

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

Showers and storms accompanied seasonable temperatures across the state during the week. Rainfall was variable, though totals were generally less than one inch in most areas. The heaviest rain (2-3 inches) was concentrated in the south-central and southwest counties. Daytime high temperatures were near normal for mid-August and ranged from the upper 50s to lower 80s, with nighttime lows mainly in the 50s. According to the USDA NASS, crop progress continued to be about two weeks behind the last year and the normal pace, with considerable variability in development resulting from spring planting delays and inconsistent summer weather. Warmer, sunnier conditions would be welcome for maturation of late planted corn and soybeans, as well as harvesting of alfalfa, oats, potatoes, and winter wheat.

LOOKING AHEAD

LILY LEAF BEETLE: Price County has been added to the list of Wisconsin counties with confirmed populations of the invasive lily leaf beetle (LLB). According to a resident's report, the beetles were observed on Turk's-cap lilies near Catawba on August 10. The addition of Price County brings the total number of infested Wisconsin counties to 11. Lily leaf beetle was also detected in Dane and Door counties two weeks ago.

CORN ROOTWORM: Preliminary results of the annual beetle survey indicate adult rootworm populations are low. The current state average based on sampling of 165 grain corn fields is 0.2 beetles per plant, with 66% of fields having no detectable population. The survey includes 229 cornfields and is expected to be complete by August 23.

SOYBEAN APHID: Densities remain very low. Although a few soybean fields have developed populations of 30-40 aphids per plant in the past two weeks, most contain fewer than 10 per plant. Final aphid treatments, if required, must be applied before the R5.5 (mid-seed) growth stage to provide any economic benefit.

WESTERN BEAN CUTWORM: Trap counts have decreased markedly, signaling the end of the moth flight period. A total of 371 moths were captured this week, compared to 1,619 last week. The cumulative state count as of August 15 is 3,425 moths in 57 traps, or an average of 60 per trap. Results of the 2019 trapping survey are summarized in the map on page 129.

EUROPEAN CORN BORER: Summer moth emergence has peaked across the southern two-thirds of the state. Larval development is variable at this time, with 1st to 4th-instar caterpillars observed from August 8-14. Controls directed against second-generation larvae must be applied during the period after egg hatch and before the

caterpillars bore into corn stalks and ears, prior to the accumulation of 2,100 degree days (modified base 50°F). The treatment window for second-generation larvae will close by August 22 in southern Wisconsin.



European corn borer larva (3rd or early 4th instar) Krista Hamilton DATCP

CORN EARWORM: Significant flights of 21-80 moths per trap were registered in Dodge and Fond du Lac counties, with 130 moths captured at 5 of 16 pheromone trap locations this week. A cumulative total of 524 moths have been collected since migrants began arriving in mid-July. Although the corn earworm flights recorded over the last five weeks have not been especially large, fresh-market sweet corn growers should continue to monitor silking sweet corn fields and follow CEW flight reports through early September.

FORAGES & GRAINS

POTATO LEAFHOPPER: Alfalfa surveys in western Wisconsin indicate pressure is still moderate to high. The average this week was 1.9 adults and nymphs per sweep, with economic counts of two or more leafhoppers found in about 36% of sampled fields.

PEA APHID: Populations of this forage pest remain low. Most fields sampled from August 8-15 had fewer than 0.5 per sweep, or 50 per 100 sweeps.

PLANT BUG: Counts varied from 0.5-1.2 plant bugs per sweep, with an average of 0.4 per sweep. Numbers in alfalfa have not reached economic levels at any time this season, and reports suggest that populations have been similarly low in fruit and vegetable crops.

