Integrated Pest & Crop Management

Fusarium Head Blight or Scab of Wheat

By Laura Sweets

Fusarium head blight or scab of wheat develops on plants in the flowering to early grain fill stages of growth. Winter wheat in south Missouri is beginning to flower or is the early stages of flowering. The winter wheat in much of the rest of the state ranges from vegetative stages of growth to flag leafs emerging to just beginning to head. So the time for possible infection by the Fusarium head blight fungus is at hand. Infection is very dependent on environmental conditions while wheat is in susceptible stages of growth, i.e. flowering. Moderate temperatures in the range of 77-86°F, frequent rain, overcast days, high humidity and prolonged dews favor infection and development of scab. Weather conditions over the next several weeks will determine the extent and severity of scab in this year's wheat crop. Fusarium head blight or scab problems will be more severe if rains coincide with flowering of wheat fields. After a warm, dry first half of April, many parts of the state have been cooler and wetter since April 15. If the rain continues as the crop moves through the flowering stages, the risk for scab will increase.

The characteristic symptom of scab on wheat is a premature bleaching of a portion of the head or the entire head. Superficial mold growth, usually pink or orange in color, may be evident at the base of the diseased spikelets. Bleached spikelets are usually sterile or contain shriveled and or discolored seed.

Scab is caused by the fungus *Fusarium graminearum*. This fungus overwinters on host residues such as wheat stubble, corn stalks and grass residues. Spores are carried by wind currents from the residues on which they have survived to wheat heads. If environmental conditions are favorable, i.e. warm and moist, the spores germinate and invade flower parts, glumes and other portions of the spike. Scab infection occurs when favorable environmental conditions occur as the wheat crop is in the flowering to early grain fill stages.

Unfortunately, the detrimental effects of scab are not limited to its adverse effects on yield. The fungi which cause scab may also produce mycotoxins. Vomitoxin (deoxynivalenol or DON) and zearalenone may occur in wheat grain infected by scab fungi. This is a primary concern where grain is fed to non-ruminant animals. Ruminants are fairly tolerant of these two mycotoxins. Also, the fungi which cause scab may survive on the seed and can cause seedling blight and root rot problems when scabby grain is used for seed.

Crop rotation, variety selection and residue management are preventative measures for managing scab in wheat. At this point in the season the only

Continued on page 65

In This Issue

Weed of the Month: Field Pansy

By Kevin Bradley

Field pansy (*Viola rafinesquii*) is a winter annual that can germinate in either the fall or spring, and is sometimes called "Johnny-jump-up" because of its rapid spring development. The leaves of field pansy are mostly smooth and without hairs. The leaf margins have small notches that become more easily detectable as the plant matures (Figure 1). The leaves are mostly round or oval, but become more narrow and linear up the flowering stem (Figure 2). Another distinguishing feature is the presence of stipules that can be as much as 1-inch in length, which occur along the flowering stem where the leaf bases join the stem. Field pansy has attractive pale yellow to purple flowers which consist of 5 petals and 5 sepals. The petals are most often blue to purple, often with dark purple lines within and in the "throat" of the flower, the colors fade from blue or purple to white or sometimes yellow (Figures 3 and 4). The sepals are much smaller in size and inconspicuous when compared to the petals, but are light green in color and hairless. Field pansy will usually only reach 5 or 6 inches in height when fully mature but can form mats throughout no-till crop production fields where dense infestations exist.

Figure 2. Field pansy has leaves that become more linear as the progress up the flowering stem.

Field pansy has received more attention in recent years because it is one species that is not controlled well by "standard" burndown applications of glyphosate in the spring. Even burndown applications of glyphosate plus 2,4-D have not provided acceptable levels of field pansy control in many no-till corn and soybean fields. Weed scientists at Kansas State University have conducted some research on the control of this species in recent years. Their research, along with other work done on the control of this species, has shown that fall applications, especially fall applications of herbicides with residual activity, should provide good control of field pansy. Research has also shown that even a single glyphosate application in the fall will provide better control of this species than the same amount of glyphosate applied in the spring. If fall applications are not made and this weed is present in the spring, the addition of dicamba (Banvel, Clarity, Distinct) to a glyphosate burndown should provide much

Figure 1. Young field pansy plants in a no-till production field. Notice the small notches along the leaf margins.

