

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 approaching cold front brought cooler and drier weather to the state early in the week. Daytime high temperatures remained unseasonably brisk in the 60s to mid-70s, while lows declined to the 40s and 50s. Locally severe storms with torrential downpours accompanied the cooling trend, and in the River Falls area of northwestern Wisconsin, thunderstorms overnight on June 6 dropped 7.3 inches of rain that caused flooding, road closures and significant crop damage. The average rainfall for the entire month of July in River Falls is 4.4 inches. Strong storms also impacted northeastern Wisconsin late Monday afternoon where four tornadoes damaged barns, crops and farm buildings in Oconto, Shawano and Waupaca counties. Standing water from the latest round of storms has left many corn and soybean fields submerged, and will likely favor disease development later in the season.

LOOKING AHEAD

EUROPEAN CORN BORER: Pupation of first generation corn borers has started in the south-central and south-west areas. Black light traps could register the earliest moths of the summer flight by July 16. Larvae from the spring flight presently range in development from second- to fifth-instar. The treatment window for first

generation larvae has closed over much of southern and central Wisconsin with the accumulation of 1,100 degree days (modified base 50°F).

SPOTTED WING DROSOPHILA: The first SWD flies of the season were captured in Dane County on June 22 by UW-Madison researchers. Raspberry growers should take measures now to prevent or reduce SWD infestation, including increasing scouting and trap monitoring efforts, installing barrier netting, and preparing for insecticidal control as berries ripen.

WESTERN BEAN CUTWORM: The annual flight is gradually increasing across southern and central Wisconsin. Pheromone traps registered moths at six of 78 monitoring sites, with a high count of 17 moths near Hancock in Waushara County. Emergence is approximately 10-20% complete in the southern half of the state. Egg deposition on corn and dry beans is occurring in advanced locations.

JAPANESE BEETLE: Significant numbers of beetles are already feeding on apples, grapes and raspberries in the southern and west-central counties. Even the smallest blemish or surface injury to fruit can attract large concentrations of this insect. Spot treatment of individual trees or cultivars should be considered for orchards and vineyards that experience high populations. Close monitoring of raspberries and other preferred plants where the beetles first appear is recommended.

SOYBEAN APHID: The first economic infestations of the year may develop later this month. Densities remain low at less than five aphids per plant in surveyed fields, but levels are expected to increase as more soybean acres enter the reproductive flowering stages. Historically, the first economic populations of 250 or more aphids per plant have been detected in Wisconsin by the third week of July. This pest requires consistent monitoring from now until the R5.5 stage of soybean growth in August.



Soybean aphids

Krista Hamilton DATCP

FORAGES & GRAINS

POTATO LEAFHOPPER: Counts in second- and third-crop alfalfa are still below-threshold at less than one leafhopper per sweep. Economic populations of two or more leafhoppers per sweep in alfalfa 12 inches or taller have not been observed as of July 8. The cool, wet weather pattern of early July has generally been unfavorable for leafhoppers.

PEA APHID: Alfalfa fields surveyed in the southern counties contained low populations of less than 0.4 aphids per sweep or 40 per 100 sweeps. Counts in the west-central area were comparable at less than 0.2 per sweep. Aphid fungal pathogens, which may have caused populations to collapse three weeks ago, are probably continuing to limit aphid activity.

PLANT BUG: Representative counts in the southern half of the state range from 0.1-1.5 per sweep. The average is only 0.3 per sweep, based on a sample size of 30 fields. Nymphs of various maturities remain common in most fields and reports indicate damaging populations are appearing in some apple orchards and fruit crops.