DEGREE DAYS JAN 1 - AUGUST 14

LOCATION	50°F	2018	NORM	40°F
Dubuque, IA	2245	2441	2091	3512
Lone Rock	2034	2187	—	3250
Beloit	2079	2149	2125	3301
Sullivan	1923	2031	2008	3096
Madison	2053	2147	2025	3278
Juneau	1850	2061	—	3003
Racine	1777	1927	—	2931
Waukesha	1897	1959	—	3068
Milwaukee	1849	1980	1923	3012
Hartford	1817	1997	—	2965
Appleton	1831	2091	—	2967
Green Bay	1779	2038	1814	2908
Big Flats	1812	2066	—	2970
Hancock	1739	1940	1966	2874
Port Edwards	1737	1950	1929	2862
La Crosse	2005	2295	2214	3221
Eau Claire	1907	2192	1995	3065
Cumberland	1608	1792	1869	2666
Bayfield	1385	1561	—	2380
Wausau	1528	1756	1830	2574
Medford	1491	1686	1675	2527
Crivitz	1656	1884	—	2729
Crandon	1502	1696	1428	2517

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

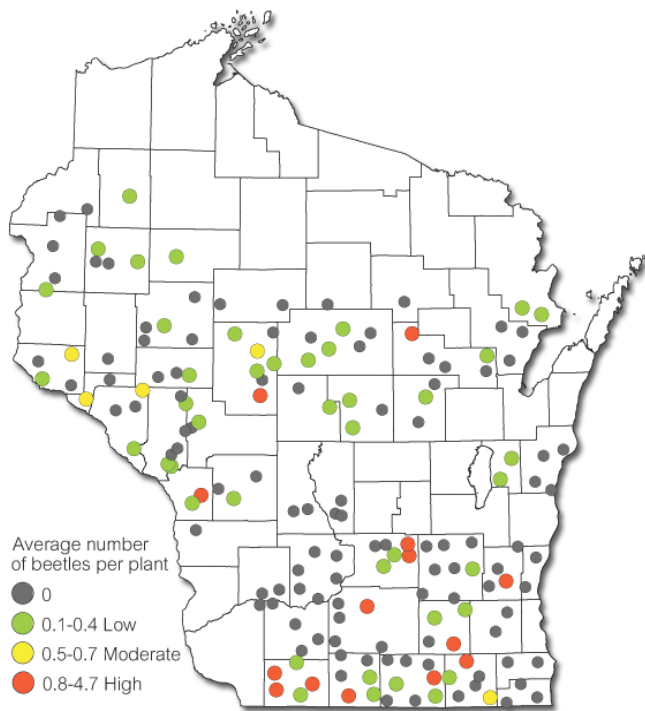
CORN

EUROPEAN CORN BORER: The treatment window for second-generation larvae will close next week in southern and portions of central Wisconsin. Final inspections should be performed before degree day accumulations surpass 2,100 (modified base 50°F) and larvae begin boring into corn stalks. Due to the variability in corn borer development across the state, sweet corn growers are advised to scout fields carefully. The predominant larval stages found this week were the 2nd and 3rd instars.

CORN ROOTWORM: DATCP's annual beetle survey is now in progress. Preliminary results from August 1-14 indicate populations are generally low for the third season in a row. Above-threshold averages of 0.75 or more beetles per plant have been found in only 14 of 165 fields (8%), while beetles were absent from 109 of the survey sites (66%). The current state average is very low at 0.2

beetle per plant. Corn producers should be aware of the potential for corn rootworm adults to redistribute from earlier silking fields to later-planted fields as beetle emergence continues. Now is the time to scout to determine this season's beetle pressure and to forecast the risk of larval root injury to continuous corn in 2020.

