



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

Volume 13, Issue 17

July 15, 2005

Soybean Rust Update

First Soybean Rust Identified in a Commercial Field in southern Alabama

Soybean rust was observed in a 60 acre commercial soybean field in Baldwin County Alabama on July 12. The field is approximately 1 mile NE of the soybean sentinel plots that were observed to have rust on June 28. The severity is low at the present time but widespread in the field. It is not widespread in the state and many of their other sentinel plots have no rust yet.

We need to stay calm and wait for rust to increase in the South before there are going to be enough spores to move north. Risk of soybean rust in DE is very low.

The section 18 fungicides were approved for use in DE and MD on Wednesday. This does not mean that it is time to spray for rust. The threat of rust is very low and early applications before the risk is high could result in the need for two applications. We are recommending waiting until the risk is high and hopefully only one application will be needed or none at all.

New Soybean Rust Hotline Service to Launch
Delaware and Maryland will launch a new toll free service for growers, scouts, CCA's and others that are following soybean rust closely. Arv Grybauskas and myself will be providing the

information on the current soybean rust situation. Hopefully we can provide timely updates and information to help everyone make informed choices about soybean rust identification and control. We will be providing a risk assessment based on the current weather predictions and information provided by the USDA and North Carolina forecasting programs as well. The number will hopefully be operational by this Monday or sooner.

The Hotline number is **866-234-1347**. The Mid-Atlantic Crop Advisor Board has been gracious to provide major funding for this service and we are grateful for their support.

Additional soybean rust information is included in the Agronomic Crops Section

Bob Mulrooney

Vegetables

Vegetable Crop Insects - *Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu*

Crop Pest Hotline

As we enter the time when moth catches generally start to increase, you can call the Crop Pest Hotline at 1-800-345-7544 (in state) or 1-302-831-8851 (out of state) for the most recent trap catches. Trap catches are typically updated on Monday and Thursday evenings.

Lima Beans

As soon as the earliest planted fields have pin pods, be sure to scout for lygus bugs and stinkbugs. Treatment should be considered if you find 15 adults and/or nymphs per 50 sweeps. Capture, Mustang or Warrior are labeled for both species. The higher labeled rates will be needed if stinkbugs are the predominant insect present.

Melons

Continue to scout all fields on a weekly basis for aphids, cucumber beetles and spider mites. We continue to find fields with economic levels of spider mites and aphids. In addition, as you approach harvest, be sure to watch for cucumber beetles that can feed on the rinds.

Peppers

In areas where corn borers are being caught in local traps and pepper fruit is ¼ inch or more in diameter, fields should be sprayed on a 7-day schedule for corn borer control. Be sure to check local moth catches in your area at <http://www.udel.edu/IPM/traps/latestblt.html>. You will also need to consider a treatment for pepper maggot. Although there have not been any reports of beet armyworm (BAW), be sure to be scouting for this insect. No threshold is available, so you need to watch for the first small larvae as well as their feeding signs. You can often find small beet armyworm larvae feeding in groups on young leaves and fine webbing is produced by smaller larvae near these feeding sites. It is important to spray as soon as you see small holes and before you see this webbing since defoliation can rapidly occur. You will also need to use a product like Spintor, Avaunt, or Intrepid which provide BAW control.

Potatoes

Continue to scout fields for Colorado potato beetle (CPB), leafhoppers and aphids. We are starting to see a significant increase in the number of second generation CPB adults.

Snap Beans

Continue to scout all seedling stage fields for leafhopper and thrips activity. Sprays are needed at the bud and pin stages on processing beans. Since trap catches can change quickly, you will need to call the Crop Pest Hotline or check our website for the most recent trap catches to help decide on the spray interval

between the pin stage and harvest for processing snap beans

(<http://www.udel.edu/IPM/traps/latestblt.html> and

http://www.udel.edu/IPM/thresh/snapbeanecbt_hresh.html). Once pins are present on fresh

market snap beans and corn borers are being caught in local traps, a 7-10 day schedule should be maintained for corn borer control.

