Volume 62 No. 04 May 18, 2017

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
2811 Agriculture Dr. Madison, WI 53718 • http://pestbulletin.wisconsin.gov

WEATHER & PESTS

An influx of warmth, with daytime highs exceeding 80°F in the southern and western areas, improved conditions for crop planting and emergence across the state. Mild spring temperatures and light winds helped to both warm and dry topsoils following several weeks of damp, colder-than-normal weather. Although scattered rain and thunderstorms during the first half of the week caused brief planting interruptions, fieldwork advanced rapidly between showers as farmers capitalized on the warmer, more favorable conditions. According to the USDA NASS, about half of the state's corn has been planted, a significant increase over only 15% last week, while potato and oat planting is nearing completion. Full-scale soybean planting began across the southern and central counties, and 15% of this year's expected acreage has now been sown. Pest insect activity also increased in response to the warming trend, with Colorado potato beetles, codling moths, potato leafhoppers and several other common crop pests making their first appearance during the week.

LOOKING AHEAD

BLACK CUTWORM: Larval progeny of the earliest migrants are forecasted to reach the destructive late-instar cutting stages next week. The combination of a very large April-May moth migration, delayed planting, and extensive weed growth in many cornfields this spring means conditions are highly conducive to localized outbreaks. Scouting should begin several days before the predicted first cutting date of May 21.

EUROPEAN CORN BORER: Degree day accumulations near Beloit, La Crosse, Lone Rock, Madison and Platteville have surpassed the 374 units (modified base 50°F) required for moth emergence to begin, though significant flights are not expected for another two weeks. Black light trap contents should be closely inspected in the week ahead for early moths.

POTATO LEAFHOPPER: Migrants are appearing in southern and west-central Wisconsin alfalfa fields. Counts this week were very low and ranged no higher than nine per 100 sweeps. The mid-May arrival of this migratory pest routinely coincides with the first alfalfa harvest.

CODLING MOTH: Emergence of spring moths began at Rochester in Racine County on May 14. Eight other apple orchards also reported first captures this week, although most did not register a sustained flight. Daily monitoring of pheromone traps is recommended in the week ahead or until the biofix has been determined. Codling moth flight occurs consistently between the hours of 5:00 and 10:00 pm in our region, and winds must be below 3 mph and temperatures above 62°F

during these hours for mating to occur. Lower nightly temperatures predicted for next week could suppress flights and delay the biofix, as well as the start of treatment programs.

TRUE ARMYWORM: Moths have been flying on warmer evenings for several weeks and continue to be collected over the southern half of the state, as far north as Wood County. The capture of 54 moths at Marshfield in the last two weeks indicates that the migration has extended into Central Wisconsin where growers can anticipate armyworm larvae becoming noticeable in fields by early June.

PLUM CURCULIO: Mild weather during the week ending May 17 activated weevil migration into orchards. The first oviposition scars should become evident in the two weeks following petal-fall. Apple growers are advised to begin examining early-season cultivars for the crescent-shaped scars indicative of plum curculio egg laying once fruitlets reach 5 mm.

Plum curculio crescent-shaped oviposition scar *umaine.edu*

FORAGES & GRAINS

PEA APHID: Densities varied widely from 2-450 aphids per 100 sweeps and averaged 110 per 100 sweeps, which is a considerable increase from last week's average of 28 per 100 sweeps.

ALFALFA WEEVIL: Larval counts in the south-central and southwestern areas of the state remain low. Alfalfa surveyed in Buffalo, Crawford, Dane, Grant, Iowa, Jackson, Jefferson, La Crosse, Lafayette, Monroe, Richland, Sauk, Trempealeau and Vernon counties contained 1-88 weevils per 100 sweeps, and an average of 10 per 100 sweeps. Fifteen of the 57 fields sampled (26%) still had no apparent population. Routine scouting for larvae and leaf tip feeding should be underway and continue through early second-crop regrowth.

