laying in the days ahead, is likely to occur in hosts other than corn, as corn is not developmentally advanced enough at this time.

True armyworm – Once armyworm moths are spotted in field crops, lawns, or black light traps, it's time to begin scouting. Between May 5 and May 13, the first migration of true armyworm officially began and catches ranging from 9 to 39 moths were reported in black light traps across southern Wisconsin. While black light trap counts may hint that a large number of moths are in the area, counts do not necessarily indicate severe infestations will arise. On the other hand, light captures of moths do not always mean we're in the clear when it comes to armyworm problems.

Much like black cutworms, adults migrate to Wisconsin from the south in the spring and usually appear by late April or early May. After mating, clusters of greenish-white eggs are laid. Larvae emerge 7-10 days later and feed for 3-4 weeks. Fourth instar larvae cause irregular notching of leaf margins. Fifth and sixth instar larvae feed in the whorl and can strip leaf tissue to the midrib. Full-grown larvae pupate for an additional two weeks, then emerge as adults. There are three generations per season, with each generation lasting 5-6 weeks. The greatest damage to corn is typically caused by the last two larval instars in July.

Begin scouting when damage is first noticed. Wheat and no-till corn fields planted into a rye cover crop are especially prone to armyworm infestation, particularly the border rows. To scout for armyworm in corn, examine 20 plants in 5 different areas of the field. Record the number of larvae on each plant and only count larvae that are ¾ inch or smaller. Consider spot treatments when there is one armyworm per plant on 75% of plants, or if there are two armyworms per plant on 25% of the plants.

Black cutworm – Warmer temperatures have accelerated black cutworm development, and in many southern areas larvae have reached the 4th instar, the stage at which they've grown large enough to cut through corn seedlings. On average, this week's pheromone trap captures were the highest yet, suggesting it's time to start monitoring fields for signs of cutting. Scout closely for injury to seedling corn at 562-640 GDD₅₀ by the last week of May or the first week of June. When thresholds are exceeded, spot treatments may be beneficial. Consult UWEX publication A3422 for pesticide recommendations.

Black Cutworm Trap Catches through May 26			
Site	BCW	Site	BCW
Grant Co.*		Green Co.	
Benton	6	Cadiz Springs	3
Hazel Green	6	W Monroe	5
Sinsinawa	1	E Monroe	6
Dickeyville	8	Juda	5
Lancaster	2	Brodhead	2
Lafayette Co.*		Rock Co.	
South Wayne	10	Janesville	0
Gratiot	4	Avon	3
West Gratiot	7	Newark	7
Shullsburg	2	West Beloit	2
West Shullsburg	15	East Beloit	3
		Clinton	5

* Grant and Lafayette counts were from May 12-26

Forages

Alfalfa weevil – Populations have doubled, even tripled in fields where larvae were scarcely noticeable one week ago. The Dane, Iowa, Grant, Lafayette and Rock Co. fields surveyed this week showed levels of tip feeding ranging from 5-80%, and averaging 21%. The number of larvae ranged from 1-101 per 25 sweeps, averaging 23 per 25 sweeps (0.93 larvae per sweep). Fields in Adams and Marquette Cos. were still relatively undamaged by weevils, with fewer than 2-3 larvae per 10 sweeps and less than 20% tip feeding. Larvae netted during this week's surveys were in all stages of development; more advanced 3rd instar larvae were most numerous in the south. Scouting MUST be done this week in areas where 300-400 GDD₄₈ have been reached. In fields where tip feeding exceeds 40%, cutting a few days earlier than planned will help to prevent further loss.

As a quick reminder, assessing levels of tip feeding is very simple. Pull 30 stems from several different locations and count the number of stems that show evidence of tip feeding. Divide by 30 to calculate the percentage of tip injury.

Pea aphids – Aphid densities continued to build in alfalfa fields this week, but the presence of mummies is



an encouraging sign that parasitoids, particularly *Aphidius rosae*, are at work helping to control aphids. No winged aphids were sighted this week, meaning migration to pea fields remains a future event. Look for winged aphids to appear next week and anticipate an alfalfa-to-pea field migration in the next week or two.