Sweet Corn

In most locations, fresh market silking sweet corn should be sprayed on a 3-4 day schedule, except in the Dover and Rising Sun areas where sprays are needed on a 3-day schedule. Be sure to check trap catches for the current spray schedule since trap catches quickly change. Trap catches are generally updated on Monday and Thursday nights.

<http://www.udel.edu/IPM/traps/latestblt.html>; http://www.udel.edu/IPM/thresh/silkspraythres_h.html. We continue to find fall armyworm

larvae in whorl to pre-tassel stage sweet corn. A treatment should be considered when 12-15% of the plants are infested. Since fall armyworm feed deep in the whorls, sprays should be directed into the whorls and multiple applications are often needed to achieve control.



Downy Mildew on Pickles - Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu

Fungicide spraying and drier weather seem to have slowed or halted the current downy mildew infections present throughout the state on cucumbers. Growers are encouraged to continue their fungicide sprays. Spray schedules should not be extended too far and if any new lesions appear on healthy treated leaves before the expected spray interval, reapply quickly. Many growers, fieldmen, and scouts attended the recent field meeting and heard our comments on controlling downy mildew. We are currently recommending Previcur Flex, Gavel, and Tanos, along with Curzate, Bravo and mancozeb worked in as alternation products or tank mix partners. On the basis of having seen one large field treated with Ridomil Gold/Bravo and 5-6 new, healthy leaves with some older infected ones, I

was pleased to see that level of control. Ridomil Gold/Bravo did not perform well in tests in 2004 and as a result I was cautious about its effectiveness. There are sensitivity issues that still may be unresolved but it looks like it can be another product for the fight against downy mildew this season. Hopefully, we learn more as time goes on.

As the crop develops and possible Phytophthora fruit rot control is needed, fungicides such as Gavel, or Ridomil Gold/Bravo, can do double duty or Acrobat plus copper can be used for fruit rot control, but expect little control against downy mildew. All should be applied to get good coverage of the fruit.



Licensed and Bonded Dealers in Agricultural Products

The Delaware Department of Agriculture grants licenses to Dealers of agricultural products. The Dealers include Delaware brokers, as well as out-of-state brokers licensed as dealers of agricultural products in the State of Delaware.

Cambridge Farms Inc.
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Thomas E. Moore, Inc.
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J.G. Townsend, Jr. & Co., Frozen Foods, Inc.
Georgetown, DE

Maine Farmers Exchange
Presque Isle, ME

W.B.M. Potato Brokerage, Inc.
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McMelon, Inc.
Lake Wales, FL

Seabrook Brothers & Sons, Inc.
Seabrook, NJ

Tri Winner Irving Acres, Inc.
Presque Isle, ME

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Northumberland, PA

Hanover Foods Corp.
Hanover, PA

S.E.W. Friel LLP
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Kenny Brothers Produce LLC
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M.G. Ford Produce, Inc.
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Salisbury, MD

Lamar Rou Produce
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Maine Potato Growers
Presque Isle, ME

The Pictsweet Company
Bells, TN

Hapco Farms LLC
Riverhead, NY

Global Produce Sales, Inc.
Lakeland, FL

Eastern Potato Dealers, Inc.
Boca Raton, FL

For more information visit
<http://www.state.de.us/deptagri/foodprod/dealer.shtml> and scroll down for the most recent licenses.

Agronomic Crops

Agronomic Crop Insects - Joanne Whalen,
Extension IPM Specialist; jwhalen@udel.edu

Soybeans

In addition to grasshoppers, thrips and potato leafhoppers, we can also find green cloverworm and Japanese beetles feeding on soybeans. No controls will be needed until you find 30% defoliation pre-bloom and 15% during bloom. As a general guideline, you should also find 10-15 cloverworms or 7 Japanese beetles per foot of row. Unfortunately, we do not have a threshold for the number per sweep.

Be sure to continue to check fields for spider mites. A treatment is recommended if you find 20-30 mites per leaflet or 10% of plants with 1/3 or more leaf area damaged. Although edge treatments can work in the right situation, it will be important to scout the entire field before deciding if an edge treatment is enough. At this point, the only materials available for mite control in soybeans are dimethoate and Lorsban.

