

Issue: 2018.4
April 27, 2018

Pest&Crop newsletter

Purdue Cooperative Extension Service and USDA-NIFA Extension IPM Grant

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Editor: Tammy Luck | Department of Entomology, Purdue University, 901 W. State St., West Lafayette, IN 47907

Black Cutworm Adult Pheromone Trap Report

County	Cooperator	BCW Trapped						
		Wk 1 3/29/18-4/4/18	Wk 2 4/5/18-4/11/18	Wk 3 4/12/18-4/18/18	Wk 4 4/19/18-4/25/18	Wk 5 4/26/18-5/2/18	Wk 6 5/3/18-5/9/18	Wk 7 5/10/18-5/16/18
Adams	Mrs. Anderson's/2nd Grade		0	0	4			
Adams	Wyneken Lutheran School/Decatur							
Adams	Roe/Mercer Landmark	0	0	0	0			
Allen	Anderson/Syngenta	0	0	0	0			
Allen	Gynn/Southwind Farms	0	0	0	0			
Allen	Kneubuhler/G&K Concepts	0	0	0	1			
Bartholomew	Bush/Pioneer Hybrids	0	1	2	2			
Clay	Bower/Ceres Solutions/Clay City	0	0	0	0			
Clay	Bower/Ceres Solutions/Bowling Green	0	0	0	0			
Clay	Bower/Ceres Solutions/Brazil	0	0	4	2			
Clinton	Emanuel/Boone Co. CES	0	0	6	0			
Clinton	Foster/Rossville	0	0	0	0			
Daviess	Venard/Venard Agri-Consulting/Washington	1	2	2	0			
Daviess	Venard/Venard Agri-Consulting/Elnora	0	0	2	1			
DeKalb	Hoffman/ATA Solutions		0	0				
Dubois	Eck/Dubois Co. CES	0	0	0	3			
Elkhart	Kauffman/Crop Tech Inc.	0	0	0	1			
Fayette	Schelle/Falmouth Farm Supply Inc.	0	0	5	17			
Fountain	Mroczkiewicz/Syngenta	0	0	0	7			
Fulton	Ranstead/Ceres Solutions/Rochester		0	0	0			
Fulton	Jenkins/Ceres Solutions/Talma	0	0	0	0			
Greene	Venard/Venard Agri-Consulting/Newberry	1	4	5	0			
Hamilton	Campbell/Beck's Hybrids	0	0	0	4			
Hendricks	Nicholson/Nicholson Consulting	0	0	0	0			
Jasper	Overstreet/Jasper Co. CES	0	0					
Jasper	Ritter/Brodbeck Seeds	0	0	0				
Jay	Boyer/Davis PAC	0	0	0				
Jay	Shrack/Ran-Del Agri Services	0	0	4	2			
Jay	Temple/Jay Co. CES/Redkey	0	0	3	1			
Jay	Temple/Jay Co. CES/Pennville	0	0	3	1			
Jennings	Bauerle/SEPAC	0	1	0	3			
Knox	Bower/Ceres Solutions/Freelandville	0	0	0	0			
Knox	Bower/Ceres Solutions/Vincennes	0	0	0	0			
Kosciusko	Klotz/Etna Green	0	0	0	0			
Lake	Kleine	0	0	2	3			
Lake	Moyer/Dekalb Hybrids/Shelby	0	0	0	0			