DEGREE DAYS JANUARY 1 - MAY 17

LOCATION	50°F	2016	NORM	40°F
Dubuque, IA	490	353	385	975
Lone Rock	439	327	—	858
Beloit	448	362	393	904
Sullivan	386	241	344	797
Madison	410	297	368	826
Juneau	375	244	—	770
Racine	333	223	—	729
Waukesha	358	241	—	759
Milwaukee	330	213	289	724
Hartford	355	241	—	747
Appleton	296	208	—	649
Green Bay	292	172	284	633
Big Flats	366	283	—	732
Hancock	324	283	356	662
Port Edwards	317	268	346	658
La Crosse	420	350	409	843
Eau Claire	353	308	352	726
Cumberland	231	268	298	548
Bayfield	117	164	—	373
Wausau	247	209	296	565
Medford	230	212	259	547
Crivitz	265	160	—	581
Crandon	197	182	238	490

Method: Modified B50; Modified B40 as of January 1, 2017. NORMALS based on 30-year average daily temps, 1981-2010.

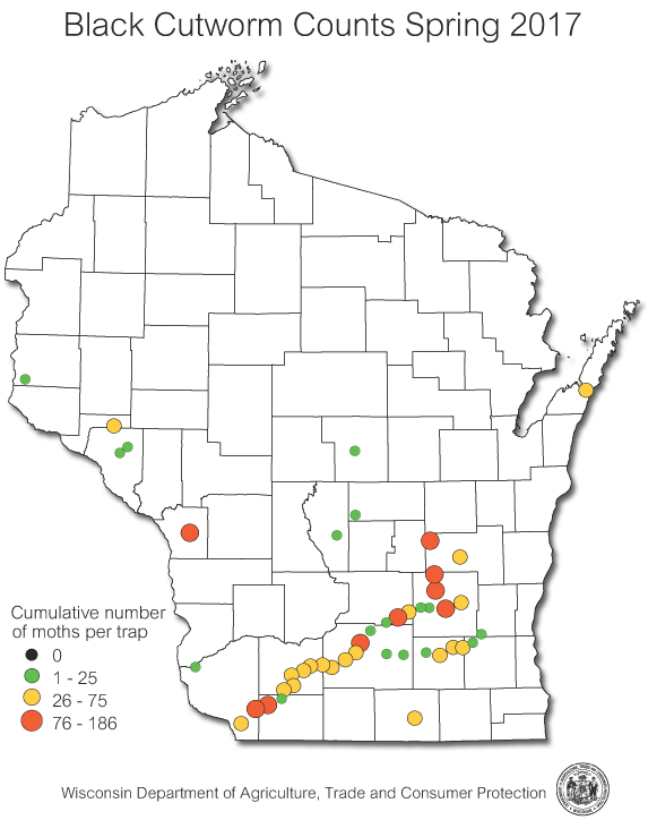
POTATO LEAFHOPPER: The first distinct migration into Wisconsin occurred last week and leafhoppers are appearing in low numbers in southern and west-central alfalfa. Adults were collected in 19 of 57 fields (33%) from May 11-17, in Buffalo, Dane, Grant, Iowa, Jefferson, Lafayette, Monroe and Trempealeau counties. As mentioned, this insect customarily arrives in Wisconsin around the time the first alfalfa crop is harvested and under favorable conditions can rapidly increase to damaging levels in the second crop.

TARNISHED PLANT BUG: Representative counts are low and range from 1-12 per 100 sweeps, with an average of five adults per 100 sweeps. The first small nymphs should begin appearing in sweep net collections before the end of the month.

CORN

BLACK CUTWORM: Larvae from migrants that arrived in mid-April are projected to have reached the intermediate instars, and should grow large enough to begin severing corn plants by May 21. Warm nightly temperatures and another large weekly capture of 409 moths documented during the May 11-17 reporting period signals that egg laying has intensified. The annual migration which started on March 26 has to date yielded a very high cumulative count of 2,153 moths in 45 traps, or an average of 48 per trap.

Compared to recent years, field conditions are extremely favorable for outbreaks and much of the state's corn acreage is considered to be at increased risk of infestation this season. Compounding the threat are significant planting delays, late weed control, and the unusually large moth migration. Black cutworm larval development appears well synchronized with corn emergence this spring and localized cutworm infestations are anticipated beginning next week.



