On-line Registration for UW Crop Diagnostic Training Center Workshops is now open

Dan Heider, UW IPM Program

Now that the 2011 growing season is on its way, remember to take time to register for the UW Crop Diagnostic Training Center Workshops. The Diagnostic Troubleshooting Workshop is scheduled for Tuesday, July 19, 2011, and is a must for anyone who wishes to improve their crop problem troubleshooting ability.

The Crop and Pest Management Workshop is scheduled for Tuesday, August 16, 2011, and features five UW-Extension Crop Specialists covering a host of field crop concerns. You won't want to miss either of these hands-on, in-field training opportunities, so don't miss your chance as registration is limited for all workshops.

To view the CDTC Workshop brochure for more details, click on the following link: CDTC brochure

For fast and easy online registration and credit card payment, click on the following link:
https://www.patstore.wisc.edu/ipm/register.asp

If you have any questions regarding either workshop, please contact the Training Center Coordinator, Dan Heider at 608-262-6491 or by email at djheider@wisc.edu.

Use automatic steering to avoid mowing the same ground twice

Matthew Digman, Research Agricultural Engineer, Dairy Forage Research Center (USDA-ARS) and T. J. Shinners, Summer Engineering Intern, University of Wisconsin – Madison

We all hate to leave strips of uncut crop, commonly called "skips," in our hay fields. There's not much yield wasted, but pride of a clean cut field is often lost to local cafe gossip. To avoid skips we typically overlap the cutterbar into the previous pass by a small amount. How much is this well-manicured landscape costing you in lost productivity? Precise steering so you achieve full cut width on every pass would make you more productive. On the other hand, driving at maximum cutting width can be a tiresome chore. Could automatic steering give us the break we need while maximizing the cutting width of the mower? These are some of the questions we set out to answer two seasons ago.

We approached the problem in two ways. First, we conducted an experiment at the UW-Madison's Arlington Agricultural Research Station to better understand what factors influenced how much we overlap. Second, we hit the road, observing farms and custom operators across the state to see how folks were driving.

In the controlled experiment we tested how driver experience and cutting speed influenced the amount of overlap. The cutting speeds tested were 4, 6 and 8 miles per hour (mph). The experienced driver had been cutting at the research farm

for over five years and the second driver was new to the job. We conducted the experiment in first and second cutting with the farm's donated self-propelled windrower with a disk cutterbar (thanks to John Deere Ottumwa Works). Our findings: surprisingly, speed didn't play much of a role in overlap and neither did experience. However, the experiment did find that when the two factors interacted, particularly high speeds and low experience levels, the overlap loss increased.

The second part of the experiment proved to be even more interesting. Here we measured pass-to-pass overlap on 15 farms. The machines included pull-type, mounted and self-propelled mowers with operating widths varying from 10 to 32-ft. The operating speeds varied from 5.5 to 12.5 mph. The overlap varied from 0.5 to 16% with the average around 5%. That's 5% of the cutting width wasted with each pass. On a 14-ft mower that's about eight inches per pass. Overlap averaged slightly higher for the pull-type at 6.6% than for the mounted and self-propelled machines at 5.2 and 5.0%, respectively. The other interesting fact gleaned from the study was that machines utilizing automatic steering with SF2 or OmniSTAR HP signal correction were able to cut overlap in half from 5 to 2.5% in the machines we observed.

