Missouri Ag News

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Bacterial Blight in Cotton

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According to the Compendium of Cotton Diseases, Bacterial Blight has been around for over 100 years. This disease is caused by the organism (*Xanthomonas axonopodis pv. Malvacearum*).

This disease was reported earlier this month in Mississippi in the Mississippi Crop Situation by plant extension plant pathologist, Tom Allen on July 15. This report can be found at

http://www.mississippi-crops.com/2011/07/15/alert-bacterial-blight-of-cotton/.

It was reported in Arkansas by Terry Kirkpatrick on their extension website at http://www.arkansas-crops.com/2011/07/20/alert-bacterial-blight-of-cotton-found-in-arkansas/. It has been reported in Desha and Mississippi Counties. At the present time, I know of no cases in Missouri, but that could change rather quickly.

Bacterial blight was historically a major cotton disease across the U.S. Cotton Belt, but the discovery and use of resistance to the pathogen in most cotton cultivars and modern seed processing and handling procedures, particularly the use of acid-delinted seed, lowered incidence of this disease substantially for the last two decades. In 1976, the Cotton

Disease Council estimated that 73,000 bales were lost as a result of the foliar and stem phases of this disease. Since this organism can cause boll rot, additional losses were probably included in this category.

Bacterial blight can occur on all parts of the plant. It can be part of the seedling disease complex, but the first visible symptoms are the leaf spots. This disease is also called angular leaf spot because the leaf spots are angular shaped and they are found along the main veins of the leaf. The disease can be found on the leaves, bracts, squares, and bolls. Lesions on bolls will appear as if hot oil splashed on the boll. Some people have described the boll lesions as having the appearance of a cigarette burn depending upon the stage of the disease as well as the stage of the bolls.

Bacterial blight is most prevalent at high temperatures and high humidity. Temperatures in the 86-97 degrees

"Bacterial Blight in Cotton" continued……

and humidity of greater than 85 percent provide the right conditions for development. Since the disease is bacterial it is easily spread by windblown moisture and water splashing on the plants.

So what can producers do now if they find it in the field? The Arkansas Alert recommends the following: 1) "Continue to manage the crop for yield. While the disease may hurt, it will not likely hurt nearly as bad as abandoning the field or cutting back on inputs. 2) Recognize that the disease can be spread by equipment or people moving through the field when the leaves are wet. Avoid running ground rigs through or scouting fields when the foliage is still wet from rain, dew, or irrigation. 3) Be realistic regarding irrigation. While overhead irrigation may contribute to the spread of the pathogen, lack of irrigation will be of much greater concern. Continue to irrigate as needed to meet crop demands, but do not over-irrigate. 4) There are no chemical control methods for control of bacterial blight in the field. Maintain good insect control to minimize the possibility of infection through wounds created by insect feeding.

5) Do not over fertilize. Lush, rank foliage will contribute to higher humidity in the canopy, a longer period of leaf wetness, and will enhance infection. In fields or cultivars where the crop tends toward rank growth, consider using plant growth regulators to maintain an open canopy."

Mike Milam, Agronomy Specialist, University of Missouri Extension, Kennett, MO.

Downed Rice Endorsement Listening Session

The USA Rice Federation has contracted with AgriLogic Consulting to develop a Downed Rice Endorsement and will be conducting listening sessions throughout major rice producing regions of the U.S. to obtain feedback regarding the feasibility and specifications of developing a Downed Rice Endorsement. This endorsement is intended to offer optional buy-up coverage for rice producers which would compensate a portion of the additional harvest costs associated with a downed rice event (i.e. as a result of high winds, etc.). You are invited to participate in a meeting to assist in developing the provisions of the endorsement. Your opinion is considered highly valuable.

Wednesday, August 3 at 6:00pm

Delta Research Center

147 State Highway T, Portageville, MO

Please contact Nicole at 913-982-2448 with questions and/or to RSVP.

Welcome Sam Atwell

We have given him enough time to get settled in so for those of you who don't know we have a new agronomy specialist in New Madrid County.

Welcome Mr. Sam Atwell. He has worked in our area of Missouri for more than 20 years so he is a friend to many in agriculture. Please great him warmly and direct all your rice questions toward him.

Agriculture Energy Field Day

August 4, 2011 - Mineral Area College, Park Hills, MO

REGISTRATION REQUIRED by July 28th (no fee to attend)**:** Email: esites@mineralarea.edu or call 573-518-2370.

LOCATION: Rice Lecture Hall, Technology Building, Mineral Area College, Park Hills, MO

DIRECTIONS: From Highway 67 take the Park Hills/Leadington Exit. The College is located on the east side of the exit, turn accordingly. Turn left onto the campus. The Technology Building is the first building on the left past College Park Apartments. Parking is available in the student lot in front of the building.

