

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

Mild weather with showers and thunderstorms prevailed in Wisconsin, maintaining soggy conditions and perpetuating fieldwork delays. Daytime high temperatures were near or slightly below seasonal normals and ranged from the upper 50s to low 80s. Lows plummeted to the upper 20s and low 30s in north-central Wisconsin on June 2, prompting the NWS to issue a Freeze Warning and Frost Advisory for portions of the north. Although warming temperatures during the week allowed for limited planting progress and harvesting of spring alfalfa, only 8% of the first alfalfa crop has been cut to date and many stands are simply too wet or shorter than normal. Corn planting advanced 12 percentage points to 58% complete, but is now 13 days behind last year's 88% and 17 days later than the five-year average of 91%. At the start of June, planting and emergence of all crops remain significantly delayed. A sustained warmer and drier early summer weather pattern is needed to spur crop development after a record-setting wet spring.

LOOKING AHEAD

BLACK CUTWORM: The primary damage period for corn is now open and much of the state's acreage is under an elevated threat of larval infestation. Significant planting delays and a sizeable spring moth migration are expect-

ed to contribute to localized black cutworm problems this month. Routine inspection of emerging corn (including Bt hybrids) for larvae and cut plants is advised until the five-leaf (V5) stage.

EUROPEAN CORN BORER: Degree day accumulations across southern Wisconsin have surpassed the 374 heat units (modified base 50°F) required for moth emergence to begin, though peak flights are not expected for another two weeks. The first ECB moths of the season were reported from two of DATCP's 11 black light trap sites in the past week.

ALFALFA WEEVIL: Larval populations have increased markedly in some fields since the last report. Surveys indicate that leaf feeding damage in first-crop alfalfa remains well below the 40% threshold, but counts have reached 2-3 larvae per sweep and leaf tip damage should intensify next week as more weevil grubs enter the larger and most destructive third and fourth instars.

TRUE ARMYWORM: Remarkably large captures of 491 and 270 moths were registered in Janesville black light trap in the last two weeks, signaling that armyworms moths may be locally abundant and egg deposition is intensifying. Crop advisors and growers should anticipate first-generation armyworm caterpillars appearing in the perimeter rows of corn, small grains and other grass hosts by mid-June.

CODLING MOTH: Emergence of spring moths accelerated during the week ending June 5, and the biofix was set at several monitoring sites. Controls directed against first-generation larvae will be optimally timed this spring if applied 350 degree days (modified base 50°F) after the biofix date, which is the equivalent of about 21 calendar days for orchards near Madison. Exact treatment dates will vary by location and with early June temperatures.

STRIPED CUCUMBER BEETLE: Damaging populations of beetles are appearing in gardens in west-central Wisconsin, and likely in other locations. Protecting seedling and transplanted cucurbits with floating row covers, screens or cones can reduce the risk of bacterial wilt and is recommended for highly susceptible cucurbits such as cucumbers and melons. Seedlings are more susceptible both to feeding damage and disease and should be monitored at least twice weekly.



Striped cucumber beetle missouribeginningfarming.blogspot.com

MONARCH BUTTERFLY: Egg laying is underway. Wisconsin farmers have historically been conservationists of monarchs and other pollinators and can again contribute to their recovery by reducing herbicide use on critical milkweed habitat on farm lands and by supporting milkweed restoration.

FORAGES & GRAINS

POTATO LEAFHOPPER: Surveys indicate that levels of this insect remain low in first-crop alfalfa. Counts in 70 fields checked from May 31-June 5 were less than 0.25 per sweep (25 per 100 sweeps). The economic threshold for leafhoppers in alfalfa taller than 12 inches is 2.0 per sweep. Second growth alfalfa is very susceptible to