Continued on page 63

Weed of the Month: Field Pansy

continued from page 62

Figure 3. Field pansy can form dense mats in some fields and is usually one of the first plants to flower in the spring.

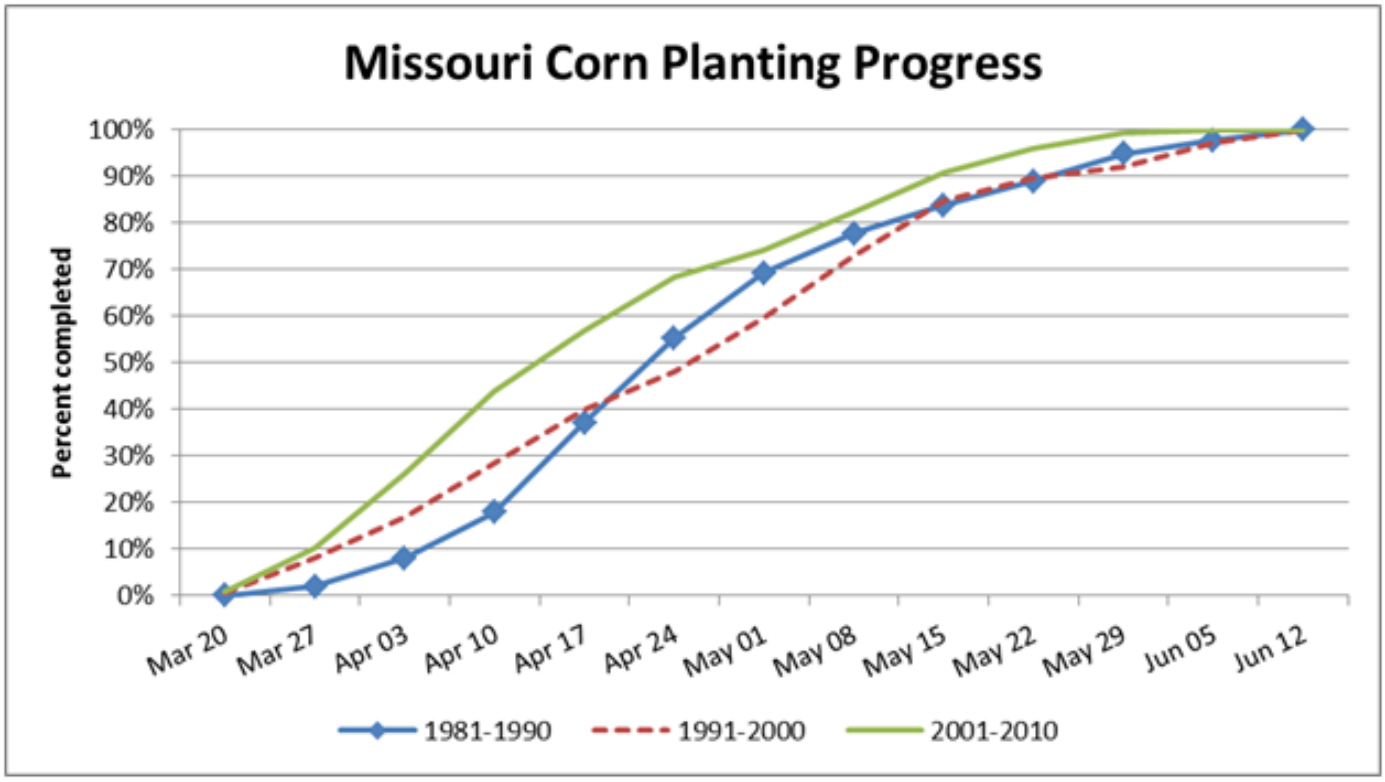
Figure 4. Field pansy has distinctive flowers with 5 petals.

better control of field pansy than standard burndown applications of glyphosate plus 2,4-D, although a longer replant interval will be required when dicamba has been applied. Some researchers have found that even as little as 2 fluid ounces of Clarity plus glyphosate plus 2, 4-D will enhance field pansy control dramatically. Another option other than adding dicamba to the burndown is to add a preplant herbicide to the glyphosate plus 2, 4-D, one that has both contact and residual activity on field pansy. In corn, products that we know will enhance the burndown and residual control of field pansy include atrazine, Balance, and any Callisto-containing product (Lumax, Lexar, etc.). In soybean, products that contain FirstRate (Authority First, Sonic, Gangster) and Harmony GT (Basis, Envive, Resolve Q, etc.) will also enhance the burndown and residual control of field pansy compared to applications of glyphosate plus 2, 4-D alone.