Preliminary Corn Rootworm Survey Results
State Ave. = 0.02 beetle per plant



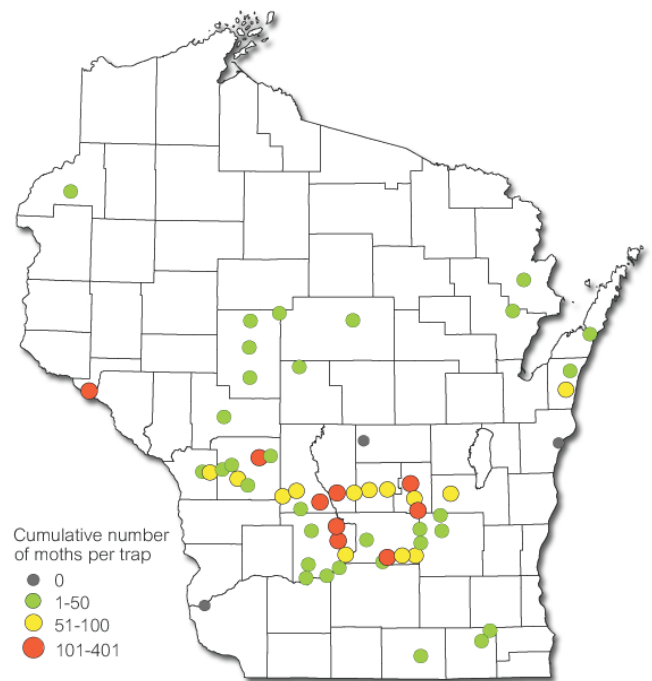
Wisconsin Department of Agriculture, Trade and Consumer Protection

JAPANESE BEETLE: This insect is still common on silks in cornfield margins. The highest beetle pressure noted during August surveys has been in Eau Claire, Grant, Sauk, and Trempealeau counties in the southwest and west-central districts. As a reminder, a fieldwide average of three or more beetles per ear is considered high and may be a concern for fields not yet pollinated.

CORN EARWORM: Small to moderate moth flights into Wisconsin continued, and larvae from migrants that arrived in July are appearing in the tips of corn ears. The pheromone trap high count for the period of August 8-15 was 80 moths at Beaver Dam in Dodge County. All other monitoring sites captured fewer than 27 moths. The earworm caterpillars noted this week in the west-central and central areas (Monroe to Portage County) were about 1-1½ inches long. Routine scouting should be maintained for fresh market and processing sweet corn.

WESTERN BEAN CUTWORM: Moth counts have declined at most monitoring locations. The trap in Green Lake County that captured 258 moths last week caught only 14 this week, and numbers at nearly all other sites fell below 10 per trap for the reporting period. The network's total weekly capture of 371 moths is a sharp decrease from 1,619 last week when the flight peaked at many locations. As of August 14, the state cumulative total is 3,425 moths in 57 traps (60 per trap average.) The highest individual count for the nine-week monitoring period is 401 moths near Princeton. Larvae produced by the annual flight are becoming evident in corn and have been noted recently in Adams, Buffalo, Columbia, Jackson, and Marquette counties.

Western Bean Cutworm Moth Counts 2019



Wisconsin Department of Agriculture, Trade and Consumer Protection

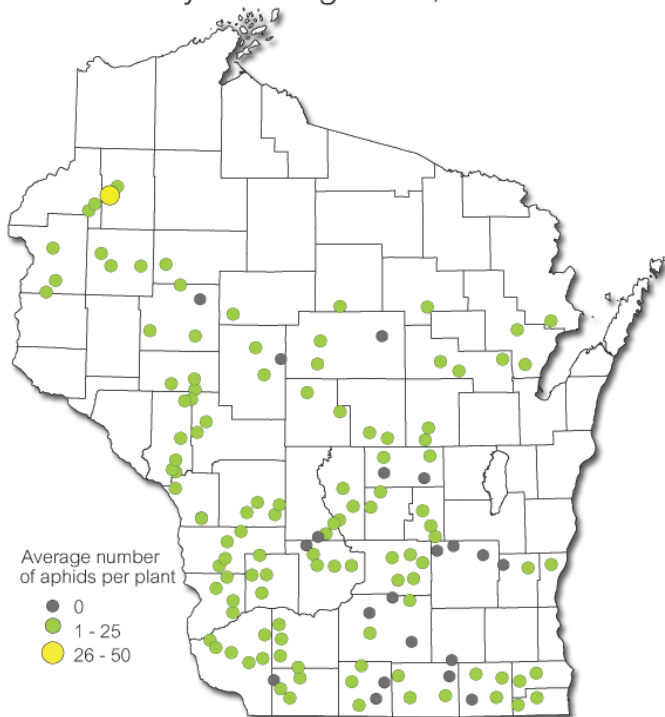
SOYBEANS

GREEN CLOVERWORM: Larvae are still very common in surveyed soybean fields. Defoliation rates are generally minor at less than 5-10%, with locally higher populations observed in Jackson, La Crosse and Trempealeau counties in the west-central area. This sporadic soybean pest is highly susceptible to parasitism and disease, and is normally controlled naturally without insecticide use.