Potato leafhopper – Because migrant adults just arrived in Wisconsin last week, populations of adults are not particularly high just yet. While counts are currently running about 0.25 per sweep in 24-32 inch hay throughout the southern tier of counties, growers can expect activity to pick up as soon as weather turns more favorable. Injury to second growth alfalfa is a distinct possibility. See the table below for economic thresholds for potato leafhopper in alfalfa.

Height of alfalfa (inches)	Ave. # PLH per Sweep (adults & nymphs)
< 3	0.2
3-6	0.5
6-12	1
12-14	2

Alfalfa plant bug – Nymphs were relatively numerous in Dane, Green, Grant and Rock Co. alfalfa fields. Counts ranged up to 2.5 adults and nymphs per sweep. Combined with tarnished plant bug adults and nymphs, counts increased to 3.5-4.5 plant bugs per sweep. The threshold for plant bugs in alfalfa 3 inches or shorter is 3 per sweep, and increases to 5 per sweep in alfalfa that is taller than 3 inches. All fields surveyed this week were within a few days of being cut, which should help to temporarily reduce plant bug numbers.

Soybeans

Bean leaf beetle – The third annual spring survey for overwintered beetles progressed as far north as Sheboygan Co. on the eastern side of the state, and Sauk Co. on the western side this week. A total of 126 alfalfa fields have been surveyed so far. Overwintered bean leaf beetles were collected from 43 of the 126 fields (34%). Grant, Green, Lafayette and Rock Cos. had the highest number of sites with beetles. As was the case in previous years, survey specialists found fewer beetles as the survey advanced northward.

The early soybeans expected to begin emerging in the week ahead will be magnets for bean leaf beetles, and could suffer severe defoliation. Growers are strongly encouraged to scout emerging soybean fields for bean leaf beetles. 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. Guidelines from Iowa State University suggest 2.0-4.4 beetles per plant at growth stage VC, 3.1-6.8 beetles per plant at growth stage V1, and 4.9-10.7 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>.

Soybean Rust – From Walt Stevenson, *UW Vegetable Plant Pathologist*: Many growers have been asking about soybean rust and movement in southern states. The public website for soybean rust (<http://www.sbrusa.net/>) reports: “Four counties in Florida have reported soybean rust on kudzu. Seminole County in Georgia remains the only county with a positive rust find on soybeans. This was found on volunteer soybeans and these plants are being eliminated. Scouting continues throughout the south and southeastern part of the United States. on kudzu and volunteer soybeans.” With funding provided by the Midwest Food Processors Association, we are planning an extensive evaluation of canning peas, dry peas, snap beans, lima beans and dry beans for their susceptibility to the soybean rust pathogen. We picked a field location near Jackson, MS because of its proximity to rust observation late last year and soybean production in the area. Our cooperator is patiently waiting for the rust pathogen to move over to Mississippi, but at the moment, our planting plans are on hold. We have explored alternative planting sites in Florida and feel that this is another option, should soybean rust begin to move. For the moment, we feel that the magic seeds are better in our suitcase than in the ground. At the first sign of movement off of kudzu to commercial soybeans, we will finalize our planting plans.

Vegetables

Thanks to Karen Delahaut, UW Extension Fresh Market Vegetable Specialist, for submitting all the articles in the Vegetable section this week.

Aster Leafhopper – Last week we learned that the number of aster leafhoppers carrying the aster yellows phytoplasma was at about 2%. Now that Ed Grafius, vegetable entomologist at Michigan State, has done the “reverse math” to calculate the number of aphids per 100 sweeps for each crop, a report of the threshold levels can be provided. Following are the recommendations:



Lettuce should be treated if there are 12-15 ALH per 100 sweeps; carrot growers should treat when there are 25 ALH/ per 100 sweeps for susceptible carrot varieties and 50 ALH per sweep for resistant varieties, including Amtou, Bercaro, Charger, El Presidente, Enterprise, Gold King, Growers Choice, GT 26 Dicer, Hi Color 9, Impak, Nanton, Nimrod, PrimeCut 59, Prospector, Raoleta, Revo, Rona, Royal Chantenay, Scarlet Nantes, Scarlet Nantes ST, Sierra, Sirocco, Six Pak, Spearhead, Tahoe, Textsun, Toudo, and Triple Play.

