

Integrated Pest & Crop Management

Soybean Seed: To Treat or Not to Treat

By Laura Sweets

The 2009 season is shaping up to be an interesting and challenging season. Right now there are still questions on whether or not to treat soybean seed with seed treatment fungicides.

Soybean seed treatment fungicides can be effective in preventing or reducing damage from pathogens that may be carried on the seed or pathogens present in the soil that cause seed decay, seedling blights and root rots of soybean. Soybean seed treatment fungicides are recommended if there is a concern about seed-borne diseases (ex. Phomopsis seed decay), if the field has a history of a specific early-season soybean disease (ex. field has a history of Phytophthora root rot) or conditions at planting are not favorable for rapid germination and emergence thus favoring early-season soybean diseases (ex. cold and wet soils might favor Pythium seed decay and seedling blight). Soybean seed treatment fungicides will not improve the germination of seed that has a poor germination rate because of physical cracks in the seed coat, weathering during the seed production year and other physiological factors.

Although it is still early for soybean planting, weather conditions thus far have been cool and wet. In many areas of the state soils are saturated. If this weather trend continues there could be increased risk of soil-borne pathogens such as *Pythium* sp. and *Phytophthora* causing more widespread problems than usual. This is certainly a year in which the decision to use a seed treatment fungicide should be considered carefully.

There are certain scenarios under which treatment of soybean seed with a seed treatment fungicide would still be a wise consideration. These include the following:

1. If there is a legitimate concern that seed is infested or infected with a seed-borne disease.
2. If the field being planted has a history of a specific early-season soybean disease such as Phytophthora root rot, Pythium seed decay and seedling blight, Fusarium root rot or Rhizoctonia root rot.
3. If conditions at planting are not favorable for rapid germination and emergence. This could include early planting or planting when soil temperatures are below 55 degrees Fahrenheit.
4. If the variety being planted is a high yielding variety that is disease-susceptible, especially

a variety with little or no resistance and/or field tolerance to Phytophthora.

A number of products are labeled for use on soybean seed. Basically these products can be divided into fungicides that are effective against the water mold fungi *Pythium* and *Phytophthora* or those effective against fungi other than *Pythium* and *Phytophthora*, i.e. *Rhizoctonia*, *Fusarium*, *Macrophomina* and other soil or seed-borne fungi. Metalaxyl and mefenoxam are labeled for use against *Pythium* and *Phytophthora*. These active ingredients are available alone or in combination with other soybean seed treatment fungicides. Azoxystrobin, captan, carboxin, fludioxonil, PCNB, TBZ (thiabendazole), thiram and trifloxystrobin are labeled for use against fungi other than *Pythium* and *Phytophthora*. These active ingredients are available alone, in combinations or in combination with products effective against *Pythium* and *Phytophthora*. See University of Missouri Extension Publication M171, "2009 Missouri Pest Management Guide: Corn, Grain Sorghum, Soybean and Winter Wheat" for tables of seed treatment fungicides labeled for use on soybean.

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MU's IPM Pest Monitoring Network

By Steven Kirk

As the days grow longer and the weather begins to warm, individuals involved in our agriculture and horticulture sectors

site located at: <http://ppp.missouri.edu/pestmonitoring/index.htm>.

Monitoring for pest outbreaks is a cornerstone of MU's IPM Program. IPM stresses scouting practices rather than calendar-based treatments to detect pests and determine if action is necessary. MU's IPM Pest Monitoring Network provides farmers, landowners and pest managers with an up-to-date tally on several economically

insects listed above, we also monitor for Southwestern Corn Borer, Tobacco Budworm, Beet Armyworm and Soybean Looper in the southern and southeastern portions of Missouri.

