



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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May 18, 2007

Vegetables

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

Cabbage

Continue to scout for diamondback and imported cabbageworm larvae. A treatment should be applied when 5% of the plants are infested and before larvae move to the hearts of the plants.

Melons

Be sure to watch for melon aphids, cucumber beetles and spider mites as soon as plants are set in the field. Consultants are finding low levels of insect pressure at this time. In some cases, aphids found on plants are grain aphids coming off the rye strips. However, you will need to watch carefully for increases in melon aphids as well as beneficial insects. The treatment threshold for aphids is 20 percent infested plants with at least 5 aphids per leaf. Foliar materials labeled on melons for melon aphid control include Fulfill, Lannate and Thionex. These materials should be applied before aphid populations explode. The Fulfill label states that the addition of a penetrating type spray adjuvant is recommended to provide optimum coverage and penetration. Foliar products labeled for cucumber beetle control on melons include the pyrethroids, Lannate, Sevin and Thionex.

Potatoes

Low levels of adult Colorado potato beetles can be found in fields where at planting insecticides were not used. A treatment should not be needed for adults until you find 25 beetles per 50 plants and defoliation has reached the 10% level. If a neonicotinoid insecticide was used at planting (i.e. Admire, Platinum, Venom, Cruiser or Gaucho), you should not apply a foliar neonicotinoid in season (i.e. Actara, Assail, Leverage, or Provado). Corn borer catches still remain low

(<http://ag.udel.edu/extension/IPM/traps/latestblt.html>).

A corn borer spray may be needed 3-5 days after an increase in trap catches or when we reach 700-degree days (base 50). If you are scouting for infested terminals, the first treatment should be applied when 10% (fresh market) or 20-25% (processing) of the terminals are infested with small larvae.

Snap Beans

All seedling stage fields should be scouted for leafhopper and thrips activity. As a general guideline, the thrips threshold is 5-6 per leaflet and the leafhopper threshold is 5 per sweep. If both insects are present, the threshold for each should be reduced by 1/3.

Sweet Corn

Continue to sample for cutworms and flea beetles. As a general guideline, treatments should be applied if you find 3% cut plants or 10% leaf feeding. In order to get an accurate estimate of flea beetle populations; fields should be scouted midday when beetles are active. A

treatment will be needed if 5% of the plants are infested with beetles. In fields where plastic was used as a row cover, begin sampling for

European corn borer larvae as soon as the plastic is removed. A treatment should be applied if 15 percent of the plants are infested.

Potato Disease Advisory May 17, 2007 - Bob Mulrooney, Extension Plant Pathologist

Late Blight Advisory

Disease Severity Value (DSV) Accumulation as of May 16, 2007 is as follows:

Location: Broad Acres, Zimmerman Farm, Rt 9, Greenrow: May 2

Remember that 18 DSVs is the threshold to begin a spray program

Date	Total DSV	Spray Recommendation
5/2 - 5/9	2	none
5/10 - 5/11	2	none
5/12 - 5/16	0	none

Remember that these values are for potatoes that would have about 50% emergence and made a row that you can see on or before May 2.

Growers who do not want to rely only on the DSV calculations for scheduling fungicide applications should apply at least 1-2 sprays of mancozeb (Dithane, Manzate, Pencozeb, Manex II) or Bravo (chlorothalonil) before plants canopy down the row. Late blight has not been a problem here in Delaware for many years. Unless you have seed from an unknown source the risk of late blight is low. For specific fungicide recommendations, see the 2007 Delaware Commercial Vegetable Production Recommendations Book.

Agronomic Crops

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

Alfalfa

In addition to checking for weevils feeding on re-growth, be sure to begin checking all fields for leafhoppers within one week of cutting. Be sure to sample all spring planted fields since they are very susceptible to damage. Once the damage is found, yield loss has already occurred. The treatment thresholds are 20 per 100 sweeps on alfalfa 3 inches or less in height, 50 per 100 sweeps in 4-6 inch tall alfalfa and 100 per 100 sweeps in 7-11 inch tall alfalfa.

