

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

Rain lingered in parts of the state early in the week, although overall growing conditions remained mostly favorable for summer crops. The warm and very humid air of July 6 and 7 was replaced by lower humidity levels and more comfortable temperatures mid-week. Afternoon highs ranged from the upper 70s to mid-80s and were near normal for this time of year. Low temperatures were in the upper 50s in the far northwest to around 70 in the southeast. Crop development continued to progress rapidly across the state, despite surplus soil moisture and weed pressure. The most advanced corn in the southwestern counties is five to seven feet tall and is tasselling. Overall, 77% of the corn crop was reported in good to excellent condition at the start of the week, a three percentage point decline from last week but 14 points higher than the same time last year. More heat and less rain are needed as crops enter the critical reproductive stages this month. A cooler and drier weather pattern is forecast for Wisconsin next week.

LOOKING AHEAD

EUROPEAN CORN BORER: The treatment window for first generation larvae has closed near Beloit, Madison, La Crosse, Lone Rock and other southern locations where 1,100 degree days (modified base 50°F) were surpassed

as of July 9. Third and fourth-instar larvae are entering corn midribs, tassels and stalks where they are protected from insecticide sprays. Chemical control remains an option for growers in the southeastern, central and northern counties for another week.

SOYBEAN APHID: Counts remain extremely low in most soybean fields. All of the 87 sites surveyed since the last report had averages below 14 aphids per plant and 78% of the fields had no detectable aphid population. Economic densities of 250 or more aphids per plant have not been observed as of July 9.

TRUE ARMYWORM: Larvae are still fairly common in corn and many surveyed fields are showing 1-6% of plants with ragged leaves and defoliation. Continued scouting is recommended throughout July since black light traps are registering locally heavy flights (82 moths at Janesville from July 3-9) and environmental conditions remain very favorable for armyworm problems.

WESTERN BEAN CUTWORM: The annual flight is under way in the southern half of the state where black light and pheromone traps registered low counts of 1-8 moths from July 3-9. Twenty-five percent emergence of the moth population is anticipated in the next two weeks as far north as Hancock in Waushara County, as accumulations of 1,320 degree days (modified base 50°F) are reached. Corn in the pretassel stage is preferred for oviposition

and should be inspected for eggs and small larvae in the week ahead.



Western bean cutworm eggs Mark Moore, Moore Communications

APPLE MAGGOT: The first flies of the season appeared on traps in Fond du Lac and Sheboygan County apple orchards last week, marking the start of the adult emergence period. Close inspection of red sphere and yellow sticky traps is suggested, particularly for orchards impacted by recent hail storms. The apple maggot fly is distinguished from similar fruit flies by an F-shaped wing banding pattern and a pronounced white spot on the thorax.

CORN ROOTWORM: Beetles are emerging in Dane and Rock counties. These insects will become increasingly abundant this month, with peak emergence anticipated by mid- to late August. Corn that lodges unexpectedly after storms or heavy rain should be examined to determine if corn rootworm larvae are the cause of the damage. Growers of Bt-rootworm hybrids with the Cry3Bb1 trait (YieldGard RW, VT Triple products and Genuity SmartStax) who experience poor root protection this season and suspect resistance are advised to notify their seed company representative.

FORAGES & GRAINS

ALFALFA WEEVIL: Larval populations are now less than 0.1 per sweep and pupation is occurring statewide. No further alfalfa weevil problems are anticipated this season.

PLANT BUG: Surveys conducted as far north as Marathon and Shawano counties yielded counts of 0.2-1.6

