



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Soybean Rust Update

There have been several new finds this past week in the southern states including Alabama, Georgia, and Florida. As mentioned before, there has been very little yield loss associated with these detections. One notable exception is a field of 50 acres in AL where no fungicides were applied. The dry weather here has obviously been very unfavorable for infection and spores deposition has not been forecast for DE as of Thursday (9-15). Most of our sentinel plots and Soybean Board plots are at R7 and R8 and a few are at R6. Scouting is now being limited to several fields in each county that have soybeans at R6 or R7. Growers that have soybeans after barley and wheat may still want to scout fields weekly after Hurricane Ophelia passes.

The national soybean rust forecast is predicting new spore transport and depositions over portions of northeast Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Tennessee, and Kentucky over the next few days. Additional spore transport and depositions are expected in the Carolinas, and Virginia, during the same period, assuming Ophelia stays on the predicted track. Favorable disease weather is expected in Texas, Oklahoma, Kansas, Missouri, Arkansas, Tennessee, Kentucky, Indiana, and Ohio over the next two days. Depending on the path and strength of Ophelia, additional areas of favorable disease weather could occur along the coastal areas of the Carolinas and into Virginia.

Continue to check the websites and toll free number for updates:

<http://www.sbrusa.net>

<http://www.ces.ncsu.edu/depts/pp/soybeanrust/>

DE/MD Soybean Rust Hotline 1-866-234-1347

Bob Mulrooney

Vegetables

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

Cabbage

Continue to sample fall planted fields for diamondback, cabbage looper, beet armyworm and fall armyworm larvae. A treatment should be considered if you find 5% of the plants infested and before larvae move into the hearts of the plants.

Lima Beans

Continue to scout fields for lygus bugs, stinkbugs and corn earworm until frost.

Peppers

Be sure to maintain a 5-7 day spray schedule for corn borer, corn earworm, beet armyworm and fall armyworm control. We also continue to get reports of fields with heavy aphid infestations. Once populations are exploded, control is difficult to achieve and multiple applications will be needed.

Snap Beans

All fresh market and processing snap beans will need to be sprayed from the bud stage through harvest for corn borer and corn earworm control.

Spinach

Continue to sample for webworm and beet armyworm larvae. Small to medium size larvae and feeding on leaves can be found. Controls should be applied when worms are small and before webbing has occurred. Two or more applications may be needed to achieve control of webworms and beet armyworm. You should also start sampling for aphids. A warm, dry fall can be favorable for aphid explosions. Since there is a zero tolerance for aphids in both processing and fresh market spinach, treatments should be applied before populations explode. In addition, multiple sprays will be needed if treatments are applied after a population explosion. Assail, Fulfill and Provado are labeled for aphid control in spinach. With aphid control, good coverage is essential. Remember to check the label for days to harvest after the last application.

Sweet Corn

Fresh market, silking sweet corn should be sprayed on a 2-3 day schedule.

Agronomic Crops

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

Soybeans

As of this week, we are still getting reports of fields with economic levels of soybean aphids. The economic (treatment) threshold is 250 aphids per plant through growth stage R5 and through the beginning of R6 (full seed). We have also had reports of beneficial insects helping to crash populations, so be sure to watch carefully for predators as well as parasitized aphids.

We continue to find double cropped fields with economic levels of corn earworm in both Kent and Sussex Counties. A treatment should be considered if you find 3 per 25 sweeps in narrow

fields and 5 per 25 sweeps in wide row fields (20-inches or greater).

Small Grains

In general, cooler summer temperatures with adequate rainfall followed by a warm, dry fall are conditions that favor aphid development in small grains, especially in early planted fields. Early fall infestations of the greenbug aphid (which causes direct damage to small grains) are also favored by cool, late summer conditions. Therefore, with timely corn harvest we could see more fields planted early and these fields could be susceptible to attack.