SOYBEAN APHID: Surveys continue to indicate that populations remain well below the 250 aphid-per-plant

treatment threshold in most Wisconsin soybean fields. The state average count is extremely low at just three aphids per plant in 134 fields sampled between July 25 and August 14. Only one field, in Washburn County, had an average above 35 aphids per plant, while 32 fields had no detectable population.

Soybean Aphid Survey Results July 25 - August 14, 2019



Wisconsin Department of Agriculture, Trade and Consumer Protection



SOYBEAN DEFOLIATORS: Defoliation by celery leaf tiers, grasshoppers, green cloverworms, Japanese beetles, leafrollers, stink bugs and thistle caterpillars is prevalent in sampled fields, particularly around field perimeters. A combined defoliation rate exceeding 20% for soybeans in the seed-filling stages may justify treatment if the insects are actively feeding and damage is expected to increase. Defoliation estimates should be based on all parts of the soybean canopy (not just the injured portion) to avoid overestimating leaf injury and thus making unnecessary insecticide applications.

CELERY LEAFTIER: Large numbers of this tan moth that resembles a small European corn borer were noted during surveys in Portage and Wood counties. The larvae attack cultivated flowers, weeds, and vegetables, including beans, beets, celery and spinach, but are not considered a threat to field crops. The last time celery

leaf tier populations reached significant levels in Wisconsin was in 2010.



Celery leaf tier moth

Krista Hamilton DATCP

FRUITS

CODLING MOTH: Significant moth flights continued in several eastern and southern Wisconsin locations. Above-threshold counts exceeding 5 moths per trap were registered in 9 of 21 cooperating orchards during the period ending August 14. Additional spot treatments may be necessary for orchard blocks where this pest remains abundant. Control of second-generation CM is important since the larvae can continue to emerge and damage fruits even after the apples are in storage.



Codling moth larval damage to apples

Patrick Clement flickr.com

OBLIQUEBANDED LEAFROLLER: Oviposition by the summer flight of moths is underway. In contrast to spring caterpillars that primarily feed on vegetative tissue, late-season larvae are more damaging, as they infest

ripening fruit. Effective management of the summer generation in August will reduce the overwintering population and next year's spring brood. Orchard IPM Specialist John Aue recommends a 3-5% fruit injury rate as the treatment threshold and suggests a trapping density of two traps per 20 acres to determine where to direct treatments.



Obliquebanded leafroller moth and pupa Krista Hamilton DATCP

STINK BUG: Late-season activity is increasing. Apple growers should continue to scout fruits for the dimples or dark, irregular circular depressions typical of stink bug feeding, and flag sites with multiple depressions on the same fruit or tree. Spot treatment is usually adequate if damage is light or limited to specific orchard areas of blocks.



Brown marmorated stink bug Krista Hamilton DATCP

SAN JOSE SCALE: Monitoring for second-generation crawlers is suggested through late August. Damage by this pest can increase exponentially from one generation to the next, and problems may persist through mid-

September. As harvest begins, it is recommended that growers examine fruits for the "black cap stage" adults and maintain tape on infested limbs. A count of 10-15 scale crawlers over a few days or 10 crawlers on one tape, may warrant application.

APPLE MAGGOT: Most monitoring sites captured fewer AM flies than in the previous week. The high count was again noted at Gays Mills in Crawford County where 17 flies were trapped on an unbaited red sphere. Apple maggot controls may need to be maintained through the first week of September if flies are being captured at the rate of one fly per trap per week on unbaited traps or five flies per trap per week on baited traps.