Black Cutworm – Pheromone trap catches of black cutworms escalated this week, with counts as high as 15 moths per trap in Lafayette Co. There are reports of “native” (those native to Wisconsin that overwinter here) cutworms doing a lot of damage to corn in Monroe County as well as near Mazomanie in Dane Co.

Black Cutworm Treatment Thresholds	
Crop	Threshold
Beans	2 larvae/row foot
Potatoes	4 larvae/row foot
Sweet corn	> 5% of plants damaged

Striped Cucumber Beetle – Striped cucumber beetles have been reported on cucurbits in an East Troy hoop house. Growers who have emerged or transplanted vine crops should be diligently monitoring for this pest! The smaller the seedling/transplant, the more direct feeding damage these cucumber beetles can cause. In addition to the direct feeding, cucumber beetles are the vector for bacterial wilt, a disease that is particularly damaging to cucumbers and muskmelons. Treatment is warranted when there are more than 4-5 beetles per 50 plants. High beetle populations (greater than 20 per plant) will overwhelm the ability of any insecticide to control this insect quickly enough to stop the transmission of the wilt-causing bacteria. Organic growers must plan ahead, practice crop rotation, and avoid planting cucurbits in the same place two years in a row. Also, to exclude beetles before they have the opportunity to get to the crop, immediately cover emerged seedlings or transplants with floating row covers, making sure that all edges are secured. For more information go to <http://cecommerce.uwex.edu/pdfs/A3751-E.PDF>



Colorado Potato Beetle – An adult Colorado potato beetle was spotted on a central Wisconsin farm last Tuesday. If the adults are active in the central sands, they are likely active in the southern part of the state as well. A report was received from East Troy that adult Colorado potato beetle, eggs, and first instar larvae are present in fields there. Growers should begin monitoring their potato and eggplant crops for adults and eggs. Treatments should be timed to target first and second instar larvae.

Potato Leafhopper – This annual pest of potatoes and beans blew in on winds last Wednesday. This insect has a wide host range, but is particularly problematic and can cause economic injury to snap beans and potatoes. Before their preferred hosts emerge, leafhoppers take up residence in alfalfa until the alfalfa is cut, at which time they migrate to other hosts (including nursery stock). Populations are still low at this point, and we will continue to provide updates as their numbers progress. Find threshold levels for snap beans and potatoes at http://cecommerce.uwex.edu/pdfs/A3723_e.PDF

Flea Beetles – This week Karen Delahaut received word of flea beetles decimating cole crops, followed by the strong recommendation “never to plant cole crops!” Karen says that farmers who have ever tried to grow something like mustard greens or any of the cole crops to sell as a leafy green, know what she is talking about. Fortunately, broccoli, cauliflower, and Brussels sprouts can still be marketed despite flea beetle feeding damage. Growers of cole crops, spinach, beets and any salad mix that contains mustards, should be utilizing row covers to prevent damage. It is also very important to practice crop rotation to avoid trapping flea beetles from the previous year beneath the row cover. For more information on Flea Beetles, visit http://cecommerce.uwex.edu/pdfs/A3720_e.PDF .