Scouting is strongly advised at this time and should be concentrated in non-Bt corn and fields where annual weed pressure was heaviest or a cover crop was terminated late. Cutworm larvae are capable of damaging corn protected with a Bt trait, usually in situations where larvae first develop on weeds or cover crops and are forced by late herbicide applications onto Bt corn when they are larger and less susceptible to Bt toxins. The threshold for corn is when 3% of plants show small, irregular holes in the leaves or other evidence of cutworm damage.

TRUE ARMYWORM: Larvae were collected from alfalfa fields in Jackson, La Crosse and Vernon counties this week. The <¼ inch worms are the offspring of moths that arrived in April. Black light traps in Columbia, Dodge, Fond du Lac, Grant and Rock counties have been registering low numbers of moths (1-40 per trap) for several weeks, and growers can expect armyworms to begin appearing in fields by early June. True armyworm flights sometimes precede larval outbreaks by 3-4 weeks.

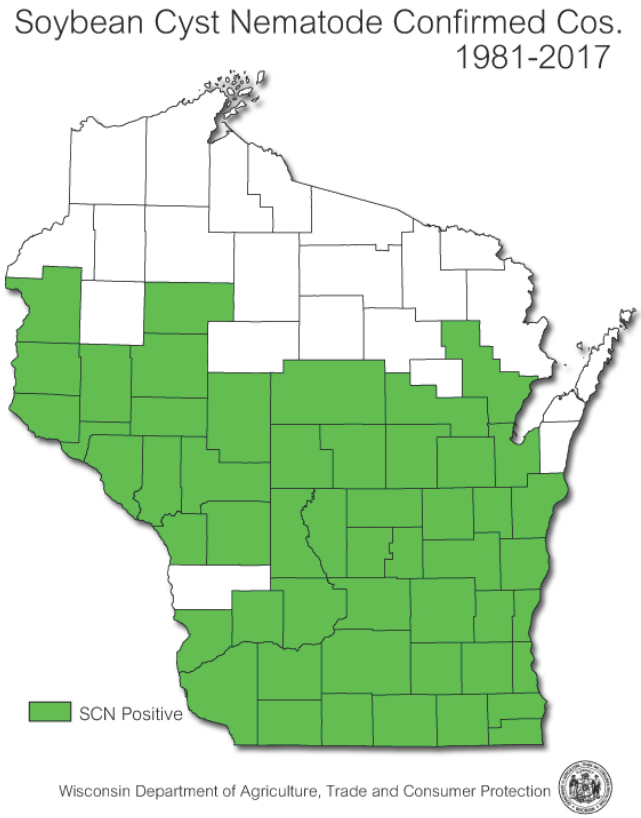
True armyworm moth *Krista Hamilton DATCP*

SOYBEANS

BEAN LEAF BEETLE: Overwintered beetles were found in two of 57 alfalfa fields sampled this week. The first appearance of this insect was noted on May 9 in Sauk County. The very low number of beetles collected to date suggests a low risk of soybean defoliation next month. Routine scouting should begin at soybean emergence.

SOYBEAN CYST NEMATODE: The accompanying map shows Wisconsin counties with known infestations of this yield-reducing soybean pest, from the first detection in Racine County in 1981 to the most recent in Marathon County in 2013. The total number of counties with at least one SCN-infested field is now 51. DATCP continues

to provide SCN testing for phytosanitary certification but no longer conduct annual surveys. Requests for soil testing information and sample test kits may be directed to freescntest@mailplus.wisc.edu.



FRUITS

PLUM CURCULIO: Adult migration into orchard edges increased this week and early feeding and oviposition scars are already appearing on apples and plums. Growers who applied PC petal-fall treatment should be aware that heavy rain will degrade insecticides and a perimeter application may be needed 7-10 days following a petal-fall spray to prevent the further migration of PC into the orchard. Organic growers have the option of applying Surround® WP (kaolin clay) to orchard blocks. Another control strategy is to leave untreated "trap rows" of early varieties that are treated with an insecticide (e.g. PyGanic) on a warm night when the weevils are most active.

