Wisconsin Crop Manager

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What's New?

Weeds

Crops

Online copy available at http://ipcm.wisc.edu

2007 Soil, Water, and Nutrient Management Meetings

The Department of Soil Science will offer Soil, Water, and Nutrient Management Meetings at eightlocations in 2007. These meetings now combine the former Soil & Water Management and Fertilizer Dealer Meetings into one 4-hour session. Dick Wolkowski, Chris Baxter, Carrie Laboski, Sue Porter,and John Peters will present current soil & water management and soil fertility information. Allspeakers may not be present at all meetings. A $35.00 registration fee (which includes lunch) willbe charged for the meeting. Certified Crop Adviser CEU credits (2 hours in soil and water management and 2 hours in nutrient management) have been requested. Make reservations withthe host agent at least 1 week before the meeting you wish to attend.

Discussion Topics

- Addressing the soil compaction problem – Dick Wolkowski
- Managing carbon in Wisconsin Soils – Dick Wolkowski
- Nitrogen availability from manipulated manures – Chris Baxter
- Using the new lime recommendations in Wisconsin – John Peters
- What's new in nutrient management planning – Sue Porter
- Crop availability of manure phosphorus – Carrie Laboski
- Soil fertility briefs: Discussion of questions generated during the 2007 growing season and highlights of important soil fertility concepts – Carrie Laboski & John Peters

Download/print/read the flyer >>> 07dealerprogram.pdf

New Version of Snap-Plus is Available

Laura W. Good, Snap-Plus Project Coordinator, Dept. of Soil Science

A new version of the Snap-Plus nutrient management planning software for cropland and grazing land in Wisconsin is available. Snap-Plus is easily downloaded from the web site www.snapplus.net. This software facilitates planning manure and fertilizer applications to meet crop production goals while following state guidelines for water quality protection. Along with numerous usability improvements, this new version includes updated UW-Extension soil fertility recommendations and National Resources Conservation Services soil survey mapping unit information. New features to help planners include:

- Corn nitrogen recommendations use the MRTN (Maximum Return to Nitrogen) method starting in crop year 2007, and both the N:corn price ratio and the range-point used for setting the recommendation can be reset for individual or multiple fields;
- Application rates for manures directly deposited by animals can now be calculated with the Grazing Nutrient Rate Calculator;

- Warning messages appear when nitrogen applications are in excess of Nutrient Management Standard 590 guidelines.

More about these changes and other improvements can be found by clicking "Latest News" on the Snap-Plus web site www.snapplus.net.

Fall Alfalfa Removal Using Herbicides

Mark Renz, Extension Weed Scientist, University of Wisconsin-Madison

Alfalfa is a key crop in many rotations within Wisconsin, but if not successfully removed it can be troublesome in subsequent crops. This is especially true in no-till systems. This experiment was conducted on Roundup Ready alfalfa, as concern exists in the ability to remove this crop without the use of glyphosate as this is the most common herbicide used to remove alfalfa.

We established a trial at Arlington Field Research Station to evaluate the ability of several growth regulator herbicides in removing alfalfa for no-till production systems. Applications were applied at two timings in October that represent typical timings and environmental conditions for alfalfa removal in Wisconsin. The October 5th timing had good environmental conditions conducive for herbicide absorption/translocation and mortality. In contrast the October 19th timing was applied when conditions were sub-optimal with maximum air temperatures below 50 F the day of and the day after application. A range of growth regulator herbicides and rates were evaluated (See Table 2 for details). All treatments were applied to plots that were 10 ft wide by 30 ft long using a hand held CO2 powered backpack sprayer that delivered 15 gallons/A of spray solution. Other site and environmental conditions are summarized in Table 1.

Table 1.Environmental conditions for fall herbicide applications at Arlington, WI.

Timing of treatment	10/5/06	10/19/2006
Height of alfalfa	4-6 inches tall	5 – 7 inches tall
Air/Soil Temp at time of application	Air = 59 F; Soil =57 F	Air = 39 F; Soil =40 F
Max/Min air temp day before application	Max= 62F; Min= 43F	Max = 53F; Min= 35F
Max/Min air temp day of application	Max= 57F; Min= 34F	Max = 39F; Min= 31F
Max/Min air temp day after application	Max= 62F; Min= 29F	Max = 47F; Min= 25F

In May, the effectiveness of treatments was evaluated. Percent cover of alfalfa was visually estimated, and number of crowns that had green foliage present were counted in each plot. Table 2 summarizes the average (each treatment was replicated four times) values along with significant differences ($p<0.05$). Only Weedmaster applied at 2 pt/a didn't have any resprouting plants, however all herbicides were effective at limiting resprouting of alfalfa at the appropriate rate and timing. The early October timing had significantly better results than the later timing. 2,4-D and Banvel performance was reduced at the later timing at the lowest rate. Weedmaster applied in late October did not have any significant reduction in the number of crowns, but control was much more variable between plots. Only Weedmaster applied at 1.5 pt/A in late October had 5 crowns or less resprout the following spring. SeeTable 2 on next page.

