Volume 60 No. 09 June 18, 2015

WISCONSIN PEST BULLETIN

Timely crop pest news, forecasts, and growing season conditions for Wisconsin

STATE OF WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION PLANT INDUSTRY BUREAU
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WEATHER & PESTS

Unsettled weather throughout the week maintained adequate to surplus soil moisture for summer crop growth. Overcast skies and mild temperatures prevailed, while repeated rounds of showers and thunderstorms created very wet soil conditions across the northern and western areas. High temperatures were near normal for mid-June and ranged from the 70s to lower 80s. Lows were in the mid-40s to mid-60s. The showers interrupted post-emergence herbicide applications, codling moth treatments, and late alfalfa harvesting, but there were enough days suitable for fieldwork to proceed between rains. Crops are faring very well despite excess June precipitation, and recent warmer temperatures have spurred plant growth statewide. The most advanced corn has reached the eight-leaf (V8) growth stage and soybeans are likely to enter the initial reproductive stages (R1) before the end of the month.

LOOKING AHEAD

EUROPEAN CORN BORER: The treatment window for first-generation larvae has opened near Janesville, La Crosse, Madison, Spring Green and other advanced locations. Close inspection of susceptible corn and Bt refuge areas is advised during the next two weeks to determine the percentage of whorls infested with small larvae. Conventional or organic treatments directed against the early instar stages must be applied before boring into stalks and midribs begins around 1,100 degree days (modified base 50°F).

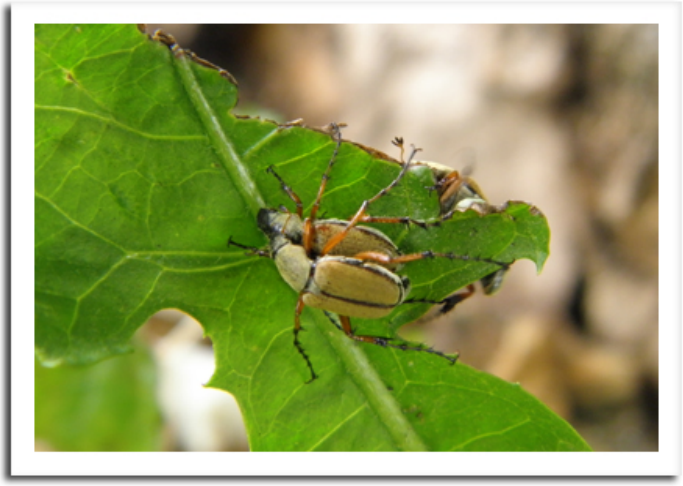
APPLE MAGGOT: Degree day accumulations in portions of southwestern and south-central Wisconsin are adequate for fly emergence. Red sphere and yellow sticky traps should be placed at this time to detect the earliest emerging adults. The treatment threshold for apple maggot remains at five flies per trap per week for traps enhanced with ammonia attractant and one fly per trap per week for unbaited traps.

WESTERN BEAN CUTWORM: The annual trapping survey has started and the results obtained over the next nine weeks are expected to reveal the peak emergence period, potential problem areas, and the relative abundance of western bean cutworm adults in 2015. The first moths could begin collecting in pheromone traps before the end of the month.

CORN ROOTWORM: Research indicates that 50% of overwintered eggs hatch between 684 and 767 degree days (modified base 52°F), a threshold expected to be reached by June 24 near Madison. Evidence of root injury should become noticeable in heavily infested fields next month, particularly where soils remain saturated. The first beetles customarily appear around July 4.

JAPANESE BEETLE: Emergence of the first beetles of the season was noted on June 10 on the UW-Madison campus. Damage to fruit trees, ornamentals, nursery stock and field crops should be anticipated during the next two months. Populations of this beetle are now established as far north as Barron County in northwestern Wisconsin and Oconto County in the northeast.

ROSE CHAFER: This defoliator has been observed on perennials, field crops, and in home gardens since the last report. The adults deposit eggs in the soil that hatch into grubs which feed on the roots of grasses, weeds and garden plants. Beetle populations and damage are expected to increase during the next 3-4 weeks, especially in areas of the state with sandy soils.



Rose chafer beetles *Krista Hamilton DATCP*

TRUE ARMWORM: An extremely large flight of 539 moths was registered in the Janesville black light trap from June 11-16. The Ripon monitoring site also reported a significant capture of 112 moths. This development emphasizes the need for continued monitoring of corn, wheat and other susceptible crops for first-generation larvae through July.