7:30 a.m.	**Registration**
8:00 a.m.	**Open Session**
8:30 a.m.	**Tours Begin**
	MAESTRO and Biofuels - Dr. Leon Schumacher, University of Missouri, Columbia, MO
9:00 a.m.	**Grant and Loan Opportunities for Energy Projects -** Dr. Van Ayers, Agriculture and Rural Development Specialist, University of Missouri Extension, Bloomfield, MO
9:30 a.m.	**Tours**
	Building a Sustainable Biomass Supply Chain - Dr. Hank Stelzer, State Forestry Extension Specialist, University of Missouri Extension, Columbia, MO
10:00 a.m.	**MAESTRO and Biofuels -** Dr. Leon Schumacher, University of Missouri, Columbia, MO
10:30 a.m.	**Tours**
	Grant and Loan Opportunities for Energy Projects - Dr. Van Ayers, Agriculture and Rural Development Specialist, University of Missouri Extension, Bloomfield, MO
11:00 a.m.	**Building a Sustainable Biomass Supply Chain -** Dr. Hank Stelzer, State Forestry Extension Specialist, University of Missouri Extension, Columbia, MO
11:30 a.m.	**Tours End - Lunch - Concourse Area**

Participants may also choose from two tours - MAC's Biomass plots and Renewable Energy Equipment – which will run concurrently with presentations.

Rice Acres Down

“ Missouri Rice acres are down from 250,000 acres in 2010 to 145,000 acres in 2011...”

Rice planting date often affects yield potential for Southeast Missouri farmers. Maximum rice yield potential is strongly correlated to planting date. Research from the University of Missouri indicates the optimum planting window where rice yield potential is not compromised significantly is before May 10 for southeast Missouri. The average yield potential drops 1% per day after May 20. This was followed by an even more significant drop in yield potential with rice planted June 5 and later.

Late season planting increases the risk of yield loss due to unfavorable environmental conditions during critical periods in rice development.

Yield loss could result from unsynchronized pollination due to increased nighttime temperatures late into summer months, increased heat stress, diseases like blast and false smut, and higher percentage of plants infested by insects such as stink bugs. If the high temperatures persist we could see some yields reduced. But if night temperatures cool a bit as predicted heading rice should do very well.

Missouri Rice acres are down from 250,000 acres in 2010 to 145,000 acres 2011 according to USDA.

Sam Atwell, Agronomy Specialist, University of Missouri Extension, New Madrid, MO.

Rice in head. - Courtesy B. Beck

Water for Livestock

Water is the most important nutrient to livestock, and even more important when the weather is hot. Water is necessary for regulation of body temperature, growth, reproduction, lactation, digestion, lubrication of joints, and eyesight. Signs of dehydration are tightening of the skin, loss of weight, drying of the mucous membranes, sunken eyes, and cessation of milk production. The temperature of the water is also important to animals. Animals favor water with a temperature between 40^{o} and 65^{o} F. It has been shown that steers that have access to cool (not cold) drinking water will gain .3 to .4 pounds more per day than those with warm water. Studies have also shown that there is no difference in animal performance when given pond water versus well water. Access to water can also affect performance of the animal. Most animals should be given free access to water at all times. Dairy cattle with free access to water produce more milk and butterfat than cows that are allowed to drink twice daily. However, a horse that is hot from strenuous exercise should not be given free access to water or colic and laminitis can result. Instead, allow the animal a few sips every 3-5 minutes until they are cooled down.

Water requirements are influenced by several factors such as weight, pregnancy, lactation, activity, diet, feed intake, and environmental temperature. Increasing the salt concentration or protein level of the diet stimulates increased water intake. Also, feeds high in fiber, such as poor quality hay or pasture, will increase the water requirement for digestion purposes. Below is a table that shows the requirements for various species at different stages of production.

Remember, an animal can live for 60 days without food but only seven days without water.

Kendra Graham, Livestock Specialist, University of Missouri Extension, Greenville, MO.

Water intake of animals in gallons

Beef	Dry/Bred Cows and Heifers – 14-15 Lactating Cow – 16-17 Bulls – 18-19 Calves – 4-8
Dairy	Calves – 2-5 Heifers – 5-9 Large Lactating Cows – 20-25 Small Lactating Cows – 15-18
Sheep	Rams – 2 Ewe with Lambs – 3 Lambs - .3-.5
Swine	Sow plus Litter – 6 Gilts – 3 100 lb. Pig – 2 25 lb. Pig - 1
Horses	Maintenance – 8-12 Lactating Mare – 10-15 Working Horse – 12-18 Weanling – 7-9
Goats	Meat Goat - .3-.5 Lactating - .8-1.0 Kid - .1-.2

Bacterial Fruit Blotch

Because there are no cultivars with immunity to BFB, most seed companies will not guarantee disease free stock.

