Wisconsin Crop Manager

Volume 9 Number 18 July 18, 2002

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INSECTS AND MITES

Adult Corn Rootworm Emergence

Bryan Jensen, IPM Program

Adult corn rootworms are beginning to emerge in Wisconsin and now is a good time to monitor rootworm insecticide performance (see July 11, 2002 issue of Crop Manager) and to spot-check for adult feeding on the silks of pollinating corn. The latter situation is never wide spread, but in years when corn development is behind beetle emergence, adults will migrate to the first pollinating fields. As neighboring corn fields start to pollinate, beetles will disperse and these fields will not likely have problems.

Pollination problems arise when adult western and northern rootworm beetles congregate and feed on green silks resulting in partially filled ears. In commercial corn fields, treatment may be justified if green silks are being clipped to within one-half inch of the tip of the ear. This usually requires an average of 5-6 beetles/plant. Once the field has pollinated (silks detach easily from kernel and/or turn brown) no further damage is expected.

Soybean Aphid Update

Bryan Jensen, IPM Program

Although soybean aphid may be behind last year's population trend, we are starting to get calls regarding increases in frequency and numbers/plant. There is still time to scout and make recommendations. Recently, hot weather patterns may have slowed population growth but anticipated seasonal weather may have the opposite effect. No one really knows for sure how aphid management will turn out this year, but every day that goes by without spraying is only going to help.

One of the hardest decisions for a crop advisor to make is a "no spray". Your credibility is at stake and when managing an insect with the reproductive capacity of the soybean aphid, you can really feel uneasy. You can help your decision making process by monitoring aphids in similar fields over a period of time to get a better feel for recent growth patterns. Are aphid population increasing rapidly or leveling off? Monitor all common beneficial insects over the same time to determine changes in their populations. Look for signs of diseased aphids, although in previous years this hasn't happened until early August, similar weather patterns may start a population crash earlier (or later) than normal. Are there other plant stresses in the field? In parts of the state growers are experiencing a drought. If your client's soybeans aren't stressed, that may "buy some time". Look for alatoid nymphs, or nymphs with developing wings. When these nymphs mature into winged adults, they will migrate out of the field and possibly result in a huge population reduction. A picture of alatoid nymphs can be found along with current management guidelines in the Soybean Aphid Management fact sheet located on the IPCM website at http://ipcm.wisc.edu/.

PLANT DISEASES

UW-Extension/Madison
Plant Disease Diagnostic Clinic Update

Amy Gibbs, Ann Joy and Brian Hudelson, Plant Disease Diagnostics Clinic

The Clinic receives samples of many field, forage and vegetable crops from around the state. The following diseases are what we identified during the past two weeks:

CROP	DISEASE/DISORDER	PATHOGEN	COUNTY
Alfalfa	Lepto Leaf Spot	*Leptosphaerulina briosiana*	Dane
	Root/Crown Root	*Aphanomyces euteiches, Fjusarium* sp., *Pythium* sp., *Phoma medicaginis*, *Phytophthora* sp., *Rhizoctonia solani*	Marathon, Pierce, Sheboygan
	Verticillium Wilt	*Verticillium* sp.	Sheboygan
Corn	Yellow Leaf Blight	*Phyllosticta maydis*	Marinette
Ginseng	Mystery Seedling Disease	*Cylindrocarpon destructans, Fusarium* sp., *Septonema* sp.	Marathon, Taylor
Goldenseal	Botrytis Leaf Blight	*Botrytis* sp.	Marathon
Horseradish	Root Rot	*Fusarium* sp., *Pythium* sp.	Eau Claire
Potato	Stem Blight	*Fusarium* sp., *Pythium* sp.	Portage
Soybean	Root Rot	*Chalara* sp., *Fusarium* sp., *Pythium* sp.	Adams, Calumet, Dane
Tomato	Early Blight	*Alternaria solani*	Chippewa
Wheat	Scab Septoria Leaf Blotch Take-All	*Fusarium graminearum* *Septoria* sp. *Gaeumannomyces graminis* var. *tritici*	Dane Shawano, Dane Dane

For a complete listing of samples processed by the Plant Disease Diagnostics Clinic in 2000, 2001, and 2002 visit the PDDC website at www.plantpath.wisc.edu/pddc.

WEEDS

Dry Conditions Increase Poisonous Plant Concerns

Jerry Doll, Exten. Weed Scientist

It seems there are always questions on poisonous plants and this year is no exception. And we know the risk of poisoning increases in drought years as livestock on pastures may be forced to eat plants they would not normally consume. An example would be a farm near the site of this year's Farm Progress Days. The exercise lot near the barn was filled with small jimson weed plants. If consumed, this weed would cause serious health problems and possible death. Additionally, weeds not usually considered as toxic may become poisonous under certain conditions. For example, in a drought, pigweed and lambsquarters accumulate nitrates, especially soon after a rain, and grazing or feeding this forage could seriously affect animal health.