SLUGS: Surplus rainfall this month has favored activity by these nocturnal pests. Light to moderate defoliation is common in corn and soybean fields in the west-central and northern areas, and problems are likely to continue as long as wet weather persists.

FORAGES & GRAINS

ALFALFA WEEVIL: Damage is expected to subside by July as remaining third and fourth instar larvae enter the non-feeding pupal stage. Larvae are common but not numerous in second-crop alfalfa. The average count from June 11-17 was below 0.1 per sweep and leaf tip feeding was less than 10% in surveyed fields.

PEA APHID: This insect continues to be the most abundant alfalfa pest. Densities currently range from 1-14 per sweep and average three per sweep. The rainy, humid weather of the past two weeks promotes the spread of fungal pathogens that regulate these aphids and could cause populations to collapse before the end of the month.

MEADOW SPITTLEBUG: The adult stage of this insect was swept from alfalfa in Dane, Grant, La Crosse and Trempealeau counties, signaling the population has matured and their distinctive spittle masses will not reappear until next spring.

POTATO LEAFHOPPER: Counts in alfalfa remain low. The highest number found in the last reporting period was

DEGREE DAYS JANUARY 1 - JUNE 17

LOCATION	50°F	2014	NORM	48°F	40°F
Dubuque, IA	926	—	851	943	1501
Lone Rock	879	—	—	900	1414
Beloit	924	—	863	937	1490
Sullivan	676	—	792	700	1151
Madison	856	—	818	874	1374
Juneau	762	—	—	788	1253
Racine	603	—	—	634	1089
Waukesha	676	—	—	700	1151
Milwaukee	612	—	690	642	1092
Hartford	676	—	—	700	1151
Appleton	697	—	—	722	1183
Green Bay	612	—	688	652	1096
Big Flats	800	—	—	797	1237
Hancock	800	—	800	797	1237
Port Edwards	765	—	777	775	1221
La Crosse	902	—	904	931	1468
Eau Claire	781	—	800	802	1302
Cumberland	675	—	719	682	1121
Bayfield	471	—	—	456	780
Wausau	651	—	705	660	1070
Medford	624	—	634	632	1042
Crivitz	563	—	—	576	979
Crandon	554	—	560	545	901

Method: ModifiedB50; Sine48; ModifiedB40 as of Jan 1, 2015. NORMALS based on 30-year average daily temps, 1981-2010.

only 0.3 per sweep in a 10-inch field near Fort Atkinson in Jefferson County. Nymphs were collected from seven of the 36 sites surveyed this week and populations appear to be increasing.

PLANT BUG: Combined counts of the tarnished and alfalfa plant bug species average 0.3 per sweep, which is well-below the economic threshold of five per sweep. The tarnished plant bug continues to be the more common of the two species.

CORN

TRUE ARMYWORM: Light injury to corn was observed in 24% of fields sampled from June 11-17. This should serve as an indication for crop advisors and growers to continue inspecting corn and small grains for armyworm larvae, especially wheat fields lodged during recent heavy rains. Control of armyworms is justified when 25% of corn plants are infested with two or more small larvae (¾ inch or shorter) or 75% of plants are infested with one armyworm of any size. The threshold in wheat is three armyworms per square foot.

True armyworm leaf feeding *Krista Hamilton DATCP*

EUROPEAN CORN BORER: Larvae resulting from moths of the spring flight are in the early instar stages and fresh whorl-feeding injury has become evident in a few southern and west-central fields. Surveys found very low infestations of 1-4% in three of 25 (12%) sites examined this week, in La Crosse and Trempealeau counties. The optimal treatment window for first generation larvae has opened in the southernmost areas of the state with the accumulation of 800 degree days (modified base 50°F).

SLUGS: Damage consisting of narrow, irregular longitudinal streaks in the lower leaves was observed in several damp, weedy fields in Buffalo, Monroe and Trempealeau counties. These mollusks thrive during periods of wet weather and could become a problem in no-till systems and very weedy corn where surface residue and high moisture favor their development. Corn in the V4 stage or younger is most susceptible to slug feeding.