DEGREE DAYS JANUARY 1 – JUNE 5

LOCATION	50°F	2018	NORM	40°F
Dubuque, IA	580	788	634	1137
Lone Rock	534	682	—	1045
Beloit	535	661	645	1047
Sullivan	473	586	584	941
Madison	512	652	609	1028
Juneau	425	602	—	875
Racine	384	513	—	829
Waukesha	444	537	—	906
Milwaukee	397	537	493	850
Hartford	419	572	—	864
Appleton	366	576	—	794
Green Bay	344	551	500	764
Big Flats	409	622	—	863
Hancock	380	566	599	810
Port Edwards	385	568	583	811
La Crosse	468	715	678	976
Eau Claire	433	647	597	884
Cumberland	338	524	531	698
Bayfield	218	425	—	538
Wausau	310	518	519	662
Medford	308	510	464	653
Crivitz	335	547	—	715
Crandon	298	492	416	632

Method: Modified B50; Modified B40 as of January 1, 2019. NORMALS based on 30-year average daily temps, 1981-2010.

leafhopper injury and should be regularly sampled later this month.

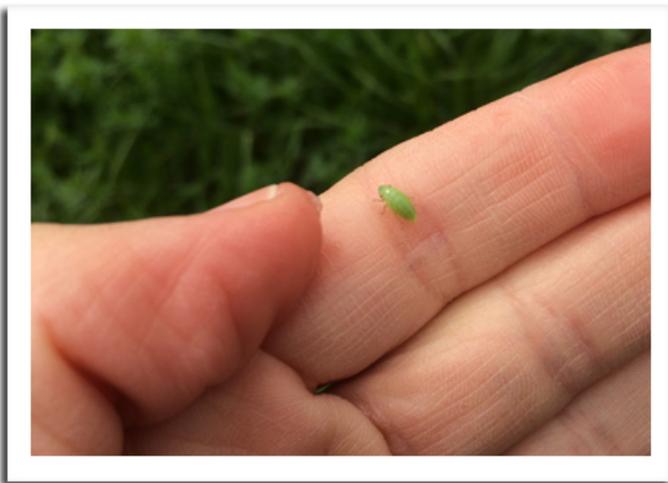
ALFALFA WEEVIL: Larval counts are variable but generally low for early June. The highest average this week was 1.1 per sweep (or 110 per 100 sweeps) in southwestern Wisconsin alfalfa, including Grant, Iowa, Richland, Sauk, and Trempealeau counties. Much lower counts of 0-0.7 per sweep were observed in Columbia, Dodge, Fond du Lac and Jefferson counties. Surveys in Dunn and St. Croix counties found larval counts were also low and ranged from 0 - 0.4 per sweep. Leaf tip feeding was below 20% in all sampled fields, but harvesting the first crop in the week ahead will be important for avoiding damage by the larger late-stage weevil larvae. Scouting is recommended until new growth of the second crop is established.

PEA APHID: Counts ranged from 1-5 per sweep and averaged 2.5 per sweep, a marked increase from last week's average of 0.8 per sweep. The weekly high count of five

per sweep was noted in La Crosse County. Winged aphids were found in 90% of the 70 fields sampled.

PLANT BUG: Reproduction has increased and nymphs are common in sweep net collections. Combined counts of the tarnished and alfalfa plant bug species were below 0.7 per sweep in all fields surveyed this week.

MEADOW SPITTLEBUG: Nymphs are currently $\frac{1}{4}$ - $\frac{1}{2}$ grown. The highest population encountered was about 10 per 100 stems in Sauk County, which is very low in comparison to the economic threshold of one nymph per stem. Most surveyed fields had few spittle masses.



Meadow spittlebug nymph

Krista Hamilton DATCP

CORN

TRUE ARMYWORM: Small larvae ranging in length from $\frac{1}{2}$ - $\frac{3}{4}$ inch are fairly common in alfalfa sweep net collections. Based on this observation and the very large local flights of 490 and 271 moths reported during the previous two weeks, more concentrated scouting of corn and wheat should begin next week.

SLUGS: Longitudinal leaf streaks indicative of slug activity are evident in damp cornfields. These mollusks become prevalent during periods of wet weather and are usually most damaging in no-till or reduced-till systems and very weedy corn where surface residue and high moisture favor their development. Corn in the V4 stage or younger is particularly vulnerable to slug feeding.

