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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
2811 Agriculture Dr. Madison, WI 53718 • http://pestbulletin.wisconsin.gov

WEATHER & PESTS

Damp, unseasonably cool weather continued to delay most planting activities in Wisconsin during the week ending May 1. A narrow swath of heavy late-season snow fell across the southern counties on April 27, when daily-record totals reached 5.5 inches in Beloit, 4.0 inches in Kenosha, and 2.5 inches in Madison, and precipitation lingered throughout the week. Intermittent rain in the south and light snow in the north slowed spring tillage, currently three days ahead of last year but four days behind the five-year average, while planting was restricted by excessive field moisture. The latest USDA NASS crop report shows topsoil moisture supplies are 38% surplus and 62% adequate for the state's agricultural lands, with the highest surplus ratings of 65% and 68% in the northeast and north-central counties, respectively. There have been only 8.3 days suitable for fieldwork in Wisconsin since April 1, and only 4% of the state's intended corn acreage has been planted to date. An extended period of warm, dry weather is needed at the start of May to allow for planting and other fieldwork.

LOOKING AHEAD

BLACK CUTWORM: Moths first appeared in the state on April 4 this season and a significant capture of 10 moths in two nights was recorded near Janesville in Rock County on April 12. Nine other trap sites in Columbia, Dane, Dodge, Fond du Lac, Grant, Iowa and Jefferson counties also registered significant flights in the past three weeks. The spring survey has captured a cumulative total of 487 black cutworm moths in 44 traps as of May 1, which compares to 230 moths at this time last year and 1,531 in 2017. Egg hatch is beginning in locations where 90 degree days (modified base 50°F) have accumulated since the first significant flight on April 12, including Beloit, Madison and Lone Rock.

BROWN MARMORATED STINK BUG: The record-cold Arctic air that impacted Wisconsin in late January is unlikely to have reduced overwintering BMSB populations. This newly-established invasive pest avoids exposure to lethal cold temperatures by entering diapause and sheltering indoors or beneath the bark of dead, standing trees. According to UW-Madison Entomologist PJ Liesch, BMSB continues to be one of the top reported insects at the Insect Diagnostic Lab this spring. With the recent addition of Dodge County, BMSB has been now been confirmed in 29 of Wisconsin's 72 counties.

TRUE ARMYWORM: The first capture of true armyworm moths was registered in southern Wisconsin during the week on April 8, and additional flights have been reported since then. The Janesville black light trap has collected 140 moths to date, with 54 of those captured April 18-24 and 61 moths caught April 25-May 1. A pheromone trap

at the same site has picked up 25 moths as of May 1. Recall that pheromone traps attract only male moths, whereas black light is attractive to both males and females. These captures signal that at least three migration events have occurred this spring and egg deposition has started.

True armyworm moth Krista Hamilton DATCP

EASTERN TENT CATERPILLAR: Egg hatch was observed on April 20 in Green County. The characteristic tents are not yet noticeable, but should become visible on apple, ornamental crabapple, wild cherry, and other host trees by the second week of May. Manual removal of the small tents, rather than pruning infested branches, is suggested. Insecticides are not necessary for tent caterpillar control.

GYPSY MOTH: Overwintered eggs are expected to begin hatching in the week ahead. Horticultural oil applied directly to the egg masses will remain an effective treatment for one more week in the central and northern areas of the state. Golden Pest Spray Oil and other oil products labeled for gypsy moth control are available online or at garden centers and retailers.

FORAGES & GRAINS

ALFALFA WEEVIL: Overwintered adults are emerging and spring egg laying should begin next week in southern Wisconsin alfalfa fields. Extreme cold temperatures are likely to have caused higher than normal egg mortality this winter, potentially reducing larval populations in first-crop alfalfa later this month. The first appearance of larvae is expected to be delayed by recent low temperatures and is forecast for May 16 in the southwest counties. Consultants and field scouts should plan to begin surveys for weevil larvae during the week of May 19-25.