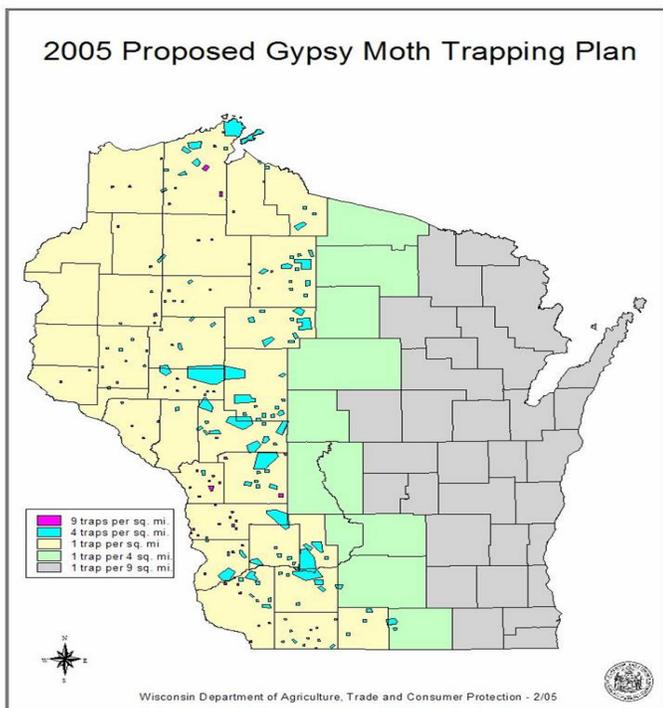
Gypsy Moth

Gypsy moth trapping - Trapper training was completed this week and traps are now being set in many Wisconsin counties. As of May 25th, over 1,500 traps had been placed. The first official report of trap captures will be included in next week’s issue of the Wisconsin Pest Bulletin. Trappers are scheduled to set nearly 38,000 traps statewide this summer, a process that will take approximately four to five weeks to complete. All traps should be up by the week of July 4th. Gypsy moth trappers carry a picture I.D. card, wear an orange or green safety vest and have vehicle placards identifying their car or truck as part of our program. Trappers cannot start work before 6:00 a.m. or work after 6:00 p.m. They do not work on weekends. Trappers are instructed to ask for permission to set traps on private property or leave a notice that a trap has been placed if

no one is home. We sincerely appreciate landowner permission in allowing our trappers to set traps on private property. Most traps are set along the rights-of-way of roads, but there are also many set off the road as part of our more concentrated delimitation trapping.

Questions about the GYPSY MOTH PROGRAM?
Please call our hotline at 1-800-642-MOTH or visit our website at:

<http://www.datcp.state.wi.us/arm/environment/insects/gypsy-moth/>



Forest and Landscape

Northern cedar bark beetle – Several factors were determined to be causing the demise of a large number of columnar arborvitae at a Racine Co. residence this week; one was the Northern cedar bark beetle. Weakened by mower injury to the base of the shrubs as well as arborvitae leafminer, the bark beetles were the final blow to these plants. The northern cedar bark beetle (*Phloeosinus canadensis*) attacks weakened, recently transplanted, or dying cedars. Often the first symptom of attack is a thinning and dying back of the foliage. Closer inspection reveals minute holes approximately 2 mm in diameter in the bark of the trunk and the branches. Branches as small as 1 cm in diameter may be attacked. Eggs are laid closely spaced in deep niches in the wood. Both larvae and adults can damage arborvitae. Larvae feed in the cambial layer and can girdle the branches and the trunk, while adults feed on the bark. Bark beetles often go undetected until populations are high and irreparable damage has been done. Healthy cedar trees and shrubs usually are not attacked. Hence, maintaining cedars in good condition will greatly reduce the chances

of an infestation from developing. Infested shrubs should be removed, as these are sources for further bark beetle spread.

Botrytis blight (*Botrytis cinerea*) – Light to moderate amounts of botrytis blight were found throughout the state at various nursery dealers. When night-time temperatures are cool, day temperatures are warm, and moisture high, the fungus readily sporulates on leaves, covering them with grayish brown dusty masses of spores. To reduce the incidence of botrytis blight, improve foliage drying and reduce moisture condensation on foliage during the night. Botrytis blight can affect plant species in different ways (see table). Peony and tulip are affected by *Botrytis peoniae* and *Botrytis tulipae* respectively.