Significance

This experiment clearly shows that environmental conditions can alter the level of control with growth regulator herbicides in alfalfa. Applications when conditions promote herbicide absorption and translocation (temperatures at least in the 50s) are the most desirable. Unfortunately time constraints often make for applications during non-ideal conditions. Realize that this IS NOT RECOMMENDED, but if this does occur a reduction in control will likely result. The level of reduction will vary from field to field due to a range of environmental conditions. It would have been interesting to compare the difference in effectiveness between these growth regulator herbicides and glyphosate, but the use of a Roundup Ready alfalfa stand prevented us from including this treatment.

This study found that rates needed to be increased when applied later in the fall under less than ideal environmental conditions. I think another point to consider is what level of control is acceptable? How many alfalfa plants surviving are acceptable in your production system? While a few volunteer alfalfa plants are unsightly, they likely would not cause a loss of yield.

Request for Yield Information from Corn Treated with Foliar Fungicides

Paul Esker, Craig Grau, Bryan Jensen

A number of Wisconsin corn acres were treated with foliar fungicides this summer. We would be very interested in any yield information that you would be willing to share from those fields which had at least two replicates of treated and untreated strips. These data, along with our small and large plot trials, will be very useful and give us all better insight to the benefit of foliar fungicides on corn.

Click on the link below to open or download a harvest survey form. Please fill out as much of the form as possible. Then either print it out, or use "File/Save as" to save a new file. Then FAX, surface mail, or email as an attachment to:

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Choose a form to download.

2007-Corn-Foliar-Fungicide-Harvest-Form.doc

2007-Corn-Foliar-Fungicide-Harvest-Form.pdf

Table 2. Alfalfa cover and # crowns May following fall herbicide applications at Arlington, WI

Treatment	Rate		Applic. date	% cover		# crowns / 300 ft^2	
2,4-D Amine + NIS	1.0	pt/a	10/5	5.0	cd	45.8	c
2,4-D Amine + NIS	2.0	pt/a	10/5	1.3	fg	8.5	de
2,4-D Amine + NIS	3.0	pt/a	10/5	0.8	g	2.0	e
Banvel + NIS	1.0	pt/a	10/5	1.0	g	5.0	de
Banvel + NIS	1.5	pt/a	10/5	1.0	g	2.3	de
Banvel + NIS	2.0	pt/a	10/5	0.5	g	0.5	e
Weedmaster + NIS	1.0	pt/a	10/5	1.0	g	5.8	de
Weedmaster + NIS	1.5	pt/a	10/5	0.3	g	0.3	e
Weedmaster + NIS	2.0	pt/a	10/5	0.0	g	0.0	e
2,4-D Amine + NIS	1.0	pt/a	10/19	26.3	b	103.5	b
2,4-D Amine + NIS	2.0	pt/a	10/19	4.3	cd	42.5	cd
2,4-D Amine + NIS	3.0	pt/a	10/19	1.0	fg	8.3	de
Banvel + NIS	1.0	pt/a	10/19	5.0	c	58.8	c
Banvel + NIS	1.5	pt/a	10/19	2.0	de	30.5	cde
Banvel + NIS	2.0	pt/a	10/19	0.8	fg	8.8	e
Weedmaster + NIS	1.0	pt/a	10/19	2.5	fg	23.0	cde
Weedmaster + NIS	1.5	pt/a	10/19	1.0	ef	4.3	de
Weedmaster + NIS	2.0	pt/a	10/19	-		-	
UTC	-	-	-	1000.0	a	95.0	a

Abbreviations: NIS = nonionic surfactant (applied at 0.25 % v/v)

Check Combine Settings and Scout Fields Prior to Soybean Harvest

Shawn P. Conley, Eileen Cullen, and Paul Esker

The word that best describes preliminary soybean yield estimates from across the Midwest is **variable**. Whole field averages ranging from 7 to 70 bushels per acre are being reported in southern Illinois and Indiana. The limiting factor in many of these low-yielding environments has been rainfall. Growers should take extraordinary precautions this year to check combine settings throughout the harvest day especially if they switch soybean maturity groups. Much of the rainfall that occurred in the drought areas of WI occurred too late to aid early maturity group soybeans (these soybeans were physiologically mature-R7 growth stage prior to rain); however many late maturity group varieties were still in the R6 (grain-fill) growth stage and may have benefited from the mid-August rainfall. As growers proceed in harvest a quick in-field estimate can be preformed to assess where yield losses are occurring. The three areas of concern are pre-harvest loss (standing soybean), header loss (harvested swath in front of combine), and machine loss (harvested swath behind combine). In each area of interest count the number of beans per 10 ft^2. Remember 40 seeds per 10 ft^2 equal ~1 bushel per acre yield loss. The reason for this yield loss concern stems from a similar environment that occurred in Northern Indiana in 2005. In some fields I assessed as much as 7 bushel per acre yield loss due to improper harvest (Image1).

