WEATHER & PESTS

A cool, rainy weather pattern has prevailed since the last report. Below-normal temperatures with daytime highs in the 60s and 70s continued for a second week, slowing summer crop growth and favoring development of plant fungal diseases. Persistent, almost daily precipitation disrupted fieldwork and kept fields saturated, with topsoil moisture now rated 97% adequate or surplus statewide. Rainfall totals of 1-2 inches were common in the central areas, including 2.1 inches at Marshfield between June 22 and 28. In contrast to the first half of June, which featured a record-high average temperature of 75.3°F near La Crosse (previously 73.3°F in 2005) and hot, humid conditions throughout much of the state, the second half of the month has been unseasonably cool with frequent showers and locally severe thunderstorms. For the first time, La Crosse reported highs of 80°F or greater on each of the first 17 days in June, but temperatures during the last 11 days have not exceeded the 70s, with more rainy days than were dry.

LOOKING AHEAD

ROSE CHAFER: These beetles are extremely abundant this season and reports of severe damage to grapes, raspberries, strawberries, fruit trees, roses and ornamentals are common. Chafer feeding is expected to continue for another two weeks and should subside in most areas by mid-July. Insecticide treatment of grape vines and landscape plants at product label-specified intervals may be required as long as the chafers are numerous.

WESTERN BEAN CUTWORM: The annual flight has started in southern and central Wisconsin. Fifteen of 61 traps collected a total of 38 moths this week, with a high count of seven moths reported near Cambria in Columbia County. Twenty-five percent emergence of the adult population is anticipated by July 20 throughout the southern half of the state. Cornfields reaching the pretassel stage will be preferentially selected for oviposition and should be closely inspected in the next two weeks for egg masses and small larvae.

TRUE ARMWORM: A significant flight of 113 moths was documented in the Janesville black light trap from June 22-28. This capture indicates that larvae produced by migrants arriving in May have matured. Egg laying should intensify as more moths emerge next month and a second generation of armyworms can be expected in corn, wheat and other crops by mid- to late July.

EUROPEAN CORN BORER: Larvae are primarily in the early instars and will begin entering corn leaf midribs and unemerged tassels next week. The treatment window for first-generation corn borers is forecasted to close near
Beloit, Madison, La Crosse, Platteville and across the far southern and western areas by July 1, following the accumulation of 1,100 degree days (modified base 50°F). Chemical control remains an option in the southeastern, central and northern counties for an additional week, or approximately through July 9.

SPOTTED WING DROSOPHILA: Captures of male and female flies have to date been reported from sites in Columbia, Dane, Door, La Crosse, Pierce and Sauk counties. Numbers in DATCP traps have been low as of June 28, but emergence is increasing and past experience with this destructive invasive pest suggests that populations are likely to surge in July, with larval infestations in raspberries and other fruits becoming prevalent by mid-month. Fruit growers are advised to increase monitoring efforts at this time and make preparations for SWD management.

FORAGES & GRAINS

ALFALFA WEEVIL: A few late-stage larvae persist, but most of the population has pupated and new adults are appearing in sweep net collections. Larval counts in second-crop alfalfa have declined to less than 0.2 per sweep, and further problems are not anticipated this year.

POTATO LEAFHOPPER: Counts in western and central alfalfa fields have increased noticeably in the last two weeks, although averages generally remain just below established economic thresholds. Surveys conducted in 30 fields during the week ending June 28 found moderate counts of 0.5-1.7 leafhoppers per sweep at 40% of sites, while 60% had low counts of less than 0.4 per sweep. The higher averages were observed in Juneau, Lafayette and Sauk counties. Nymphs are appearing in more alfalfa fields, indicating a potential for leafhopper populations to increase to above-threshold levels next month.

PEA APHID: Numbers average approximately one aphid per sweep, with a few sites containing higher counts of 2-3 per sweep. Pea aphid levels have shown a considerable decline since mid-June.

PLANT BUG: Counts in the southern half of the state range from 0.1-1.9 per sweep. The average is only 0.4 per sweep, based on surveys in 30 fields. Nymphs of various maturities can be found in most fields and reports suggest that these insects are causing damage in some nurseries, apple orchards, and in fruit crops.
**CORN**

**WESTERN BEAN CUTWORM:** Moth emergence continued for a second consecutive week. The DATCP network of 61 pheromone traps captured a cumulative total of 59 moths as of June 28, which is higher than the nine moths collected by the same time last year. The appearance of moths indicates that the annual flight is accelerating in the southern half of the state and close inspection of corn plants for egg masses and small larvae should start in the next two weeks, as fields enter the late-whorl and pre-tassel stages. The eggs are deposited on the upper surface of the top 3-4 leaves, often on the flag leaf, and the larvae can be found in developing tassels.

Considering the variability in corn development this year, female moths should have no difficulty finding corn in an optimal stage for oviposition, which could lead to more widespread problems than in recent years. An economic threshold of 5% of plants infested for field corn and 4% for processing sweet corn has been established by the University of Wisconsin. Insecticide treatments applied at 90-95% tassel emergence are most effective.