Field Corn

We are starting to find cutworm leaf feeding on corn. Be sure to sample all fields through the 5-leaf stage for damage. As a general guideline, a treatment should be considered in 1-2 leaf stage corn if you find 3% cut plants or 10% leaf

feeding. If cutworms are feeding below the soil surface, it will be important to treat as late in the day as possible, direct sprays to the base of the plants, and use at least 30 gallons of water per acre. You should also sample no-till fields for true armyworms, especially where a grass cover or volunteer small grains were burned down at planting. As a general guideline, a treatment may be needed for armyworms if 25% of the plants are infested with larvae less than one-inch long.

Small Grains

Continue to scout fields for cereal leaf beetles, aphids, armyworms and sawflies. We have received a few reports of economic levels of aphids being found in the heads of small grains. The treatment threshold is 20-25 aphids per head. If multiple pests are present in barley, your only control option is Lannate. In wheat, your options include Baythroid, Lannate, Mustang MAX, Proaxis or Warrior. If sawfly are present, be sure to use the higher labeled rates.

Agronomic Crop Diseases - *Bob Mulrooney*;
Extension Plant Pathologist; bobmul@udel.edu

Soybean Rust Update

Just after the newsletter went to press last week there was a report of soybean rust on kudzu in southern Louisiana. Soybean rust was detected in a kudzu patch west of New Orleans in New Iberia, Louisiana. This is the first report of rust this far west in 2007 and it is 53 days ahead of last year's first find in Louisiana. This may be significant because that part of the south has been getting rain that Florida and southern Georgia were not getting. This occurrence was earlier than last season and if it continues to spread and weather is favorable for infection (big ifs) there may be more risk of soybean rust affecting the Midwest soybean crop. We are more at risk from soybean rust increasing in FL and southwest GA, which have been very dry and very little soybean rust has been detected there.

Wheat

Wheat Scab Forecast

I will be very surprised if we see any scab development this season. One key feature to this disease is the weather leading up to flowering. The 7-10 days before flowering are critical to the development of the fungus that causes scab. It lives on corn residue but the residue has to be moist and the temperature has to be at least in the 60s and optimum is 70s to 80s. The soil surface and therefore the infected debris has been dry for the most part this season and the periods of temperatures ranging between the 30s and 50s for parts of many of the days leading up to flowering has kept the pathogen in check. If we get a few more showers in the next two weeks we may see a few heads with an infected spikelet or two but nothing major. *Arv Grybauskas, Extension Field Crops Plant Pathologist, University of Maryland.*

Other Diseases

Fortunately leaf rust did not develop into a problem and powdery mildew seems to be at very low levels and both diseases should not pose a threat to yield of the wheat crop. Keep scouting until flowering is over. Once flowering is over the window for fungicide application is closed.

Selecting Species and Establishing Goat Pastures Part II: Difficulty in Removing Sericea Lespedeza - *Richard Taylor, Extension Agronomy Specialist*; rtaylor@udel.edu

Last week, I covered the establishment of sericea lespedeza for grazing goats but this week I'll cover some of the risks involved in using sericea lespedeza. Although sericea has a very weak, vulnerable seedling stage and must be carefully cultured during establishment, once established it has several characteristics that worry many people.

Sericea is not a preferred plant for grazing cattle. Although cattle will graze the young succulent spring plant growth, summer growth when temperatures are high has a higher tannic content and low palatability to cattle. The high tannin concentrations desirable for controlling certain internal goat parasites provides sericea with resistance to insect pests and helps the plant tolerate a wide range of growing conditions. In addition, sericea lespedeza is a prolific seed producer, is spread by seed, has a deep laterally spreading fibrous root system that depletes soil moisture for companion crops, and the seed may survive in the soil for many years. Sericea also flourishes after fire which is used in the management of native grass pastures.

