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# 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

Dry weather persisted as crops continued through the latter stages of reproduction. Weekly rainfall totaled less than 0.25 inch across most of the state, although there were reports of heavy rain in excess of two inches in the northeast and east-central counties on August 11-12. A high unofficial total of 5.5 inches was recorded at Maplewood in Door County, according to the National Weather Service Green Bay Office. Growing conditions for Wisconsin crops remained mostly favorable, despite lingering short-term dryness. Reproductive to filling soybeans continued to advance under below-normal temperatures and a lack of heat stress, and 65% of the crop was setting pods at the start of the week, a 20% increase over last week and nine points ahead of the five-year average. Condition ratings for corn declined by three percentage points, but 69% of the crop is in the good to excellent category, 10 percentage points better than the same time last year.

## LOOKING AHEAD

WESTERN BEAN CUTWORM: The annual flight is now 75-100% complete statewide. As of August 13, the cumulative count is 490 moths in 103 traps, or approximately five per trap. This total is nearly equivalent to the 584 moths collected in 114 traps (five per trap) by the same time last year. A few moths may continue to appear in the northern counties for another two weeks, but the flight has effectively ended in southern and central Wisconsin.

EUROPEAN CORN BORER: Moth counts have increased at a few black light trap locations since the last report. The degree day model for this pest suggests that summer flight has peaked in the southwest, south-central and west-central areas. Susceptible corn should be inspected for egg masses and larvae before 2,100 degree days (modified base 50°F) have been surpassed and the treatment window for second generation corn borers closes.

CORN ROOTWORM: Preliminary results of the August beetle survey indicate populations are variable, with most fields containing low to moderate average counts of less than 0.7 beetle per plant and a few showing very high counts of 2.2-11.2 per plant. Above-threshold populations have been observed in 16 of 66 (24%) fields surveyed as of August 13. The survey for adult rootworms, which indicates larval root damage potential for 2015, will continue during the next two weeks in the central and northern areas.

SPOTTED WING DROSOPHILA: Flies and larvae have now been confirmed in Crawford, Dane, Door, Iowa, Jackson, La Crosse, Monroe, Rock, St. Croix, Vernon and Washburn counties, for a total of 11 counties since

the first larvae were detected on June 30. The infestations are primarily affecting raspberries, although adult flies have also been collected in traps set near grapes. Spotted wing drosophila poses the greatest threat to ripening fruits, but fruits that drop, become overripe, or split can harbor larvae and should be removed and disposed of to minimize the risk of damage to later-ripening varieties. Insecticide sprays will not protect the crop once the maggots have infested the fruits.

*Spotted wing drosophila larva in raspberry* wrir4.ucdavis.edu

## FORAGES & GRAINS

POTATO LEAFHOPPER: Counts remain below-threshold in all surveyed areas, rarely exceeding 1.5 adults and nymphs per sweep. Levels of this insect have been low to moderate all season long. Routine monitoring should continue through early September.

PLANT BUG: Nymphs were less abundant in fields sampled this week, indicating reproduction has slowed. Populations ranged from 0.1-3.5 per sweep and averaged 1.5 per sweep, compared to an average of 2.1 per sweep last week. The tarnished plant bug is still the most common of the plant bug species found in Wisconsin alfalfa.

PEA APHID: Levels of this insect have not increased in response to this month's cool and mostly dry weather, which ordinarily favors aphid population growth. The average count from August 7-13 was less than one per sweep. Pea aphid levels have been consistently low since the last week of June when counts peaked at approximately 20 aphids per sweep.