On most susceptible plants, new infections may begin in the spring as soon as weather conditions are favorable for disease development. Wet or very humid weather may be highly favorable for the spread of the disease. For some *Botrytis* spp., sclerotia develop in dead plant tissue and form the overwintering stage of the fungus. Fungal mycelium may also overwinter in woody stem debris. Sclerotia then germinate in the spring, or mycelium grows out of infected debris and conidia (infectious spores) develop. Conidia may be windborne or rain-splashed to cause new infections on susceptible host tissue.

Botrytis Symptoms and Host Plants

Leaf Spots or Blights

Beet
Begonia
Chicory
Crucifers
Cucurbits
Dogwood
Eggplant
Endive
Geranium
Hawthorn
Hydrangea
Lettuce
Onion

Cankers or Shoot Blights

Pansy
Peony
Pepper
Periwinkle
Potato
Rhubarb
Rutabaga
Shallot
Tomato
Tulip
Turnip
Violet

Bud Blast Fruits or Bulb Rot

Chrysanthemum Bean
Dahlia Cucurbits
Dogwood Eggplant
Geranium Grape
Hydrangea Onion
Marigold Pepper
Peony Raspberry
Petunia Strawberry
Rose Tomato
Sunflower Tulip
Sweet Pea Rose
Tulip Snapdragon
Zinnia Tulip

Flower Blights

Anemone
Asparagus
Calendula
Chrysanthemum
Fuchsia
Geranium
Heather
Hydrangea
Peony
Periwinkle

The best way to manage this disease is by inspection and sanitation. While inspecting plants carry a paper bag for sanitation. Remove faded or blighted flowers, blighted leaves, or entire plants infected at the base and place them in the paper bag so that they may be discarded with the trash or burned. It is best not to do any sanitation when plants are wet with dew or rain since this could spread fungal spores during conditions which favor infection. Likewise avoid overhead watering, syringing, or misting plants especially if Botrytis blight has been troublesome in the past. To promote rapid drying of plants, space them to allow good air circulation.

Remember that this fungus can overwinter as tiny, black sclerotia embedded in dead plant tissue. Therefore, practice sanitation every autumn. Remove plant debris from the garden, cut stalks at or below the ground level, and destroy or discard this plant debris.

Fungicidal sprays may also help by protecting plants from infections. Apply these when spring weather is continuously cool and wet or if Botrytis blight has been a problem the previous year. There are many effective fungicides for use against Botrytis spp. but products vary greatly depending on the site and type of plant to be treated. Each fungicide is registered for use on different plants or groups of plants, so be certain the plant which will be treated is listed on the label. Some fungicides with the active ingredients chlorothalonil, mancozeb, potassium bicarbonate, and thiophante-methyl may be registered to treat some plants in the home landscape. For more information go to the following website: http://www.umass.edu/umext/floriculture/fact_sheets/pest_management/botrytis.html.

Impatiens necrotic spot virus (INSV) – A few flats of Impatiens at nursery dealers in Marathon and Wood Cos. were infected with this virus. Plants were ordered removed and destroyed. INSV is transmitted primarily by the western flower thrips. See last weeks bulletin on tomato spotted wilt virus for more information.

Columbine leafminer – The first find of columbine leafminer was made at a nursery dealer in Columbia Co. this week. Mines were widespread throughout the containers of columbine. Although aesthetically displeasing, columbine leafminer is rarely damaging and usually requires no control efforts.

Anthraxnose – River birch at a nursery dealer in Dodge Co. had light-to-moderate amounts of leaf spotting caused by this fungus.

Weir's cushion rust – Colorado spruce at a nursery dealer in Oneida Co. were found to be infected with this rust fungus. The origin of the nursery stock is not known at this time.

Cedar-hawthorn rust – Light-to-moderate amounts of

this leaf rust were found on Washington hawthorn at a nursery dealer in Dodge Co.

Fruit

***Proteoteras aesculana* Riley** – Since mid-April this codling moth imposter has been appearing in codling moth traps placed in southern Wisconsin orchards. It is not well understood why *Proteoteras*, a codling moth look-a-like, turns up specifically in codling moth traps. Although the two species look very similar, the physical appearance of a moth should have little to do with the attraction to the specific pheromone produced by females of the species. *Proteoteras* is smaller than codling moth, attaining a length about 8 mm long, with a wingspan of 18 mm. *Proteoteras* can be separated by the tufts of scales on the front wing. *Proteoteras* is not considered an apple pest.