All these characteristics have made sericea lespedeza a noxious weed in some states, a nuisance plant for native grass pastures, and an invasive plant in non-use areas and other unmanaged or poorly managed field. Seeds are spread by wildlife, cattle, hay, and also as a contaminant in other legume seed and can quickly spread from useful pastures into surrounding land.

Sericea Lespedeza Control

Eliminating lespedeza from a pasture is difficult. While frequent mowings and over-grazing can reduce the vigor and longevity of the stand, these tactics are not adequate to kill lespedeza in situations where you want to intentionally eliminate lespedeza from a field.

Controlling seed production from the beginning of pasture establishment is key in preventing longer-term problems. Grazing with meat goats

can reduce seed production if stocking rates are maintained at levels to keep sericea grazed below a 3-4 inch height. Also, you should boost the competitiveness of the companion grass to suppress the ability of seedling lespedeza plants to establish. Since sericea lespedeza does not produce much nitrogen (N) for any companion grass, fertilization with N will help boost the grass' competitiveness. Select a companion grass that can tolerate continuous close grazing.

Frequent mowing closer than 4 inches or close frequent grazing can reduce the vigor of sericea plants. The most damaging time to cut or graze sericea is late in the year when the plant flowers and later when it is trying to build root reserves for next year's growth. Generally these methods won't kill the lespedeza but will restrict seed production and weaken the plant for herbicide control.

Very few broadleaf herbicides have provided good control of sericea lespedeza. Sericea has not been controlled with 2,4-D and minimal control has been achieved with a combination of dicamba and 2,4-D. If the area is removed from production (grazing) for an appropriate period of time, Pastureguard (triclopyr + fluroxypyr) or metsulfuron applied in early June can give good control of the sericea lespedeza. However, additional applications may be necessary the following year.

A long-term view of the field or pasture where you are considering planting lespedeza as well as the surrounding area is needed. Be sure to carefully weigh all the considerations.

Horseweed (or Maretail) Control - Mark VanGessel, *Extension Weed Specialist*; mjv@udel.edu

No-till soybean fields that have not been treated yet pose a difficult situation. 2,4-D at 1 pt/A will not be very effective on the taller horseweed plants. ALS-inhibiting herbicides such as FirstRate are not particularly good on horseweed plants over six inches. Canopy EX or Canopy SP will be the best options because of the high

rates of Classic (a component in each of these herbicides). This is not a good option to use every year for horseweed control, but it is a good choice if you have not treated your fields yet. If Canopy SP does not fit into your herbicide program, two applications of Gramoxone Enteon will be needed to control/suppress these large weeds.

Postemergence Pokeweed Control - Mark VanGessel, *Extension Weed Specialist*; mjv@udel.edu

A few questions have come in about controlling common pokeweed postemergence in field corn. We had a trial 2 years ago with tall pokeweed (sprayed in late June) and had results similar to a study conducted at Southern Illinois University. Dicamba [Banvel, Clarity, Sterling]; Distinct; NorthStar, and Callisto were the best treatments for conventional corn hybrids. Glyphosate was also effective if Roundup Ready corn was planted. Our trial did not include Lightning, but the SIU trial reported good control with Lightning with Clearfield corn. For soybeans, glyphosate is the best option. In non-Roundup Ready soybeans, Synchrony was fair (but requires STS-soybeans) or FirstRate which was only fair in the SIU trial.

Corn Height Restrictions for Postemergence Herbicides - Mark VanGessel, *Extension Weed Specialist*; mjv@udel.edu

Corn herbicides need to be applied at the correct timing to avoid crop injury. Applications after this time can result in crop injury and possibly yield reduction. Refer to the table on page 5 for the corn height restrictions for common corn herbicides. Broadcast applications refer to an over the top application and directed refers to use of special spray equipment to direct the spray so that the spray does not come in contact with the whorl of the corn. When corn height and collar number are given, base your decision on whichever feature is first attained.