BLACK CUTWORM: Minor larval infestations in corn have been observed in Columbia, Dodge, Fond du Lac,

Jefferson and Sauk counties. Damage estimates were low and ranged from 1-2%. The larvae found in the infested fields were about $1\frac{1}{4}$ inch long on June 5. A fully-grown caterpillar is about $1\frac{1}{2}$ inches long. The primary cutting period is now in underway and will extend throughout June this year. A rescue treatment is justified if more than 3% of plants are damaged and larvae are present in the field.



Black cutworm damage

Roger Schmidt UW-Madison

EUROPEAN CORN BORER: Emergence of spring moths has begun, with low counts of 1 and 4 moths per trap registered in the Arlington and Pardeeville black light traps. The degree day model for this pest suggests egg deposition is starting in areas of the state where 450 degree days (modified base 50°F) have accumulated, such as Beloit, Madison and Lone Rock.



European corn borer moth

www.sequella.co.uk

CORN EARWORM: Nine early migrants were captured in the Janesville pheromone trap from May 31-June 5,

and others are likely to have arrived in the state on southerly winds. Larvae produced by these early moths generally pose no threat to emerging corn. The more destructive migration occurs between mid-August and early September.

SOYBEANS

SOYBEAN APHID: The spring dispersal of winged aphids to soybeans could begin in the week ahead. Currently only 10% of the state's soybean acreage has emerged.

SLUGS: Delayed planting and persistent moist soils this spring are extremely conducive for slug activity. Spot-checking emerging soybeans for feeding scars on the hypocotyls and cotyledons, as well as distorted or tattered unifoliate leaves, is advised. Stand losses from slugs usually occur when soils are wet and seed furrows do not close fully during planting, creating a "highway" for the slugs to feed on and destroy the growing point of consecutive seedlings. A sample size of 20 plants in each of five areas of the field is suggested. Spot application of a molluscicide bait to problem areas should be considered only as a last resort for severe infestations. No specific thresholds have been developed for slugs in soybeans. Growers must follow labeled use rates and distribute the product evenly over the infested area.



Slug defoliation on soybeans

Krista Hamilton DATCP

FRUITS

CODLING MOTH: A significant increase in codling moth emergence was charted in the past week. Counts for the period of May 30-June 5 varied from 0-35 moths per trap,

with six of the 27 reporting orchards registering economic counts of five or more moths per trap. In locations where the spring flight has been inconsistent, it is recommended that growers delay applications until 350 degree days after biofix, when a greater percentage of the larval population has emerged. Setting additional pheromone traps would also be beneficial in identifying localized areas of moth activity within the orchard if counts remain low and a precise biofix cannot be established. A density of one trap per 2.5 acres (or one per five acres where blocks are uniform in size, shape and topography) is suggested.



Codling moth eggs and newly-hatched larva

ucanr.edu/blogs

PLUM CURCULIO: A report from Sauk County indicates PC activity has increased sharply in the past week and the first feeding and oviposition scars are appearing on apples. Close inspection of fruits for feeding and egg laying injury should be underway in apple orchards beyond petal fall and continue until 308 degree days (base 50°F) accumulate after McIntosh petal fall. Female weevils show a strong preference for early-sizing apples and fruitlets 10 mm in size will be most attractive. Organic control options include PyGanic (pyrethrin) applied at dusk to the outer rows and Surround WP (kaolin) on interior trees.

SPOTTED TENTIFORM LEAFMINER: Moth counts are expected to increase abruptly by mid-June as the second flight begins. Numbers this week were mostly low and ranged from 0-250 moths per trap, with the exception of 1,743 moths per trap in Marathon County. The economic threshold for STLM increases from 0.1 to 1.0 mine per leaf for the second generation of sapfeeder larvae.

OBLIQUEBANDED LEAFROLLER: Moths are beginning to emerge across southern Wisconsin, but most larvae

in the central and northern areas are still in the intermediate to late instars and could continue to damage apple foliage and expanding buds before pupation occurs. Chemical intervention may be justified for orchards with significant leafroller pressure. Apple growers who have experienced OBLR problems in recent years should consider setting additional traps to determine specific blocks or varieties in which to concentrate sampling and control.