DEGREE DAYS JANUARY 1 - MAY 1

LOCATION	50°F	2018	NORM	40°F
Dubuque, IA	173	140	226	422
Lone Rock	173	129	—	398
Beloit	168	121	231	396
Sullivan	154	96	196	352
Madison	158	114	214	385
Juneau	127	99	—	308
Racine	116	83	—	297
Waukesha	143	86	—	338
Milwaukee	121	86	166	305
Hartford	132	95	—	313
Appleton	87	86	—	247
Green Bay	76	83	152	234
Big Flats	116	105	—	303
Hancock	106	82	201	278
Port Edwards	103	83	198	273
La Crosse	137	127	236	353
Eau Claire	107	101	197	292
Cumberland	72	64	158	198
Bayfield	42	18	—	156
Wausau	70	66	161	196
Medford	64	65	136	183
Crivitz	69	90	—	214
Crandon	60	65	123	179

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

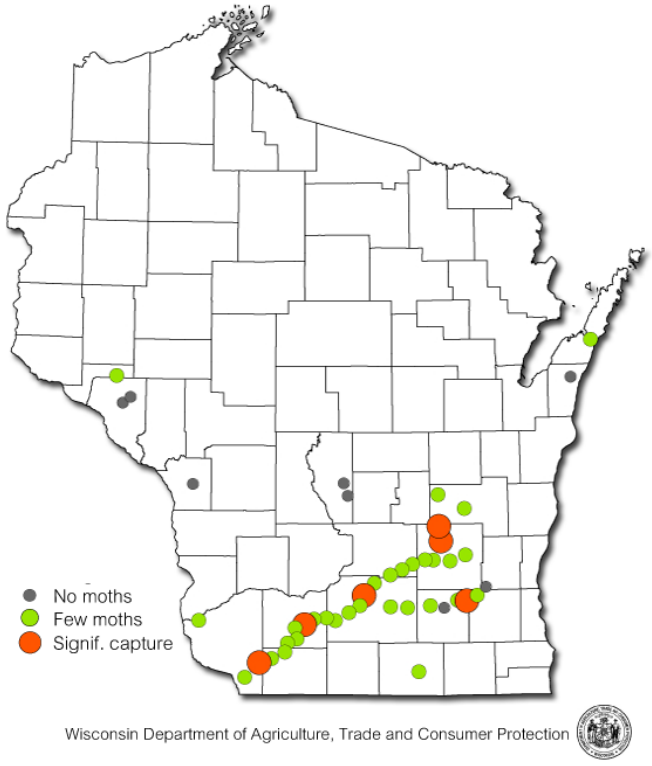
PEA APHID: The degree day accumulation above base 40°F is adequate for egg hatch. Although populations were elevated in some fields last June, economic pea aphid damage is uncommon in Wisconsin. Alfalfa stands, both established and new seedings, can usually tolerate relatively high numbers of aphids without reduction in quality or yield. The long-established threshold for this pest remains at 100 per sweep.

CORN

BLACK CUTWORM: Moths began arriving in the state three weeks ago, with the first reported capture on April 4 at Janesville and a significant flight registered by April 12. A significant or “intense” capture of nine or more moths in two nights indicates areas of the state where migrations have occurred and marks the biofix for calculating cut-

worm degree days. Captures of this level have been documented at 10 of DATCP's monitoring sites as of May 1. Intense counts in the past week ranged from 13-15 moths per trap at six sites in Dane, Dodge, Grant, Iowa and Jefferson counties (see map below). The 2019 BCW network consisting of 44 traps has to date collected a cumulative total of 487 moths, or 11 per trap. A forecast of peak corn cutting dates will be issued next week.