But could cutting overlap from 5 to 2.5% pay for the hardware needed for automatic steering? Well, the usual response of "it depends" applies. If you cover enough acres, the answer is yes. If you can't pay for the system by mowing hay you'll have to come up with other applications to spread the cost. Tillage, spraying and seeding would all be good candidates. I've compiled a chart based on the numbers using USDA NASS's 2007 custom rate survey if you'd like to look at the payback on just using the system in mowing.
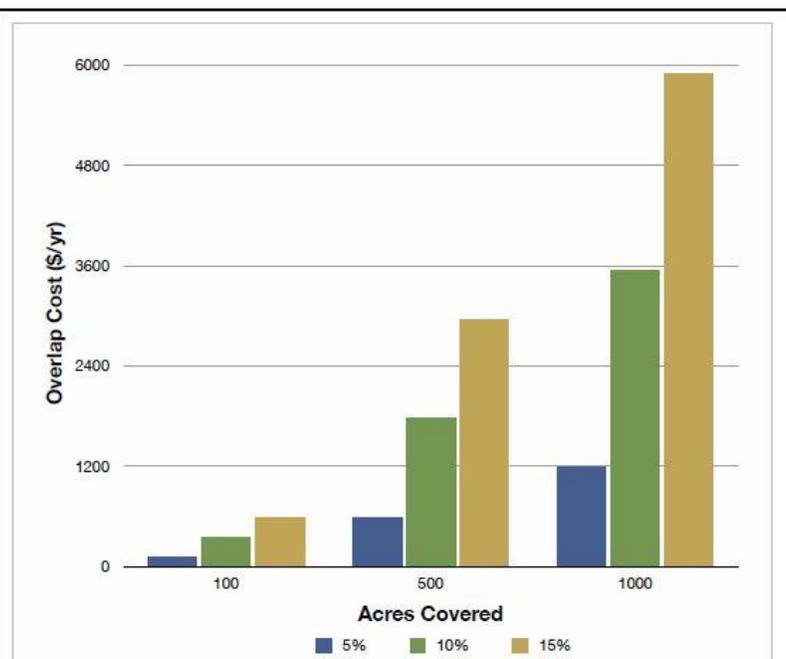

Figure 1. Savings using automatic steering in mowing for 100, 500 and 1000 acres of crop harvested four times annually. Based on our research overlap with guidance is reduced to 2.5% of cutting width. Therefore, overlap is reduced from 5, 10 and 15% to 2.5, 7.5 and 12.5% for the blue, green and brown bars, respectively.

2011 - Foliar Fungicides for Field Crops

Paul Esker

With grain commodity prices remaining strong, we have updated our "Number of bushels needed to cover the cost of a foliar fungicide application" table for 2011. We will be shortly updating this record on the Field Crops Plant Pathology website. For 2011, we have the estimated bushels across a wide range of commodity prices as well as fungicide costs and application prices. Commodity prices range from $3 to 13 per bushel while fungicide cost and application prices range from $13 to 27 per acre. Fungicide prices were estimated from several sources, including consultation with industry colleagues.

In general, the breakeven number of bushels (across the range of prices) ranges from 1 to 9 bushels per acre. This is meant to be a guide as other costs can include wheel track damage in wheat and soybean with fungicide applications, if made using ground equipment. Our best results for response to a fungicide application are when conditions are favorable for disease development and we have knowledge of the variety reaction to specific diseases that can cause yield loss.

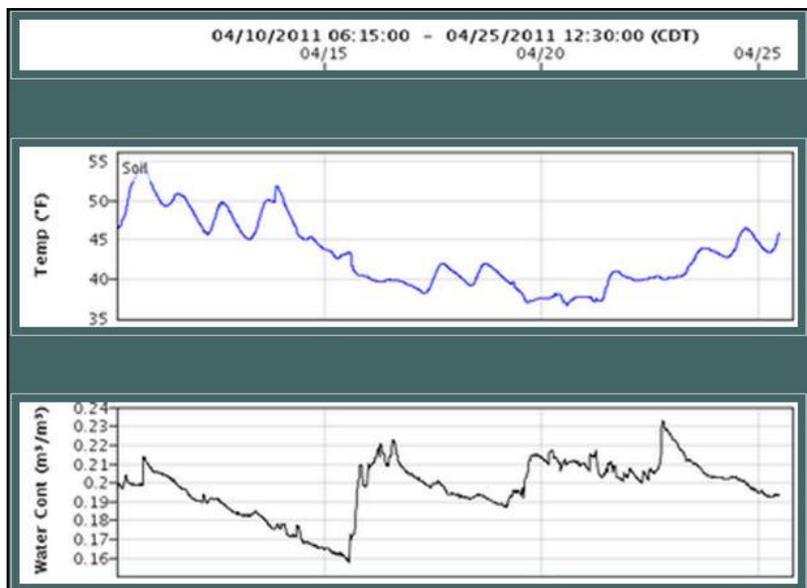## Soil Temperature and Moisture and Seed Treatments