Herbicide	Maximum Corn Size
Accent	broadcast: 6 collars or 20 in. directed: 10 collars or 36 in.
Aim	broadcast: up to 8 collars directed: when necessary
Atrazine	12 inches tall
Banvel Clarity	16 oz/A: 5 leaves or 8 inches 8 oz/A or less: 36 inches tall or 15 days pre-tassel
Beacon	broadcast: min- 4 inches tall; max- 20 in. tall or 6 collar directed: pre-tassel
Callisto	30 inches tall or 8 collars
2,4-D Amine 2,4-D Ester	broadcast: 8 inches tall directed: pre-tassel
Harmony GT	1 - 4 collars or 12 inches tall
Liberty	broadcast: 24 inches tall or 7 collars directed: 20 to 36 inches tall
Option	broadcast: 16" tall or V5 directed: 16-36" tall
Resolve	up to 12 inches or 6 leaf collars
Sandea	broadcast: 48 inches tall directed: when necessary
Roundup WeatherMax on "Roundup Ready Corn 2"	broadcast: up to 30 inches or 8 collars recommended directed: 24 to 30 inches directed: 30 to 48 inches
Touchdown	up to 8 collars
Premixes	
Distinct	6 oz rate: 4 to 10 inches tall 4 oz rate: up to 24 in. tall 4 oz directed: up to 36 in. tall
Equip	broadcast: 12 in. or 4 collar directed: 12 to 36 inches or 4 to 8 collar
Exceed	broadcast: min- 4 in. tall; max- 20 in. tall or 6 collar directed: 20 to 30 inches tall
Lightning	broadcast: 12 inches tall directed: 20 inches tall
Marksman	broadcast: 5-If stage or 8 inches tall
Northstar	broadcast: min- 4 inches tall; max- 20 in. tall or 6 collar directed: 20 to 30 inches tall
Steadfast	less than 20 inches or up to 6 collars
Steadfast ATZ	up to 12 inches or 6 collars
Yukon	spike through 36 inches tall

Poor Corn Stands: Fertilizer Injury - Gordon Johnson, Kent County Extension Agriculture Agent; gcjohn@udel.edu

In dealing with corn stand issues it is easy to assume that soil insects are at fault. It is common to find grubs when looking for missing plants. However, soil insects are often not the primary cause of stand loss, even if they are easy to find.

I have been in several fields in the last week that have shown symptoms of fertilizer injury to seedling corn. Injury was more pronounced in or limited to certain rows. In these rows, gaps were evident, and many emerged plants were stunted. Seeds that were dug up in the gaps were intact and there were no direct signs of feeding on seminal roots or the mesocotyl or coleoptile (seedling shoot). The most common symptoms were browning (death) of seminal root tips, entire shoots or shoot tips (coleoptile/mesocotyl), or a section of the shoot (mesocotyl). Plants that had emerged in affected rows were lighter in color than healthy plants and had necrotic edges on the leaves - the leaf margins were brown and dried.

Fertilizers can injure germinating seedlings in two ways. First is a straight salt effect. Inorganic fertilizers are manufactured in the form of salts that disassociate into ionic forms in water. As salts, they have high osmotic potential when concentrated in solution. When a high concentration of dissolved salts surrounds a seedling, moisture moves out of the seedling into the dissolved salt solution in the soil through osmosis. Osmosis is the passage of water from a region of high water concentration through a semi-permeable membrane to a region of low water concentration. Semi-permeable membranes are very thin layers of material (plant cell membranes are semi-permeable) which allow some things to pass through them but prevent other things from passing through. If the soil has a lower concentration of water than the cell (i.e. a very concentrated salt solution in the soil) the cell will lose water by osmosis. Water crosses the cell membrane in both directions, but this time more water leaves the cell than enters it. Therefore the cell will shrink and eventually can loose enough water to die.