Kevin Bradley
BradleyKe@missouri.edu
(573) 882-4039

Crop Progress Reports

By Ray Massey



The April 24, 2011 Crop Progress and Condition Report of the Missouri Agricultural Statistic Service reported that corn planting was 28% complete. This was compared to 65% complete for last year and 41% complete for normal. Normal is officially defined as the average of the last five years. But what is really normal for corn planting in Missouri?

Using data from the last 30 years, we analyzed the corn planting progress over time. Figure 1 indicates that corn planting during the last decade has been progressing earlier than the previous two decades. The 50% mark was reached around April 14 during the years 2001-2010; April 21 during 1981-1990; April 25 during 1991-2000.

There are probably multiple reasons for earlier planting. Technology is one factor. Less spring tillage allows for earlier planting. Seeds that better resist cold temperatures permit earlier planting with less risk. Perhaps as farms become larger, farmers are entering the fields earlier to complete all of their necessary field work on time. However, as this year is demonstrating, weather is a critical factor. Planting doesn't occur when the fields are too wet to enter.

Several effects of earlier planting exist. It increases the risk of cold soils and frost on young plants causing poor stands that may need to be replanted. Poor stands may not be covered by crop insurance if the planting occurs before the initial planting dates. Initial plantings dates for corn in Missouri are April 5 for the northern 3 tiers of counties, March 20 for SE and SW Missouri, and April 1 for the rest of the state. Countering the risk of not having crop insurance coverage for planting occurring before the initial planting date is that several seed companies offer discounts for seed to replant fields with poor stands.

A positive effect of earlier planting is that silking occurs earlier in the summer, reducing the risk of extreme heat negatively affecting pollination.

Of course Missouri is a large state and corn planting is not the only field work of importance. Graphs for USDA crop progress in Missouri for corn, soybeans and wheat have been created and are available on the web at http://agebb.missouri.edu/commag/crops/. Graphs for each crop reporting district have also been made so that farmers in different parts of the state can see what is "normal" for their region.

Ray Massey
MasseyR@missouri.edu
(573) 884-7788

Diseases Put a Lid on Soybean Yields in the USA-Research is Needed

By Allen Wrather

At $10.00 per bushel, the estimated value of soybeans grown in the United States in 2010 was $33.3 billion, but are soybean growers getting all they can from their fields? Not according to a study Dr. Steve Koenning at North Carolina State, Dr. Carl Bradley at the University of Illinois and I conducted with a team of researchers from around the United States. The results of this study show diseases continue to reduce yields and grower income.

The estimated loss of soybean due to diseases, including nematodes, in the United States during 2010 was 478 million bushels valued at $4.8 billion.

The greatest soybean losses across the United States in 2010 were caused by soybean cyst nematode, followed by sudden death syndrome, seedling diseases, Phytophthora root and stem rot, and charcoal rot. Soybean rust did not reduce USA soybean yield in 2010 and has only slightly suppressed soybean yields in the southern production area during 2005 to 2009.

The objective of this multi-year research project funded by soybean checkoff dollars through the United Soybean Board is to help funding agencies and scientists focus on the major problems that occur in the United States so they can focus research and develop solutions more quickly.

More information about soybean yield losses due to diseases in the United States during 1996 to 2010 has been posted on the University of Missouri web site at http://aes.missouri.edu/delta/research/soyloss,

Allen Wrather
WratherJ@missouri.edu
(573) 379-5431

Birds Point-New Madrid Floodway Crop Insurance

Submitted by Ray Massey

The Risk Management Agency is in touch with the Corps of Engineers and is closely following all the developments around the Birds Point-New Madrid Floodway. Much of the land under consideration is already flooded by the heavy rains this spring. Insured crops on previously flooded land are covered by Federal crop insurance policies. Policyholders should notify their crop insurance companies as soon as they discover that their land is flooded. At this time, RMA is reviewing our statutory authority regarding any deliberate release of water by the Corps of Engineers. RMA continues to gather information and will be providing additional guidance to the insurance companies in the near future.