DEGREE DAYS JANUARY 1 - JULY 9

| LOCATION | 50°F | 2013 | NORM | 48°F | 40°F |
|--------------|------|------|------|------|------|
| Dubuque, IA | 1268 | 1220 | 1312 | 1350 | 2013 |
| Lone Rock | 1243 | 1178 | — | 1316 | 1979 |
| Beloit | 1292 | 1304 | 1328 | 1351 | 2051 |
| Sullivan | 999 | 1182 | 1241 | 1083 | 1691 |
| Madison | 1189 | 1171 | 1264 | 1264 | 1924 |
| Juneau | 1079 | 1094 | — | 1172 | 1782 |
| Racine | 941 | 994 | — | 1041 | 1653 |
| Waukesha | 999 | 1043 | — | 1083 | 1691 |
| Milwaukee | 943 | 972 | 1130 | 1033 | 1636 |
| Hartford | 999 | 1010 | — | 1083 | 1691 |
| Appleton | 976 | 1003 | — | 1065 | 1659 |
| Green Bay | 889 | 929 | 1099 | 983 | 1566 |
| Big Flats | 1100 | 1024 | — | 1152 | 1744 |
| Hancock | 1100 | 1033 | 1230 | 1152 | 1744 |
| Port Edwards | 1057 | 989 | 1199 | 1117 | 1693 |
| La Crosse | 1222 | 1130 | 1388 | 1299 | 1938 |
| Eau Claire | 1074 | 1039 | 1240 | 1150 | 1748 |
| Cumberland | 919 | 915 | 1139 | 991 | 1524 |
| Bayfield | 625 | 617 | — | 657 | 1098 |
| Wausau | 908 | 909 | 1114 | 979 | 1518 |
| Medford | 876 | 927 | 1012 | 948 | 1481 |
| Crivitz | 837 | 860 | — | 916 | 1450 |
| Crandon | 790 | 840 | 876 | 843 | 1336 |

Method: ModifiedB50; SineB48; ModifiedB40 as of Jan 1, 2014. NORMALS based on 30-year average daily temps, 1981-2010.

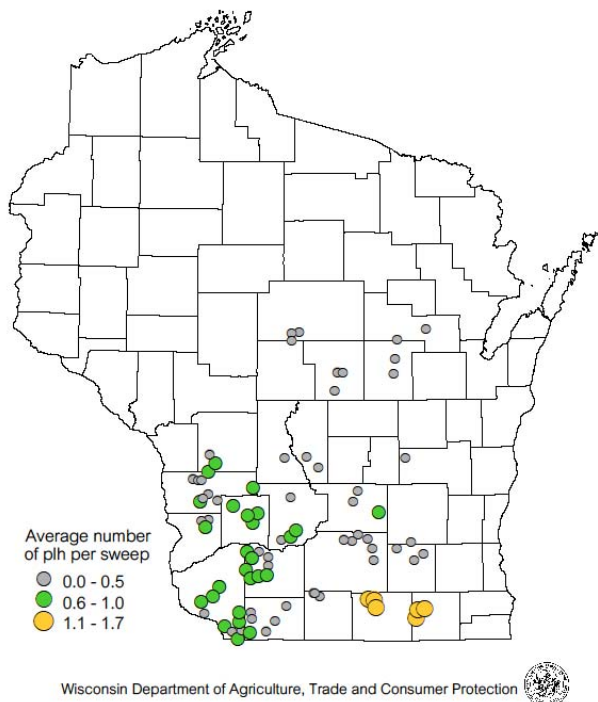
plant bugs per sweep, which are standard for this time of year and still low in comparison to the economic threshold of five per sweep in alfalfa.

PEA APHID: Populations of this insect collapsed abruptly since the last report was issued and now average only 0.5 per sweep compared to 4.9 per sweep two weeks ago. The prevailing wet, humid weather of late June and early July favors the spread of fungal pathogens that regulate pea aphids and likely contributed to the population decline observed.

POTATO LEAFHOPPER: Counts in second-crop alfalfa remain much the same as previously reported, except in the southernmost counties where populations appear to be increasing. Of the 84 fields surveyed in the past two weeks, 52 (62%) had fewer than 0.5 leafhoppers per sweep, 26 (31%) had 0.6-1.0 per sweep and six (7%) had 1.1-1.7 per sweep. The average was 0.5 per sweep. Economic counts of 2.0 or more leafhoppers per sweep

for alfalfa 12 inches or taller were not observed. Circumstances have not justified treatment in any alfalfa field surveyed as of July 9.