The second way that fertilizers can injure seedlings is by ammonia (NH₃) toxicity. Starter or popup fertilizers that contain urea can release ammonia under certain soil conditions (high pH, dry soils, low organic matter) in the process where urea-N fertilizer is converted into ammonium (NH₄). Ammonia (NH₃) is a toxic gas (the odor you smell when opening a bottle of household ammonia or that you smell in urine) that can kill plant cells if it is in high concentration. Ammonium (NH₄) is not toxic and is one of the forms that plants take up nitrogen in.

Fertilizers vary in their salt effects with some having greater effects than others. This is given as a salt index. Salt index values for various fertilizer materials are given below:

Table 1. Fertilizer Salt Index of some materials

Fertilizer	Formulation	Salt Index
Potassium chloride	0-0-60	116
Urea	46-0-0	75
Ammonium sulphate	20-0-0-24	69
Anhydrous ammonia	82-0-0	47
Monoammonium phosphate	11-52-0	34
<i>Salt index based on sodium nitrate = 100</i>		
<i>Source: Potash & Phosphate Institute, 2005</i>		

Starter and popup fertilizers should be made from lower salt index fertilizer forms and avoid urea nitrogen forms to limit potential salt and ammonia injuries.

Fertilizer burn in seedling corn is most common in dry, sandy soils and during periods of drought. In these conditions, salts in the soil solution become more concentrated. Often fertilizer burn arises from problems with application equipment on the planter. The most common problem is getting fertilizer application rates too high. Improper settings, lack of or improper calibration, and poor distribution on liquid systems (some rows receiving more than others) can lead to over application of fertilizer and salt injury. This is extremely critical in popup

fertilizer application where fertilizer is being put directly in the seed furrow at low rates. A small increase in rate can lead to fertilizer injury in seedlings. Too high of rates of starter fertilizer, even placed 2 inches to the side and 2 inches deep, can also lead to fertilizer burn. With starter fertilizer, injury can also occur if the fertilizer opener is closer than 2 inches, placing the concentrated fertilizer band too close to the seed.

The Case Against Popup Fertilizer

Popup fertilizer is fertilizer at a low rate that is placed in the seed furrow in contrast to starter fertilizer which is commonly placed in a band 2 inches to the side of the seed, two inches in depth. Many studies have been done on popup fertilizer over the years with inconsistent results. Commonly, no yield benefit is found. The risk of salt injury, especially in dry, sandy soils, outweighs any potential benefit from the fertilizer. Starter fertilizers have a much lower risk of injury to seedlings.

Crabgrass Control in Corn – Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Grass control is likely to be poor this year in corn due to lack of rain to “activate” some of the herbicides. It is best to scout your fields earlier than normal to check for breaks in grass control. The biggest concern is crabgrass, which is difficult to control with postemergence grass herbicides. There are a number of herbicides to control grasses postemergence in corn. These herbicides include the active ingredients nicosulfuron - Accent; nicosulfuron plus rimsulfuron - Steadfast, or Steadfast ATZ; or foramsulfuron - Option or Equip. Accent will not control crabgrass; while the other products will only control small crabgrass (labels specify 1 to 2 inches). There is no restriction for Accent or Steadfast for minimum corn size, while Option states applications should not be made before V-1 stage. Be diligent and scout your fields early for need of postemergence herbicides, particularly with crabgrass.

Grain Marketing Highlights - Carl German, Extension Crops Marketing Specialist; clgerman@udel.edu

Planting Progress Catches Up

U.S. corn and soybean planting caught up with the 5-year average last week based upon USDA's Crop Progress report issued Monday afternoon, May 14. It remains to be seen whether any acreage shift will occur from the March 31st Planting Intentions report. In the meantime, the 2007 row crop season has gotten off to a fairly good start. Weather now becomes the dominant factor in determining the final production outcome. The next two months could bring price volatility unlike anything we have ever seen before. If weather problems develop, both old and new-crop prices will shoot higher because of the perceived need to ration usage. According to a private grain market analyst, "This is not a good environment in which to get married to either the bullish or the bearish side of the market".