Lake	Moyer/Dekalb Hybrids/Scheider	0	0	4	0
LaPorte	Rocke/Agri-Mgmt. Solutions/Wanatah	0	0	0	1
Marshall	Harrell/Harrell Ag Services/Trap 1	0	0	0	0
Marshall	Harrell/Harrell Ag Services/Trap 2	0	0	0	0
Marshall	Klotz/SR 10 & SR 331		0	0	0
Marshall	Miller/Ceres Solutions		0	0	8
Miami	Early/Pioneer Hybrids	0	0	0	1
Montgomery	Delp/Nicholson Consulting	0	0	0	2
Newton	Moyer/Dekalb Hybrids/Lake Village	0	0	2	0
Porter	Leuck/PPAC	0	0		0
Posey	Schmitz/Posey Co. CES/Cynthiana	0	0	0	
Posey	Schmitz/Posey Co. CES/St. Phillips W.	0	0	0	
Pulaski	Capouch/M&R Ag Services				0
Pulaski	Leman/Ceres Solutions	0	0	0	3
Putnam	Nicholson/Nicholson Consulting	0	0	1	8
Randolph	Boyer/DPAC	0	0	0	4
Rush	Schelle/Falmouth Farm Supply Inc.	1	0	3	2
Shelby	Fisher/Shelby County Co-op	0	0	0	
Shelby	Simpson/Simpson Farms				2
Starke	Capouch/M&R Ag Services				
St. Joseph	Barry/Helena				0
St. Joseph	Carbiener	0	0	0	
Sullivan	Bower/Ceres Solutions/Farmersburg	0	0	0	0
Sullivan	Bower/Ceres Solutions/Sullivan	0	2	4	2
Tippecanoe	Bower/Ceres Solutions/Lafayette	0	0	0	1
Tippecanoe	Nagel/Ceres Solutions	0	0	3	17
Tippecanoe	Obermeyer/Purdue	0	0	0	1
Tippecanoe	Ensign/Hoy Monsanto Research Farm	0	0	0	
Tipton	Campbell/Beck's Hybrids	0	3	0	1
Vermillion	Bower/Ceres Solutions/Clinton	0	0	0	0
Wabash	Enyeart/Ceres Solutions	0	0		1
Whitley	Boyer, Richards/NEPAC/Schrader	-	0	0	2
Whitley	Boyer, Richards/NEPAC/Kyler Farm	-	0	1	0

* = Intensive Capture...this occurs when 9 or more moths are caught over a 2-night period

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Armyworm Pheromone Trap Report

Armyworm Pheromone Trap Report

County/Cooperator	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8
Dubois/SIPAC Ag Center	0	0	11	3				
Jennings/SEPAC Ag Center	0	0	2	5				
Knox/SWPAC Ag Center	0	27	44	45				

LaPorte/Pinney Ag Center	0	0	3	3
Lawrence/Feldun Ag Center	0	28	89	144
Randolph/Davis Ag Center	0	0	273	80
Tippecanoe/Meigs	0	0	1	5
Whitley/NEPAC Ag Center		0	22	22

Wk 1 = 3/29/18 - 4/4/18; Wk 2 = 4/5/18-4/10/18; Wk 3 = 4/11/18-4/18/18; Wk 4 = 4/19/19=4/25/18

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Use Caution with Weather Prediction Tools and Dicamba Recordkeeping

Authors: Joe Ikley and Bill Johnson

With a promising extended forecast, we may finally get a lot of field work done around the state. With planting and spray season upon us, we decided it was a good time to test some of the weather prediction tools that have been advertised throughout the winter. On the afternoon of April 19th and the morning of April 20th, we drove out to our research plots at Throckmorton Purdue Agriculture Center (TPAC) to measure wind speeds with our handheld Kestrel 3000 held at 3 feet above the ground. We used the National Weather Service guidelines of measuring wind for 2 continuous minutes. We then compared the wind speeds from our handheld device to several apps and websites that pinpointed our location on a smartphone. The different results we found on April 19th are in Table 1, and the results from April 20th are in Table 2. Remember that according to the labels for Xtendimax, Engenia, and FeXapan, wind speed and direction must be measured at boom height at the start and stop of each application. Some state regulatory agencies are allowing applicators to use some of the available apps for weather data recording. Most of these apps will use currently reported weather data and models to try to pinpoint a forecast to your location. However, we wanted to see how much the weather model data compared to our handheld device.

Table 1. Wind data collected from multiple devices at 3 PM on April 19th. N/A means the device or app does not measure or report data for that column.

Source	Wind Direction	Wind Speed	Wind Gusts
Kestrel 3000 (Handheld)	N	6.9 MPH	10.8 MPH
RRXtend Spray (App)	N	7 MPH	N/A
Engenia Spray Tool (Website)	N	12 MPH	24 MPH
DTN Ag Weather (App)	NNE	5 MPH	N/A
Pocket Spray Smart (App)	N	15.8 MPH	N/A
National Weather Service (Website)	N	13 MPH	20 MPH
The Weather Channel (App)	N	14 MPH	N/A

Table 2. Wind data collected from multiple devices at 10 AM on April 20th. N/A means the device or app does not measure or report data for that column.