Black Cutworm Counts April 25-May 1, 2019



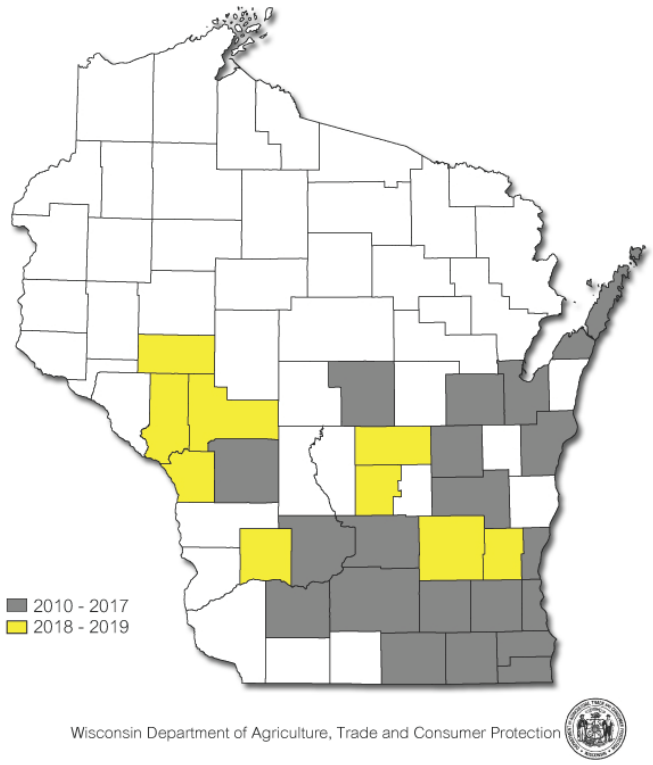
TRUE ARMYWORM: The first moths of the 2019 season were collected in the Janesville trap on April 8, which was more than two weeks earlier than their April 25 arrival date last year. Another 61 moths were captured from April 25-May 1. Cover crops and spring-killed alfalfa will provide attractive oviposition sites for these migrant moths, as will small grains. No-tillage fields previously in sod or with small grain cover crops that were not burned down with herbicides early enough in spring usually experience greater problems with true armyworm than do conventional tillage fields.

SOYBEANS

BROWN MARMORATED STINK BUG: Historic cold winter temperatures will not have impacted indoor BMSB populations, which according to PJ Liesch of the UW-Madison Insect Diagnostic Lab, have already resumed activity. Populations of this invasive pest are currently highest in the Madison, Milwaukee and Green Bay-Oshkosh areas, although its range is also expanding into western Wisconsin. Soybean growers in southeastern and south-central Wisconsin should expect to see BMSB in fields for the first time this season.

Growers and crop advisors in the 43 counties where the stink bug has not yet been reported are asked to send in suspects to the UW-Madison Insect Diagnostic Lab http://labs.russell.wisc.edu/ insectlab/samples/ for official determination. A map showing confirmed BMSB county records since the first Wisconsin detection in 2010 is provided below.

Brown Marmorated Stink Bug Reports



SOYBEAN APHID: In contrast to BMSB, extreme low temperatures during the late January polar vortex may have been lethal to soybean aphid eggs on buckthorn in parts of the state. Egg freeze is expected between -25 and -35°F, a range reached or exceeded in many Wisconsin locations during the January 28-31 cold spell. If soybean aphid egg winter mortality was indeed high, then early aphid densities in soybeans should initially be lower this season.

FRUITS

CODLING MOTH: Mating disruption (MD) products should be in place about two weeks prior to the start of the spring codling moth flight. For southern Wisconsin orchards, MD deployment is advised soon since the first moths often appear in traps by May 15. Data from the last five years indicates the spring biofix has been set at most reporting orchards between May 17 and 27. According to Peter Werts of the IPM Institute in Madison, the labor requirement associated with newer MD products has lessened in recent years, making this non-toxic approach to codling moth control more practical than in the past, as well as cost-competitive compared to traditional insecticide sprays. DATCP cooperators using mating disruption this year are asked to specify "MD" in their weekly reports.

GRAPE FLEA BEETLE: Emergence of overwintered adults began two weeks ago. Scouting twice weekly is suggested beginning at the bud swell stage and continuing until the buds have grown to 1/2 inch or more. Beetle feeding in the ends and sides of buds destroys the plant's capacity to develop a primary or secondary shoot, ultimately reducing grape yields. Plants in the border rows of vineyards are at greatest risk of damage and should be inspected for the metallic blue-green beetles on warm, sunny days this month. A sample size of 25 vines in five separate locations is suggested by the UW. Treatment may be justified if 5% or more of buds are damaged.

Grape flea beetle bud damage *Erik Burkness UMN*

EASTERN TENT CATERPILLAR: Egg hatch is underway statewide. The distinctive silk webbed tents should become increasingly noticeable on apple and other host trees in the next two weeks. Use of insecticides is not necessary to control this caterpillar. Defoliated trees usually grow new leaves, and natural enemies such as birds, parasitic wasps, and disease organisms also help to regulate spring populations.