Paul Esker

While today's (Monday) weather has been the sort of day we have been lacking recently, the USDA-NASS Wisconsin Crop Progress for April 25th indicates that in almost all of the reporting districts, subsoil moisture is either adequate to surplus! As we get itchy to be in the fields planting, a very relevant question to ask is if seed treatment fungicides will be effective in soybean in 2011.

Our experience over the past few years has been that these products can be a cost-effective management tool. We have seen consistent responses in both inoculated and non-inoculated trials for some products. Several factors drive this response including soil temperature and soil moisture. Below are the soil temperature and soil moisture levels for Arlington and Chilton over the past 30 days. What should be rather obvious is that the soil temperature dropped steadily as the month progressed. Temperatures have only recently begun to increase but are still holding in the mid-40's. Soil moisture has been good at both locations and increased with either recent snows or rain. As such, right now conditions are at such where the use of a seed treatment may be warranted and effective, especially in reduced tillage to no-till environments.

See figures on next page.

Arlington soil temperature and soil moisture.

04/10/2011 06:15:00 – 04/25/2011 12:30:00 (CDT)

Chilton soil temperature and soil moisture.

04/10/2011 04:30:00 – 04/25/2011 10:30:00 (CDT)
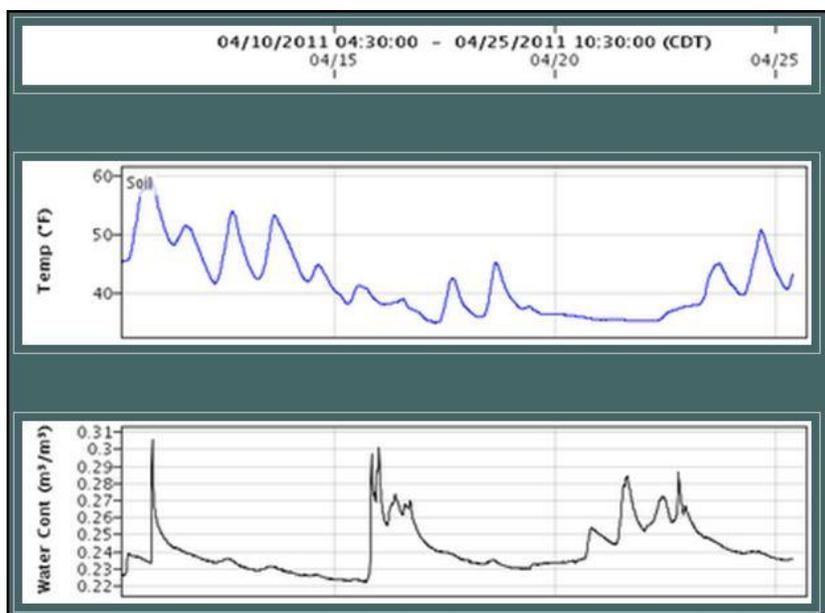
UW-Extension/Madison Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Ann Joy, Amanda Zimmerman and Adam Greene, Plant Disease Diagnostics Clinic

The PDDC receives samples of many plant samples from around the state. The following diseases/disorders have been identified at the PDDC between April 20, 2011 through April 26, 2011:

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
VEGETABLES			
Potato	Bacterial Soft Rot	*Pectobacterium carotovorum*	Portage

For additional information on plant diseases and their control, visit the PDDC website at pddc.wisc.edu.