So if the dry weather continues (at least for a sizeable area of the state), two items I have prepared on this topic may be of interest to you. One is a paper presented at this year's Forage Council meeting; it is found at this web site: http://ipcm.wisc.edu/uw_weeds/extension/articles/poisonpasture.htm. The other is an article on poisonous plants in last year's Crop Manager at: http://ipcm.wisc.edu/wcm/pdfs/2001/01%2D18weeds2.html. Both resources have the titles and ordering information of very helpful poisonous plant books. You can also see the review article on one of the best and newest references in the April 11, 2002 Crop Manager (page 35).

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Acetic Acid (Vinegar) for Weed Control

Jerry Doll, Exten. Weed Scientist

It seems that many have heard something about using vinegar for weed control this summer. It has been in the popular press and on the internet so we were not surprised that several people asked about it last week at Farm Progress Days. The same must be happening in Iowa as Micheal Owen, an ISU weed scientist prepared an article for their Integrated Crop Management Newsletter. We thank Dr. Owen for permission to use his article; his efforts saved me the time of doing an article on this topic. Here is a slightly edited version what he wrote in the July 15 issue of their newsletter.

As a result of questions regarding the use of vinegar as a tool for controlling weeds, I contacted the USDA researchers that conducted the work and also checked a number of sites on the Web for information. The information below is from discussions with the researchers Dr. John Teasdale and Dr. Jay Radhakrishnan, and publicist Don Comis, and is reported at several web sites (www.barc.usda.gov/anri/sasl/vinegar.html and www.ars.usda.gov/is/pr/2002/020515.html).

It is important to recognize that the use of acetic acid (vinegar), unless the material is specifically labeled as a herbicide, is illegal and a violation of FIFRA. A number of companies have registrations for acetic acid to be used as a herbicide. This information can be accessed at www.garden-ville.com, www.greensense.net, www.bradfieldind.com, and www.biconet.com.

Various lawn and garden stores may carry these products. Like any herbicide, it is important to follow all directions and safety procedures. The USDA issued a warning in their research report stating: "WARNING: Note that vinegar with acetic acid concentrations greater than 5% may be hazardous and should be handled with appropriate precautions." However, acetic acid is not reported to accumulate in the environment and readily breaks down to water.

Acetic acid is not a selective herbicide. Dr. John Teasdale suggested the mechanism of action of acetic acid is similar to that of paraquat in that acetic acid causes the rapid dissolution of cell membrane integrity resulting in the dessication of foliar tissues, and ultimately plant death. Acetic acid is non-selective, and may damage any plants contacted by the material.

While acetic acid may burn off the tops of Canada thistle and other perennials, it will not control the root system responsible for regeneration of plants. Furthermore, a recent demonstration at the Nashua Research Farm suggested that acetic acid is not effective at controlling larger weeds.

Directed applications (keeping the vinegar away from the crop plant) are necessary to use acetic acid when crops are present in fields. Acetic acid concentrations from 10 to 20% controlled 80 to 100% of the smaller weeds, as reported in the USDA release. Typical

concentration of acetic acid in most commercially available vinegars is 5%, and this concentration is reported to provide variable control of small weeds.

The USDA researchers suggested the spot spraying at the base of corn might be the most effective manner to utilize acetic acid as a herbicide. Broadcast applications of 20% and 30% acetic acid solutions would cost approximately $66 to $99 per acre, respectively. Banded applications could reduce that cost to one-third of the broadcast rate.

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Burdock Wins the 2002 Biggest Weed Contest

Jerry Doll, Extension Weed Scientist

The big weeds rolled through the streets of Tent City last week at Farm Progress Days in search of the Weed Doctors. A total of 18 weeds were entered and indeed most were big. The grand prize goes to a burdock that Philip Schwabe of Muscoda (Grant Co.) entered. It was 7.8 ft tall and a whopping 8.3 ft wide for a score of 64.74. (Each weed was given a numerical score which was calculated by multiplying its height by its width.) This is a repeat victory for Philip as he won the grand prize in the first Biggest Weed contest in 2000 with another giant burdock plant.

The winners for the other daily prizes were also burdocks; one submitted by Joan Bennett of Dodgeville (Iowa Co.) and the other by Anthony Sedlak of Blue River (Richland Co.). The tallest weed submitted was a giant ragweed that was 10.3 ft tall; the widest weed was Mr. Schwabe's burdock at 8.3 ft. Other weeds entered included black mustard, angelica, tall lettuce, wild parsnip, musk thistle, and common mullein.

We will have another Biggest Weed Contest at the Farm Technology Days in Waupaca County next year. So if you wish you had entered this year's contest but didn't, you will have another chance!