Be sure to also scout fields on a weekly basis for soybean aphids. The action threshold - developed in the Midwest - is an average of 250 aphids per plant, on plants sampled throughout the field. Spraying at or beyond R6 has not been documented to increase yield. Conditions that favor aphid population growth are cool temperatures, plant stress, particularly drought stress, and a lack of aphid predators. A number of insecticides are labeled including Asana, Baythroid (label states suppression), Mustang MAX, Lorsban and Warrior. Experience from the Midwest has indicated that dimethoate has not provided adequate control.



Soybean Diseases - Bob Mulrooney; Extension
Plant Pathologist; bobmul@udel.edu

Diagnostic update

Two diseases have been identified in Delaware soybeans so far this season: Septoria brown spot caused by the fungus *Septoria glycines*; and now downy mildew (*Peronospora manshurica*). Septoria can be seen in all stages of soybean

growth once unifoliate leaves emerge. Downy mildew usually is found once a canopy forms and plants are dense.



Septoria brownspot on soybean

Mulrooney



Downy mildew on the upper side of leaf. Note irregular yellow spots.

Mulrooney



Downy on the lower side, Note: small tufts of fungus on corresponding lower leaf surface.

Mulrooney

The following articles were written by Dr. Arv Grybauskas, Extension Plant Pathologist, Univ. of Maryland, for his Maryland Soybean Rust Update on July 13, 2005. They were very pertinent for Delaware as well and are printed here with his permission.

Spore Trap vs. Sentinel Plot Reports

Dr. Arv Grybauskas

The press and some industry websites have helped fuel some confusion about the spread and threat of soybean rust mainly on the basis of reports of spores being trapped in new areas. The latest case in point is the discovery of "rust-like" spores in Kentucky and Tennessee. On the one hand being very aggressive to battle this disease is good as we don't want to be too late to spray if soybean rust gets established, but on the other hand it is tending to fuel the fire to spray when it is not even remotely necessary. It is important to keep in perspective where the disease has occurred, where the spores might have been distributed to and how it has been progressing to really get a feel for risk. But also you need to understand the limitations and the advance warning nature of the spore trap information.

Interpreting the sentinel plots is pretty straight forward. Once we have infection and confirmation that the disease is soybean rust in a sentinel plot we know we have a potential problem in that area. The interesting thing this season is that, to date, we only have two counties with sentinel plots of soybeans in the entire US with confirmed soybean rust. There are **NO** commercial fields with reported problems. (*Bob Mulrooney adds: This changed since the report on July 14 that it was discovered in AL.*) Obviously, this is in part due to spraying in the nearby areas once soybean rust was reported. But overall, we do not have a large scale epidemic brewing.

There are several different spore trap networks. All of these are experimental. The obvious advantage of a spore trap network is that this could provide an even more advanced warning of soybean rust, than the sentinel network. But there are several disadvantages to the system. First, low levels of spores, as all the cases have been so far, cannot be confirmed to be soybean rust. Trust me when I say there are many rust

spores out there and they all have overlapping ranges of sizes, shapes and colors. Thus, if you only have a few to look at, and they have dried a little or become misshaped it is very hard to say with certainty what rust has been trapped. Furthermore, all it tells you is that rust blew into the area. The spores still have to successfully land on a host, penetrate the tissue, establish an infection in the tissue and grow and develop before you see a pustule. All of those processes have environmental requirements and each step can fail for one reason or another. Before the Kentucky and Tennessee spore trap reports we had a report from northeastern Louisiana two weeks ago. There have been no reports of rust actually developing in NE Louisiana on anything at this time. The environment between tropical storm Arlene, the presumed mover of spores to Louisiana, and tropical storm Cindy has not been favorable for spore survival and infection. If disease develops there from any surviving spores from the Arlene transport event it could be another week or two before we can confirm that. It takes about 5 days under ideal conditions to cause a leaf fleck and 9 to produce a pustule. Ideal conditions means it is overcast, humid and in the 80's around the clock. It won't be ideal around the clock even today, July 13, 2005, even though we have a thick haze and tropical conditions from the remnants of Hurricane Dennis. In the absence of continuous Dennis-like conditions it may take 14-21 days before pustules could appear.