Contributed by Ray Massey
MasseyR@missouri.edu
(573) 884-7788

Developing a Vineyard Nutrition Program

By Andy Allen

Grapevines do not require large quantities of fertilizers. Compared to agronomic crops, on a per acre basis the amount of fertilizers necessary to maintain proper vineyard nutrition levels are relatively small. Whether you are a homeowner with a few vines or a commercial grape grower with several acres, a properly developed vineyard nutrition program will provide the nutrients needed in the amounts needed without applying excessive quantities of fertilizer. There are several ways to apply fertilizers to a vineyard and numerous materials, both inorganic and organic, that can be used, but regardless of the fertilizer material used or the manner in which is it supplied to the vineyard a good vineyard nutrition program should be based on monitoring the nutritional status of both the soil and the grapevines. This is done through a program of soil and tissue testing.

Developing a vineyard nutrition program begins before the vines are ever planted. Soil samples of the intended vineyard site should be taken a year in advance of planting and submitting for pH and nutrient level analysis. Once the soil pH and nutrient levels have been brought up to the soil testing lab's recommendations, no additional fertilization other than nitrogen applications should be needed for the first 3-4 years of the vineyard's existence. Levels of nutrients in the soil other than nitrogen do not rapidly decrease on their own and grapevines do not remove large quantities of nutrients other than nitrogen

Continued on page 66

Developing a Vineyard Nutrition Program

continued from page 65

and potassium (the latter only after fruit production begins), so after the soil has been properly sampled and amended according to recommendations prior to planting soil sampling and analysis should be done every 2-3 years beginning with the first full crop. Because different grapevine cultivars (and different rootstocks if grafted grapevines are used) have varying abilities to remove nutrients from the soil, growers with blocks of different cultivars should collect separate soil samples from the individual blocks.

Figure 1. Fully-expanded, newly matured leaf.

Soil analysis by itself does not tell the full story, though. Soil analysis tells you what nutrients are available in the soil for uptake, but does not tell you what the grapevine nutrient status is. Just because soil nutrient levels are adequate for healthy grapevine growth and productivity does not mean that the vines are removing and utilizing those nutrients in the quantities that they need. Several factors can contribute to this: excessive crop load, poor vine health, root damage from disease, nematodes, or phylloxera, excess competition from weeds, imbalances of nutrients in the soil (magnesium-potassium being a common example), poor root function in wet soils, inadequate nutrient solubility in dry soils, etc. To determine the nutrient status of the vine itself, tissue

Table 1. Grapevine Petiole Nutrient Levels from Veraison Samples

Element[a]	Deficient	Below Normal	Normal	Above Normal	Excessive
N (%)	0.3 - 0.7	0.7 - 0.9	0.9 – 1.3	1.4 – 2.0	2.1+
P (%)	0.12	0.13 - 0.15	0.16 – 0.29	0.30 – 0.50	0.51+
K (%)	0.5 - 1.0	1.1 - 1.4	1.5 – 2.5	2.6 – 4.5	4.6+
Ca (%)	0.5 - 0.8	0.8 - 1.1	1.2 – 1.8	1.9 – 3.0	3.1+
Mg (%)	0.14	0.15 - 0.25	0.26 – 0.45	0.46 – 0.80	0.81+
Mn (ppm)	10 - 24	25 - 30	31 – 150	150 – 700	700+
Fe (ppm)	10 - 20	21 - 30	31 – 50	51 – 200	200+
Cu (ppm)	0 - 2	3 - 4	5 – 15	15 – 30	31+
B (ppm)	14 - 19	20 - 25	25 – 50	51 – 100	100+
Zn (ppm)	0 - 15	16 - 29	30 - 50	51 – 80	80+

[a] Values may differ among species for optimal growth. Values from leaves will vary significantly. For petioles taken between July 15 to August 15.

Source: Midwest Small Fruit Pest Management Handbook. Ohio State Bul. 861.

Continued on page 67

Developing a Vineyard Nutrition Program

continued from page 66

sampling and analysis should be conducted every year beginning in the first cropping year.