Slug feeding damage on corn *Krista Hamilton DATCP*

STALK BORER: Surveys indicate that 1-12% of edge row plants in several Adams, Buffalo, La Crosse, and Trempealeau County fields are infested with small, ½ to 1-inch larvae. This mid-season pest migrates from perennial grasses and broadleaf weed hosts in early June and infests the first 4-6 rows of corn. Scouting is recommended through the V7 stage since Bt corn hybrids suppress but will not completely control stalk borers.

Stalk borer damage to corn *Krista Hamilton DATCP*

ROSE CHAFER: Minor defoliation caused by this beetle was observed this week in corn in the west-central area. Currently the infestations involve fewer than 2% of plants, though as many as five beetles per plant were found in a La Crosse County field. Rose chafers are also appearing on soybeans and a variety of ornamental and garden plants. Beetle activity and leaf skeletonization is most prevalent in fields on sandy soils and usually subsides by late July.

Rose chafers feeding on corn leaves *Krista Hamilton DATCP*

GRANULATE CUTWORM: This moth, which bears a striking resemblance to the western bean cutworm adult, is appearing in black light traps. The granulate cutworm is noticeably smaller, about ¾ of the size of the western bean cutworm. The annual flight of western bean cutworm adults is unlikely to begin for another 1-2 weeks.

SOYBEANS

SOYBEAN APHID: Densities remain very low and aphids have colonized no more than 10% of plants at most sites. Average counts in six of 44 (14%) soybean fields sampled this week were less than 0.5 aphids per plant and nine per infested plant, based upon examination of 100 plants per field. Thirty-eight of the fields had no aphids. Populations are expected to increase next month as soybean fields enter the reproductive stages of growth. Routine monitoring for aphids should begin by early July.

ROSE CHAFER: Beetles are emerging in greater numbers and causing light damage to soybeans on sandy soils in the southern and west-central areas of the state. Defoliation levels ranged from 5-10% and were still well-below the 30% treatment threshold in the V2-V4 fields checked during the June 11-17 reporting period.

SLUGS: Surveys in Buffalo, La Crosse and Trempealeau counties found minor but extensive leaf feeding injury on approximately 20-70% of plants in fields with soils saturated after several rounds of heavy rain. The observed defoliation was primarily limited to the unifoliate leaves and was not expected to have an adverse long-term impact on plants.

Economic thresholds have not been developed for slug control in soybeans or corn and chemical control using baits should only be considered as a last resort option when plants show severe defoliation, wet conditions persist, and the slugs are actively feeding.

Slug defoliation on soybeans *Krista Hamilton DATCP*

FRUITS

SPOTTED TENTIFORM LEAFMINER: Moths of the second flight began emerging in substantial numbers this week, with pheromone trap counts ranging as high as 990 per trap near Hill Point in Richland County. The peak in moth activity should occur by early to mid-July. Apple orchards with populations greater than one mine per leaf or a history of STLM infestation are candidates for control of second-generation larvae.

ROSE CHAFER: This generalist vineyard and orchard pest is emerging and may soon skeletonize grape leaves and consume developing fruit clusters. Scouting twice weekly is advised for vineyards on sandy soils and those with a history of rose chafer problems as soon as the first beetle is observed. An average of two beetles per vine has been

suggested as the basis for initiating controls. Systemic soil drench insecticides are only effective if applied at least 20 days in advance of the adult emergence period. Commercially available traps can attract more beetles from surrounding areas and are not recommended for use in vineyards.

OBLIQUEBANDED LEAFROLLER: Larvae from eggs deposited this spring are emerging across the southern half of the state. The small, newly-hatched caterpillars are controlled by most products applied for codling moth control (except granulosis virus and mating disruption), but scouting is still required to determine if codling moth sprays have effectively reduced OBLR levels or if additional measures are needed to reduce populations and prevent fruit damage. Sampling for fruit and foliar feeding should begin seven days after the first moths are captured in pheromone traps.

Obliquebanded leafroller larva forums.gardenweb.com

LESSER PEACHTREE BORER: The first flight has peaked in most southern and central orchards, although counts remain high in the southeastern, east-central and northern areas. A trunk spray applied 7-14 days after emergence of the first spring moths begins in June and again at the peak of the second summer moth flight in August or September is recommended in the Midwest Tree Fruit Spray Guide for orchards with moderate to severe LPTB infestation. For orchards with minimal LPTB problems, growers may forego the first June treatment and instead apply an insecticide at the peak of the second moth flight in August or September. Directed sprays must be applied uniformly to drench the trunk and scaffold limbs to about eight feet above ground. Some of the regularly applied cover sprays also control borers, but specific trunk and scaffold branch sprays may be required in orchards with significant LPTB pressure. LPTB infests scaffold limbs and the upper trunk primarily on older trees.