DEGREE DAYS JANUARY 1 - JULY 8

| LOCATION | 50°F | 2014 | NORM | 48°F | 40°F |
|--------------|------|------|-------|------|------|
| Dubuque, IA | 1286 | 1252 | 1290 | 1345 | 2071 |
| Lone Rock | 1227 | 1227 | — | 1289 | 1971 |
| Beloit | 1283 | 1275 | 1305 | 1338 | 2059 |
| Sullivan | 977 | 986 | 1219 | 1039 | 1658 |
| Madison | 1200 | 1174 | 1242 | 1259 | 1927 |
| Juneau | 1092 | 1065 | — | 1157 | 1790 |
| Racine | 895 | 926 | — | 968 | 1591 |
| Waukesha | 977 | 986 | — | 1039 | 1658 |
| Milwaukee | 909 | 929 | 1108 | 980 | 1598 |
| Hartford | 977 | 986 | — | 1039 | 1658 |
| Appleton | 1018 | 964 | — | 1083 | 1712 |
| Green Bay | 920 | 877 | 1079 | 1001 | 1613 |
| Big Flats | 1132 | 1087 | — | 1165 | 1773 |
| Hancock | 1132 | 1087 | 1210 | 1165 | 1773 |
| Port Edwards | 1093 | 1045 | 1178 | 1140 | 1754 |
| La Crosse | 1284 | 1205 | 1365 | 1355 | 2060 |
| Eau Claire | 1133 | 1059 | 1219 | 1196 | 1864 |
| Cumberland | 997 | 907 | 11118 | 1043 | 1649 |
| Bayfield | 723 | 616 | — | 729 | 1214 |
| Wausau | 941 | 899 | 1094 | 983 | 1560 |
| Medford | 907 | 866 | 994 | 945 | 1521 |
| Crivitz | 847 | 828 | — | 892 | 1461 |
| Crandon | 814 | 782 | 860 | 827 | 1344 |

Method: ModifiedB50; Sine48; ModifiedB40 as of Jan 1, 2015. NORMALS based on 30-year average daily temps, 1981-2010.

CORN

WESTERN BEAN CUTWORM: Moth emergence continued at low levels for the third consecutive week. The Wisconsin network of 78 pheromone traps registered a cumulative total of 29 moths as of July 8, which is nearly equivalent to 26 moths collected by the same time last year. Approximately 10-20% of the population has emerged across the southern half of the state.

The appearance of moths indicates that close inspection of corn for egg masses and small larvae should be under way. The eggs are deposited in groups of 20-200 on the upper leaf surface and the larvae can be found in developing tassels. An economic threshold of 8% of plants infested for field corn and 4% infestation for processing sweet corn has been established by the University of Wisconsin. Insecticide treatments applied at 90-95% tassel emergence are most effective.

CORN ROOTWORM: Beetles are emerging in Grant, Green and Rock counties. These insects will become increasingly abundant this month, with peak emergence anticipated by mid-August. Corn that lodges after storms or heavy rain should be evaluated to determine if corn rootworm larvae are the cause of the damage.



Western corn rootworm beetle

Krista Hamilton DATCP

Growers of Bt-rootworm hybrids should be aware that cross-resistance between the Cry3Bb1 and mCry3A toxins has been documented, meaning that a western corn rootworm beetle population which develops resistance to either mCry3A corn or Cry3Bb1 corn will be resistant to both traits, even if one of the traits has never been used against that population. Additionally, all of the Bt pyramids targeting corn rootworm contain either mCry3A or Cry3Bb1, which raises concerns about the long-term reliability of these hybrids. Bt corn growers who experience poor root protection this season and suspect resistance are advised to notify their seed company representative.

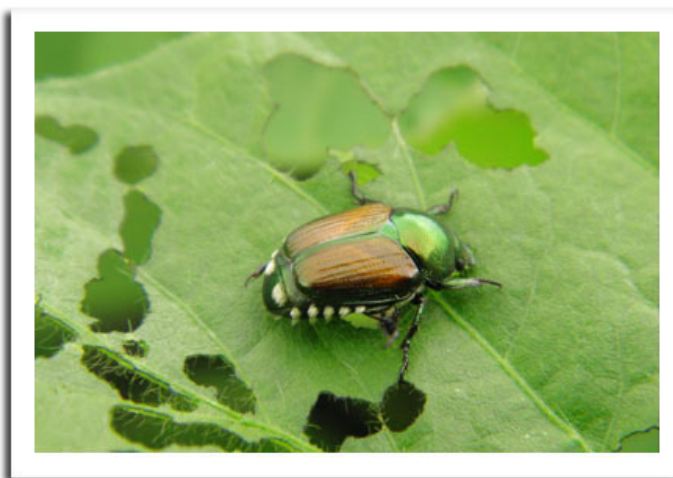
STALK BORER: Larvae ranging in size from 1-1½ inches were noted to have caused extensive damage to the perimeter rows of corn at a few sites in Dane, Richland and Vernon counties. In one Dane County field, 36% of plants in the second row from the edge were severely damaged. Spot treatment is no longer advised now that larvae have bored into the stalks and unemerged tassels, and most corn is past the susceptible V7 growth stage.