Eyespotted bud moth – *Proteoteras* isn't the only moth that may be confused with codling moth. Eyespotted bud moth is a second species that occasionally contaminates codling moth pheromone traps. This moth is smaller than both *Proteoteras* and codling moth, with a body length about 6 mm and a wingspan of 14 mm. Further, eyespotted bud moth has a wide gray-white band across each forewing. Eyespotted bud moth is an introduced, minor pest of apples.



Codling moth – Now that the first flight of the season is underway throughout much of the state, cooperators planning to use pheromone traps to time sprays should monitor traps on a daily basis until the biofix occurs. As a reminder, the biofix is the



starting date of the first sustained flight of five male moths. Sprays to control codling moths should be applied 250 GDD₅₀ after the biofix to target newly emerged larvae. A second application may be necessary 14-21 days following the first application. In addition to pheromone trapping, regular scouting and the use of degree day models are also critical in timing sprays. The predictive degree day model below may be used to time codling moth development:

CM Event	GDD ₅₀
1st flight begins	201 - 340
1st egg hatches	491
1st flight peak	500
Egg hatch 50% complete	713
2nd flight begins	873 - 1296
2nd flight peak	1577

Frost injury – Frost injury has been a major source of anxiety for both apple and strawberry growers this spring. In the case of strawberries temperatures a few weeks ago dropped low enough to damage both the first flower buds and the king flower, the flowers that bear the largest fruits. UW Extension Horticulture Specialist Bob Tomesh has forecasted smaller strawberries later this season resulting from early May frost damage.

Meadow spittlebug – Meadow spittlebugs are generally only a nuisance in strawberries because pickers have an aversion to getting their hands smeared with the spittle masses; however, when present in large numbers, the

nymphs can actually weaken plants and distort the leaves and berries. In strawberries the nymphs are most commonly 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 one spittle mass per square foot. Because meadow spittlebugs tend to be more abundant in weedy strawberry fields, good weed control practices will help to prevent serious infestations from developing.



Black Light Trapping Results												
Trap Site	Date	ECB	True AW	Fall AW	BCW	DCW	SCW	VCW	WBCW	CabL	CeL	CEW
Southwest												
Lancaster	5/16-5/26	1	9	1	1	0	0	1	0	0	12	0
South Central												
Arlington	5/20-5/25	0	1	0	0	0	0	1	0	0	0	0
Mazomanie	5/19-5/26	1	3	0	1	0	0	0	0	0	0	0
West Madison	5/19-5/26	0	2	0	3	0	0	1	0	0	3	0
Southeast												
Eagle*	5/20-5/25				1			2		2		
East Troy	5/20-5/26	20			1		1	1				
Janesville	5/14-5/20	0	15	0	0	0	0	1	0		1	0
s	5/21-5/26	0	41		2			4			10	
West Central												
Sparta	5/20-5/26				2		1	1			7	
East Central												
Manitowoc	5/21-5/27	0	11	0	2	0	1	0	0	0	2	0
North Central												
Wausau	5/19-5/26	0	0	0	0	0	0	0	0	0	2	0
Marshfield	5/19-5/26	0	4	1	0	0	0	1	0	0	0	0

*Correction: last week counts for Janesville 1 were actually from Eagle (note there were 5 ECB)

ECB, European corn borer; AW, armyworm; BCW, black cutworm; DCW, dingy cutworm; SCW, spotted cutworm; VCW, variegated cutworm; WBCW, western bean cutworm; Cab L, cabbage looper; CeL, celery looper; CEW, corn ear worm