The spore traps that have found soybean rust-like spores have all had a small number of spores. There is an argument that the spore traps are perfect tools to time fungicide sprays especially with products that work best before infection. This is true, but when there are very few spores that aren't easily identified and there are no strong sources of spores anywhere nearby then the risk of not spraying is not great. Let's face it, it would take on average about 21 days to find the first infections under typical environmental conditions, which is the length of time that the products give you control. At that point there would only be a few highly scattered hot spots that would take an additional 7 to 14 days to develop and start spreading. At this point, you could spray and get the same yield response if infection occurred or you could find

out that no spray was necessary. All of this works out so slowly, because we do not have a strong source of spores constantly blowing in new inoculum to really speed up the epidemic. This is what happens in Brazil and may eventually happen in the US but it is NOT HAPPENING NOW.

The spore trap network is a great tool and will help us in the future, but trapping identifiable spores has to be combined with weather forecasts, and the strength of the source to give a true picture or risk.



Spraying for Plant Health and Roundup Rumors *Dr. Arv Grybauskas*

The strobilurin class of fungicides (Headline and Quadris) have been shown to provide a yield boost in the absence of diseases. Even I have data to show that. The response, however, follows the classic bell-shaped curve with the peak (average) somewhere between 4 and 6 bu/A. The larger the data set the more it seems that the average is around 4 bu/A. This level of response is around the breakeven point. What the bell shaped curve also tells us is that half of the farmers using the product would do no better than breakeven and half do better, and at this point it is random as to who makes money and who doesn't. Feeling lucky?

The response is due to the fungicide and not due to adjuvant or insecticides added in. In some cases, the response seems better with these tank mixes but we haven't been able to reproduce it. The response is more likely to happen at higher rates of the fungicide. At soybean rust recommended rates of Headline SBR and Quilt, the response is less likely to happen than with Headline or Quadris alone. This is because the mixtures have less of the strobilurin component. There is even some data that the response to Headline is more likely at early reproductive stages rather than the middle. I am not aware of any US data that shows this. All the trials I know and trust have shown the response at R3 or R4 applications.

I have a strong dislike for the early reproductive stage spraying for the yield response ("plant health") especially if we have a pretty low risk of rust. This sets the grower up for possibly two

sprays to protect his crop rather than one or even none. The yield response in the absence of disease development is not guaranteed and is simply a gamble. It sure makes a good sales pitch, but it is not the best strategy. I do not object to the idea of spraying at R3 or R4 especially if it looks like the risk level might increase. At that timing, the protection from the product would run out by end of the spray window and thus be a well-timed spray if rust were to occur. If rust didn't occur it would still possibly produce a response. But it still depends on risk. If we have a low risk of rust then the best strategy is still to wait. The grower is more likely to make money by not spraying if they don't need to. I'm sorry if that hurts fungicide sales in the short run for the industry folks, but your time will come. I don't think rust will disappear. I think soybean rust is more likely to be a significant problem next couple of seasons than this year, and we still have no idea how this will play out this year especially for double-crop beans.

Roundup treated soybeans in a laboratory situation have been shown to be more resistant to soybean rust infection. This development has no practical value at this time. The laboratory that did the work, is trying to patent some part of the process so no details about the experiment were given in any of the press releases or reports that I have seen. We don't know if the spray has to be close in time to when infections occur or once sprayed they are resistant for some length of time. There are several possibilities, all of which might be useful, but since we know that Roundup-ready beans are used in Brazil and elsewhere, even if it's under the table, there are no field observations that Roundup or glyphosate on Roundup-ready beans does anything. I suspect that if the spray is close in time to infection there are several ways the response could happen but it would not be long lasting. The bottom line - it is unlikely to be as good as a fungicide, and since we need to be worried about rust at the reproductive periods I would have to really wonder about using a glyphosate product that late in the season.