SOYBEANS

SOYBEAN APHID: Densities in soybean fields surveyed from July 2-8 were very low at less than five aphids per

plant. Chemical treatment has not been justified for any soybean field surveyed by DATCP so far this season, but this may change later this month. Monitoring efforts should be increased in all areas of the state as soybeans advance through the early reproductive growth stages when aphid populations usually peak.

JAPANESE BEETLE: This 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

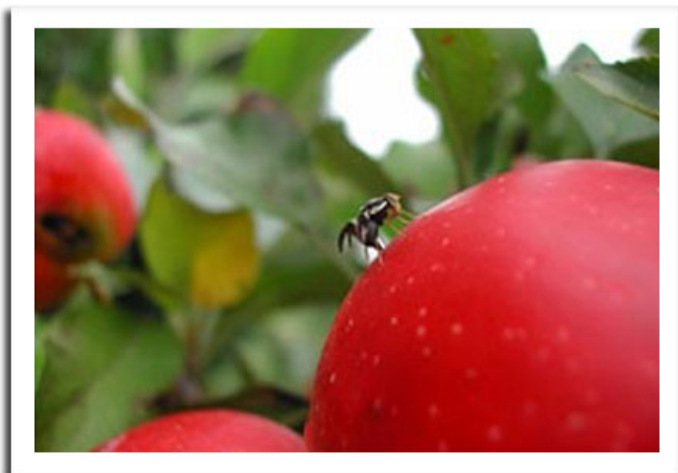
Krista Hamilton DATCP

WHITE MOLD: This soybean disease could become severe if conditions conducive to its development continue. Cool, cloudy weather and surplus soil moisture promote growth and pathogenicity of the white mold fungus, especially when these conditions occur in the two weeks prior to peak flowering. Scouting at canopy closure for tan, mushroom-like apothecia on the soil surface is recommended. Fungicides can suppress disease development if applied at or close to R1 (first flower), with diminishing effectiveness by R3 and later. Once white mold symptoms appear, fungicides are no longer effective.

FRUITS

APPLE MAGGOT: Emergence of flies increased this week, with a high count of nine flies on a yellow sticky

trap reported from Plymouth in Sheboygan County. Apple orchards affected by recent hailstorms are at greater risk of infestation by this pest since hail-damaged fruits release volatiles that can attract flies from long distances. Apple maggot traps should be cleaned of non-target flies periodically and recoated with insect sticky trap material as needed.



Apple maggot fly

www.nsf.gov

CODLING MOTH: Counts have decreased in most orchards as the first flight subsides. Orchardists who have not observed a distinct decline in moth activity and are having difficulty determining the most effective treatment window should use an accumulation of 1,000 degree days (base 50°F) from the spring biofix in late May to time the start of larvicide applications. As a general rule, approximately 1,000 degree days are required between the first and second larval generations.

JAPANESE BEETLE: Numbers are increasing in fruit and field crops over much of the state, particularly in the western counties. Neem-based repellent products that contain azadirachtin (e.g., BioNeem) may still be effective at sites where beetle populations are low and the first adults are just starting to immigrate into vineyards and orchards. These products can be used to deter beetles for 3-4 days before reapplication is needed. Products sold as "neem oil" that do not list the ingredient azadirachtin on the label are not effective against Japanese beetle.

SPOTTED TENTIFORM LEAFMINER: The second flight should peak soon at southern and central Wisconsin monitoring sites. Egg laying is expected to be heavy as long as the moths are numerous. Apple orchards with populations greater than one mine per leaf or a history

of infestation should consider treatment of second generation larvae to reduce build-up of leafminers before the third flight begins next month.

VEGETABLES

TOMATO HORNWORM: Moths are active and laying eggs on the undersides of tomato leaves. Tomato growers who have experienced past problems with this pest should inspect the undersides of leaves for individually laid eggs that are smooth, spherical and pale green in color. Once the eggs hatch, the larvae grow very rapidly and quickly defoliate plants. Spot treatment may be justified for infestations of one or more larva per plant on a minimum of 10 plants. Prompt removal of the larvae is the best control measure.



Tomato hornworm larva

[braddock outdoor.blogspot.com](http://braddockoutdoor.blogspot.com)

COLORADO POTATO BEETLE: The summer generation of beetles is expected to begin appearing in potatoes in the next two weeks. Pupation occurs in 7-10 days at this time of year and larval development proceeds much more rapidly under normal July temperatures. Conversely, cool weather slows CPB feeding activity and development. Summer beetles and all second generation larval stages are considered damaging.