REDBANDED LEAFROLLER: The first moth flight began by April 17 in southern Wisconsin. Counts generally decreased this week with the cooler weather, with over half of cooperating orchards reporting very low weekly catches of less than five moths. Peak emergence or trap catch of spring adults is approaching and should occur at advanced sites in the next 2-3 weeks. The first RBLR caterpillars customarily appear around petal fall.

VEGETABLES

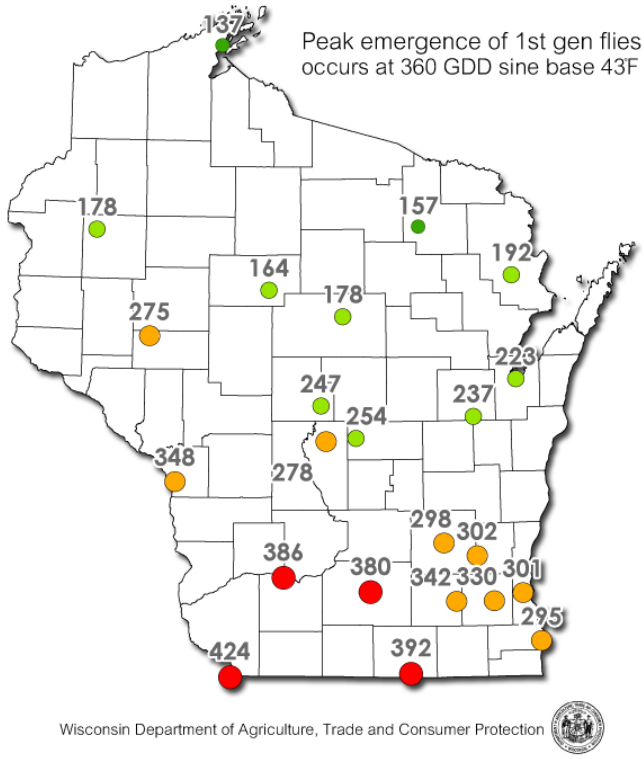
COMMON ASPARAGUS BEETLE: The first appearance of overwintered beetles and the start of egg laying on asparagus spears can be expected in the next two weeks in southern Wisconsin. The 150 degree days (simple base 50°F) required for emergence will likely be surpassed near Platteville in Grant County by May 13, while growers in the La Crosse and Viroqua areas can anticipate beetles appearing around May 17.

Common asparagus beetle *www.planetnatural.com*

SEEDCORN MAGGOT: Degree day accumulations near Beloit, Lone Rock, Madison and Platteville have surpassed the 360 thermal units (sine base 39°F) required for peak or 50% emergence of first-generation flies. The cool, moist soil conditions prevalent this spring favor SCM development and indicate vegetable seedlings may be at elevated risk of maggot damage, especially since

germination is likely to be slowed in the next two weeks by low soil temperatures. The map below shows SCM degree day accumulations as of May 1. Peak fly emergence is forecast for 360 degree days, or approximately May 4-10 across much of central Wisconsin and May 11-17 in areas north of Green Bay. If appropriate, planting outside of the projected peak flight period is recommended. Seedcorn maggot flight periods can be monitored by using yellow dishpans filled with soapy water placed every 100 feet along the field perimeter. The traps should be checked and refilled every 4-6 days to determine when fly activity is increasing or decreasing.

Seedcorn Maggot Degree Days May 1, 2019



IMPORTED CABBAGEWORM: Adults have been active sporadically in the last month. The early spring appearance of these common yellowish-white butterflies signals egg laying is underway on early-planted broccoli, cabbage, kale and other cole crops. Two basic measures to reduce early ICW damage are to ensure transplants are free of larval contamination and to install floating row covers or another physical barrier to prevent oviposition on plants.

FLEA BEETLE: Overwintered adults are emerging from diapause and can be expected to invade seed beds that are not protected with floating row covers. Seedlings and transplants are particularly vulnerable to feeding damage in the first two weeks after emergence. Measures to prevent flea beetle invasion of spring vegetable crops such as spinach and leafy greens are advised at this time.