Potato Leafhopper Counts July 1-9, 2014



CORN

WESTERN BEAN CUTWORM: The first moths of 2014 were registered from June 26-July 3 in traps in Columbia, Dane and Fond du Lac counties. Another 25 moths were collected in Adams, Columbia, Green Lake, Marquette, Monroe, Sauk and Walworth counties this week. These low counts signal the start of the flight period in Wisconsin. Participants in the DATCP western bean cutworm trapping network are reminded to begin reporting weekly moth totals to Tracy Schilder at tracy.schilder@wisconsin.gov or by phone at (608) 224-4544 by July 16.

EUROPEAN CORN BORER: Larval infestations were unexpectedly common in the south-central, southwest and west-central areas, with 33 of 86 fields (38%) examined showing 1-14% of plants with whorl feeding injury. Second and third-instar larvae were the predominant development stages in Dane, La Crosse, Richland and Vernon counties. Chemical control has become less effective now that the caterpillars are boring into corn midribs and stalks. Close inspection of susceptible cornfields and Bt refuge areas is advised to determine

the percentage of whorls infested with small larvae and whether control is justified. Growers of Bt corn should also scout fields this month to evaluate the performance of their hybrids.



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

STALK BORER: Damage to corn has become pronounced as larvae approach maturity. Surveys of V7-VT corn fields found infestation rates of 2-43%, with the highest population noted near DeForest in Dane County. Spot treatment is no longer effective for many south-central fields since the larvae have bored into the stalks and unemerged tassels. Treatments must be applied from 1,400-1,700 degree days (base 41°F), or prior to the V7 stage. Stalk borer feeding is unlikely to kill corn plants beyond V7.



Stalk borer leaf feeding damage

Krista Hamilton DATCP

CORN EARWORM: Larvae resulting from an early and minor migration last month are appearing in corn in Richland and Sauk counties. Sweet corn should be checked

regularly for this pest, and treatments applied if 50% or more of the whorls are infested.

TRUE ARMYWORM: Another significant flight of 82 moths reported from Janesville this week suggests that corn and wheat growers should remain alert for larval infestations, especially in corn with grassy weed pressure and wheat fields lodged during recent severe thunderstorms.

SOYBEANS

JAPANESE BEETLE: This generalist defoliator is appearing in soybeans, corn and other crops. Beetle populations can vary greatly between the field interior and border rows, emphasizing the importance of thorough inspection of all areas of soybean and cornfields before making control decisions. Soybeans can usually tolerate substantial defoliation without reduction in yield, although treatment is justified for fields with defoliation rates of 30% prior to bloom (R1) and 20% between bloom and pod fill (R1-R6).



Japanese beetle

Krista Hamilton DATCP

SOYBEAN APHID: Levels of this insect remain well below the economic threshold of 250 aphids per plant and over three-quarters of the soybean fields surveyed in the past two weeks still had no detectable population. Average counts at the sites sampled from July 1-9 were less than 13 aphids per plant and 29 per infested plant, based upon examination of 40 plants per field. Only 18 of the 87 (22%) had detectable infestations. The highest total count during the two-week period was 512 aphids on 18 of 40 plants in (12.8 per plant) in an Adams County field. Despite the low sample numbers, aphid populations could increase rapidly in flowering soybean fields and

economic densities may develop before the end of the month. This pest requires consistent monitoring from now until the R5.5 stage of soybean growth in August.



Soybean aphids

Krista Hamilton DATCP

FRUITS

APPLE MAGGOT: Emergence has been reported from apple orchards in Campbellsport and Plymouth where 1-2 flies were captured on traps in the past two weeks. Initial apple maggot treatments should begin 7-10 days after the first fly appears on a yellow sticky trap and immediately if the fly is found on a red sphere, with later sprays following at 10- to 14-day intervals as long as flies are appearing on traps. A trapping density of three red spheres per 10 acres is suggested. The economic threshold for apple maggot control is one fly per unbaited trap per week or five flies per baited trap per week.