Bacterial fruit blotch lesions on watermelon. - Courtesy R. Walcott

Bacteria Fruit Blotch (BFB) is caused by the bacteria *Acidovorax avenae subsp. Citrulli.* This is a disease of cucurbits that can have a significant economic impact on harvest and field management if introduced to a field.

Disease transmission usually occurs in high humidity and high temperature environments such as greenhouses. While disease is mainly spread from seed to seedling in greenhouses, transplants that have been infected can then introduce the disease to a field.

Because there are no cultivars with immunity to BFB, most seed companies will not guarantee disease free stock. Control measures used to prevent the spread of BFB include three year rotation between watermelon plantings, removal of watermelon culls infested with BFB, deep plowing in fields with BFB, sanitation and chemical application of copper based bactericides to prevent infestation.

Purchase seed from a trusted seed source. Make sure seed sample tests have been conducted on each lot for possible contamination.

If reusing flats to grow transplants make sure to sterilize those flats with bleach after each use. 1 part bleach to 5 parts water is appropriate for sanitation. Always separate seed sources as you plant them in the greenhouse if possible. If one lot is contaminated, space will help reduce your chance of spreading the disease to another lot.

Preventive sprays should be initiated before flowering and continue until fruit are mature weekly. Studies have shown that disease transfer can occur during flowering. Do not work in a field containing BFB when it is wet and use sanitation on all equipment that has entered the field before moving to a new field.

Sarah Denkler, Horticulture Specialist, University of Missouri Extension, Poplar Bluff, MO.

Stinkbug Alert in Rice

We have been reporting for a couple of weeks about the higher than average numbers of rice stinkbugs, even in fields that were not heading. Now as the majority of the crop started heading (beginning the second week of July), the numbers of rice stinkbugs in fields appears to be blowing up. We initiated a test in Lonoke County, on rice that was starting to head, and estimated the population at about 15 stink bugs per 10 sweeps. At three days after treatment, the untreated checks were running in excess of 100 stinkbugs on 10 sweeps. In fact, many of the untreated checks were running over 200 stinkbugs per 10 sweeps! Obviously, that's a big jump in just a few days and indicates the mobility of the stinkbugs and how fast the numbers can get out of hand. Even in our treatments, in most cases the numbers were still 20-30 rice stink bugs per 10 sweeps. With a threshold of 5 per 10 sweeps (the first two weeks of heading), you can see we were still well above threshold only three days after application. This isn't due to a lack of control, but more of a situation of great numbers moving into the field.

In situations like the one described above, none of our treatments reduced stinkbugs below treatment level. If you think about it, 90% control of 200 stinkbugs still leaves 20 stinkbugs per 10 sweeps. This means that a second treatment may be required 5-7 days later to achieve control below threshold numbers. Scouting fields 4-5 days after application is the only way to determine if a second treatment is necessary.

We encourage you to wait until at least 50-75% heading to make the first application. Based on the massive movement we saw in our plots, if you spray before heading you will likely end up having to treat again at 50-75% heading and then again 5-7 days later. Stinkbugs are very mobile and can move distances of greater than a mile in just a day or two. They are strongly attracted to fields as they begin to head, so premature spraying could be less valuable. All fields probably will not reach infestations like the one described above however, many are very high. We recommend you spray as needed. Products labeled for control include: Declare, Karate Z, Mustang Max, Methyl Parathion and Sevin XLR or 4E. All of these products provide fairly quick knockdown and should reduce populations, in most cases, below threshold; however, in situations like our trial, two applications may be required. Do some price-shopping and get the best product for the price.

Previous studies tell us that infestation levels like we are experiencing in our trial field can reduce yields 30 bushels per acre or even more. The first two weeks of heading, controlling rice stink bugs will maintain yield. The second two weeks, we treat to avoid "pecky" rice discounts. Remember, drop the threshold to one per sweep or 10 stinkbugs per 10 sweeps the third and fourth week of heading. It is my understanding that several of the rice buyers have tightened down on peck, so it is very important to keep rice stink bugs at below threshold levels in the crop to maintain yields and avoid harsh discounts. So scout and watch for developing populations, and if and when thresholds are reached, take action accordingly.

Gus Lorenze, Extension Entomologist and Dr. Charles Wilson, Extension Agronomist
University of Arkansas

Controlling Horse Parasites

"..several management techniques … can be used to prevent and control parasites. "

Internal parasites can cause problems in the health and performance of your horse. Internal organs such as the lungs, liver, stomach, and intestines are the most susceptible to damage due to these parasites.