**EUROPEAN CORN BORER:** Early whorl feeding was observed in 23% (14 of 61) of the V7-V11 fields sampled this week. Infestations were common but mostly light, ranging from 1-7%, with three exceptional fields in Marquette and Sauk counties found to have 21-24% of plants infested. Larvae varied in development from first to third-instar and a few had begun boring into the midribs of corn leaves. The treatment window is expected to close over the weekend of July 1-2 in the south-central and southwestern counties and will remain open only until about July 9 in the southeastern and central areas. Scouting and management decisions made in the week ahead will be most effective against first-generation corn borers.

**TRUE ARMYWORM:** Light defoliation has been noted in about 26% (31 of 125) of cornfields surveyed by DATCP this month. Larval infestations at these sites have usually involved fewer than 10% of the plants, although reports of economic infestations have been received from several counties, including a few fields in Fond du Lac County that required more than one insecticide treatment to bring under control. Conditions are still very favorable for armyworms after the recent rains, and the significant flight of 113 moths registered in the Janesville trap this week suggests that the second generation of caterpillars should begin emerging soon. Continued inspection of corn and small grains throughout July is recommended.
CORN EARWORM: Moths from an early migration were caught in the Arlington pheromone trap last week and near Janesville this week. Numbers were very low at only two per trap, but the capture of even a few migrants indicates that a flight into Wisconsin has occurred. Larvae could begin infesting sweet corn by mid-July.

SOYBEANS

DEFOLIATORS: Leaf feeding by rose chafers, bean leaf beetles, Japanese beetles, sand chafers, and slugs has been common in soybeans this month, though defoliation is light, ranging from 5-15% on no more than 20% of plants in most fields. Damage rates have not exceeded the 30% economic threshold for soybeans in the pre-bloom (prior to R1) stages as of June 29 and control has not been warranted for any field surveyed by DATCP.

SOYBEAN APHID: Densities have not increased substantially since aphids were first observed on June 5. Counts averaged less than one aphid per plant in 30% of the fields surveyed this week, and the other 70% had no detectable aphid population. Aphid colonies are currently more prevalent in western Wisconsin soybeans than in the southern and eastern areas. Routine monitoring should begin by the second week of July or once fields reach the R1 (first flower) development stage.

FRUITS

CODLING MOTH: The first flight has declined in most locations. The weekly average count based on reports from 24 orchards was only two moths per trap, compared to six per trap last week. Apple growers should continue to monitor late flights, and apply treatments as needed, until 700 degree days (modified base 50°F) have accrued from the spring biofix. Orchards near Brodhead, Madison and La Crosse have accumulated about 650 degree days since May 20 when the biofix was recorded at a few warmer southern sites.
SPOTTED TENTIFORM LEAFMINER: Mines created by second-generation sapfeeder larvae are appearing on the undersides of apple leaves in the southern half of the state. Orchardists concerned about this pest should apply controls before larvae advance to the tissue-feeder stage (visible on the upper leaf surfaces), about 10-14 days after a peak flight has occurred. The treatment threshold is one mine per leaf based on sampling of 10 terminals and fruit spurs per tree on 2-3 trees per orchard block. Trap counts should begin to decline over the next two weeks, signaling the end of the second moth flight.

SAN JOSE SCALE: First-generation nymphs or crawlers began emerging in southern Wisconsin orchards three weeks ago, and have now settled onto the fruits and leaves. Continued sampling by taping scaffold branches is advised to confirm that nymph activity is complete. Neonicotinoids, insect growth regulators or other materials directed against mobile crawlers are ineffective once the scales have begun to secrete their waxy covering.

POTATO LEAFHOPPER: The near-threshold populations common in alfalfa could translate into fruit tree damage as harvesting of second-crop hay increases next month. Non-bearing, 1- to 2-year-old trees are most susceptible to leafhopper feeding and should be monitored for leaf cupping and yellowing of terminal shoots. Treatment is justified at levels of one or more nymphs per leaf.

VEGETABLES

TOMATO HORNWORM: Moths have begun laying eggs on the undersides of tomato leaves in southwestern Wisconsin. Tomato growers who have experienced past problems with this pest should inspect plants for the smooth, spherical, pale green eggs deposited individually on the undersides of leaves. Once the eggs hatch, the larvae grow rapidly and can quickly defoliate plants. Spot treatment may be considered for infestations of one or more larvae per plant on a minimum of 10 plants. Prompt removal of the larvae is the preferred control measure.

ONION MAGGOT: Emergence of second-generation flies is anticipated near Madison, La Crosse, Spring Green and other advanced southern location 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.