CODLING MOTH: The spring flight of moths has declined in most orchards and fruit damage is becoming apparent. The summer flight is expected to begin in the next two weeks. Apple growers are advised to check their records for the spring biofix to estimate the second biofix, which generally occurs 1,000 degree days (base 50°F) later. In preparation for the summer flight, growers should replace pheromone lures and begin more frequent trap checks. Larvicides or other controls should be maintained as long as counts remain above five moths per trap per week.

JAPANESE BEETLE: Adults are emerging in southern and western Wisconsin and neonicotinoids or Neem oil spray to repel the beetles must be applied very soon, while populations are low and the beetles are still immigrating

into the orchard. Neem oil is appropriate and effective for organic systems when applied repeatedly. PyGanic is another organically acceptable method for immediate contact control but dissipates quickly if applied during the day. A third option is kaolin clay (Surround WP) which deters both Japanese beetle and apple maggots, although its efficacy against Japanese beetle is inconsistent.

GRAPE PHYLLOXERA: Grape growers concerned about the appearance of phylloxera galls on grape foliage are reminded that insecticide treatments should have been applied at the first sign of gall formation last month. No insecticide can reduce or eliminate the galls once they have formed on the leaves.



Grape phylloxera

www.helpfulgardener.com

SPOTTED WING DROSOPHILA: A report issued by the UW-Madison Fruit Crops Entomologist, Christelle Geudot, confirms the year's first capture of SWD flies in Vernon County on June 30. The threat of SWD to ripening fruit remains uncertain and it is not known if infestations will be as widespread or severe as in 2012 and 2013.

The first appearance of flies should serve as an early warning to fruit growers to escalate monitoring efforts (checking traps twice weekly), install barrier netting, or make preparations for possible insecticidal control. The use of insecticides is not advised until SWD infestation is verified by trapping or visual inspection. After the first flies or larvae are confirmed, applications of one of the insecticides registered for control of SWD may proceed at 4- to 5-day intervals from ripening through harvest. A list of insecticide options can be found on the UW-Madison SWD website at <http://labs.russell.wisc.edu/>

[swd/management-2/](#). For organic operations, the OMFI-approved insecticides PyGanic and Entrust are available for SWD control.



Spotted wing drosophila larva in raspberry

wrlr4.ucdavis.edu

SAN JOSE SCALE: First generation crawlers are settling and the "white cap" scales are appearing on fruits. Apple growers who did not tape scaffold branches earlier this season to monitor the crawlers should scout for the crawlers this weekend and consider implementing controls or flagging problem areas for more intense scouting when the second generation appears in August. Final treatment decisions must be made soon, while the bright yellow crawlers are still active.

San Jose Scale crawler 'white cap phase' blogs.cornell.edu/jentsch/2014

VEGETABLES

BACTERIAL WILT: Reports indicate this insect-transmitted disease is developing on cucumbers in Dane and Sauk counties. The vectors are the striped and spotted cucum-

ber beetles. Control consists of eliminating the beetles—either by hand or with the use of an insecticide such as rotenone or carbaryl—and removing symptomatic plants to reduce inoculum sources. Even small numbers of infected beetles can devastate a planting and must be eliminated before disease symptoms appear. Treatment is warranted for infestations of 4-5 beetles per 50 plants.



Bacterial wilt of cucumber

missouribotanicalgarden.org

SQUASH VINE BORER: Moths are still very active around pumpkins, zucchini and squash in home gardens. Growers of these vine crops should continue checking susceptible plants for flat, brown eggs deposited at the base of stems as long as the moths are present. Control is required as soon as the eggs are noticed to prevent the larvae from boring into the vines. Gardeners may remove the eggs by hand, cover the plants with netting, and destroy the adults. Carbaryl applied to the plant bases as a weekly spray during the three-week egg laying period is also an effective form of chemical control.



Squash vine borer adult

qwen.wan.flickr.com

LATE BLIGHT: To date there have been no confirmed cases of late blight in the state, but disease severity value accumulations have exceeded the late blight risk threshold in the Antigo, Grand Marsh, Hancock and Plover areas, indicating conditions are favorable for disease development. The University of Wisconsin-Extension recommends that growers begin preventative fungicide applications to protect their tomatoes and potatoes.

