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Insects, Mites, And Nematodes

Don't Forget the Alfalfa - (*John Obermeyer, Christian Krupke, and Larry Bledsoe*) -

- Alfalfa weevil activity has begun.
- Scouting should begin now in southern Indiana.
- Scouting techniques are given.

Producers are off to another fast start this spring. With all attention given to corn and soybean planting, alfalfa fields are typically neglected. Problem is, alfalfa weevil is now beginning to feed in southern counties of Indiana. If left unchecked, significant first-cutting yield and quality may be lost from this pest. While initial damage is minor, "pin-hole" feeding, it is the best time to begin scouting.

Sampling a field to determine the extent of alfalfa weevil damage and average stage of plant development is best accomplished by walking through the field in an "M-shaped pattern." Ten alfalfa stems should be examined in each of 5 representative areas of the field for a total of 50 stems from the entire field. Consider that south facing slopes and/or sandy soils warm sooner and should be included in the sampling. Each stem should be examined for: (1) evidence of tip feeding by alfalfa weevil larvae; (2) maturity of the stem, i.e. pre-bud, bud and/or flowers; and (3) stem length. Larvae presence within the terminal buds should also be noted. Although large alfalfa weevil larvae are relatively



Alfalfa weevil pin-hole feeding

easy to find, small larvae are difficult to see; thus, very close examination of leaves may be required to detect "pin-hole" feeding and small larvae.

Future issues of the *Pest&Crop* will address management decisions made with accumulated heat units.



Soybean Aphid Waking from Winter's Nap – (John Obermeyer)

Researchers in the Midwest have been monitoring buckthorn for soybean aphid eggs this past fall and winter. Now, reports are trickling in of aphid nymphs found on these plants (Indiana, Michigan, and Ohio). These nymphs may or may not be the first soybean aphid of 2005, as positive ID is pending, but the timing is consistent with previous years. Eventually these nymphs will form wings and fly to alternate hosts to feed. This transition period of the soybean aphid from buckthorn (winter host) to soybean (summer host) is still somewhat of a mystery in this aphid's biology, especially when soybean haven't emerged in an area.

Please consider this information as only an update of this pest. Predictions of soybean aphid severity for 2005 is still premature and not possible at this time.



Soybean aphid eggs next to buckthorn buds (photo by Mark Sears, Univeristy of Guelph)



Black Cutworm Adult Pheromone Trap Report			
Week 1 = 3/31/05 - 4/6/05 Week 2 = 4/7/05 - 4/13/05			
County	Cooperator	BCW Trapped	
		Wk 1	Wk 2
Adams	Roe/Mercer Landmark	3	1
Allen	Gynn/South Wind Farm	1	1
Benton	Babcock/AgroKey	-	3
Clay	Smith/Growers Co-op (Brazil)	0	1
Clay	Smith/Growers Co-op (Clay City)	1	1
Elkhart	Kauffman/Crop Tech Inc.	-	0
Fountain	Hutson/Purdue CES	0	0
Fulton	Jenkins/Fulton-Marshall Co-op	0	0
Gibson	Hirsch Farms	1	-
Greene	Maruszewski/Worthington Pioneer	0	0
Knox	Growers Co-op (Fritchton 1)	0	0
Knox	Growers Co-op (Fritchton 2)	0	0
Knox	Smith/Growers Co-op (Oaktown)	1	2
Lake	Kliene Farms (1)	1	3
Lake	Kliene Farms (2)	0	2
Marshall	Barry/Fulton-Marshall Co-op	0	0
Marshall	Shanks/Plymouth Pioneer	0	0
Newton	Babcock/AgroKey	-	0
Putnam	Nicholson/Consultant	0	0
Randolph	Boyer/Davis-Purdue Ag Center	0	1
Rush	Tacheny/Pioneer Hi-Bred	4	4
Shelby	Gabbard/Shelby Co. CES	0	3
Sullivan	Growers Co-op (Sullivan E)	0	1
Sullivan	Growers Co-op (Sullivan W)	0	2
Sullivan	Growers Co-op (New Lebanon)	0	4
Tippecanoe	Obermeyer/Purdue CES	0	0
Tipton	Johnson/Pioneer	0	2
Vermillion	Hutson/Purdue CES	0	0
Warren	Babcock/AgroKey	-	0
White	Reynolds/Vogel Popcorn	0	0
Whitley	Walker/NEPAC	0	0

Weeds

Star-Of-Bethlehem – (Glenn Nice and Bill Johnson)

Star-of-Bethlehem (*Ornithogalum umbellatum*) is becoming a problem in no-till fields in southern-Indiana. At first glance, it might look like a thick mat of waxy grass or some kind of wild garlic with its long narrow linear leaves growing in tufts. This plant is actually part of the lily family, a close relative of wild garlic. It is a perennial growing year after year from underground bulbs (Figure 1). Little white star-shaped flowers with six petals will appear in the early summer (Figure 2). If you examine the underside of the petals you will often see green stripes.

Star-of-Bethlehem is one of Indiana's toxic plants although it is not a commonly reported problem. All parts of the plant contain cardiac glycosides. The highest concentrations occur in the bulbs, which remain underground in most cases and do not come in contact with most grazing animals. Symptoms of toxicosis are stomach and intestinal irritation, this can be followed by heart rate and rhythm problems. If allowed to continue it can lead to fatal cardiac arrhythmias¹.

Star-of Bethlehem is known for being non-responsive to several herbicides. Dr. Bryan Young of the Southern Illinois University conducted research in no-till soybean and corn².



Fig. 1. Star-of-Bethlehem bulbs



Fig. 2. Star-of-Bethlehem produce little white star-shaped flowers with six petals in early summer

Applications of paraquat (Gramoxone Max®) at 0.75 lb ai/A, glyphosate (Roundup®, etc) at 0.77 lb ai/A, and 2,4-D were applied mid-April in 2002 and then again in 2003 to 6 to 8 inch plants. Visual ratings were taken and bulbs were collected to investigate bulb biomass reduction.

Paraquat provided 70 to 78% control at one year after the 2002 application. Plots which had received glyphosate or 2,4-D applications had less than 29% control one year after spring application. When compared to the non-treated plot (6,248 bulbs per 10.8 foot squared) the paraquat treated plots had 88% less bulb density. The use of 2,4-D resulted in an increase of bulbs. Growth regulators do not appear to be effective in controlling star-of-Bethlehem. So, at this point in the season, use of paraquat would be the recommended practice for control of this weed.

Reference:

¹R.J. Goetz, T.N. Jordan, J.W. McCain, and N.Y. Su. (accessed 4/8/2005) Indiana Plants Poisonous to Livestock and Pets. Cooperative Extension Service, Purdue University. <www.vet.purdue.edu/depts/addl/toxic/cover1.htm>.

²J.A. Hagerman and B.G. Young. 2004. Control of star-of-Bethlehem prior to corn and soybean. North Central Weed Science Proceedings 59-19.

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