APPLE INSECT TRAPPING RESULTS

	Date	STLM	RBLR	CM	OBLR	PC
Crawford Co.						
Gays Mills 1	5/15-5/22	81	7	6		
	5/15-5/22	63	4			
Gays Mills-W2	5/18-5/24	0	20	0	5	
Gays Mills-E2	5/19-5/26	100	3	12	0	
Iowa Co.						
Dodgeville	5/19-5/26	14	3	16	0	
Richland Co.						
Hill Point	5/18-5/24	10	2	0	0	
	5/11-5/17	65	5	0	0	
Richland Center -W	5/9-5/26	25	8	1	0	
Richland Center - E	5/19-5/26	65	9	0	0	
Sauk Co.						
Baraboo	5/19-5/26	28	2	0	0	
Dane Co.						
Deerfield	5/18-5/26	4	7	9	1	
West Madison	5/20-5/26	0	0	4	0	
	5/13-5/20	4	16	0	0	
Green Co.						
Brodhead	5/19-5/26	0	0	0	2	
Racine Co.						
Raymond	5/14-5/26	41	28	0	3	
Rochester	5/19-5/26	180	12.5	4	0	0
Kenosha Co.						
Mequon	5/20-5/26	250	5	0.5	0	
	5/13-5/20	275	6	0		
Waukesha Co.						
New Berlin	5/14-5/26	26	2	6	5	
Pierce Co.						
Beldenville	5/19-5/26	105	2	0	20	
Spring Valley	5/20-5/27	80	14.5	0	0	0
Jackson Co.						
Hixton	5/18-5/24	20	12	0	0	
Trempealeau Co.						
Galesville	5/20-5/26	11	4	0	0	
Marquette Co						
Montello	5/15-5/22	552	42	0	0	1
Brown Co.						
Oneida	5/16-5/23	250	30	1	0	
Sheboygan Co.						
Plymouth	5/20-5/27	122	21	1	0	
	5/13-5/20	550	27	1	0	
Fond du Lac Co.						
Campbellsport	5/16-5/23	400+	45	0	0	
Malone	5/19-5/26	45	0	6	0	
Rosendale	5/19-5/26	46	18	1	0	
Marinette Co.						
Wausaukee	5/20-5/27	106	5	0	0	

STLM, Spotted tentiform leafminer; RBLR, red banded leafroller; CM, codling moth; OBLR, oblique banded leafroller, PC, plum curculio



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Web Site of the Week

Global Invasive Species Database

<http://www.issg.org/database/welcome/>

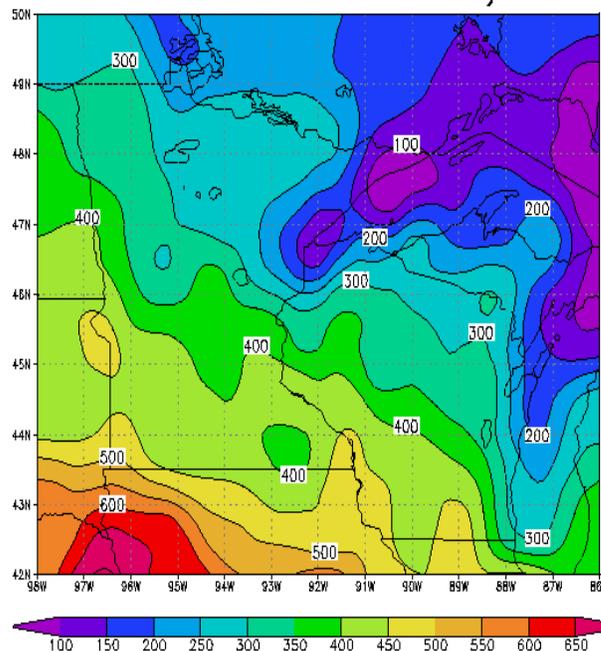
What is that weed that seems to be taking over your garden? Is that giant land snail native to Wisconsin? And is that an invasive insect chewing holes in your firewood? Find the answers at the web site of the week.

Quote of the Week

There is little chance that meteorologists can solve the mysteries of weather until they gain an understanding of the mutual attraction of rain and weekends.

~Arnot Sheppard

Base 50F D.D. from 1 Jan to 25 May 2005



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