## DEGREE DAYS JANUARY 1 - AUG 13

| LOCATION | 50°F | 2013 | NORM | 48°F | 40°F |
|---|---|---|---|---|---|
| *Dubuque, IA* | 1918 | 1900 | 2071 | 2059 | 3015 |
| *Lone Rock* | 1917 | 1835 | — | 2038 | 3007 |
| *Beloit* | 1963 | 2020 | 2104 | 2081 | 3074 |
| *Sullivan* | 1569 | 1828 | 1989 | 1711 | 2610 |
| *Madison* | 1821 | 1836 | 2004 | 1942 | 2907 |
| *Juneau* | 1677 | 1718 | — | 1828 | 2730 |
| *Racine* | 1528 | 1632 | — | 1688 | 2591 |
| *Waukesha* | 1569 | 1650 | — | 1711 | 2610 |
| *Milwaukee* | 1519 | 1590 | 1901 | 1668 | 2562 |
| *Hartford* | 1569 | 1609 | — | 1711 | 2610 |
| *Appleton* | 1577 | 1601 | | 1726 | 2612 |
| *Green Bay* | 1471 | 1519 | 1795 | 1625 | 2500 |
| *Big Flats* | 1687 | 1601 | — | 1783 | 2680 |
| *Hancock* | 1687 | 1619 | 1946 | 1783 | 2680 |
| *Port Edwards* | 1635 | 1559 | 1910 | 1749 | 2616 |
| *La Crosse* | 1909 | 1795 | 2192 | 2032 | 2977 |
| *Eau Claire* | 1732 | 1674 | 1976 | 1866 | 2758 |
| *Cumberland* | 1514 | 1482 | 1850 | 1641 | 2467 |
| *Bayfield* | 1104 | 1085 | — | 1184 | 1913 |
| *Wausau* | 1440 | 1432 | 1811 | 1572 | 2390 |
| *Medford* | 1384 | 1468 | 1658 | 1520 | 2332 |
| *Crivitz* | 1393 | 1408 | — | 1528 | 2352 |
| *Crandon* | 1268 | 1310 | 1413 | 1371 | 2141 |

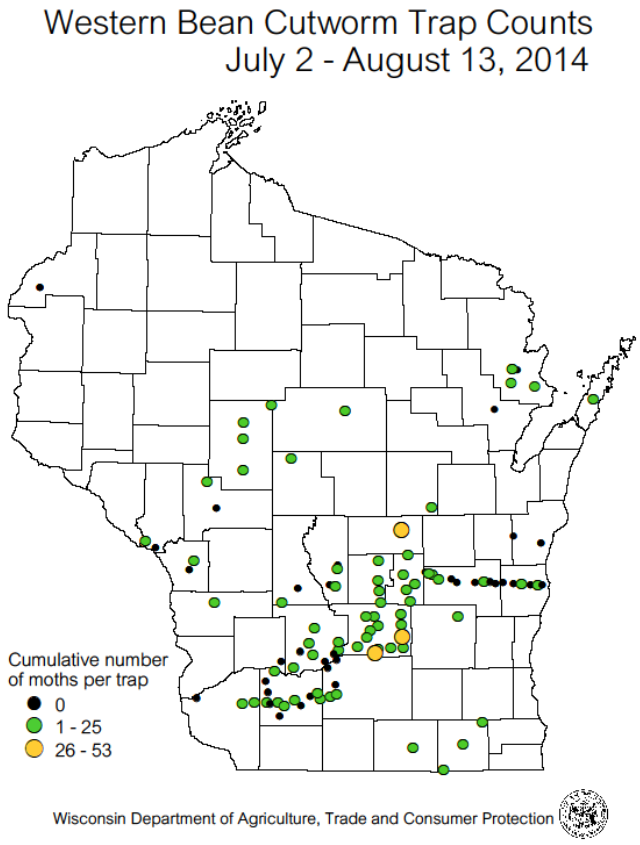
*Method: ModifiedB50; SineB48; ModifiedB40 as of Jan 1, 2014. NORMALS based on 30-year average daily temps, 1981-2010.*

## CORN

EUROPEAN CORN BORER: Second generation larvae are appearing in the ear tips of corn. Surveyed fields in the southwest and west-central counties had 2-20% of the ears infested with 1-2 small larvae, which varied from newly hatched to third instar. The treatment window for second generation corn borers will remain open for approximately two more weeks across the southern half of the state. Controls directed against the summer larvae must be applied during the period after egg hatch and before larvae bore into the stalks, prior to the accumulation of 2,100 degree days (modified base 50°F).