Several tissues can and have been used for tissue analysis of grapevines, but the most commonly used tissue in most labs today is the leaf petiole. Petiole samples are collected at one of two times during the growing season: for Vitis vinifera cultivars (Cabernet, Chardonnay, Merlot, etc.) they are commonly collected at bloom from leaves opposite the basal cluster. For native and hybrid cultivars they are commonly collected at veraison (the time when the immature berries in the cluster begin to change color and soften) from the Most Recently Matured Leaf (MRML) near the shoot tip (Figure 1). This will be the most recently fully-expanded leaf with the darker green color indicating maturity rather than the yellowish-green color of a young leaf. The optimum nutrient values for these two timings are very different for most nutrients and you should be aware which set of petiole nutrient value standards is utilized by the lab to which you send your sample(s). The Soil and Plant Testing Lab at MU uses the veraison-based standards commonly used in Midwestern viticulture (Table 1).

Figure 2. Petioles with leaf blades removed.

As with soil sampling, petiole samples should be collected separately for individual grapevine cultivars. As stated earlier, this is because they have differing capacities for uptake of different nutrients. If a single cultivar is grown on different rootstocks (or one block of a cultivar is grown on its own roots and another block of the same cultivar is grafted onto a rootstock) these should also be sampled separately. As with soil samples, very large blocks (greater than 10 acres) of a single cultivar should be broken up into 10-acre sub-blocks; if the block is less than 10-acres but is not uniform then take more than 1 sample based on differences in soil or topography (i.e. – slope versus hilltop). When collecting the petiole samples pull the sample leaf from the shoot and immediately remove the leaf blade, keeping only the petioles (Figure 2). Do not wait until you have collected several leaves to remove the leaf blades; while they are attached they are still transpiring and pulling nutrient-containing sap out of the petioles. Pull only one leaf per shoot and preferably no more than two leaves per vine. Avoid diseased, insect-damaged, or torn leaves and those that have been in more shaded areas of the vine canopy. Use only healthy, whole leaves that are in an area of the canopy where they are exposed to full sunlight. Avoid weak or excessively vigorous vines and pull samples from vines that are representative of the "average" level of vigor for that block or cultivar. A sample should consist of 100 petioles. Once the sample is completed it should be rinsed in distilled water, the petioles should be laid out to dry and then packaged in paper lunch bags. Avoid plastic ziplock or sandwich bags. Label the paper bag with information on cultivar, rootstock (if grafted), vineyard location, block (if more than 1), and date the sample was collected. Send the samples to the lab immediately; delays can decrease the accuracy of the results.

The utilization of a well-planned and consistent soil and petiole sampling program will yield important information on vine nutritional status. This information along with proper timing of application can maximize fertilizer use efficiency, vine performance, environmental protection, and vineyard profitability.

Regional grape growers can send petiole samples to the University of Missouri Soil and Plant Testing Lab in Columbia, MO. Their contact information is:

University of Missouri
Soil and Plant Testing Laboratory
23 Mumford Hall
Columbia, MO 65211
Phone: 573-882-0623
Fax: 573-884-4288
http://soilplantlab.missouri.edu/soil/

Andy Allen
AllenRa@missouri.edu
(573) 882-6752

Bird Cherry-Oat Aphid

By Wayne Bailey

Economic populations of this aphid have been found in a few SW Missouri wheat fields. Most of the infested fields were late planted with plants not yet exhibiting head emergence. Most fields in this region of the state do not support economic infestations of this aphid as ladybird beetles and other beneficial pathogens are active and helping to reduce numbers of bird cherry-oat aphids. Although there is much controversy as to the impact this specific aphid has on wheat plants, it is known that the bird cherry-oat aphid is an efficient vector of barley yellow dwarf virus during the fall of the year and does suck plant juices from wheat plants during fall, winter, and spring if present in wheat fields. A review of this aphid finds that numerous thresholds and thoughts about their damage potential to wheat vary greatly from state to state. Past work in Missouri and studies ongoing in more Western states do show this insect can be an important pest of wheat under certain conditions. In the last IPCM newsletter the economic threshold for the bird cherry-oat aphid was listed at 12 to 25 aphids per tiller. Although some states do use this threshold, in Missouri trials conducted several years ago suggested that a more conservative threshold be used due to a greater risk of this pest in the state. Thus, the 2011 economic threshold for bird cherry-oat aphid in Missouri wheat is 12 to 25 aphids present per linear foot of row from emergence in the fall up to initiation of wheat head emergence in the spring. In support of this threshold, some western states are now calling additional research concerning the impact feeding (sucking of plant juices) by the bird cherry-oat aphid has on wheat during spring, winter, and spring seasons. At present, many entomologist believe this pest probably causes more damage to wheat than reflected in traditional economic thresholds.