Lesser peachtree borer whatsthatbug.com

REDBANDED LEAFROLLER: Moth counts are expected to increase by July as the second flight gains momentum. Minimal RBLR activity was noted again this week, with average counts varying from 0-26 moths per trap and averaging less than four per trap.

CODLING MOTH: Most southern and central Wisconsin apple orchards are 250-450 degree days (modified base 50°F) beyond the spring biofix, and treatments for first-generation larvae have started. Reapplication of CM insecticides may be necessary if heavy rainfall of two or more inches is received and trap counts are consistently above five moths per trap per week. Applying materials at higher label rates may provide extended protection from rain and a longer reapplication interval, according to Orchard IPM Specialist, John Aue. Scouting fruits for tiny, circular entry wounds is advised in the week ahead.

VEGETABLES

STRIPED CUCUMBER BEETLE: An organic CSA farm in Milwaukee County reports that cucumber beetles are appearing in extraordinary numbers on winter squash transplants, apparently at the highest levels observed in their 19 years of farming. According to the grower, several cultural controls---crop rotation, row covers and a perimeter trap crop of 'Blue Hubbard' squash---have been implemented to no avail. Another organic option for striped cucumber beetle control is to apply a protective coating of Surround® WP (kaolin clay) just before seed-

lings are transplanted into the field. The kaolin clay acts as an irritant and makes cucurbit crops unattractive to the beetles. Surround® can be applied to small plants already in the field, though applications may not be as effective and will need to be repeated as new beetles arrive.

Striped cucumber beetles inside squash blossom *Krista Hamilton DATCP*

IMPORTED CABBAGEWORM: Adult butterflies have become increasingly abundant this month and larvae of varying sizes can be found on cabbage, cauliflower and broccoli in most home vegetable gardens. Manual removal of the caterpillars is suggested for smaller plantings, while a Bt insecticide can be considered for larger production fields.

Imported cabbageworm larva *UM Extension*

POTATO LEAFHOPPER: Counts in snap beans and potatoes are likely to increase next month as reproduction intensifies. Recommended treatment thresholds for potatoes are one adult per net sweep or 15 total nymphs on the undersides of 50 potato leaves. For snap beans, the threshold is 0.5 per sweep for seedlings and one per sweep in the third trifoliate to bud stages.

SQUASH VINE BORER: Moth emergence has started in advanced southern Wisconsin locations. Close inspection of pumpkins, squash, gourds, and other vine crops for eggs and evidence of larval feeding is advised from 900-1,000 degree days (modified base 50°F). Insecticidal controls are only effective if applied before the larvae bore into vines and reapplication may be required during the adult flight period.

Squash vine borer moth *Jackie Belmore flickr.com*

NURSERY & FOREST

VIBURNUM LEAF BEETLE: The UW-Madison Insect Diagnostic Lab has confirmed the identification of viburnum leaf beetle (VLB) in two Milwaukee County locations, approximately two miles from a previous 2014 detection site. This represents the third and fourth confirmed cases of this invasive European beetle in Wisconsin. The first discovery of VLB was on May 20, 2009 in Dane County.

This exotic species is particularly damaging because both the adult and immature forms rapidly defoliate viburnums. Successive feeding by larvae and adults prevents shrubs from refoliating and may cause plant death after 2-3 years of heavy infestation. Milwaukee County gardeners, landscapers, nursery stock growers and retailers should be alert to the characteristic, unique skeletonization of viburnum leaves caused by these insects. Aggressive treatment is advised to prevent this pest from spreading to uninfested areas of the state. Suspected infestations of viburnum leaf beetle should be

reported to the DATCP Lead Nursery Program Inspector at DATCPnursery@wisconsin.gov.

Viburnum leaf beetle larvae *Jennifer Schlick flickr.com*

COLUMBINE LEAFMINER: Leaf mines caused by the larval stages of this insect were noted this week on columbine at nurseries in Burnett and Iron counties. The serpentine mines are formed as the larvae consume inner leaf tissue and initially appear whitish in color, eventually turning tan or brown later in the season. Removing and destroying infested leaves in the fall will reduce this aesthetic problem.