There are several management techniques that can be used to prevent and control parasites. Interrupt the life cycle of parasites by sanitizing stalls and removing manure. Grazing horses with ruminants and pasture rotation reduces parasite infestation and decreases overgrazing which promotes larvae ingestion. It is best to separate horses into age groups for grazing because yearling horses often need a different deworming program than broodmares. Feed hay and grain in bunks and clean all feeders, buckets and water troughs regularly to prevent ingestion of parasites. Be sure to isolate and deworm all new arrivals to the farm to prevent bringing in new parasites.

Ascarids found in horse. - courtesy of Horseman Magazine

There are several chemical treatments available for all types of parasites. Bots, ascarids, strongyles, and pinworms are the major parasites that cause the most problems in the horse. Dewormers containing the chemicals avermectin and milbemycin have been shown to be most effective against all of these parasites. It is best to rotate between chemical types yearly or every other year to prevent parasites from becoming immune to the dewormers. Also, all horses will not respond equally to all chemicals so it is best to find a dewormer that works specifically for your horse. Consultation of your veterinarian is a good first step in finding the right dewormer for your horse.

Kendra Graham, Livestock Specialist, University of Missouri Extension, Greenville, MO.

Late Season Soybean Pests

Last year was the "Year of the Podworm" for soybean producers. Podworms appeared in late planted soybean fields towards the end of August and into September. Many standard control programs did not provide satisfactory control of "podworm". A two part reason was coverage issues in some areas and some of the podworms were not corn earworm but tobacco budworm, which can only be distinguished by the presence of an extra tooth on the inner mandible of the budworm. Budworms are known to be much more tolerant/ resistant to pyrethroid chemistry.

Mandibles of tobcco budworm (left) and bollworm (rt. Notice the 'Extra tooth" on the inner surface (middle) of the tobacco budworm mandible. - Picture courtesy of University of Arkansas MP439. http://www.uaex.edu/Other_Areas/publications/PDF/MP-439.pdf

As producers, you know, last season does not dictate the pest pattern for this season. However, it is important to remain vigilant as flowers develop and to continue to monitor through pod development. It will be essential that you scout because the podworm complex can come on late, after a common fungicide application timing of R3. So, manage your insecticides prudently to help fight resistance, just as you are managing resistance in weeds. Also, unwarranted early season insecticide applications can reduce or eliminate beneficial insects. Podworm threshold in soybean is an average of 1 worm per foot of row. This number, as well as sweep net thresholds, will vary with various Universities. The sweep net threshold for mid-South Universities is 9 per 25 sweeps. If treatment is warranted, consider adding the insecticide, acephate, to your pyrethroid to help reduce escapes. Also available are insecticides that specifically target Lepidoptera (caterpillar) insects. They would include indoxacarb (Steward), spinosad (Tracer), flubendiamide (Belt) and thiodicarb (Larvin). Trade names are only used for ease of reference and MU Extension does not endorse any specific product. Read and follow all pesticide labels.

The final late season pest to mention is stink bug. Our predominant species is the green stink bug, followed distantly by the brown stink bug. Threshold is the same as podworm, 1 per foot of row. Keep in mind, that the insecticides that specifically target Lepidoptera species, may offer suppression but do not control stink bugs. And, like budworm, brown stink bugs are more tolerant/resistant to pyrethroids.

Dr. Anthony Ohmes, Agronomy Specialist, University of Missouri Extension, Charleston, MO.

For more information on late season soybean pests contact your local University of Missouri Extension Center and find more information at the following links:

http://bootheelagpestmanagement.wordpress.com/2011/07/26/worm-products-for-soybeans-in-missouri/

http://ppp.missouri.edu/newsletters/ipcm/archives/v20n20/a2.pdf

http://extension.missouri.edu/p/G7110

http://extension.missouri.edu/p/G7151

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2011 Missouri Fair Schedule

Missouri State Fair - August 11 to 21 Sedalia, MO
Reynolds County Fair - September 1 to 3 in Centerville, MO
Ripley County Fair - September 7 to 10 in Doniphan, MO
Southeast Missouri District Fair - September 10 to 17 in Cape Girardeau, MO
Carter County Fall Festival - September 17 in VanBuren, MO
Stoddard county Fair - September 20 to 24 in Dexter, MO
East Perry Community Fair - September 23 to 24 in Altenburg, MO
Wayne County Fair - September 23 to 25 in Silva, MO
Delta Fair - September 27 to October 1 in Kennett, MO
Bollinger County Fall Festival - September 29 to October 1 in Marble Hill, MO
Madison County Fair - October 6-8 in Fredericktown, MO