A feature new in 2008 allows individuals the opportunity to sign up to receive electronic Pest Monitoring Alerts when potentially significant insect captures have been reported by our trapping staff. This information is provided to help pest managers make sound pest management decisions. To subscribe to the IPM Pest Monitoring Alerts visit our web site at: <http://ppp.missouri.edu/pestmonitoring/subscribe.htm>. At the site, fill in the required fields and then mark the boxes next to the insects of interest and click submit. When pest captures reach significant numbers you will automatically be notified via email. Notification of insect captures in pheromone traps DO NOT indicate that treatment is necessary, but indicate that fields in your area may be at risk and should be scouted.

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(ABOVE) The University of Missouri IPM Pest Monitoring Website.

begins to ponder the implications of the year's coming growing season. Among the many things on the minds of our producers is the anticipation of how pests may play a role in the coming year's crop production. The University of Missouri's Integrated Pest Management (IPM) Program offers many helpful ways to assist farmers and landowners in managing their pest problems. Among these is the "IPM Pest Monitoring Network" web

important insect species captured in pheromone traps throughout Missouri.

Over 30 trappers monitor nearly 50 insect traps in 37 counties around the state. By visiting our web site farmers and pest managers can view trap counts that are updated regularly. These include Black Cutworm, True Armyworm, Japanese Beetle, European Corn Borer, Corn Earworm and Fall Armyworm monitored throughout the state. In addition to the

Wheat Diseases Slow to Develop

By Laura Sweets

Thus far we have received few reports of biotic diseases on wheat this season. Most of the questions on wheat have been related to poor growth and thin stands that may be related to late planting last fall and an open winter.

Typically this is the time of year when wheat virus diseases such as wheat spindle streak mosaic, wheat soilborne mosaic and barley yellow dwarf are showing up in Missouri wheat fields. These wheat virus diseases were covered in the March 16, 2009, issue of the Integrated Pest & Crop Management Newsletter. Thus far we have received very few samples of

wheat with virus-like symptoms. There is certainly still time for these virus diseases to develop so fields which are off-color or still slow to greenup should be checked for symptoms of virus diseases.

Early reports from the southern United States suggest that leaf rust and stripe rust are also developing very slowly this season. This may be in part because those areas have been quite dry. We have not had reports or samples of rust diseases on wheat in Missouri so far this season.

Although wet conditions favor the development of fungal foliage diseases such as leaf rust, stripe rust and Septoria

leaf blotch. These foliage diseases prefer warmer temperatures than what we have had so far this year. As temperatures do warm up in the coming weeks, scouting for wheat foliage diseases will be important.

Next week's newsletter will contain an article on wheat foliage diseases and an updated table of foliar fungicides for use on wheat.

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Visit our Web site at ppp.missouri.edu

At This Point, It's Mostly Just Revenge

By Kevin Bradley

The most common questions I've received over the past week or so have to do with henbit infestations in wheat. My response has been the same in almost every instance, "That ship has sailed." Henbit is already in full bloom or past the full bloom stage in just about every part of the state. It is entering into its natural state of senescence and completing seed production. At this point, it will not be competitive enough with wheat to justify a herbicide application. Although Harmony Extra can be sprayed up to the flag leaf stage and will probably still control henbit, I do not think it is an economically justifiable treatment at this time. If there are other weeds like chickweed present, then you may want to reconsider but understand that henbit has already done all the damage it is going to do. The good news is that henbit is one of the weaker competitors as far as winter annual weeds go, and if you couple that with the fact that wheat is a very competitive crop, chances are you may not have lost yield anyway. For example, research conducted in Missouri has revealed that it takes as many as 82 henbit plants per square meter to cause even a 13% yield loss in wheat.

At this point in the season, it is also important to remember that applications of 2, 4-D must be made before the jointing stage of wheat or severe crop



Herbicide applications are not necessarily warranted on henbit infestations like this that are in full bloom or past the full bloom stage of growth.

injury can occur. Jointing is a wheat stage that precedes stem elongation and can be determined by feeling the plant for the presence of a 'joint' just above the soil surface. You can do this by pinching the existing wheat stem and sliding your fingers upwards from the base of the plant. If a hard bump is felt about an inch or so above the soil surface, slicing into this area will more than likely reveal the

presence of a joint, or node, and 2, 4-D applications should not be made.