SQUASH BUG: These insects are feeding on cucurbit crops from Grant to Monroe County, causing symptoms similar to bacterial wilt. Unlike bacterial wilt, affected plants usually recover once the squash bugs have been controlled. According to the UW-Extension, insecticide options for commercial plantings include synthetic pyrethroids (e.g. Brigade, Mustang, Pounce, Warrior, etc.) or neonicotinoids (Assail, Belay, Scorpion, Endigo). Organic growers should use directed applications of pyrethrum (PyGanic) or the pre-mix with azadirachtin (Azera). An average of one egg mass per plant when plants are flowering is recommended as the basis for initiating treatment. For home gardens, soapy water or carbaryl treatment provides some control but reapplication is usually required.



Squash bug nymphs

www.gardensimply.com

NURSERY & FOREST

GUIGNARDIA LEAF BLOTCH: This leaf spot disease is developing on Boston ivy and Ohio buckeye trees in Ozaukee and Washington Counties. Symptoms include irregular, reddish-brown leaf lesions with yellow margins that distort affected foliage as they increase in size and severity. Disease development can be suppressed by

disposing of fallen leaves in autumn to reduce inoculum levels.



Guignardia leaf blotch on buckeye

Liz Meils DATCP

SEPTORIA LEAF SPOT: Dogwood shrubs in Kenosha, Milwaukee, Ozaukee, Washington and Waukesha counties were showing symptoms of this common fungal disease. Diagnostic characteristics are small, dark purple lesions that first appear on the lower leaves and stems and later enlarge and spread to the upper leaves. The simplest cultural control is to increase plant spacing to promote airflow.



Septoria leaf spot on dogwood 'Ivory Halo'

Liz Meils DATCP

BASIL DOWNY MILDEW: This fungal-like disease was observed on basil at garden centers in Brown County. First reported in Wisconsin in 2010, basil downy mildew can rapidly devastate basil crops and render plants unmarketable. Diagnostic characteristics include yellowing and downward curling of foliage and grayish-purple, fuzzy sporulation on leaf undersides. This disease thrives

under warm, humid conditions, with symptoms progressing from the lower leaves upward.

Cultural controls include reducing humidity and leaf wetness, increasing airflow, planting less susceptible varieties, and using clean seed. Any fungicide product used as a preventative measure must be applied before symptoms appear and reapplied at regular intervals.

GYPSY MOTH: The second phase of the 2014 gypsy moth aerial spraying program began July 9 with treatments in five southwestern Wisconsin counties: Crawford, Grant, Iowa, La Crosse and Richland. This mid-summer treatment phase, intended to disrupt mating by using a pheromone product specific to gypsy moths, is expected to be completed before the end of the month. Gypsy Moth Program specialists report that the moth flight began on July 9 in the Magnolia and Orfordville areas of Rock County. The last of the state's planned 13,400 pheromone traps were set earlier this week. Results obtained by the annual trapping survey are used to locate emerging gypsy moth populations and determine future treatment sites.

TREE ASSISTANCE PROGRAM: Nursery stock growers and orchardists are now eligible to receive financial assistance for replanting and rehabilitating trees, shrubs and vines damaged by natural disasters as part of the Tree Assistance Program (TAP), authorized by the 2014 Farm Bill and administered by the USDA Farm Service Agency (FSA). The program covers tree losses retroactively back to October 1, 2011. Eligible nursery plants include ornamental, fruit, nut and Christmas trees produced for commercial sale. Nursery growers must have sustained tree losses of 15% or greater to qualify for assistance. The total acreage of planted trees, shrubs or vines for which a grower can receive TAP payments cannot exceed 500 acres per year, and no person or partnership may receive more than \$125,000 per year. Nursery operators should contact their local FSA office or USDA service center for additional information.