VEGETABLES

LATE BLIGHT: Two new cases of late blight were confirmed by the UW this week, one on tomato in Monroe County and the other on potato in Waushara County. These detections follow the season's first three cases in La Crosse, Portage and Wood counties. The predominant strain type identified so far is UW-23, which can be managed with phenylamide fungicides such as mefenoxam and metalaxyl. Test results for the Waushara County case are pending.



Late blight lesion on tomato leaf Krista Hamilton DATCP

Late blight could begin to spread rapidly if weather conditions turn cool and damp in coming weeks, causing entire plants to decline and die in as few as 7-10 days. It is critical that susceptible potatoes and tomatoes in the La Crosse, Portage, and Wood County areas be treated with a combination of antispore and protectant fungicides to limit new infections. Gardeners and potato

growers elsewhere are advised to continue monitoring their crops for signs of infection, including brownish-black water soaked leaf lesions, dark stem lesions or sunken golden- to dark brown spots with distinct rings on the fruit surface. Removal and destruction of infected plants is required if lesions are noticed. Diseased plant material should not be composted.



Late blight lesion on tomato

Krista Hamilton DATCP

SQUASH BUG: All stages of this pest were observed this week on melons, pumpkins and squash in several community gardens. Most cucurbit crops have matured beyond the critical period of control (seedling and flowering stages), but squash bug feeding will persist through fall, causing aesthetic damage and, in extreme cases, killing plants. Disposing of all cucurbit foliage and plant debris around the garden will eliminate overwintering sites and help reduce next year's population.



Squash bugs

Tracy Schilder DATCP

ONION MAGGOT: Late-summer flies are beginning to emerge in advanced southern Wisconsin locations with

the accumulation of 3,230 degree days (base 40°F). Larvae from this third and final generation will overwinter in cull onions or bulbs left behind in fields. Good fall clean-up and rotating to a non-crop host are recommended if onion maggot problems occurred this season. Onion maggot degree days as of August 14 are as follows: Beloit 3,301, Madison 3,278, Eau Claire 3,065, Green Bay 2,908, and Hancock 2,874.

CABBAGE LOOPER: Larval damage to cole crops is very common this season. Scouting should continue through early September. A 10% infestation rate is the suggested treatment threshold from early heading until harvest to protect the market quality of cabbage. The same threshold applies to broccoli and cauliflower once flowers or curds begin to develop.



Cabbage looper damage

Krista Hamilton DATCP

NURSERY & FOREST

JAPANESE BEETLE: Nursery operators and homeowners continue to report damage to linden trees, roses, and numerous other ornamental plants. Adequate soil moisture levels favored grub survival from last season and may be one of the factors contributing to the outbreaks this season. Peak emergence has occurred in most areas and populations should begin to decline by the end of the month.

OAK WILT: Symptoms of oak wilt have become evident where the disease occurs in northern Wisconsin, making late summer an opportune time to assess oak stands for damage. This lethal oak disease is spread by pruning or wounding oaks during the spring and summer months, which allows the sap-feeding beetle vectors to introduce

the fungus to healthy trees. Once introduced into an oak stand, the fungus can spread underground through grafted roots. Symptoms are more pronounced in red oaks as the leaves turn brown and wilt in a short period of time, while white oaks have additional defenses against the fungus and the effects are less conspicuous. It is strongly recommended that residents and foresters do not prune oak trees until late fall or winter in areas where the disease is established. Oak wilt has been confirmed in 61 of Wisconsin's 72 counties.



Oak wilt symptoms on oak leaves

ISU Plant Disease Clinic

DOGWOOD SAWFLY: Larvae were observed on the foliage of redosier dogwoods in La Crosse County. At this time of year, defoliation has usually progressed to the point that most leaf tissue has been fully consumed and only the midvein remains. Chemical control is effective against early-instar larvae (less than $\frac{3}{4}$ inch), but that treatment window has closed for this season. Varieties most susceptible to sawfly infestation are the gray and redosier dogwoods.