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ALS Resistant Giant Ragweed in Soybean

Chris Boerboom, Ext. Weed Scientist

I had an interesting call this week about poor giant ragweed control in soybeans with FirstRate applied postemergence. FirstRate is a herbicide that should have either controlled giant ragweed or caused significant damage. Therefore, the suspicion was that the giant ragweed was resistant to FirstRate, an ALS-inhibiting herbicide. In this case, we ruled out an application error based on excellent control of other weeds. The herbicide use history for the field also included FirstRate and ALS herbicide use in the past. Resistance may also have a patchy appearance initially. This may have happened in this field, but part of the field was not readily visible from the road.

It should also be noted that ALS-resistant giant and common ragweed have been reported in several other states, even in the first year that FirstRate was used. In those fields, it was suspected that previous Pursuit or Scepter use had selected for ALS-resistant ragweed even though these herbicides are not highly active on ragweed. As a result, resistance was observed in these isolated fields the first year FirstRate was used. Therefore, the occurrence of ALS-resistant giant ragweed in this Wisconsin field seemed probable based on 1) evidence of a proper application, 2) herbicide use history, and 3) several other reports of this type of resistance.

Following the identification of resistance, management becomes the next concern. With giant ragweed, an immediate rescue treatment of Cobra or Flexstar in conventional soybeans is the logical next step. Unfortunately, the giant ragweed will likely be too large for full control by the time the resistance is recognized. The rescue treatments may only provide partial control and limit seed production.

Longterm management should consider options to limit the spread of the resistance. Resistant giant ragweed seed is present in the current field and will likely not be eliminated unless all of the giant ragweed is eradicated from the field. This may be a difficult task. However, it may be possible to keep resistant seed from being moved to other fields. Seed movement could be delayed by cleaning ragweed seed off the combine when leaving that field or by combining that field last. ALS herbicide use in the future should also be carefully managed (ie. use non-ALS herbicides or tank mix a herbicide that controls giant ragweed with ALS herbicides) in that field and other fields on that farm.

The trait for ALS resistance would be present in the pollen from resistant giant ragweed and this could be another way that resistance could be spread from this field. Giant ragweed's male and female flowers are separated on the plant so pollen transfer from flower to flower must occur. Cross pollination from plant to plant is also likely. However, I did not do a literature search on the distance or percentage that giant ragweed cross pollinates. In future years, high levels of giant ragweed control in this field could limit spread from either seed or pollen because there would be few ragweed to produce seed or pollen if a good control program was used.

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Weed Escapes in Roundup Ready Soybeans

Chris Boerboom, Ext. Weed Scientist

I had several conversations this past week about weeds escaping glyphosate control in Roundup Ready soybeans. The most frequent weed mentioned was common lambsquarters. In some cases, resistance was being questioned because it seemed as though lambsquarters was the only weed escaping control. One field had a mixture of dead, injured and healthy lambsquarters within inches of each other, where spray coverage should not have been a factor. In other areas, resistance seemed less likely because the lambsquarters escapes were seen in many fields and it would be highly improbable for resistance to appear on such a large scale in a single year. A comment was also made that the lambsquarters was controlled in the overlap strips in another field, an unlikely situation if resistance was to blame.

Although I was not able to gather all the application and weather information for these fields, it was noted that many of these applications were made during the recent period of high temperatures. Actually, I think we may have had some of the highest temperatures during the early post treatments since Roundup Ready soybeans have been widely grown in Wisconsin. The high temperatures may have limited the glyphosate activity on harder to control broadleaf weeds. Other factors that may be interacting to limit glyphosate performance are lower glyphosate rates, larger weed sizes, hard water, if ammonium sulfate was used or the type used, and if glyphosate was applied during late eveing hours. Regardless of the exact cause of the glyphosate escapes, a second glyphosate application under normal weather conditions should control these weeds if they are at a density that warrants control. Unfortunately, many fields are now drought stressed, which could also reduce glyphosate's activity.

ODDS AND ENDS

Degree-Days for Wisconsin by Region
Tuesday 7/16/02

Method & Basis	NW	N	NE	WC	C	EC	SW	SC	SE
Corn, planted 1 May	1015	910	946	1200	1097	965	1164	1140	1097
Corn, planted 15 May	982	876	912	1129	1039	930	1077	1060	1039
Corn, planted 1 June (Mod. 50)	830	749	782	941	875	802	904	903	888
Alfalfa Weevi1 (Sine 48)	1150	1035	1051	1268	1195	1048	1304	1257	1183
European Corn Borer (Mod. 50)	1121	997	1046	1357	1240	1072	1356	1321	1266
Stalk Borer (Sine 41)	1677	1542	1569	1849	1761	1580	1925	1863	1761

Brought to you by the ASIG group, UW Soil Sciences, http://www.soils.wisc.edu/asig/
Further information about these data are available at http://www.soils.wisc.edu/wimnext/crops.html

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The next issue of the "Wisconsin Crop Manager" is scheduled to go in the mail on July 25, 2002.

"This and past issues of the Crop Manager are available online at http://ipcm.wisc.edu/wcm/. Contact the managing editor (jddoll@wisc.edu) with your suggestions, comments or questions regarding the Crop Manager."