Factors that increase the potential of a return from applying an insecticide to control aphids and to reduce barley yellow dwarf virus (BYDV) infection in wheat include:

- normal-cool summer temperatures with adequate rainfall
- intensive wheat management including high fertility
- use of BYDV susceptible varieties
- planting before the Hessian fly free date
- a late, warm fall

The potential for viral transmission is impossible to predict. Two seed applied materials, Gaucho and Cruiser, are available as a preventative treatment for aphid control in wheat and barley. If you have a history of aphids transmitting viruses in the fall and you plan to scout for aphids, as a general guideline a foliar treatment should be considered if you find 10 to 20 aphids (especially winged forms) per linear foot of row. It should also be noted that in states to our south where BYDV is more prevalent, they are using thresholds as low as 3 per foot of row or in some cases do not feel comfortable with any threshold. Direct damage from greenbug aphid has also been an issue in recent years. If you are able to scout, be sure you plan to sample your fields at emergence. Although we do not have any thresholds developed in our area for greenbug, thresholds from areas to the south say a treatment will be needed in the fall if you find 10 aphids per foot of row.

Foliar materials labeled for aphid control in *wheat* include dimethoate, Lannate, malathion, Mustang MAX, Penncap-M and Warrior. The materials labeled for *barley* include Lannate,

malathion and PennCap-M. The Warrior label says 3.84 oz/acre are needed for greenbug aphid and the Mustang label states only aids in control of greenbug aphids. *Remember that these pyrethroids are only labeled on wheat.*



Sting Nematode Identified in Delaware -
Bob Mulrooney; Extension Plant Pathologist;
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A new nematode was identified causing severe stunting and death of soybeans in Sussex County west of Laurel. This new nematode in Delaware was identified as sting nematode *Belonolaimus longicaudatus*. The grower also had a problem in this same field last year on field corn. Areas were stunted and no soil fertility or herbicide problems or other diseases could be determined to be the cause of the stunting. I have seen this nematode from samples from very sandy fields in NJ but never in Delaware fields. It is a serious nematode pathogen because of the severity of the damage at low population levels and the lack of any resistant crops. It can be devastating to soybeans and corn as well as many vegetables. Populations can vary in their ability to infect certain crops. For example, populations in North Carolina are very pathogenic to peanuts while Florida populations are not. The same has been seen on watermelon. I am going to try and see if this Delaware population of sting nematode will infect watermelon. Growers who have severely stunted areas of soybeans or corn and do not know the cause are encouraged to soil test for nematodes this fall once harvest is done or now when the stunted areas are clearly visible. I have no idea of the number of acres infested. A brief survey of the surrounding fields did not indicate other infestations. Information on sampling can be found at http://ag.udel.edu/extension/pdc/pdf/Nematode_Assay_taking_samples.pdf

The following information about sting nematode is from the University of Florida:

Sting nematodes are among the most destructive plant-parasitic nematodes on a wide range of plants. Adults can reach lengths greater than 3 mm, making them one of the largest plant-

parasitic nematodes. While there are several species of sting nematodes described, only *Belonolaimus longicaudatus* Rau is known to cause widespread crop damage.

Distribution

Belonolaimus longicaudatus is found primarily in the sandy coastal plains of the Atlantic and Gulf coasts but also occurs naturally in sandy areas of some Midwestern plains states such as Kansas and Nebraska. Sting nematodes can be introduced to new areas on infested turf sod and have been introduced by this means to some golf courses in California and internationally to some of the Caribbean islands, Puerto Rico, Bermuda and Australia. Sting nematodes require at least 80 percent sand content in soil to survive, so they are typically only found in sandy soil environments.

Life Cycle and Biology

Sting nematodes are ectoparasites of plant roots, meaning that they remain in the soil and feed by inserting a long stylet or mouth spear into root tips. The nematodes then inject enzymes into root tissues and suck plant juices out through the stylet. Root tips typically cease growing in response to feeding by sting nematodes. Sting nematodes cause particular damage to young plants with a developing root system.