WESTERN BEAN CUTWORM: Moth collections have declined to low levels as the annual flight subsides. Preliminary results of the 2014 trapping survey indicate this year's very low count of 490 moths in 103 pheromone traps (five per trap) is comparable to last year's total of 584 moths collected in 114 traps, also approxi-

mately five per trap. Cumulative counts for the 103 pheromone traps distributed across Wisconsin are shown in the map below. The highest individual trap total for the 10-week monitoring period was only 53 moths near Pine River in Waushara County.




CORN ROOTWORM: The annual beetle survey is now in progress and early results indicate a population increase in southwestern Wisconsin and a decrease in the south-central area. The average count in the southwest is 0.9 beetle per plant, an increase from 0.6 per plant in 2013. In the south-central district, the current average of 0.3 beetle per plant compares to 0.5 per plant last year. A count of 0.75 or more beetle per plant (7-8 beetles per 10 plants) signals the potential for root damage to non-Bt, continuous corn in 2015. Above-threshold populations were found in 16 of the 66 fields (24%) surveyed as of August 13.

## SOYBEANS

SOYBEAN APHID: Surveys conducted from July 14-August 11 failed to detect economic populations in 196 sampled fields. Densities ranged from 0-93 aphids per plant and averaged only four per plant. A small proportion of the sites surveyed since early August appeared to have been treated or spot-treated for aphid control, although foliar insecticide treatment has not been required for the vast majority of the state's soybeans this year. All soybean fields should be examined next week to evaluate aphid densities. Final treatments must be applied before the R5.5 growth stage.

JAPANESE BEETLE: This beetle is still common over much of the state. Defoliation levels in Dane, Juneau, Kenosha, Portage, Racine and Wood counties varied from 5-15% in the past week, which is below the 20% threshold for soybeans in the seed-filling stages.

*Japanese beetle feeding on soybean leaf* *Krista Hamilton DATCP*

## FRUITS

OBLIQUEBANDED LEAFROLLER: Moths of the second flight are appearing in high numbers across much of the state, as far north as Edgar in Marathon County. The summer flight could be prolonged until early September this year if temperatures remain cooler than average, in which case surface feeding damage would also persist into fall.

APPLE MAGGOT: Emergence increased abruptly this week at a few orchard locations. Counts of 22 and 23 flies per unbaited red sphere trap were reported from Gays Mills and Mineral Point, respectively, while 15 of 26 orchards registered one or more flies. Apple growers should maintain traps and continue apple maggot sprays as long as the flies are being captured and counts exceed established economic thresholds.

SPOTTED WING DROSOPHILA: The list of counties with confirmed SWD infestations continues to grow. Counties

reporting SWD detections this season include: Crawford, Dane, Door, Iowa, Jackson, La Crosse, Monroe, Rock, St. Croix, Vernon and Washburn counties. Infestations are also suspected in Sheboygan, Trempealeau and Washington counties, but have not yet been verified. Recommended preventative controls for conventional small fruit growers include repeated insecticide applications at four- to five-day intervals. 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 management. Effective control of this insect requires early monitoring to determine fly abundance and starting treatments before the maggots appear in fruits.

CODLING MOTH: Since August temperatures have generally been below-normal and degree days are accumulating slowly, some orchards have not yet documented the peak emergence of summer codling moths, expected to occur 1,300-1,400 degree days (modified base 50°F) after the first spring biofix. Pheromone lures should be replaced in advance of the anticipated increase in moth activity at these sites.

## VEGETABLES

ONION MAGGOT: Late-summer flies are expected to begin emerging across southern and central Wisconsin in the next two weeks, following 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. Proper sanitation and rotating to a non-crop host are recommended for growers who experienced onion maggot problems earlier this season.