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 3-9

| COUNTY | SITE | STLM ¹ | RBLR ² | CM ³ | OBLR ⁴ | AM RED ⁵ | YELLOW ⁶ |
|---------------------|---------------|-------------------|-------------------|-----------------|-------------------|---------------------|---------------------|
| Bayfield | Keystone | 0 | 0 | 0 | 15 | — | — |
| Bayfield | Oriente | 0 | 0 | 0 | 19 | — | — |
| Brown | Oneida | 900 | 40 | 17 | 6 | — | — |
| Columbia | Rio | 75 | 20 | 1 | 0 | 0 | 0 |
| Crawford | Gays Mills | 374 | 6 | 0 | 1 | — | — |
| Dane | Deerfield | 581 | 95 | 7 | 0 | 0 | 0 |
| Dane | McFarland | 289 | 76 | 0 | 4 | — | — |
| Dane | Mt. Horeb | 292 | 72 | 1 | 16 | — | — |
| Dane | Stoughton | 268 | 41 | 14 | 4 | 0 | 6 |
| Dane | West Madison | 214 | 70 | 26 | 2 | | |
| Fond du Lac | Campbellsport | 89 | 25 | 0 | 12 | 0 | 0 |
| Fond du Lac | Malone | 100 | 100 | 3 | 5 | — | — |
| Fond du Lac | Rosendale | — | — | — | — | — | — |
| Grant | Sinsinawa | 47 | 0 | 0 | 3 | 0 | 0 |
| Green | Brodhead | 24 | 36 | 1 | 3 | 0 | 0 |
| Iowa | Mineral Point | 370 | 142 | 4 | 7 | — | — |
| Jackson | Hixton | 38 | 1 | 4 | 6 | 0 | 0 |
| Kenosh ⁰ | Burlington | 375 | 160 | 5 | 5 | 0 | 0 |
| Marathon | Edgar | 560 | 28 | 6 | 7 | 0 | 0 |
| Marinette | Niagara | 25 | 2 | 6 | 34 | — | — |
| Marquette | Montello | 1008 | 16 | 0 | 5 | 0 | 0 |
| Ozaukee | Mequon | 200 | 8 | 18 | 9 | — | — |
| Pierce | Beldenville | 306 | 0 | 4 | 3 | 0 | 0 |
| Pierce | Spring Valley | 61 | 32 | 0 | 4 | 0 | 0 |
| Racine | Raymond | 350 | 68 | 5 | 8 | 0 | 0 |
| Racine | Rochester | 500 | 125 | 13 | 3 | 0 | 0 |
| Richland | Hillpoint | 810 | 42 | 1 | 7 | 0 | 0 |
| Sheboygan | Plymouth | 396 | 30 | 5 | 24 | **1 | 0 |
| Walworth | East Troy | — | — | — | — | — | — |
| Walworth | Elkhorn | — | — | — | — | — | — |
| Waukesha | New Berlin | 40 | 32 | 19 | 11 | 0 | 0 |

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵Apple maggot red ball; ⁶Unbaited AM trap; ^{**}Baited AM trap; ⁰Apple 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 |
|-------------|------------------|------------------|------------------|-----------------|------------------|------------------|-------------------|------------------|-----------------|------------------|-------------------|
| Chippewa | Chippewa Falls | — | — | — | — | — | — | — | — | — | — |
| Crawford | Prairie du Chien | — | — | — | — | — | — | — | — | — | — |
| Dane | Mazomanie | 0 | 0 | 0 | 0 | 19 | 1 | 0 | 3 | 1 | 0 |
| Fond du Lac | Ripon | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 5 | 0 | 0 |
| Manitowoc | Manitowoc | — | — | — | — | — | — | — | — | — | — |
| Marathon | Wausau | 0 | 1 | 0 | 0 | 2 | 1 | 5 | 9 | 0 | 0 |
| Monroe | Sparta | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 6 |
| Portage | Plover | — | — | — | — | — | — | — | — | — | — |
| Rock | Janesville | 1 | 33 | 0 | 0 | 0 | 34 | 0 | 82 | 0 | 0 |
| Vernon | Coon Valley | — | — | — | — | — | — | — | — | — | — |
| Walworth | East Troy | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 0 |
| Wood | Marshfield | 0 | 8 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 |

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