Obliquebanded leafroller larva

Krista Hamilton DATCP

PLANT BUGS: Fruit growers can anticipate more plant bug adults appearing on apples, strawberries and other fruits as more alfalfa acreage is harvested next week. Nymphs are currently widespread and abundant in alfalfa sweep net collections.

SPOTTED WING DROSOPHILA: Last season, SWD flies were detected in Michigan on organic blueberries during the first week of May, marking the earliest recorded emergence date in the upper Midwest. The previous earliest report was on June 6, 2016 in Door County. Berry growers planning to monitor SWD this season should set their traps next week to document the first capture date.

GRAPE PLUME MOTH: This green caterpillar with whitish hairs is appearing on grape foliage in Vernon County vineyards. Feeding by the larvae on interveinal areas of leaves and characteristic webbing on young terminals usually does not require control, but in exceptional cases, spot treatment of infested rows with *Bacillus thuringiensis* var. *kurstaki* (Btk) may be considered. Since Bt must be ingested by larvae to be lethal, it is necessary to confirm the presence of caterpillars and treat only if the larvae are small enough that continued feeding is expected. Grape growers who notice shoots with young leaves

webbed together are advised to unroll the leaf to verify that the larvae inside is grape plume moth.



Grape plume moth larva

Mike Cesarz

WOOLY APPLE APHID: Apple growers are advised to begin scouting areas infested with this aphid last season to confirm the first appearance of aerial colonies, expected to become noticeable by mid-June.



Woolly apple aphid

www.aphotofauna.com

VEGETABLES

STRIPED CUCUMBER BEETLE: Surveys in a western Wisconsin community garden found economic counts of 2-5 beetles per plant on young melon plants. Squash and zucchini plants were also moderately infested with an average of 0.5 beetle per plant. These yellow and black striped beetles can severely defoliate vine crops, but are most damaging as vectors of bacterial wilt. The bacteria is acquired from infected weeds and spread to cucurbits

through feces or contaminated mouthparts. The first symptom of bacterial wilt on cucumber and melon is flagging of lateral and individual leaves. A count of one beetle per plant for melons, cucumbers, and young pumpkins and five beetles per plant for less susceptible cucurbits (squash, older pumpkins, watermelon) signals a high risk of bacterial wilt if the beetle population is not controlled.



Striped cucumber beetle

Krista Hamilton DATCP

FLEA BEETLE: Heavy populations of 10-20 beetles per plant were observed on eggplant transplants in a La Crosse County garden. Significant defoliation can usually be tolerated by host plants and treatment is not advised unless large numbers of beetles are present on all plants and defoliation exceeds 30%. Controls are most effective if applied in the morning, when the beetles are less active.



Flea beetles on eggplant

Krista Hamilton DATCP

POTATO LEAFHOPPER: Surveys in alfalfa indicate a large migration occurred approximately two weeks ago. The

nymphs produced by these migrants usually appear during the second or third week of June. Vegetable fields in close proximity to alfalfa could see an influx of adult leafhopper populations as harvesting of first-crop hay accelerates in the week ahead.



Potato leafhopper nymphs

nymphs blog.uvm.edu

IMPORTED CABBAGEWORM: Egg hatch and larval damage to cabbage and other vegetables in gardens and field production areas has intensified. Larvae observed on a western Wisconsin CSA farm were approximately ¼ inch long on June 3. Manual removal of the caterpillars from the undersides of cabbage leaves is suggested for control in gardens. Bt or another insecticide may be required for larger plantings.



Imported cabbageworm larva

Krista Hamilton DATCP

BLACK CUTWORM: Vegetable gardens should be monitored for signs of black cutworm feeding now that first-generation larvae are in the damaging late-instar stages. Beans, cabbage, carrots, celery, corn, lettuce, peas, pep-

pers, potatoes and tomatoes are all susceptible to cutting during the transplant establishment period. Most damage occurs at night as the larvae feed on the stems of young plants at or slightly above or below the soil line. Placing a plastic or cardboard collar around plants, with one end pushed a few inches into the soil and the other end extending several inches above ground, should provide a barrier to prevent feeding by most species of cutworms.