SQUASH BUG: Reports suggest these difficult-to-control insects are becoming a common problem in pumpkin, squash and melon crops again this season. The treatment threshold for squash bugs is based on an average count of one egg mass per plant, although scouting for tiny eggs is often impractical in larger plantings. If the insects are numerous and wilting is observed, pyrethroid insecticides such as permethrin directed against the

nymphs are an effective control. Growers should be aware that the efficacy of these materials is reduced at temperatures above 80°F and the smaller nymphs are more readily killed than the adults. Refer to UWEX publication A3422 "Commercial Vegetable Production in Wisconsin" for a list of registered insecticides.



Squash bug nymph

Krista Hamilton DATCP

ONION MAGGOT: Second generation flies are emerging near Madison, La Crosse, Spring Green and other locations where 1,950 GDD (simple base 40°F) have been surpassed. Emergence is anticipated near Fond du Lac, Eau Claire and Hancock in the week ahead. Management of the summer generation is less critical than spring and fall populations since egg desiccation and mortality rates are higher at warmer temperatures, but season-long sanitation is still important for preventing future infestations. Second brood eggs are deposited near previously-damaged onions.

NURSERY & FOREST

HETEROSPORIUM LEAF SPOT: This common leaf spot disease of iris was observed in a St. Croix County nursery this week. Symptoms appear early in the season as brown spots with water-soaked margins near the leaf tips. Once irises bloom, the spots enlarge rapidly, coalesce, and cause leaf dieback starting at the tip. Later the spots turn yellow to reddish-brown with characteristic gray centers.

Although the heterosporium fungus does not attack the bulbs or rhizomes, it weakens and may eventually kill plants. Since the fungus overwinters on dead iris leaves, removing and disposing of all diseased leaves in fall will

reduce the amount of inoculum available for infection the following spring. A fungicide spray program is recommended for severe cases involving many plants.



Heterosporium leaf spot on iris

Liz Meils DATCP

PHYLLOSTICTA LEAF SPOT: The distinctive light brown lesions with purple-red borders appearing on maples in Columbia and Sawyer counties are symptoms of phyllosticta leaf spot, a primarily aesthetic disease of maples also known as purple-bordered leaf spot or eye spot. Severe infection induces premature yellowing and shedding of leaves, but damage from the disease is usually minimal. Controls consist of removing infected leaves, increasing air flow and avoiding overhead watering. Fungicide treatment is not advised.



Phyllosticta leaf spot on maple

caldwell.ces.ncsu.edu

HOLLYHOCK SAWFLY: The green and black larvae of this insect were determined to be the cause of severe defoliation of hollyhocks at a Vernon County residence. The gregarious caterpillar-like worms feed in groups on

the underside of hollyhock leaves, causing a lacy or skeletonized pattern of damage similar to that of the Japanese beetle. Control must be initiated as soon as the first holes appear on the lower leaves.



Hollyhock sawfly defoliation

Krista Hamilton DATCP

For severe infestations, soil applications of the systemic insecticide imidacloprid at the base of trees have been very effective.



European elm scale symptoms

Whitney Cranshaw CSU Bugwood.org

EUROPEAN ELM SCALE: Nymphs are emerging from beneath the gray, waxy female scale coverings and have been observed on 'Valley Forge' American elms in Sawyer County. The tiny yellow crawlers will spend the summer feeding on the undersides of leaves before migrating back to branches and twigs in fall.



European elm scale

Tim Allen DATCP

This scale pest of elm and hackberry can cause yellowing of foliage prior to natural autumnal color change, stunting, premature leaf drop, and branch dieback—symptoms similar to Dutch elm disease. In addition, branches on heavily infested trees are often blackened by sooty mold growing on the honeydew produced by the crawlers.