CABBAGE LOOPER: Migrants are appearing in low numbers in black light traps. Although the full extent of the current flight is unknown, weekly scouting is advised this month and through early September. A 10% infestation threshold should be used 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.

SQUASH BUG: Adults and nymphs are still very active in pumpkin and winter squash plantings across the state. Vegetable growers should continue to inspect the undersides of leaves for the metallic bronze eggs deposited in groups of 15-40 between leaf veins or on stems as long as small nymphs are present. Squash bugs are capable of damaging mature fruit, thus control may be needed as the crop nears harvest. Organically acceptable materials include PyGanic, insecticidal soaps and certain oils.

*Squash bug eggs* *Krista Hamilton DATCP*

## NURSERY & FOREST

LECANIUM SCALE: Light infestations of this flat, elliptical brown scale insect were found this week on ash, elm and linden trees in Brown County. Egg hatch occurred several weeks ago and the mobile crawlers are no longer active in most parts of the state. Late June is usually the optimal time to target the yellow crawlers with horticultural oils or soaps, insect growth regulators, or conventional insecticides, before they settle onto the twigs and branches.

*Lecanium scale* *insects.tamu.edu*

At this point in the season, the scales have attached to tree branches and stems where they will overwinter. Nursery stock retailers should promptly remove and destroy infested plants as soon as the scales are noticed. Growers of nursery plants are required to treat infested stock before it can be offered for sale. Dormant oils or horticultural oils applied at higher rates in early spring are an effective control against the overwintered female scales.

DOTHISTROMA NEEDLE BLIGHT: This damaging foliar disease was noted on Austrian pines in Brown County. The causal fungus infects needles and may kill pines after successive years of severe infection. Early symptoms are yellowish-red spots which appear on foliage in mid-summer and later develop into reddish-brown bands that encircle affected needles. This pattern of discoloration is the reason Dothistroma is also aptly called "red band needle blight". Symptoms are usually most severe in the lower crown. Copper fungicides can be used to prevent infection. A mid-May application protects needles from previous seasons and a second application 4-6 weeks later protects current-year needles.

*Dothistoma needle blight* *A. Yanchuk*

SPRUCE NEEDLEMINER: Nursery inspections in Brown County found minor needle damage on Colorado blue spruce caused by the larvae of this insect, which hollow out the base of spruce needles. Groups of needles are often cut and later webbed together in a small mass. Infestations of large trees are usually confined to lower branches, but entire crowns of small trees may be defoliated. Late-season needleminer control consists of removing and burning dead needles to reduce the overwintering population. Treatments targeting the young larvae before they begin burrowing into the needles should be applied early next spring when Magnolia x soulangiana is in full bloom, around 100-200 degree days base 50°F.

*Spruce needleminer damage on Colorado blue spruce* *Liz Meils DATCP*

FOLIAR NEMATODE OF HOSTA: Several hosta cultivars at a nursery in Eau Claire County had characteristic brown necrotic leaf streaks indicative of feeding by foliar nematodes. The symptoms are more pronounced and recognizable later in the growing season. This pest is readily spread among hostas by rainfall and splashing water, as well as overhead irrigation. The most effective foliar nematode control is avoidance by purchasing uninfested plants. If symptomatic hostas are observed, all infected tissues or leaves should be removed and destroyed. Reducing leaf wetness is also advised to prevent the nematodes from spreading to other plants.