Sting nematodes reproduce sexually, so both males and females are common in soil. After mating, the female lays eggs in pairs in the soil and will continue to lay eggs as long as food is available. The eggs hatch after about five days. The young nematodes must locate a plant root and begin feeding to survive. Once feeding commences the juvenile nematodes grow and undergo three molts before becoming adults. The total life cycle from egg to reproducing adult takes 18 to 24 days.

Importance

Sting nematodes cause yield losses in many crops and severe infestations can cause complete crop destruction. Damaged crops include vegetables (carrot, corn, crucifers, beans, potato), fruits (citrus, strawberry), agronomic crops (cotton, peanut, sorghum, soybean), turfgrasses (Bahagrass, Bermudagrass, St. Augustinegrass, zoysiagrass) and forest crops (pine trees).

Symptoms

Plants damaged by sting nematodes often wilt, may be stunted and may show symptoms of nutrient deficiency. Seedlings may sprout from the soil and then cease growing altogether. Plant death may occur with high population densities of sting nematodes.



University of Georgia

Soybeans stunted by sting nematode infestation



W.T. Crow, University of Florida

Stunted cotton roots with typical knobby appearance

Hosts

Sting nematodes can feed on more types of plants than almost any other nematode. Populations of sting nematodes from different localities have been shown to differ in their ability to feed on some plants. For instance, they are known to be very damaging to peanut in the Carolinas, but populations in Florida do not attack peanut. Some populations in Florida are damaging to citrus, but others are not. It is possible that the host status of a particular type of plant varies according to the population of sting nematodes at a given locality.

Some plants that have proven to be good hosts to some populations of sting nematodes are given below. Asterisks indicate plants that are hosts for some populations of sting nematodes and not others.

Grain, turf and forage grasses: Bahiagrass, barley, bentgrass, Bermudagrass*, bluegrass, centipedegrass, corn, fescue*, millet, oats, Pangola digitgrass, St. Augustinegrass, Sudangrass, rye, wheat and zoysiagrass.

Fruits and vegetables: beans*, blueberry*, cabbage*, cantaloupe, carrot, cauliflower, cucumber*, endive, celery, citrus*, cowpea, eggplant*, lettuce*, muscadine grape, okra*, onion*, pea, pecan, pepper*, potato, squash, strawberry*, sweet potato*, tomato, turnip* and watermelon*.

Nongrass agronomic crops: cotton*, clover, peanut*, loblolly pine*, soybean and sugarcane.

Cover crops: hairy vetch, iron clay pea, joint vetch, lespedeza, mung bean, pigeonpea, sesbania and sorghum-sudangrass.

Weeds: beggarweed, cocklebur*, crabgrass, cudweed, dandelion*, dogfennel, Johnsongrass, lambsquarter*, morning glory, Spanish needle*, ragweed and wild carrot.

Some plants identified as nonhosts or poor hosts in research studies include alfalfa, asparagus, camellia, cocklebur, crotalaria, gladiolus, hairy indigo, horseweed, hot pepper, Japanese holly, Jerusalem oak, jimson weed, okra, oxalis, pepper, plantain, pokeweed, sandbur, sunn hemp, tobacco and velvetbean. Because of the tremendous variation in ability to parasitize different plants exhibited by sting nematodes, there is no guarantee that these plants may not be hosts for untested populations.

Grain Marketing Highlights - Carl German,
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Coarse Grains

Forecasted '05 U.S. corn production was placed at 10.639 billion bushels in the September crop report, up 289 million bushels from last month. Beginning stocks for the '05/'06 marketing year were increased 15 million bushels to 2.125 billion bushels due to a reduction in '04/'05 marketing year exports. Ending stocks for the '05/'06 marketing year are now projected at 2.079 billion bushels, up 179 million bushels from last month and 46 million bushels less than last year. The season average U.S. corn price for the '05/'06 marketing year is now placed at \$1.70 to \$2.10, down 10 cents per bushel on both ends of the range from last month.

