Wisconsin Crop Manager

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Reminder: Training for Nutrient Management Planners Workshops

Scott Sturgul, NPM Program

Two workshops designed for current and potential nutrient management plan writers in Wisconsin will be held on September 15-16 in Wausau and September 27-28 in Madison. The intent of these two-day workshops is to provide in-depth training on the preparation of quality nutrient management plans. Participants will prepare a functional plan for a real Wisconsin farm using the SNAP-Plus nutrient management planning software.

Advance registration is required and the registration fee is $200 per person ($250 per person for late registration). A brochure containing an agenda and registration information can be found in the July 14, 2011 issue of the *Wisconsin Crop Manager* and can also be found at: http://www.soils.wisc.edu/extension/cal/tnmp2011.pdf. On-line registration for the *Training for Nutrient Management Planners* workshops is available at: https://www.patstore.wisc.edu/npm/register.asp.

Please note the registration deadlines of September 6 for the Wausau workshop and September 16 for the Madison workshop.

For more information about the workshops, contact Scott Sturgul at 608-262-7486, ssturgul@wisc.edu. If you prefer paper registration (i.e. via a check) for the workshops, contact Carol Duffy at 608-262-0485, cjduffy@wisc.edu.

Vegetable Crop Update 17 is Now Available

To view this update go to the Veg Crop Update page or follow this link: http://ipcm.wisc.edu/WCMNews/VegCropUpdate/tabid/115/Default.aspx

This issue includes information regarding:

Potato and vegetable crop status report, CO potato beetle updates, European corn borer updates, soybean aphid updates, Western bean cutworm update, Late blight & early blight updates, Cucurbit powdery & downy mildew updates, Potato petiole nitrate sampling update, Control release fertilizers at 60 days post emergence

The Official Draft of the 2011 WI Winter Wheat Performance Test

Shawn Conley, Soybean and Wheat Extension Specialist

As we await the professionally formatted 2011 WI Winter Wheat Performance Test Results please go to www.coolbean.info to view the official draft results. I will repost the "official" Extension pub when completed.

Wisconsin saw a 37% increase in winter wheat acres harvested (315,000) in the 2010 -2011 growing season compared to the previous year. The forecasted yield for the 2011 crop is 68 bu/a, up 4 bu/a from last year. The increase in winter wheat acres was due to timely corn and soybean harvest coupled with increased commodity price. Wheat that was established in a timely manner last fall looked very good to excellent going into winter dormancy; however some areas had delayed emergence and poor fall growth due to dry soil conditions. Late planted wheat suffered from poor tiller development that led to thin stands and weed control problems. Spring growing conditions were mostly favorable across the state; however excessive rainfall did impact wheat in some low lying areas. Warmer-than-normal temperatures in July accelerated crop maturity, however yields were largely unaffected by the hot weather.

Winter wheat yields were variable across our testing locations due to variable rainfall, planting date, and disease pressure. Wheat yields at the Janesville, Lancaster and Arlington, and Chilton locations averaged 86, 102, 97 and 71 bu/a, respectively. Wheat yield and test weight at Chilton was reduced due to variable stands and poor tillering caused by adverse weather conditions (extremely wet and cool early spring) as well as delayed harvest caused by frequent rainfall events. Overall, winter wheat test weights were excellent in 2011. No winterkill was noted at any location in 2011.

Study Confirms Resistance of Western Corn Rootworm Field Populations to Bt CRW (Cry3Bb1) Corn in Northeastern Iowa

Eileen Cullen, Extension Entomologist

An Iowa State University entomologist research group led by Aaron J. Gassmann reported development of resistance by field populations of western corn rootworm in northeastern Iowa to Bt CRW corn expressing the Cry3Bb1 rootworm trait. The journal article, "Field-Evolved Resistance to Bt Maize by Western Corn Rootworm" published July 29 in PLoS ONE (www.plosone.org; Vol. 6, Issue 7, pp. 1-7) is available for open-access download.

This is the first confirmation of field-evolved resistance to a Bt corn crop by western corn rootworm, or any beetle (Coleoptera) species. The researchers collected western CRW adults from four corn fields in NE Iowa where growers had reported significant larval feeding injury on Bt CRW corn expressing the Cry3Bb1 protein, as well as from five non-problem control fields where Bt CRW root injury was not a problem. They reared larvae from these "problem" and "control" field collected adult populations and conducted greenhouse feeding assays on Bt CRW (Cry3Bb1), Bt CRW (Cry34/35Ab1), and respective non-Bt isoline corn hybrids. Results confirmed decreased susceptibility to Cry3Bb1 among larvae from the problem fields.

Resistance was not detected on Bt CRW Cry34/35Ab1 corn, indicating a lack of cross-resistance. The mCry3A CRW trait was not tested in this study. The Cry3b1 rootworm trait is pyramided with Cry34/35Ab1 rootworm trait in some Bt corn hybrids. For a fact sheet guide to the increasingly complex array of Bt corn products, Bt Cry proteins, target pests and IRM refuge requirements click here.

The IA study includes information from grower interviews about the problem and non-problem control corn fields. The four problem fields had been planted to Cry3Bb1 Bt CRW corn for at least three consecutive years. By contrast, only one of the five non-problem control fields in the study had Cry 3Bb1 corn for any consecutive seasons. The non-problem control fields were planted to a greater diversity of crops in the rotation, and employed an array of management practices to control corn rootworm.

How will this play out over the landscape level in the Corn Belt? Spread of western CRW resistance to Cry3Bb1 will depend on gene flow between insects in the western CRW population, fitness trade-offs in the insect to increased survival on Cry3Bb1, and selection intensity. Western CRW have limited dispersal distance compared to Lepidopteran pests, so we'd expect at first a localized pattern to the western CRW resistance to Cry3Bb1 where it can intensify and persist. Overall at the landscape level, some populations of western CRW may remain susceptible to Cry3Bb1.

The ISU authors of this study attribute western corn rootworm resistance in this example to insufficient planting of refuges, and non-recessive inheritance of resistance by western CRW. They also highlight the need for a more integrated approach to the use of Bt crops.

This study serves as an prominent reminder of Insect Resistance Management (IRM) and Refuge requirements for Bt corn, and the long-term benefits to incorporating an array of corn insect pest management tactics (IPM) as appropriate to farm location (e.g. field pest scouting records, econmic thresholds, pest pressure, crop rotation, soil or seed applied insecticides, and Bt crops).

UW-Extension/Madison Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Ann Joy, Amanda Zimmerman, Adam Greene, and Erin Schmid,
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 from August 3, 2011 through August 9, 2011:

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
FRUITS			
Cherry	Bacterial Spot	*Xanthomonas pruni*	Rock
Raspberry	Anthracnose	*Sphaceloma necator*	Wood
	Cane Blight	*Coniothyrium fuckelii*	Marquette
	Cane Botrytis	*Botrytis cinerea*	Waupaca
	Root/Crown Rot	*Pythium* sp., *Rhizoctonia* sp., *Fusarium* sp.	Marquette, Washburn, Waupaca, Wood
	Spur Blight	*Didymella applanata*	Waupaca
VEGETABLES			
Cucumber	Anthracnose	*Colletotrichum orbiculare*	Dane
Tomato	Herbicide Injury	None	Eau Claire

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