Hurricanes and Soybean Rust Risk

Dr. Arv Grybauskaus

The latest in the rumor mill is that Hurricane Dennis followed the same approach to the US as Hurricane Ivan. The obvious association is that maybe Dennis picked up some spores like Ivan did from South America to bring more spores and increase the risk of soybean rust in the US. The weather pattern is pretty close, but the risk is not the same. Last fall when Ivan brushed past the northern coast of South America, there was a significant epidemic of soybean rust in Columbia. It was a surprise as they got hit pretty bad late in their season for the first time, but the important point is they had an epidemic going and this was a strong source of spores. We have no indication that Columbia or anyone else in the Caribbean basin has a significant soybean rust problem at this point this season. The lack of a strong source keeps the risk pretty low for the US. This doesn't mean that as their season progresses that the same scenario couldn't bring a significant additional load up this way. But for the time being Dennis' path is not reason enough to load up the sprayer.



Grain Marketing Highlights - *Carl German*,
Extension Crops Marketing Specialist;
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Hurricane Dennis Disappoints Commodity Traders

Parched corn and soybean fields in a portion of the Midwest Corn Belt failed to receive necessary rains from the remnants of Hurricane Dennis. As a result, we've seen another reduction in the weekly crop condition report ratings this week. This comes at a time when the Corn Belt corn crop is entering its critical stage of development. An experienced CBOT trader put it this way this morning; "climatically, higher temperatures are yet to come". The stressful weather pattern over the central and Eastern Corn Belt does not seem to have changed much at all. Additionally, the extended forecast now calls for very stressful weather patterns over the Plains and Western Corn Belt too. In a nutshell, this means that grain marketers have been given another chance to price the remaining portion of their '05 corn and

soybean production. Right now the market is trending higher for corn, soybeans, and wheat. Besides the weather, the potential spread of Asian Rust in Midwest soybean fields will be watched closely and probably won't be known for a fact until next week.

Market Strategy

With commodity prices trending higher, advancing new crop corn and soybean prices should be placed on hold this week. Price objectives that should be considered for advancing sales further are \$2.75 or better for new crop corn, and \$6.75 or better for new crop soybeans (CBOT futures). It is definitely time to keep a close watch on getting the remaining portion of potential '05 corn and soybean production priced. Simultaneously, initial opportunities should be taken advantage of for beginning pricing on '06 corn, soybean, and wheat production. For technical assistance on grain marketing decisions contact Carl L. German, Extension Crops Marketing Specialist

Weather Summary

http://www.rec.udel.edu/TopLevel/Weather.htm
Week of July 7 to July 13, 2005
Readings Taken from Midnight to Midnight
Rainfall:
0.01 inches: July 7 1.99 inches: July 8
Air Temperature:
Highs Ranged from 93°F on July 12 to 75°F on July 7.
Lows Ranged from 73°F on July 13 to 61°F on July 9.
Soil Temperature:
83°F average. (Soil temperature taken at a 2 inch depth, under sod)

Web Address for the U of D Research & Education Center: <http://www.rec.udel.edu>

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Potato Disease Advisory #18 - July 14, 2005, Bob Mulrooney, Extension Plant Pathologist

Late Blight Advisory (18 DSV's Exceeded)

Disease Severity Value (DSV) Accumulation as of July 13, 2005 is as follows:

Location: Joe Jackewicz Farm, Magnolia, DE. Greenrow: May 4, 2005

Date	Daily DSV	Total DSV	Spray Recommendation
6/2- 6/4	11	28	-
6/4	2	30	5- day
6/5	2	32	5-day
6/6	2	34	5-day
6/8	1	35	5-day
6/9	2	37	5-day
6/10	2	39	5-day
6/11- 6/26	0	39	10-day
6/26-6/28	9	48	7 -day
6/28-6/29	3	51	7-day
6/29-6/30	3	54	7-day
6/30-7/1	2	56	7-day
7/1-7/2	2	58	7-day
7/2-7/4	0	58	7-day
7/5-7/5	2	60	7-day
7/5-7/6	3	63	7-day
7/6- 7/9	17	80	5- day
7/12- 7/13	2	82	10- day

P-day value is now 530, which is used to predict early blight and the need for protective fungicides. Early blight sprays are recommended.

Note: There have been no new reports of late blight in NJ on potato or tomato.

We will continue to accumulate several DSV's nightly with the humid weather conditions we are having. The risk is still low for late blight, but growers are encouraged to keep protective fungicide applications current.

In areas that had heavy showers and wet fields, aerial bacterial blackleg can be found causing wilting stems.