CODLING MOTH: Nine of 21 reporting apple orchards captured their first codling moths of the season between May 14 and 17. Counts varied from 0-10 per trap, although most locations did not register a sustained moth flight. Growers should continue checking traps daily until the biofix is established, and make preparations to apply controls at 250 or 350 degree days (modified base 50°F) from their specific biofix date. A first larvicide application made at 250 degree days from the biofix may be considered for orchards with high codling moth pressure. Orchards that register an inconsistent early flight, with a larger flight two weeks after the first biofix, can delay the first spray until 350 degree days. Treatment during these windows is intended to eliminate most of the newly-hatched larvae before they enter fruits.

Codling moth *Graham Calow www.naturespot.org.uk*

ORIENTAL FRUIT MOTH: The first Oriental fruit moths (OFM) of the season also began emerging this week in southern Wisconsin apple orchards. OFM flight usually starts earlier than the codling moth flight, but was delayed this month due to low temperatures.

Oriental fruit moth *John Lee mothphotographersgroup.msstate.edu*

SPOTTED TENTIFORM LEAFMINER: Moth emergence peaked in the last 1-2 weeks and is now declining. Pop-

ulations in the southern two-thirds of the state consist mostly of first-generation sapfeeder larvae. The recommended scouting procedure is to sample 10 terminals and fruit spurs per tree on 2-3 trees per orchard block. Sapfeeder mines should be noticeable on the undersides of leaves. The economic threshold is one mine per 10 leaves.

TARNISHED PLANT BUG: Nymphs can be anticipated by late May. Strawberry plants beginning to bloom should be checked weekly for both adults and nymphs. Sprays applied against the small, first and second-instar stages are very effective and can eliminate the need for a second treatment. The economic threshold for this insect in strawberries is four per 20 sweeps.

Tarnished plant bug *imgkid.com*

OBLIQUEBANDED LEAFROLLER: The first flight of moths should begin soon across the southern and western counties. Apple growers who have experienced late-season OBLR problems in recent years are advised to set additional traps to identify problem areas and help determine where to direct management efforts later this season. Scouting for foliar feeding is also suggested at this time. Control may be warranted if feeding damage affecting more than 5% of terminals or 3% of fruit clusters is observed.

VEGETABLES

IMPORTED CABBAGEWORM: Adults are emerging in higher numbers than in previous weeks and depositing eggs on cruciferous weeds and available transplanted cole crops. Close examination of plants for eggs and small larvae is critical during the oviposition period. Infestation levels in cabbage that exceed 30% at the transplant to cupping development stages may warrant treatment.

Imported cabbageworm larva *debsgardens.wordpress.com*

COLORADO POTATO BEETLE: Overwintered adults have been noted in the Holmen area of La Crosse County, indicating that the beetles are dispersing from hibernation sites and oviposition on potatoes, tomatoes, eggplants and other host plants should begin before the end of the month. The bright orange-yellow eggs are deposited in clusters of 15-30 on the undersides of leaves. Egg hatch occurs in 4-9 days.

Colorado potato beetle eggs *ecotanjim.files.wordpress.com*

ONION MAGGOT: Emergence of flies from overwintered pupae is underway is warmer southern and western areas (from La Crosse southward). Flies of the spring generation are expected to begin appearing next week across southeastern and central Wisconsin. Damage from the resulting first-generation maggots usually be-

comes evident around mid-June as onion seedlings start to wilt. Infested plants, when pulled, often break just below the rotting stem. Rotating this year's plantings as far away as possible from last year's onions is the most basic approach to onion maggot control. Preventative soil insecticides may be considered if 5-10% of last year's crop was damaged by onion maggot.

NURSERY & FOREST

TOBACCO RATTLE VIRUS: Nursery inspectors ordered the destruction of several bleeding heart plants and garden peonies last week due to tobacco rattle virus (TRV) infection. Standard symptoms on these hosts are wavy light yellow lines on leaves (bleeding heart) and ringspots (peony). This increasingly prevalent virus infects over 400 plant species, including ornamentals and agricultural crops such as potatoes. TRV can spread via root nematodes, infected cutting tools, or possibly from seeds from infected plants. There is no treatment for TRV and infected plants must be destroyed.