COLORADO POTATO BEETLE: Larvae in southern and west-central Wisconsin are primarily in early instar development stages. Bacterial insecticide treatment with *Bacillus thuringiensis* var. *tenebrionis* (Btt) is most effective at this time, while the larvae are very small. Growers using a bacterial product should be aware that these materials persist only a few days and must be reapplied 2-3 times to effectively control populations. Treatment is justifiable for pre-flowering, 6- to 8-inch potato plants when defoliation exceeds 20-30%.



Colorado potato beetle larvae

Krista Hamilton DATCP

NURSERY & FOREST

BOTRYTIS: This disorder now common to many greenhouse floral crops and fruits, also known as gray mold, was observed on assorted nursery stock during recent inspections. Botrytis is characterized by chlorotic leaves with distinct brown lesions developing into grayish-brown masses of fungal spores, which can be transported by both water and wind. These symptoms may affect any plant part and can develop at any stage of growth. Measures to reduce humidity and increase air circulation such as increasing plant spacing, venting hoop houses or greenhouses, and preventing drip from hanging baskets onto the plants below can help minimize occurrence. Treatment

with an appropriate fungicide or removal from the greenhouse is recommended for severely diseased plants.



Botrytis or gray mold

Michelle Grabowski UMN Extension

DAYLILY LEAFSTREAK: Inspectors found daylilies showing the distinctive yellow streaks along the center vein at locations in La Crosse and Marinette counties. The streaks can darken to form brown elongated areas, causing shriveling and tissue necrosis in severe cases. Removal of old or dying foliage, avoiding overhead watering, minimizing water splash between plants, increasing airflow, and not working with the plants when they are wet are preventative cultural practices. Fungicides specifically demonstrated to control daylily leafstreak can be helpful in controlling the disease and protecting new growth.



Daylily leafstreak

Tim Boyle DATCP

COLEOSPORIUM RUST: Several aster "Wood's Pink" plants at a Marathon County nursery dealer were lightly infected with this rust, caused by the pathogen *Coleo-*

sporium asterum. Rusts are common fungal diseases that first appear as powdery spores that eventually lead to leaf discoloration and necrosis later in the season. Rust problems can usually be reduced by removing and destroying infected leaves. Fungicide treatment may be warranted for severe cases.

In addition to infecting asters, *Coleosporium asterum* is also the causal agent of pine needle rust on two- and three-needled pines. On pine hosts, this rust initially causes yellowish-orange spots or bands, and later small white tubes that release orange spores from pine needles.



Coleosporium rust on aster

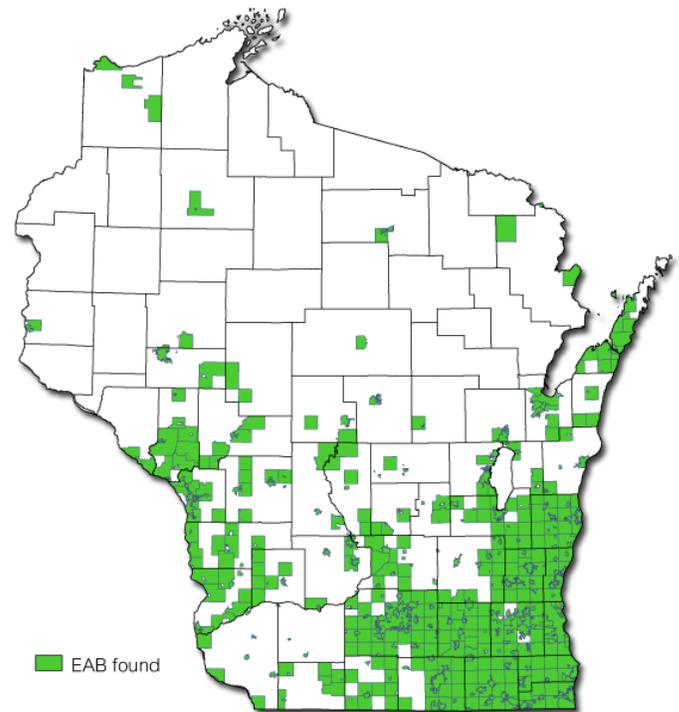
Timothy Allen DATCP

EMERALD ASH BORER: Adult beetles are expected to begin emerging from infested ash trees in southwestern Wisconsin next week. The EAB adult flight period begins around 450 degree days (modified base 50°F), or when black locust trees are in full bloom. Beetles can be found feeding on ash leaves upon emergence. Infested areas in southeastern and northern Wisconsin will likely see the first adults 2-3 weeks from now. All known Wisconsin EAB detections are shown in DATCP's interactive map at www.emeraldashborer.wi.gov.