Wayne Bailey
BaileyW@missouri.edu
(573) 864-9905

Large Black Cutworms vs. Emerging Corn Plants

By Wayne Bailey

Late planting of many corn fields in the state raises the potential for damage from black cutworm larvae in some regions of Missouri. Moth data and intensive moth capture data reported through the Missouri IPM pest monitoring network is available at

http://ppp.missouri.edu/pestmonitoring/bcw/index.cfm.

Listed below are the trap locations with intensive captures (as of 5/3/11) and predicted dates of first cutting of field corn by black cutworm larvae:

Northwest Region

Holt County (Forbes):

- Intensive capture date, 04/06/2011
  Predicted first cutting, 05/09/2011
- Intensive capture date, 04/18/2011
  Predicted first cutting, 05/18/2011

Buchanan County (St. Joseph):

- Intensive capture date, 04/06/2011
  Predicted first cutting 05/09/2011
- Intensive capture date, 04/18/2011
  Predicted first cutting 05/18/2011

West Central Region

Vernon County (Nevada):

- Intensive capture date, 03/27/2011
  Predicted first cutting, 04/29/2007
- Intensive capture date, 04/01/2011
  Predicted first cutting, 04/29/2011
- Intensive capture date, 04/06/2011
  Predicted first cutting, 05/03/2011
- Intensive capture date, 04/22/2011
  Predicted first cutting, 05/17/2011

Central

Callaway County (Hatton):

- Intensive capture date, 04/08/2011
  Predicted first cutting, 05/06/2011

Chariton County (Brunswick):

- Intensive capture date, 04/25/2011
  Predicted first cutting, 05/19/2011

Saline County (Marshall):

- Intensive capture date, 04/25/2011
  Predicted first cutting, 05/19/2011

Continued on page 69

Large Black Cutworms vs. Emerging Corn Plants

continued from page 69

North East Region

Knox County (Novelty):

- Intensive capture date, 04/11/2011
  Predicted first cutting, 5/16/2011
- Intensive capture date, 04/14/2011
  Predicted first cutting 5/19/2011
- Intensive capture date, 04/18/2011
  Predicted first cutting 05/20/2011
- Intensive capture date, 04/25/2011
  Predicted first cutting, 05/22/2011
- Intensive capture date, 04/28/2011
  Predicted first cutting, 05/22/2011
- Intensive capture date, 04/29/2011
  Predicted first cutting, 05/23/2011
- Intensive capture date, 05/03/2011
  Predicted first cutting, 5/25/2011

East Central Region

Franklin County (Union):

- Intensive capture date, 04/05/2011
  Predicted first cutting, 04/29/2011

The potential for black cutworm damage increases in late planted corn. The preceding data indicate that although some cutting may now be occurring, the potential for heavy cutting exists for the latter half of May. Considering current field conditions where wet soils have delayed corn planting in much of the state, it is likely that situations will develop where seedling corn plants will be exposed to relatively large black cutworm larvae in those areas where intensive captures of black cutworm moths have been reported. Corn plants are susceptible to black cutworm damage up to the 5-leaf stage of plant growth. Be sure to scout all corn fields for the presence of black cutworm larvae on a weekly basis until this plant growth stage is reached, but especially those fields that are late planted. As previously published in the newsletter, the traditional economic threshold for black cutworm cutting in field corn is 4-6% cutting above ground and 2-3% cutting below ground. These thresholds are valid for Missouri although as the price of corn increases it becomes economically possible to protect the yield at a lower percent cutting than when corn prices are low. A couple of years ago entomologist at Iowa State developed a pest model for black cutworm which indicated that as the corn price exceeds $5-$6 per bushel, the economic threshold may be lowered to 2% for both above and below ground types of cutting. Bases on a review of the Iowa State calculations, Missouri pest management recommendations for cutting of seedling corn plants by black cutworm larvae were modified in 2011 to follow the economic threshold of 2% or more seedling cutting of either type. If the price of corn comes down in the future, then the percent cutting threshold may need to be increased back to the traditional economic thresholds used for this pest in the past. Remember that most feeding damage to corn by black cutworm larvae will typically occur within 7-10 days following plant emergence.