Dogwood sawfly larvae on redosier dogwood

Konnie Jerabek DATCP

OAK TWIG PRUNER: Boring by the larval stages of this oak pest in small branches and twigs can result in considerable branch-drop by late summer. If lawns are covered with twigs and branches 20-40 inches long with the leaves still attached, the oak twig pruner is likely the cause. Property owners should look for a small plug of wood or frass at the end of the twig to confirm. Hardwood trees attacked by this beetle may be seriously damaged but are usually not killed. The most effective control is to collect and burn the fallen branches in autumn or winter.

TAR SPOT: This recognizable leaf blight disease is developing on maple trees across Wisconsin. The pale yellow spots apparent 2-3 weeks ago are becoming raised, black, tar-like lesions. Tar spot is an aesthetic disorder best controlled by clearing and disposing of infected leaves in fall to prevent the spores from spreading. In rare cases where treatment is warranted, three fungicide applications are necessary for control: one at bud break, one when leaves are half expanded, and one when leaves are fully expanded.



Tar spots on a maple leaf

soilplantlab.missouri.edu

APPLE INSECT & BLACK LIGHT TRAP COUNTS AUGUST 8 - 15

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	DWB ⁵	LPTB ⁶	BMSB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	9	6	0	2	3	0	0	2	*3
Bayfield	Oriente	40	1	0	5	40	3	—	0	*3
Brown	Oneida	425	39	19	2	25	1	0	1	1
Columbia	Rio	10	26	5	0	1	1	0	5	1
Crawford	Gays Mills	316	7	0	—	0	1	—	*17	—
Dane	DeForest	—	—	—	—	—	—	—	—	—
Dane	Mt. Horeb	152	50	4	7	0	0	0	0	0
Dane	Stoughton	—	—	—	—	—	—	—	—	—
Fond du Lac	Campbellsport	200	6	0	3	0	0	0	0	0
Fond du Lac	Malone	80	24	0	14	0	0	0	**3	0
Fond du Lac	Rosendale	18	31	5	4	5	6	0	1	2
Grant	Sinsinawa	—	—	—	—	—	—	—	—	—
Green	Brodhead	—	—	—	—	—	—	—	—	—
Iowa	Mineral Point	280	53	36	2	0	0	0	**4	*1
Jackson	Hixton	62	15	13	1	2	0	0	0	0
Kenosha	Burlington	995	29	4	5	16	1	0	8	—
Marathon	Edgar	—	—	—	—	—	—	—	—	—
Marinette	Niagara	—	—	—	—	—	—	—	—	—
Marquette	Montello	1053	84	8	2	3	2	0	0	0
Ozaukee	Mequon	50	2	4	5	1	0	0	1	0
Pierce	Beldenville	—	—	—	—	—	—	—	—	—
Pierce	Spring Valley	111	14	0 ^{MD}	5	31	20	0	*1	0
Racine	Raymond	732	15	17	31	16	1	—	0	0
Racine	Rochester	422	42	9	2	0	0	1	*4	0
Richland	Hill Point	145	35	4	1	4	2	0	**0	**0
Sheboygan	Plymouth	—	—	—	—	—	—	—	—	—
Walworth	East Troy	54	4	0 ^{MD}	8	3	3	0	*0	*0
Walworth	Elkhorn	70	6	0 ^{MD}	6	4	1	0	*0	*0
Waukesha	New Berlin	400	3	17	0	17	0	—	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	0	0	5	0	0
Columbia	Pardeeville	0	1	1	13	17	4	2	6	0	2
Dodge	Beaver Dam	0	0	0	9	4	0	0	0	0	2
Fond du Lac	Ripon	0	0	0	6	6	0	0	1	0	0
Grant	Prairie du Chien	3	0	0	6	0	0	0	0	0	1
Manitowoc	Manitowoc	—	—	—	—	—	—	—	—	—	—
Marathon	Wausau	0	0	0	30	0	4	4	0	0	4
Monroe	Sparta	0	0	0	0	7	0	0	0	0	0
Rock	Janesville	0	3	0	5	0	22	0	25	0	0
Walworth	East Troy	0	0	0	5	0	0	0	0	0	0
Wood	Marshfield	2	0	1	8	0	2	3	0	0	2

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