SQUASH VINE BORER: Continued inspection of pumpkins, squash, gourds, and other vine crops for eggs and evidence of larval feeding is advised during the next two weeks. The early- and intermediate-stage larvae have started boring into squash stems and runner vines, causing plants to wilt. Insecticidal controls are only useful if applied before the larvae tunnel into vines, and reaplication is usually necessary during the adult flight period. Squash varieties most susceptible to infestation are ‘Blue Hubbard’, ‘Boston Marrow’ and ‘Golden Delicious,’ while ‘Butternut’, ‘Dickenson pumpkin’ and ‘Green Striped Cushaw’ have shown some resistance or tolerance.

FOUR-LINED PLANT BUG: Gardeners, nursery managers and vegetable growers are reporting considerable
damage to vegetables, fruits, ornamentals and perennials. In most instances, four-lined plant bug feeding only affects the appearance of plants, though moderate to large populations of four-lined plant bugs can be destructive, especially to herbs. The aesthetic damage should be tolerated or ignored when possible. Contact residual insecticides are effective against plant bugs, but these broad-spectrum products also kill non-target insects and natural enemies and the pre-harvest interval may not be acceptable for herbs or other edible plants.

COLORADO POTATO BEETLE: The summer generation of beetles is expected to begin appearing in potatoes by mid-July. Pupation occurs in 7-10 days at this time of year and larval development proceeds much faster under normal July temperatures. Conversely, cool weather slows CPB feeding activity and development. Both the summer adults and second-generation larvae are considered damaging.

SQUASH BUG: Adults are appearing on cucurbits in home gardens, and populations are expected to increase sharply by mid-July with the addition of many small nymphs. Insecticide options for commercial plantings include synthetic pyrethroids (e.g. Brigade, Mustang, Pounce, Warrior, etc.) or neonicotinoids (Assail, Belay, Scorpion and Endigo). Organic growers should use directed applications of pyrethrum (PyGanic) or the pre-mix with azadirachtin (Azeria). An average of one egg mass per plant when plants are flowering is recommended as the basis for initiating treatment. For gardens, soapy water or carbaryl treatment provides some control but more than one application is often required.

NURSERY & FOREST

MAGNOLIA SCALE: Nymphs are maturing, and their white mealy wax is appearing on the branches of infested magnolias in southeastern Wisconsin. As the wax fades in August, the elliptical, shiny brown adult females will become noticeable. Nursery managers and residents are advised to inspect magnolias now and plan to spray heavily-infested trees in late August or early September, following with a second treatment 10 to 14 days later. Proper timing of the application is critical as only the young crawlers are easily controlled. Products containing bifenthrin, carbaryl, cyfluthrin, horticultural oil, insecticidal soap, malathion, or permethrin are appropriate for use in late summer.

HOLLYHOCK RUST: Nursery inspectors report that this disease is evident on hollyhock plants in La Crosse County and throughout the state. Symptoms include conspicuous yellow pin spots on the upper surface of leaves that correspond with orange-brown rust pustules on leaf undersides. Rust symptoms spread rapidly under favorably wet conditions and increase in severity as the season progresses, killing most foliage on infected plants by late summer. In severe cases, the fungus enters the stem and kills the plant. The flowers are generally not affected.

Control involves removing symptomatic leaves in spring as soon as they are observed. Older infected plants should be cut down and burned once flowering is complete. Round-leaf mallow, a common weed, can harbor
the fungus, so thorough weeding may be helpful. Fungicides are also available for control. Spraying should begin at the first sign of disease and continue at recommended intervals.

XANTHOMONAS ON HYDRANGEA: This bacterial leaf spot disease has been diagnosed on hydrangeas from a Sawyer County nursery. Xanthomonas is favored by warm, wet conditions and overwinters in infected plant debris, spreading to new growth by rain splash or overhead irrigation. Classic signs of the disease are dark, angular leaf spots that coalesce and may kill mature leaves. Recommended controls include removal and destruction of infected leaves and debris, avoiding pruning during wet periods, and sterilizing tools between cuts.

Left unchecked, these caterpillar-like insects that become non-stinging wasps (not moths or butterflies) can defoliate entire plants, leaving only the leaf midveins. The green larvae feed in May and June and complete just one generation per year, so scouting beyond June is unnecessary. Manual removal of the larvae is suggested for minor infestations. Insecticidal soap or a number of garden insecticides also control larval sawflies.

PEAR SCAB: Symptoms of this common pear disease have been noted on pear trees as far north as Ashland County. The initially small leaf lesions enlarge, coalesce, and spread to fruits, resulting in spotted, misshapen pears. Scab development is favored by cool, moist conditions and is particularly severe during wet seasons.

ROSE CHAFER: Beetles have been a common problem in nurseries this month, with light to moderate leaf skeletonization and damage to the shoot tips of trees observed by inspectors from Kenosha to Eau Claire County. Chafer populations are especially high in areas of the state with sandy soils. The adult beetles are only active for about 3-4 weeks in June and should soon disappear for the season.

COLUMBINE SAWFLY: Larvae were observed feeding on columbine plants at a nursery in Chippewa County.
## Apple Insect & Black Light Trap Counts June 22 - 28

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