Source	Wind Direction	Wind Speed	Wind Gusts
Kestrel 3000 (Handheld)	NE	3.1 MPH	4.7 MPH
RRXtend Spray (App)	NNE	0 MPH	N/A
Engenia Spray Tool (Website)	NNE	2 MPH	9 MPH
DTN Ag Weather (App)	ENE	5 MPH	N/A
Pocket Spray Smart (App)	N	3.6 MPH	N/A

National Weather Service (Website)	N/A	Calm	N/A
The Weather Channel (App)	NE	6 MPH	N/A

On April 19th, our wind speeds were approaching the high end of the legal limit to apply Xtendimax, Engenia, and FeXapan. Our handheld unit measured winds gusting slightly over 10 MPH, which means we could not spray until the wind gusts were 10 mph or less. The RRXtend Spray App and DTN Ag Weather App reported wind speeds of 7 and 5 MPH, respectively. However, neither of these two apps report wind gusts. The herbicide manufacturers and Office of the Indiana State Chemist do count wind gusts over 10 MPH as off-label, so additional information would need to be gathered if using these apps since wind gusts are not reported, only the average wind speed. The rest of the apps we used reported wind speeds over 10 MPH, indicating a no-spray situation.

On April 20th, we were on the opposite end of the wind speed limit for the new dicamba formulations. When wind speed was measured in the field with the handheld device, we had favorable wind speeds and wind gusts which would allow an applicator to spray if the wind is not blowing towards a sensitive crop. Pocket Spray Smart, DTN Ag Weather, and The Weather Channel indicated favorable wind speeds, while the rest of the apps reported wind speeds below the 3 MPH threshold.

Xtendimax, Engenia, and FeXapan have the tightest wind restrictions of herbicides we will be applying in the corn-belt, but the differences in the data provided by various sources should be a cause of concern when planning any application. A handheld device used in the field will be most accurate and meet the legal requirements for the three new dicamba products, but we understand the need to look at weather conditions before mixing and heading to the field. Given the variability that we found amongst the 7 tools we tested, we recommend using and recording from at least two different sources when evaluating if wind conditions are right to make any herbicide application. Using two sources will do two things for the applicator. One, it will provide a second set of data to provide more information on whether or not we should spray that day. Second, in the event of an offsite movement event and subsequent inspection, this will let the inspector know that you the applicator did your diligence in attempting to abide by the label requirements for spraying the Xtend soybean dicamba herbicides.

We will continue to evaluate these and other available tools over the next several weeks to check the consistency of these apps compared to in-field wind measurements.

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Cressleaf Groundsel (*Packera glabella*)

Authors: Joe Ikley and Bill Johnson

Every spring we receive several calls and e-mails about a certain 3-foot tall weed with yellow flowers. Cressleaf groundsel will once again be in full bloom across the entire state of Indiana in many no-till fields and pastures. This article is meant to provide information on the biology and life cycle of cressleaf groundsel, as well as how to control it in fields and pastures.

Biology and Identification

Cressleaf Groundsel is a winter annual weed that has been becoming more prevalent in Indiana pastures and agronomic crop ground over the past couple of years. The small seeds produced by this weed allow it to thrive in reduced and no-till systems as well as poorly established pastures. Cool and wet springs of the past couple of years have also favored cressleaf groundsel, as it is a weed that prefers moist soils and typically struggles in hot and dry weather.

Much like most winter annual weeds, cressleaf groundsel emerges as a rosette in the fall then bolts, flowers, and produces seed in the spring. Basal rosette leaves are deep pinnate serrations with roundly lobed leaf margins. Leaves are typically 2 to 10 inches in length (Britton and Brown 1970). Bolting stems are hollow and can reach up to three feet in height with inflorescences that contain six to twelve yellow ray flowers that are often compared to the flowers of common dandelion. When looking for cressleaf groundsel in older weed id or taxonomic guides be aware that it has traditionally been placed in the *Senecio* genus and only recently was placed into the *Packera* genus.