Columbine leafminer *Tim Boyle DATCP*

LINDEN BORER: Sawdust-like frass collecting at the base of trees and other signs of infestation were noted on 'Greenspire' linden trees in Burnett County. The frass is expelled as larvae feed within the sapwood. This destructive wood-boring insect attacks both vigorous and stressed nursery trees, causing structural weakening that often results in broken trunks or limbs, rapid decline and death. Early symptoms include thinning of the canopy and bark cracks or bulges where feeding has taken place. Larger trees may not show symptoms for 2-5 years, while smaller trees can exhibit symptoms the year they are infested. Dead or dying trees contain many borer larvae and should be cut down and burned or chipped before adults emerge in summer.

Linden borer frass *Konnie Jerabek DATCP*

BOXWOOD PSYLLID: Light damage to boxwoods was observed during inspections this week in Kenosha County. Feeding on tender new growth by the immature nymphs causes cupping and distortion of leaves. The psyllid nymphs remain protected within the cupped foliage and continue to feed until maturing into adults. Damage is generally minimal and treatment is seldom required.

Leaf cupping caused by boxwood psyllid *missouribotanicalgarden.org*

APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 11 - 17

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	APB[5]	LPTB[6]
Bayfield	Keystone	11	0	0	0	—	—
Bayfield	Orienta	14	0	0	—	0	4
Brown	Oneida	650	0	14	21	0	20
Clark	Greenwood	6	14	0	12	0	12
Columbia	Rio	109	0	2	—	2	4
Crawford	Gays Mills	566	0	4	11	1	10
Dane	Deerfield	654	2	24	15	—	—
Dane	DeForest	67	15	8	34	0	12
Dane	Edgerton	400	11	0	29	3	45
Dane	McFarland	223	0	3	—	—	—
Dane	Mt. Horeb	220	22	0	22	2	24
Dane	Stoughton	117	26	11	6	0	31
Dane	West Madison	123	6	2	7	—	—
Fond du Lac	Campbellsport	22	0	0	6	0	26
Fond du Lac	Malone	35	0	17	26	0	2
Fond du Lac	Rosendale	3	0	4	7	8	11
Grant	Sinsinawa	—	—	—	—	—	—
Green	Brodhead	53	21	0	10	6	11
Iowa	Mineral Point	490	13	4	20	4	38
Jackson	Hixton	13	0	3	5	0	17
Kenosha	Burlington	154	1	4	7	1	9
Marathon	Edgar	790	0	6	14	0	21
Marinette	Niagara	9	0	0	6	0	11
Marquette	Montello	446	0	1	14	—	—
Ozaukee	Mequon	0	0	4	0	2	2
Pierce	Beldenville	81	0	8	15	0	3
Pierce	Spring Valley	32	0	0	29	0	41
Racine	Raymond	79	0	0	24	0	10
Racine	Rochester	235	0	7	22	3	52
Richland	Hill Point	990	1	4	7	1	18
Sheboygan	Plymouth	0	0	2	5	20	45
Walworth	East Troy	21	3	0	3	0	2
Walworth	Elkhorn	33	5	0	5	0	50
Waukesha	New Berlin	62	1	7	6	13	8

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]American plum borer; [6]Lesser peachtree borer.

COUNTY	SITE	BCW[1]	CEL[2]	CE[3]	DCW[4]	ECB[5]	FORL[6]	SCW[7]	TA[8]	VCW[9]	WBC[10]
Columbia	Arlington	0	6	0	9	9	1	25	0	6	0
Columbia	Pardeeville	0	0	0	0	7	0	11	19	2	0
Crawford	Prairie du Chien	0	2	0	0	1	4	9	11	0	0
Fond du Lac	Ripon	0	2	0	0	1	0	0	112	0	0
Manitowoc	Manitowoc	0	0	0	0	0	0	3	7	0	0
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	0	13	0	0	17	5	12	539	0	0
Walworth	East Troy	—	—	—	—	—	—	—	—	—	—
Wood	Marshfield	0	2	0	0	0	2	42	58	0	0

[1]Black cutworm; [2]Celery looper; [3]Corn earworm; [4]Dingy cutworm; [5]European corn borer; [6]Forage looper; [7]Spotted cutworm; [8]True armyworm; [9]Variegated cutworm; [10]Western bean cutworm.