Homeowner applications of soil-drench systemic insecticide products should be completed soon in order to provide enough time for the product to move from tree roots to the canopy prior to the onset of adult beetle feeding. Insecticides available to homeowners must be applied annually and are effective on healthy trees (at least 50% canopy with foliage) up to 15 inches in diameter at breast height (DBH). Owners of trees larger than 15 inch DBH are advised to consult a certified arborist or tree care specialist to have their ash professionally treated with products suited for mature ash trees. Professionally ap-

plied trunk injected products containing Azadirachtin or Emamectin Benzoate offer 2-3 years of protection and can be applied now through early September.

EAB Detections 2008 to June 5, 2019



■ EAB found

Wisconsin Department of Agriculture, Trade and Consumer Protection



APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 5

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	DWB ⁵	LPTB ⁶	BIOFIX ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	61	27	0	0		0			
Bayfield	Orienta	7	0	—	—		—			
Brown	Oneida	250	21	1	0		—			
Columbia	Rio	0	2	3	0		0			
Crawford	Gays Mills	—	—	—	—		—			
Dane	DeForest	0	30	0	0		6			
Dane	Mt. Horeb	7	10	2	0		0			
Dane	Stoughton	3	61	6	0		2	June 1		
Fond du Lac	Campbellsport	180	19	0	0		3			
Fond du Lac	Malone	11	9	2	0		0	June 5		
Fond du Lac	Rosendale	12	5	0	3		1			
Grant	Sinsinawa	—	—	8	—		—			
Green	Brodhead	0	0	0	0		2			
Iowa	Mineral Point	5	3	27	0		5	May 31		
Jackson	Hixton	22	7	1	0		0			
Kenosha	Burlington	27	3	3	0		—			
Marathon	Edgar	1743	42	0	5		22			
Marinette	Niagara	10	15	0 ^{MD}	0		0			
Marquette	Montello	74	71	3	0		0			
Ozaukee	Mequon	10	7	1	0		0			
Pierce	Beldenville	162	45	35	4		0	June 1		
Pierce	Spring Valley	20	41	0 ^{MD}	3		4			
Racine	Raymond	28	0	2	0		0			
Racine	Rochester	28	7	10	0		0			
Richland	Hill Point	26	5	11	—		84	June 1		
Sheboygan	Plymouth	81	22	0 ^{MD}	3		0			
Walworth	East Troy	5	4	0 ^{MD}	1		2			
Walworth	Elkhorn	10	8	0 ^{MD}	3		1			
Waukesha	New Berlin	30	3	3	0		0			

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵Lesser peachtree borer; ⁶Dogwood borer; ⁷Brown marmorated stink bug; ⁸Apple maggot red ball; *Unbaited; **Baited; ⁹Apple maggot yellow board; ^{MD}Mating disruption.

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	0	0	0	1	1	0	29	0	0
Columbia	Pardeeville	0	1	0	0	4	1	0	10	0	0
Dodge	Beaver Dam	0	0	0	0	0	1	0	47	0	0
Fond du Lac	Ripon	0	0	0	0	0	0	0	7	0	0
Grant	Prairie du Chien	0	1	0	0	0	1	0	2	0	0
Manitowoc	Manitowoc	1	0	0	0	0	2	0	16	0	0
Marathon	Wausau	0	0	0	0	0	1	0	12	0	0
Monroe	Sparta	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	0	2	1	0	0	2	1	491	1	0
Walworth	East Troy	3	0	0	0	0	0	0	2	0	0
Wood	Marshfield	0	2	0	0	0	0	0	17	2	0

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