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South Missouri Wheat Fields Need to be Scouted Now For Diseases

By Allen Wrather

Southeast Missouri wheat fields need to be scouted now to determine the plant growth stage and if a fungicide is needed. A fungicide applied at the split-boot stage of growth will prevent development of most late season yield-robbing wheat diseases. Wheat growing in southeast Missouri will be at the split-boot stage of growth by late-April. Fungicides applied at this stage will help protect wheat against diseases such as leaf and stem rust, Septoria leaf and glume blotch, powdery mildew, and tan spot. These diseases will not develop in all wheat fields so each field

must be scouted separately from the boot to split-boot stage of growth to determine if a fungicide is needed.

Some of the fungicides labeled for application to wheat up to the time wheat begins to bloom include Headline (BASF), Stratego (Bayer), PropiMax (Dow), Quadris (Syngenta), Quilt (Syngenta), and Tilt (Syngenta). One application of one of these fungicides at split-boot stage of wheat growth should be sufficient to protect the wheat from most yield-robbing diseases this spring.

More information about wheat disease management is available at your county extension office and is posted on the Delta Center Web Page (aes.missouri.edu/delta). Following these suggested procedures will give wheat farmers a better chance of producing high yields and profit in 2009.

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Weather Data for the Week Ending April 13, 2009

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.	April 1 - April 13	Departure from long term avg.	Accumulated Since Apr. 1	Departure from long term avg.
Corning	Atchison	57	34	65	22	46	-3	1.18	-0.10	2	0
St. Joseph	Buchanan	53	36	62	25	45	-5	1.53	+0.08	2	-6
Brunswick	Carroll	54	33	63	27	44	-6	2.41	+1.08	4	0
Albany	Gentry	54	32	63	25	44	-5	1.44	+0.04	2	+1
Auxvasse	Audrain	53	35	62	28	44	-7	1.95	+0.35	3	-4
Vandalia	Audrain	53	34	61	29	44	-6	1.89	+0.13	2	-2
Columbia-Jefferson Farm	Boone	53	36	62	28	45	-7	1.20	-0.56	5	-13
Columbia-South Farms	Boone	53	35	61	28	45	-7	1.33	-0.43	5	-13
Williamsburg	Callaway	53	34	61	29	44	-7	1.59	-0.26	3	-7
Novelty	Knox	53	33	60	28	43	-7	2.10	+0.71	0	-3
Linneus	Linn	53	34	61	27	44	-6	2.11	+0.87	2	0
Monroe City	Monroe	53	33	60	28	43	-8	2.21	+0.56	0	-5
Versailles	Morgan	53	36	64	28	45	-8	1.20	-0.96	9	-23
Green Ridge	Pettis	54	36	64	26	45	-6	1.38	-0.31	7	-3
Lamar	Barton	57	38	68	26	47	-6	1.36	-0.40	16	-20
Cook Station	Crawford	56	33	65	27	45	-9	2.05	+0.44	7	-36
Round Spring	Shannon	59	34	70	25	47	-6	1.95	+0.21	3	-29
Mountain Grove	Wright	54	37	65	27	46	-6	1.79	-0.03	7	-13
Delta	Cape Girardeau	61	39	69	31	49	-7	1.51	-0.25	18	-40
Cardwell	Dunklin	63	42	75	35	53	-4	2.34	+0.23	48	-36
Clarkton	Dunklin	62	40	73	32	51	-6	2.31	+0.65	35	-39
Glennonville	Dunklin	62	41	73	33	52	-5	1.83	+0.22	38	-40
Charleston	Mississippi	62	39	70	32	50	-5	2.22	+0.35	28	-31
Portageville-Delta Center	Pemiscot	63	42	73	34	53	-4	2.11	+0.11	53	-28
Portageville-Lee Farm	Pemiscot	63	42	73	33	53	-4	2.20	+0.21	53	-27
Steele	Pemiscot	64	42	75	34	53	-4	1.87	-0.19	58	-20

* 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.

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