Flea beetles feeding on cauliflower www.omafra.gov.on.ca

CABBAGE MAGGOT: Peak emergence of first generation flies could begin late next week in advanced parts of southern Wisconsin. This event is predicted for 300 degree days (simple base 43°F), as lilacs are in full bloom. Broccoli and cauliflower plantings on light sandy soils are at highest risk of maggot infestation and should be regularly inspected during the latter half of the month. Transplanting cole crops one week before or after peak fly emergence or use of row covers is recommended to avoid the primary flight period. Cabbage maggot degree days as of May 1 are as follows: Beloit 229, Madison 217, Racine 158, La Crosse 191, Eau Claire 136, and Wausau 78.

NURSERY & FOREST

WINTER DRYING: Symptoms of winter drying on Canaan fir, Fraser fir, and other conifers are apparent this spring across much of the state. Winter drying is a form of injury caused when moisture lost through transpiration on warm sunny winter days cannot be replaced due to frozen soil, resulting in needle dehydration. Foliar discoloration may affect entire trees but is typically most severe on southern and western exposures which receive more direct sunlight. Damage is usually restricted to the needles and not the buds and trees often outgrow the interior damage, though the dried needles will not recover. Pruning out affected branches should be postponed until new growth emerges later this month or in June. Keeping trees as

healthy as possible throughout the growing season and irrigating in fall to assure good moisture status going into winter is also suggested to prevent winter drying.

TOBACCO MOSAIC VIRUS: This highly infectious virus was detected on the petunia hybrid 'Indian Summer' in a northeastern Wisconsin greenhouse late last month. Symptoms of TMV include stunting and yellow mottling of the leaves. This and other plant viruses are mechanically transmitted through two main pathways: by propagation tools and by insect vectors such as aphids and thrips. Unlike other common plant viruses, TMV can remain viable in dead plant tissue and on tools, and has been known to spread easily by touch. There is no cure for the viruses now common in the nursery trade, therefore DATCP recommends promptly destroying infected plants. Disinfection of tools, equipment, surfaces, pots, hands, or anything the plant has come in contact with is also advised.

Tobacco mosaic virus in petunia 'Indian Summer' *Anette Phibbs DATCP*

GYPSY MOTH: Approximately one more week remains for nurseries and homeowners to remove or treat gypsy moth egg masses before hatch begins. Locating the tan, felt-like masses becomes more difficult once trees have leafed out. Finding and scraping off the eggs is an effective way to eliminate as many as 500-1,000 larvae at a time. The egg masses can be destroyed by soaking in a bucket of soapy water or by spraying with a dormant oil such as Golden Pest Spray Oil when temperatures are above 40°F.

Homeowners are reminded not to move firewood out of the gypsy moth quarantine area which now includes 52 of the state's 72 counties https://datcp.wi.gov/Documents/GMQuarantineMap.pdf. Loggers must inspect logs prior to transport out of the quarantine zone, and are permitted to move pulpwood only to mills in compliance with DATCP's quarantine handling requirements.

Gypsy moth egg masses *Timothy Allen DATCP*

RABBIT AND VOLE DAMAGE: Nursery inspectors report that rabbit and vole damage to fruit and ornamental trees was more prevalent than normal this winter due to the heavy snowpack. Feeding by voles on bark and cambium tissue occurs at ground level, although these rodents can also feed on below-ground root tissues, causing reduced vigor in otherwise healthy-looking trees. Rabbit injury is characterized by distinct chewing or teeth marks noticeable at or above snow level. The potential for recovery from animal damage depends on the type of plant and type of injury. Deciduous shrubs commonly injured by rabbits such as Aronia, currant, dogwood, hydrangea, and lilac can tolerate severe damage and generally recover from rabbit pruning. Trunk wrap or guards and mowing grasses in fall can help reduce winter feeding problems. Trunk wrap should be removed in early spring.