Global coarse grain production was forecast at 938.97 million metric tons, an increase of 8.3 million metric tons from last month. However, use is also projected to increase so that a net gain of just 4.3 mmt is projected in ending stocks at 147.88 mmt.

Oilseeds

U.S. soybean production for the '05/'06 marketing year was forecast at 2.856 billion bushels, up 65 million bushels from last month due to improved yield prospects. Ending stocks of U.S. soybeans are now placed at 205 million bushels, an increase of 25 million bushels from last month. The season average price for '05/'06 marketing year soybeans is now projected at \$5.15 to \$6.05 per bushel, 45 cents per bushel lower on both ends of the price range from last month.

Global oilseed production for the '05/'06 marketing year is projected at 379.34 million metric tons, an increase of 2 mmt from last month but down 0.7 mmt from the '04/'05 level. Global oilseed stocks for '05/'06 were reduced 3.76 mmt this month and are now estimated at 52.31 mmt. World ending stocks of soybeans are projected at 44.92 mmt for the '05/'06 marketing year, 1.06 mmt less than the carry in from the '04/'05 marketing year.

Wheat

Projected ending stocks for the '05/'06 marketing year U.S. wheat were down 10 million bushels from last month due to higher food use and higher imports. The projected '05/'06 marketing year season average price for U.S. wheat is now placed at \$3.00 to \$3.40 per bushel, up 15 cents on the low end and 5 cents per bushel on the high end.

Global ending stocks for the '05/'06 marketing year were down slightly from last month, and 6.3 mmt less than beginning stocks carried in from the '04/'05 marketing year.

Market Strategy

Commodity prices continue to drift lower as the '05 harvest season approaches. Dec '05 corn futures are currently trading at \$2.06 per bushel. Nov '05 soybean futures are currently trading at \$5.75 per bushel. There is a possibility that prices can go lower, particularly for soybeans, as harvest pressure builds and the realization that the Southern Hemisphere cropping season is just around the corner. Brazil and Argentina are now projected to produce 99 million metric tons of soybeans in the '05/'06 marketing year as compared to 90 mmt last year. LDPs are currently in effect for new crop corn. The best LDP is likely to occur sometime during the harvest season.

Announcements

**Pesticide Safety Training and Testing
for Pesticide Applicators Certification**

September 21 & 22, 2005

Delaware Dept. of Agriculture Conference Center
Dover, DE

Sept 21 is training – 8:30 am – 4:30 pm. Training continues the morning of September 22, from 8:30 am – noon. The exam starts at 1:00 pm on September 22.



Weather Summary

<http://www.rec.udel.edu/TopLevel/Weather.htm>

Week of September 1 to September 7, 2005

Readings Taken from Midnight to Midnight

Rainfall:

0.01 inch: September 14

Air Temperature:

Highs Ranged from 91°F on September 13 to 80°F on September 11.

Lows Ranged from 69°F on September 14 to 51°F on September 12.

Soil Temperature:

79°F average.

(Soil temperature taken at a 2 inch depth, under sod)

Delaware Soybean Crop Profile

The Delaware Soybean Crop Profile has been posted to the web at:

<http://www.udel.edu/pesticide/DEsoybeancropprofile.doc>

This document will be used by the US/EPA when making pesticide regulatory decisions on products used in soybean. Please send your comments and suggestions for improvement on this document to Susan King at swhitney@udel.edu.

Mid-Atlantic Crop Management School

November 15-17, 2005

Princess Royale Hotel and Conference Center
Ocean City, MD

Register on line at:

<http://www.nrsl.umd.edu/extension/crops/home.cfm>

For more information contact Bob Kratochvil at rkratoch@umd.edu



Web Address for the U of D Research &

Education Center: <http://www.rec.udel.edu>

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