*Foliar nematode on hosta* *kentcoopextension.blogspot.com*

# APPLE INSECT & BLACK LIGHT TRAP COUNTS AUGUST 7 - 13

| COUNTY | SITE | STLM[1] | RBLR[2] | CM[3] | OBLR[4] | AM RED[5] | YELLOW[6] |
|---|---|---|---|---|---|---|---|
| Bayfield | Keystone | 4 | 0 | 0 | 0 | 6 | 14 |
| Bayfield | Orienta | 61 | 4 | 0 | 2 | 0 | 0 |
| Brown | Oneida | 400 | 10 | 0 | 3 | 2 | 0 |
| Columbia | Rio | 150 | 35 | 1 | 15 | 0 | 0 |
| Crawford | Gays Mills | 90 | 3 | 3 | 5 | 22 | — |
| Dane | Deerfield | 56 | 13 | 0 | 0 | 0 | 0 |
| Dane | McFarland | 73 | 44 | 0 | 9 | 0 | **0 |
| Dane | Mt. Horeb | 56 | 59 | 10 | 32 | 1 | 0 |
| Dane | Stoughton | 92 | 35 | 27 | 11 | 1 | 1 |
| Dane | West Madison | 72 | 48 | 3 | 4 | 0 | 0 |
| Fond du Lac | Campbellsport | 24 | 9 | 0 | 11 | *2 | 0 |
| Fond du Lac | Malone | 35 | 10 | 9 | 21 | **0 | **0 |
| Fond du Lac | Rosendale | 23 | 34 | 2 | 1 | 3 | 0 |
| Grant | Sinsinawa | 69 | 22 | 24 | 0 | 0 | 2 |
| Green | Brodhead | — | — | — | — | — | — |
| Iowa | Mineral Point | 240 | 64 | 28 | 24 | **23 | — |
| Jackson | Hixton | 28 | 0 | 8 | 1 | 0 | 4 |
| Kenosha | Burlington | 225 | 21 | 17 | 21 | 1 | — |
| Marathon | Edgar | 624 | 13 | 2 | 177 | 1 | 1 |
| Marinette | Niagara | 261 | 5 | 0 | 0 | 5 | — |
| Marquette | Montello | 297 | 6 | 2 | 5 | 0 | 0 |
| Ozaukee | Mequon | 50 | 20 | 9 | 10 | 1 | — |
| Pierce | Beldenville | 124 | 78 | 5 | 0 | 3 | 0 |
| Pierce | Spring Valley | 40 | 13 | 0 | 6 | **5 | 0 |
| Racine | Raymond | 306 | 21 | 13 | 35 | 0 | 0 |
| Racine | Rochester | 0 | 22 | 17 | 1 | *5 | 0 |
| Richland | Hillpoint | 280 | 1 | 6 | 0 | **1 | 6 |
| Sheboygan | Plymouth | — | — | — | — | — | — |
| Walworth | East Troy | — | — | — | — | — | — |
| Walworth | Elkhorn | — | — | — | — | — | — |
| Waukesha | New Berlin | 99 | 0 | 14 | 8 | 0 | 0 |

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]Apple maggot red ball; *Unbaited AM trap; **Baited AM trap; [6]Apple maggot yellow board; *Counts represents a two-week period.

| COUNTY | SITE | BCW[1] | CEL[2] | CE[3] | DCW[4] | ECB[5] | FORL[6] | SCW[7] | TA[8] | VCW[9] | WBC[10] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Crawford | Prairie du Chien | — | — | — | — | — | — | — | — | — | — |
| Dane | Mazomanie | 0 | 0 | 0 | 11 | 6 | 0 | 0 | 1 | 0 | 0 |
| Fond du Lac | Ripon | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 |
| Manitowoc | Manitowoc | — | — | — | — | — | — | — | — | — | — |
| Marathon | Wausau | 1 | 0 | 0 | 24 | 0 | 11 | 1 | 0 | 0 | 0 |
| Monroe | Sparta | — | — | — | — | — | — | — | — | — | — |
| Rock | Janesville | 1 | 2 | 1 | 0 | 3 | 0 | 0 | 5 | 0 | 0 |
| Vernon | Coon Valley | 2 | 0 | 0 | 4 | 5 | 0 | 0 | 12 | 0 | 0 |
| Walworth | East Troy | — | — | — | — | — | — | — | — | — | — |
| Wood | Marshfield | 1 | 1 | 0 | 5 | 2 | 2 | 0 | 0 | 2 | 1 |

[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.