Ethanol Corn Demand Stronger Than Expected

The U.S. ethanol industry will use 3.4 billion bushels of corn in the '07/'08 marketing year, representing a 1.250 billion bushel increase over the '06/'07 marketing year. This portends to keep ending corn stocks low at the end of the '06/'07 marketing year and prices competitive to bid for acres. Earlier this year, an initial USDA forecast called for 3.2 billion bushels to go to ethanol production in the next marketing year. This will mark the first time that corn demand for ethanol production has exceeded the demand for U.S. corn exports. U.S. corn exports are projected to decrease by 225 million bushels from the '06/'07 to the '07/'08 marketing year.

Market Strategy

There is no shortage of supply in the current marketing year for either corn or soybeans. Ending stocks for U.S. corn for the '06/'07 marketing year are projected at 937 million bushels; ending stocks for U.S. soybeans are projected at 610 million bushels. Even so, it is the '07/'08 marketing year that will lend credence to price volatility this summer. Ending stocks for U.S. corn for the '07/'08 marketing year were forecast at 947 million bushels in the May crop report; and ending stocks for U.S.

soybeans were forecast at 320 million bushels. Any indication that weather problems could reduce '07 production for U.S. corn and soybeans from the May forecast is likely to have an explosive impact on prices this summer. Currently, Dec '07 corn futures are trading at \$3.78; Nov '07 soybean futures at \$8.14; with July '07 wheat futures at \$4.98 per bushel. For technical assistance on making grain marketing decisions contact Carl L. German, Extension Crops Marketing Specialist.

Spring Crop Twilight Tour
 Thursday, May 24, 2007 6:00 p.m.
 Wye Research and Education Center

PRESENTERS:

- Jose Costa - small grain varieties
- Arv Grybauskas - crop disease status, current research initiatives, and predictions
- Bob Kratochvil - research projects with small grain, corn and soybeans
- Ron Ritter - current weed issues
- Galen Dively - current insect pressure and predictions

As always, we encourage growers, scouts and agents to bring up relevant situations they are encountering in the field for discussion. Peanuts, drinks and strawberry dessert served! Rain or shine, no pre-registration is necessary.

Announcements

Strawberry Twilight Meeting
 Thursday, May 24, 2007 6:00-8:00 p.m.
 Wye Research and Education Center

HEAR:

- Dr. Anne DeMarsay, UM plant pathologist will discuss current disease control strategies and products.
- Dr. Harry Swartz, UM small fruit breeder will discuss current work.
- Mr. Michael Embrey, UM-WREC apiary specialist, will discuss pollinator concerns
- Mr Michael Newell, UM- WREC, will discuss fall production research and field plasticulture variety trials.

SEE:

- 19 varieties on plastic from California, Florida and USDA breeding programs as part of several research trials
- High tunnel fall production system using bag culture and 5 varieties.
- Living samples of strawberry insects and diseases if available. (Participants are asked to bring in samples.)

Light refreshments after the meeting

No pre-registration necessary

Questions? contact Mike Newell 410-827-7388 or email mnewell@umd.edu

<h2>Weather Summary</h2>	
Carvel Research and Education Center Georgetown, DE	
Week of May 10 to May 16, 2007	
Readings Taken from Midnight to Midnight	
Rainfall:	
0.03 inch:	May 12
0.30 inch:	May 13
0.29 inch:	May 16
Air Temperature:	
Highs Ranged from 83° on May 11 and May 16 to 68°F on May 13.	
Lows Ranged from 65°F on May 16 to 40°F on May 14.	
Soil Temperature:	
67°F average.	
(Soil temperature taken at a 2" depth, under sod)	
Additional Delaware weather data is available at http://www.rec.udel.edu/TopLevel/Weather.htm	

Weekly Crop Update is compiled and edited by Emmalea Ernest, Extension Associate - Vegetable Crops

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