Image 1. Fall volunteer soybean due to improper combine set-up.

[1]*Image from R.L. Nielsen; Purdue University*

As growers check soybean fields for grain moisture prior to harvest it may also prove prudent to check pods for bean leaf beetle feeding. If little to no feeding is present harvest can be delayed, however if pod injury is significant these fields should be harvest first to limit grain quality concerns (decreased germination and increased fungal presence) (Obopile and Hammond, 2001; Smelser and Pedigo, 1992a; Smelser and Pedigo, 1992b).

Literature cited:

Obopile, M. and R.B. Hammond. 2001. Effects of delayed harvest on soybean seed quality following bean leaf beetle (Coleoptera: Chrysomelidae) pod injury. J. Kans. Entomol. Soc. 74:40-48.

Smelser, R.B. and L.P. Pedigo. 1992a. Soybean seed yield and quality reduction by bean leaf beetle (Coleoptera: Chrysomelidae) pod injury. J. Econ. Entomol. 85:2399-2403.

Smelser, R.B. and L.P. Pedigo. 1992b. Bean leaf beetle (Coleoptera: Chrysomelidae) herbivory on leaf, stem, and pod components of soybean. J. Econ. Entomol. 85:2408-2412.

Wheat following soybean, corn, and wheat?

Shawn P. Conley, John Gaska, Paul Esker, Craig Grau, and Matt Hanson

As wheat prices continue to climb growers search for available land in which to plant their 2007–08 winter wheat crop. Yield data from a long term rotation experiment located at Arlington, WI indicated that wheat grain yield was greatest when following soybean (Table 1) (Lauer and Gaska, 2003-2006, unpublished). Yield of second year wheat (2003 column) was similar to wheat yields following corn for grain or silage. Third (2004), fourth (2005), and fifth (2006) year continuous wheat yields were dramatically lower than the other rotational systems. Our data suggests that growers should plant wheat after soybean first, then corn, and lastly wheat. The risk of head scab will be greater when wheat follows corn or wheat compared to soybean. This is especially true if minimal or no-till practices leave a significant amount of corn or wheat residue on the soil surface.

Table 1. Winter wheat grain yield following winter wheat, soybean, corn for grain, and corn silage.

Rotation	2003	2004	2005	2006	Average
	-------Winter wheat grain yield bu a^{-1}-------				
Continuous Wheat	56.3[1]	47.0	41.8	45.0	47.5
Corn-Soybean-Wheat	66.3	51.0	71.8	74.0	65.8
Soybean-Corn (grain)-Wheat	55.7	42.0[2]	51.1	66.0	53.7
Soybean-Corn (silage)-Wheat	57.7	51.0	62.0	69.9	60.2

[1]2003 marked the second year of the continuous wheat rotation treatment

[2]Poor stand establishment in the 2004 Soybean-Corn (grain)-Wheat rotation affected wheat yield.

If growers choose to plant second year wheat several management factors should be considered to reduce risk. First plant a different wheat variety in that second year that possesses a strong disease package. Under no circumstances should growers consider planting bin-run seed in second year wheat. Though 2007 was a relatively disease free year, some level of disease was likely present in your wheat field. By planting a different variety with strong disease resistance characteristics you can reduce the likelihood of early disease pressure and significant yield loss. Growers should also consider using a fungicide seed treatment in wheat following wheat. Please see the following link for fungicide seed treatment recommendations (wheat seed treatments). Be aware that fungicide seed treatments are not a cure all for all common diseases in continuous wheat systems (e.g. take-all). Growers should also consider increasing their seeding rate to 1.8 to 2.0 million seeds per acre in wheat following wheat systems. This will aid in stand establishment and increase the likelihood of a uniform stand going into the winter. Lastly, if using a no-till system, planting into a seedbed that is free of living volunteer wheat is important in reducing the incidence of Barley Yellow Dwarf Virus. Growers should consider a herbicide application to any living volunteer wheat prior to planting to prevent a “green bridge” for the aphids that vector this virus.