Wayne Bailey
BaileyW@missouri.edu
(573) 864-9905

Japanese Beetle Grub Damage

By Wayne Bailey

Damage from the grubs of Japanese Beetle in field corn has been observed for the past several years in river bottom fields located just north of St. Charles. Typically damage from Japanese beetle is caused by adult foliar feeding on soybean or silk feeding on corn ears. Feeding on seedling corn plants by Japanese beetle grubs is rare, but rapidly becoming more common as the beetles move into most counties of the state. A question which is often asked is whether seed treatments are effective controls for grubs of this pest? If so, do different rates provide different levels of protection? The answers to these questions are difficult to answer as field insecticide trials are lacking in this area. Additionally, over 100 annual grub species and 160 perennial grub species can occur in Missouri. Each of these grubs may react differently to insecticides based on their abilities to survive exposure to specific pesticides or by their abilities to avoid pesticides in the environment. In general, I believe seed treatments on corn and soybean do reduce numbers of most grub species, although the reduction in numbers may not reduce populations to below threshold levels. For example, I observed side by side corn fields which were planted with the same corn variety although one had a seed treatment at the 250 rate and the other did not have a seed treatment applied. Both fields exhibited grub damage and larvae were present. The one without a seed treatment required replanting whereas the field with the seed treatment showed less stand loss and did not get to a plant population where replanting was necessary. In another situation where two side by side fields exhibited grub problems, the problems were less in the field with the 1200 rate as compared to the 250 rate. Thus seed treatments will help reduce numbers of most grub species, but the populations may still cause significant economic loss.

In contrast, the grubs of Japanese beetles do not seem to be affected by seed treatments at the 250 rate. Grub damage to emerging corn seedlings in the St. Charles area seems to occur to both untreated and treated seed. The damage usually occurs early season on seedlings that are just emerging. One reason why the grubs of the Japanese beetle may not be significantly affected by seed treatments is that there may be a dose to size response as well as a behavioral response. The grubs of this species go through four instars or larval stages as they grow to maturity. Unlike most grubs which often complete much of their growth in the spring, the Japanese beetle grub gains most of its growth in the fall of the year in which the eggs are laid. In the spring this grub is already large in size and does minimal feeding and growing prior to pupation in the spring. If a dose response is present with this species, then it should require a greater level of insecticide exposure to kill a large grub as compared to a small grub. In addition, the Japanese beetle grub completes its feeding very early in the spring and may not be feeding when most insecticide seed treatments are effective on other soil insects. This would explain why most damage by Japanese beetle grubs in corn occurs very early in the season to plants which are just emerging. Although many other factors, such as reduced use of soil insecticides, may also allow the Japanese beetle grubs to escape the effects of insecticides, the maturity of this grub occurring early in the season may explain much of its ability to survive seed treatments. Until insecticide trials are conducted specifically on the grubs of the Japanese beetles, no definite answer to the questions asked will be known.

Wayne Bailey
BaileyW@missouri.edu
(573) 864-9905

Alfalfa Weevil Larval Number Low

By Wayne Bailey

Although some alfalfa fields in southwest Missouri have required insecticide applications to control alfalfa weevils, numbers of alfalfa weevil larvae are very low in most central and northern Missouri counties. Low numbers of alfalfa weevil adults can be observed laying eggs in some fields in the northern half of the state, but the rapid growth of most alfalfa fields and some harvests of alfalfa taking place at this time should keep levels of weevil low through spring and summer. One reason for the low levels of weevils observed this year may be due to winter kill of eggs or the presence of a fungal pathogen which occurs during years with cool, wet springs. Regardless of the reasons, alfalfa weevil larvae should not be a problem in 2011.

Wayne Bailey
BaileyW@missouri.edu
(573) 864-9905

Fusarium Head Blight or Scab of Wheat

continued from page 61

remaining management option would the application of a fungicide to try to reduce scab levels. The fungicide table in the April 13, 2011 issue of the *Integrated Pest & Crop Management Newsletter* listed the fungicides labeled for the suppression of Fusarium head blight or scab. Growers should be scouting fields to get a feel for incidence and severity of scab in this year's wheat crop. Because of possible mycotoxin concerns and seed quality concerns, grain from fields with scab may require special handling. Wheat planted on corn, sorghum or wheat residue (even wheat double cropped with soybeans) has a greater risk for scab.