Rabbit damage on nursery tree *Timothy Allen DATCP*

APPLE INSECT & BLACK LIGHT TRAP COUNTS APRIL 25 - MAY 1

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	DWB[5]	LPTB[6]	BMSB[7]	AM RED[8]	YELLOW[9]
Bayfield	Keystone	—	—							
Bayfield	Orienta	—	—							
Brown	Oneida	—	—							
Columbia	Rio	—	—							
Crawford	Gays Mills	—	—							
Dane	DeForest	0	18							
Dane	Mt. Horeb	3	18							
Dane	Stoughton	3	2							
Fond du Lac	Campbellsport	0	0							
Fond du Lac	Malone	0	4							
Fond du Lac	Rosendale	0	3							
Grant	Sinsinawa	7	2							
Green	Brodhead	—	—							
Iowa	Mineral Point	48	106							
Jackson	Hixton	—	—							
Kenosha	Burlington	25	45							
Marathon	Edgar	0	3							
Marinette	Niagara	—	—							
Marquette	Montello	486	31							
Ozaukee	Mequon	4	49							
Pierce	Beldenville	0	0							
Pierce	Spring Valley	0	0							
Racine	Raymond	0	0							
Racine	Rochester	29	72							
Richland	Hill Point	20	105							
Sheboygan	Plymouth	0	0							
Walworth	East Troy	—	—							
Walworth	Elkhorn	—	—							
Waukesha	New Berlin	0	0							

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]Lesser peachtree borer; [6]Dogwood borer; [7]Brown marmorated stink bug; [8]Apple maggot red ball; *Unbaited; **Baited; [9]Apple 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]
Columbia	Arlington	—	—	—	—	—	—	—	—	—	—
Columbia	Pardeeville	—	—	—	—	—	—	—	—	—	—
Dodge	Beaver Dam	—	—	—	—	—	—	—	—	—	—
Fond du Lac	Ripon	—	—	—	—	—	—	—	—	—	—
Grant	Prairie du Chien	0	0	0	0	0	0	0	0	0	0
Manitowoc	Manitowoc	—	—	—	—	—	—	—	—	—	—
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	0	0	0	0	0	0	61	0	0	0
Walworth	East Troy	—	—	—	—	—	—	—	—	—	—
Wood	Marshfield	—	—	—	—	—	—	—	—	—	—

[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.

BLACK CUTWORM PHEROMONE TRAP COUNTS 2019

COUNTY	SITE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8
Adams	Brooks	—	0	—	0				
Adams	Grand Marsh	—	0	—	0				
Buffalo	Alma	0	0	0	0				
Buffalo	Gilmanton	0	0	1	0				
Columbia	Columbus	0	1	3	3				
Columbia	Hampden	1	12*	13*	7				
Columbia	Leeds	0	6	0	3				
Dane	Blooming Grove	0	1	4	1				
Dane	Blue Mounds	1	0	2	3				
Dane	Cross Plains	7	1	0	5				
Dane	Deerfield	3	8	3	5				
Dane	Middleton	0	0	0	1				
Dane	Springfield	0	0	6	13*				
Dane	Vienna	0	0	0	3				
Dodge	Beaver Dam	0	1	9	12*				
Dodge	Calamus	0	9	5	3				
Dodge	Hubbard	0	8	5	4				
Dodge	Lowell	0	3	5	1				
Dodge	Oak Grove	0	3	2	6				
Dodge	Waupun	0	7	7	13*				
Door	Sturgeon Bay	—	—	1	5				
Fond du Lac	Lamartine	0	0	7	3				
Fond du Lac	Ripon	1	1	20*	9				
Grant	Dickeyville	0	0	6	7				
Grant	Platteville	1	0	3	15*				
Grant	Prairie du Chien	0	0	0	—				
Iowa	Brigham E	0	0	1	3				
Iowa	Brigham W	1	0	8	2				
Iowa	Dodgeville E	1	1	2	14*				
Iowa	Dodgeville W	0	0	6	9				
Iowa	Mineral Point E	0	0	7	6				
Iowa	Mineral Point W	0	0	3	5				
Jefferson	Ixonia E	0	9	14*	13*				
Jefferson	Ixonia W	2	15*	2	4				
Jefferson	Johnson Creek	1	7	2	0				
Jefferson	Milford	0	3	0	2				
Kewaunee	Algoma	—	—	0	—				
La Crosse	West Salem	—	—	—	—				
Lafayette	Belmont	0	0	3	3				
Lafayette	Kendall	0	0	4	7				
Pepin	Durand	—	0	0	2				
Rock	Janesville	5	11*	3	3				
Washington	North Lake	1	6	0	0				
Waukesha	Oconomowoc	0	4	2	1				

Intense capture occurs when 9 or more moths are caught in a 2-night period. Week 1 (April 4-10), Week 2 (April 11-17), Week 3 (April 18-24), Week 4 (April 25-May 1), Week 5 (May 2-8), Week 6 (May 9-15), Week 7 (May 16-22), Week 8 (May 23-29).