Figure 1. Cressleaf groundsel rosette.



Figure 2. Bolted cressleaf groundsel.



Figure 3. Cressleaf groundsel flower cluster.

Toxic Properties

The competitiveness of cressleaf groundsel with agronomic crops has not been researched, though its presence as a winter annual in no-till fields will have the same implications of slowing soil warming and drying as other winter annual weeds. The presence of this weed in pastures and hay fields should be of more concern as it does contain toxic properties when ingested by livestock. Leaves, flowers, and seeds of cressleaf groundsel contain alkaloids that will cause liver damage in livestock that is termed seneciosis and typically occurs on a chronic level (Kingsbury 1964). Symptoms of seneciosis are loss of appetite, sluggish depressed behavioral patterns, and in extreme cases aimless walking without regard to fences or structures. Although cressleaf groundsel is not as toxic as many of its relatives in the *Packera* genus, livestock producers encountering this weed in pastures or hay should take steps to avoid prolonged ingestion by animals.

Control

Herbicide applications to control of cressleaf groundsel are most effective when applied to plants in the rosette stage, bolting plants are

very difficult to control with herbicides. Infestations in pastures can be controlled with 2,4-D or a combination of 2,4-D and dicamba applied to rosettes in the fall or early spring prior to bolting (Nice 2008). Producers should be aware that applications of these herbicides will also kill favorable broadleaves that are present in pastures.

Control recommendations for cressleaf groundsel in no-till agronomic crop fields has typically been to apply 2,4-D @ 1 qt/A to actively growing rosettes in the fall. Research at University of Illinois (Lake and Hager 2009) has shown that fall or spring applications to 2-8 inch diameter rosettes with the following herbicides and rates can achieve 94% or greater control of cressleaf groundsel:

- 1 oz/A Canopy EX (chlorimuron + rimsulfuron)
- 1-2 qt/A glyphosate (4lb ai formulation)
- 1-2 qt/A glyphosate + 1-2 pt 2,4-D (4 lb ai formulation)
- 3 pt Extreme (glyphosate + Pursuit)

In general the treatments applied in the fall resulted in greater biomass reduction of cressleaf groundsel, although all treatments and timings prevented plants from producing seed.



Figure 4. Fall application control of cressleaf groundsel compared to no fall application.

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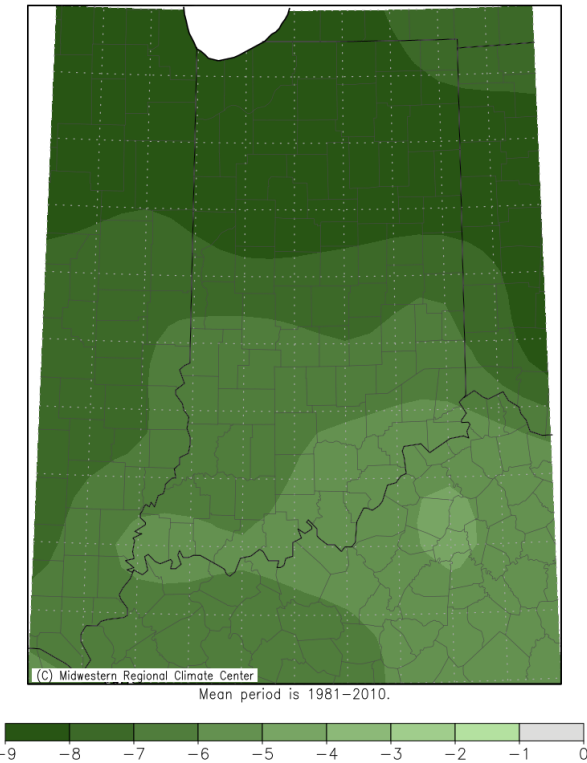
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Average Temperature Departure from Mean April 17-23, 2018

Average Temperature (°F): Departure from Mean
April 17, 2018 to April 23, 2018

Average Temperature Departure from Mean April 17-23, 2018



Indiana State Climate Office www.iclimat.org
Purdue University, West Lafayette, Indiana
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Total Precipitation April 19-25, 2018

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