Tobacco rattle virus on peony *Timothy Allen DATCP*

POWDERY MILDEW: This common fungal disease of ornamental plants was reported to be infecting rose plants in Marathon and Racine County nurseries. Powdery mildew is recognized on most plants by its grayish white powdery dusting on the upper leaves and stems, which later causes the foliage to turn yellow and prematurely senesce. Plants infected with powdery mildew show reduced vigor and aesthetic value. Careful scouting of plants, especially the lower, interior leaves can help detect early infections. Reducing humidity levels and increasing air circulation may also limit its spread, though fungicides may be required for severe outbreaks.

WHITE SMUT: This fungal disease was found on Gaillardia (blanket flowers) plants at nurseries in Jefferson and Marathon counties. White smut can be identified by white to yellow-green spots up to ¼ inch in diameter that sometimes contain smaller brownish spots at the center. The fungus is seed-borne and likely overwintered as spores amidst plant material. Proper sanitation and increased plant spacing will help reduce its spread. Removal of affected leaves and severely infected plants is also recommended.

Gaillardia with white smut *Timothy Allen DATCP*

BOTRYTIS: Botrytis, or gray mold, was observed by nursery inspectors on assorted nursery stock during recent inspections. This disorder of fruit crops and greenhouse floral crops is characterized by chlorotic lower leaves or distinct brown leaf lesions that develop a grayish brown mass of fungal spores. The spores are spread by water or wind. Symptoms can develop at any stage and may affect any plant part. Measures that reduce humidity and increase air circulation should minimize its occurrence.

APPLE INSECT & BLACK LIGHT TRAP COUNTS MAY 11 - 17

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	OFM[5]	LPTB[6]	DWB[7]	AM RED[8]	YELLOW[9]
Bayfield	Keystone	50	21	0	—	—	—			
Bayfield	Orienta	12	0	—	—	—	—			
Brown	Oneida	400	91	1	—	—	0			
Columbia	Rio	50	23	0	0	0	0			
Crawford	Gays Mills	245	104	—	0	—	—			
Dane	DeForest	—	—	—	—	—	—			
Dane	Edgerton	—	—	—	—	—	—			
Dane	Mt. Horeb	80	80	0	—	0	1			
Dane	Stoughton	52	156	1	0	—	—			
Fond du Lac	Campbellsport	—	—	—	—	—	—			
Fond du Lac	Malone	45	30	2	—	0	—			
Fond du Lac	Rosendale	42	30	3	3	0	0			
Grant	Sinsinawa	—	—	10	4	—	—			
Green	Brodhead	19	21	—	1	0	0			
Iowa	Mineral Point	120	88	6	—	9				
Jackson	Hixton	800	12	6	—	0	0			
Kenosha	Burlington	85	14	1	—	1	—			
Marathon	Edgar	68	36	0	0	0	0			
Marinette	Niagara	110	8	—	—	—	0			
Marquette	Montello	648	21	0	0	0	0			
Ozaukee	Mequon	50	33	0	0	0	0			
Pierce	Beldenville	58	63	0	0	0	0			
Pierce	Spring Valley	—	—	—	—	—	—			
Racine	Raymond	50	25	0	0	13	0			
Racine	Rochester	160	23	6	—	6	—			
Richland	Hill Point	90	44	0	0	0	0			
Sheboygan	Plymouth	423	109	0	—	39	3			
Walworth	East Troy	—	—	—	—	—	—			
Walworth	Elkhorn	—	—	—	—	—	—			
Waukesha	New Berlin	12	9	0	0	3	0			

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]Oriental fruit moth; [6]Lesser peachtree borer; [7]Dogwood borer; [8]Apple maggot red ball; *Unbaited; **Baited; [9]Apple maggot yellow board.

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	2	0	0	0	0	0	14	0	0
Columbia	Pardeeville	0	1	0	0	0	1	0	3	0	0
Dodge	Beaver Dam	0	0	0	0	0	0	0	4	0	0
Fond du Lac	Ripon	1	1	0	0	0	0	0	1	0	0
Grant	Prairie du Chien	0	0	0	0	0	2	0	0	0	0
Manitowoc	Manitowoc	0	1	0	0	0	0	0	18	0	0
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	1	0	0	0	0	2	0	11	0	0
Rock	Janesville	0	1	0	0	0	2	0	12	0	0
Walworth	East Troy	0	0	0	0	0	2	0	2	0	0
Wood	Marshfield	1	1	0	0	0	0	0	14	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.