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 2 - 8

| COUNTY | SITE | STLM ¹ | RBLR ² | CM ³ | OBLR ⁴ | APB ⁵ | LPTB ⁶ | AM RED ⁷ | YELLOW ⁸ |
|-------------|---------------|-------------------|-------------------|-----------------|-------------------|------------------|-------------------|---------------------|---------------------|
| Bayfield | Keystone | — | — | — | — | — | — | — | — |
| Bayfield | Orienta | 21 | 0 | 0 | 11 | 0 | 18 | — | — |
| Brown | Oneida | 810 | 28 | 2 | 10 | 0 | 6 | — | — |
| Clark | Greenwood | 0 | 12 | 0 | 0 | 0 | 8 | — | — |
| Columbia | Rio | 800 | 59 | 2 | — | 0 | 6 | 0 | 0 |
| Crawford | Gays Mills | 769 | 39 | 0 | 1 | 0 | 7 | 0 | 0 |
| Dane | Deerfield | 642 | 44 | 10 | 4 | — | — | — | — |
| Dane | DeForest | — | — | — | — | — | — | — | — |
| Dane | Edgerton | 58 | 105 | 0 | 20 | 0 | 47 | 2 | 0 |
| Dane | McFarland | 217 | 39 | 2 | — | — | — | — | — |
| Dane | Mt. Horeb | 560 | 104 | 1 | 3 | 0 | 12 | — | — |
| Dane | Stoughton | 130 | 126 | 8 | 1 | 0 | 0 | 0 | 2 |
| Fond du Lac | Campbellsport | 300 | 32 | 0 | 21 | 0 | 15 | — | — |
| Fond du Lac | Malone | 250 | 80 | 9 | 13 | 0 | 5 | 0 | 0 |
| Fond du Lac | Rosendale | 147 | 34 | 4 | 18 | 0 | 7 | 1 | 0 |
| Grant | Sinsinawa | 101 | 62 | 6 | 5 | — | — | — | — |
| Green | Brodhead | 52 | 46 | 0 | 2 | 0 | 8 | 0 | 0 |
| Iowa | Mineral Point | 545 | 62 | 5 | 2 | 0 | 37 | **4 | 2 |
| Jackson | Hixton | 23 | 0 | 5 | 2 | 1 | 5 | 0 | 0 |
| Kenosha | Burlington | 675 | 130 | 1 | 16 | 0 | 12 | 1 | — |
| Marathon | Edgar | 1909 | 54 | 3 | 21 | 0 | 21 | 0 | 0 |
| Marinette | Niagara | 17 | 0 | 0 | 13 | 0 | 4 | — | — |
| Marquette | Montello | 810 | 54 | 1 | 8 | 0 | 0 | — | — |
| Ozaukee | Mequon | 300 | 19 | 4 | 2 | 0 | 2 | *0 | — |
| Pierce | Beldenville | 90 | 41 | 3 | 0 | 0 | 0 | 0 | 0 |
| Pierce | Spring Valley | 123 | 50 | 0 | 2 | 0 | 15 | — | — |
| Racine | Raymond | 972 | 72 | 10 | 25 | 0 | 7 | 0 | 0 |
| Racine | Rochester | 310 | 9 | 3 | 8 | 0 | 3 | 2 | 0 |
| Richland | Hill Point | 1265 | 71 | 2 | 4 | 0 | 15 | **0 | 0 |
| Sheboygan | Plymouth | 855 | 66 | 5 | 14 | 0 | 22 | **1 | 9 |
| Walworth | East Troy | 77 | 2 | 0 | 4 | 0 | 3 | 0 | 0 |
| Walworth | Elkhorn | 328 | 72 | 0 | 67 | 4 | 68 | 4 | 0 |
| Waukesha | New Berlin | 250 | 40 | 10 | 10 | 13 | 1 | 0 | 0 |

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵American plum borer; ⁶Lesser peachtree borer; ⁷Apple maggot red ball; *Unbaited AM trap; **Baited AM trap; ⁸Apple 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 |
|-------------|------------------|------------------|------------------|-----------------|------------------|------------------|-------------------|------------------|-----------------|------------------|-------------------|
| Columbia | Arlington | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Columbia | Pardeeville | 0 | 1 | 0 | 0 | 1 | 9 | 4 | 7 | 0 | 0 |
| Crawford | Prairie du Chien | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Fond du Lac | Ripon | 0 | 0 | 0 | 0 | 6 | 23 | 0 | 9 | 0 | 0 |
| Manitowoc | Manitowoc | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 |
| Marathon | Wausau | 0 | 1 | 0 | 0 | 1 | 6 | 9 | 1 | 0 | 0 |
| Monroe | Sparta | — | — | — | — | — | — | — | — | — | — |
| Rock | Janesville | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 42 | 0 | 0 |
| Walworth | East Troy | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 2 | 0 | 0 |
| Wood | Marshfield | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 1 | 0 | 0 |

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