Laura Sweets
SweetsL@missouri.edu
(573) 884-7307

Weather Data for the Week Ending May 4, 2011

By Pat Guinan

Station	County	Weekly Temperature (ºF)						Monthly Precipitation (in.)		Growing Degree Days‡	
		Avg. Max.	Avg. Min.	Extreme High	Extreme Low	Mean	Departure from long term avg.	Apr. 1-Apr. 30	Departure from long term avg.	Accumulated Since Apr. 1	Departure from long term avg.
Corning	Atchison	70	40	79	32	57	0	3.61	+0.44	183	+54
St. Joseph	Buchanan	67	44	75	35	56	-2	2.83	-0.83	183	+37
Brunswick	Carroll	66	41	77	33	55	-3	4.20	+0.71	184	+24
Albany	Gentry	67	40	74	32	55	-2	4.04	+0.25	158	+34
Auxvasse	Audrain	66	42	78	35	54	-5	2.85	-1.03	215	+51
Vandalia	Audrain	65	42	76	32	53	-5	2.71	-1.18	197	+54
Columbia-Bradford Research and Extension Center	Boone	66	41	78	32	54	-5	2.82	-1.59	219	+29
Columbia-Jefferson Farm and Gardens	Boone	66	42	77	34	55	-4	2.79	-1.63	234	+43
Columbia-Sanborn Field	Boone	67	44	79	34	56	-3	3.14	-1.32	260	+54
Columbia-South Farms	Boone	66	42	78	34	55	-4	3.18	-1.30	233	+43
Williamsburg	Callaway	66	43	77	35	54	-4	3.30	-0.88	239	+78
Novelty	Knox	63	40	74	32	53	-5	4.33	+0.65	145	-1
Linneus	Linn	65	40	74	31	54	-3	4.16	+0.65	158	+20
Monroe City	Monroe	64	41	76	33	53	-5	3.27	-0.37	176	+13
Versailles	Morgan	68	44	80	36	56	-4	3.54	-0.86	287	+58
Green Ridge	Pettis	67	42	77	36	55	-4	3.37	-0.65	231	+62
Lamar	Barton	66	43	75	37	55	-5	3.78	-0.88	285	+57
Cook Station	Crawford	67	42	79	30	54	-6	7.35	+3.01	304	+69
Round Spring	Shannon	67	41	80	32	54	-5	11.69	+7.26	285	+74
Mountain Grove	Wright	64	43	74	35	53	-6	12.22	+7.74	268	+86
Delta	Cape Girardeau	66	47	74	41	57	-5	18.58	+14.35	332	+45
Cardwell	Dunklin	68	49	78	46	59	-5	8.58	+3.96	420	+65
Clarkton	Dunklin	67	48	78	41	58	-6	12.76	+8.41	387	+49
Glennonville	Dunklin	67	49	77	42	58	-6	13.19	+9.04	395	+51
Charleston	Mississippi	66	48	75	41	57	-6	12.90	+8.38	373	+83
Portageville-Delta Center	Pemiscot	68	50	77	45	59	-5	9.91	+5.43	425	+75
Portageville-Lee Farm	Pemiscot	68	50	78	45	59	-5	10.63	+6.15	430	+87
Steele	Pemiscot	*	*	*	*	*	*	*	*	*	*

* Complete data not available for report

‡Growing degree days are calculated by subtracting a 50 degree (Fahrenheit) base temperature from the average daily temperature. Thus, if the average temperature for the day is 75 degrees, then 25 growing degree days will have been accumulated.

Weather Data provided by Pat Guinan
GuinanP@missouri.edu
(573) 882-5908

Insect Pest & Crop Management newsletter is published by the MU IPM Program of the Division of Plant Sciences Extension. Current and back issues are available on the Web at **http://ppp.missouri.edu/newsletters/ipcmindex.htm**. Mention of any trademark, proprietary product or vendor is not intended as an endorsement by University of Missouri Extension; other products or vendors may also be suitable.

Editor: Jessica Kohler (kohlerjl@missouri.edu).