



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Vegetable Crops

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

Cabbage

As soon as plants are set in the field, be sure to sample for cabbage looper and diamondback larvae. Treatment will be needed before larvae move into the hearts of the plants. If both species are present, Avaunt, the Bt insecticides, Proclaim, Rimon, Spintor or Radiant have provided control. Newly labeled products, including Coragen and Synapse, will also provide control. If cabbage looper is the predominant species, a pyrethroid, Intrepid, or Confirm will also provide control. In recent years, we have seen more Harlequin bug activity in cabbage. In general, most of the "worm" materials are not effective on Harlequin bugs. The pyrethroids have provided control in years past.

Cucumbers

Be sure to watch for an increase in cucumber beetle and aphid populations. Fresh market cucumbers are susceptible to bacterial wilt, so treatments should be applied before beetles feed extensively on cotyledons and first true leaves. Although pickling cucumbers have a tolerance to wilt, a treatment may still be needed for machine-harvested pickling cucumbers when 5% of plants are infested with beetles and/or plants are showing fresh feeding injury. A treatment should be applied for aphids if 10-20% of the plants are infested with aphids with 5 or more aphids per leaf.

Lima Beans

Continue to scout for spider mites, stinkbugs and lygus bugs. Be sure to sample for corn earworm larvae as soon as pin pods are present. A treatment will be needed if you find one corn earworm larvae per 6 ft of row.

Melons

Continue to scout all melons for aphids, cucumber beetles, and spider mites. We continue to see an increase in aphid populations. Treatments should be applied before populations explode and leaf curling occurs.

Peppers

In areas where corn borers are being caught in local traps, fields should be sprayed on a 7-day schedule for corn borer control. As soon as corn borer trap catches increase to above 10 per night, a 5 to 7-day schedule may be needed. Since trap catches can increase quickly at this time of year, be sure to check local moth catches in your area by calling the Crop Pest Hotline (instate: 800-345-7544; out of state: 302-831-8851) or visiting our website at <http://ag.udel.edu/extension/IPM/traps/latestbit.html>. We continue to find beet armyworms (BAW) so be sure to watch for feeding signs and apply treatments before significant webbing occurs. We continue to find aphids in fields, and populations can explode quickly, especially where beneficial insect activity is low. As a general guideline, treatment may be needed if you find one or more aphids per leaf and beneficial activity is low.

Agronomic Crops

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

Soybeans

As the potential for late season insect control increases, be sure to check all labels for the days from last application to harvest as well as other restrictions.

Continue to scout for soybean aphids. Above threshold levels have been found as close as western Virginia. There are also reports of an increase in populations in Ohio and Kentucky, so be sure to scout for this pest. In general, we continue to find low levels in fields throughout the state. We can also find isolated fields statewide with populations averaging around 40-50 aphids per plant. Although our survey efforts have been concentrated in full season soybeans, you should scout both full season and double crop soybeans for aphids. With the delayed planting this year, double crop soybeans may be more susceptible to damage since they will be in the vulnerable stage for attack if populations continue to increase, especially if the weather is cool. In some cases beneficials are present and in other cases beneficial activity is low. As a general guideline, treatment is needed through the R-5 stage (seed is $\frac{1}{8}$ inch long in the pod of one of the four uppermost nodes on the main stem) of soybean development if economic levels are present. It may also be beneficial to spray through R-6 stage (pods containing a green seed that fills the pod cavity at one of the four uppermost nodes on the main stem) – reports vary as to the benefit of spraying once plants reach the R-6 but in some years and some situations there has been an economic return. Spraying after R-6 stage has not been documented to increase yield in the Midwest. The suggested treatment threshold from the Midwest is still 250 aphids per plant with 80% of the plants infested with aphids. You can also consider using speed scouting to make a treatment decision. Information on how to use speed scouting can be found at: http://www.nwroc.umn.edu/Cropping_issues/2007/Issue9/07_17_07_no4.htm or <http://breeze.ag.vt.edu/speedscouting>.

Snap Beans

At this time of year, you will need to consider a treatment for both corn borer and corn earworms. Sprays are needed at the bud and pin stages on processing beans for corn borer control. An earworm spray may also be needed at the pin stage. Just as a reminder, Orthene (acephate) will not provide effective corn earworm control in processing snap beans. If Orthene is used for corn borer control, you will need to combine it with a corn earworm material (e.g. a pyrethroid). You will need to 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://ag.udel.edu/extension/IPM/traps/latestbit.html> and

<http://ag.udel.edu/extension/IPM/thresh/snapbeanecbthresh.html>. Once pins are present on fresh market snap beans, a 7 to 10-day schedule should be maintained for corn borer and corn earworm control.

Sweet Corn

The first silk sprays will be needed as soon as ear shanks are visible. Be sure to check both blacklight and pheromone trap catches for silk spray schedules since the spray schedules can quickly change. Trap catches are generally updated on Tuesday and Friday mornings:

<http://ag.udel.edu/extension/IPM/traps/latestbit.html> and

<http://ag.udel.edu/extension/IPM/thresh/silksp raythresh.html>. You can also call the Crop Pest Hotline (in state: 800-345-7544; out of state: 302-831-8851). A whorl stage treatment should be considered for fall armyworm when 12-15% of the plants are infested. Since fall armyworms feed deep in the whorls, sprays should be directed into the whorls and multiple applications are often needed to achieve control. At this time of year, you will need to combine a fall armyworm material with a pyrethroid for the first 2-3 silk sprays for fall armyworm control. Be sure to check all labels for days to harvest and maximum amount allowed per acre.

Continue to scout for stinkbugs in fields that are in the pod development and pod fill stages. Economic damage is most likely to occur during these stages. You will need to sample for both adults and nymphs when making a treatment decision. Available thresholds are based on beans that are in the pod development and fill stages. We are currently following the same guidelines that are being used in Virginia. Thresholds are also based on numbers of large nymphs and adults, as those are the stages most capable of damaging pods. As a general guideline, current thresholds are set at 1 large nymph/adult (either brown or green stinkbug) per row foot if using a beat sheet, or 2.5 per 15 sweeps in narrow-row beans, or 3.5 per 15 sweeps in wide-row beans.

You should also scout for podworms as we enter the pod set and pod fill stages. We continue to find low levels of corn earworm in full season and now double crop soybeans, so be sure to scout fields on a routine basis. As trap catches increase, open canopy blooming fields will be the most attractive to egg laying moths. However, all fields should be scouted because as corn dries down all fields could be attractive to egg laying moths. A treatment should be considered if you find 3 podworms per 25 sweeps in narrow-row fields and 5 podworms per 25 sweeps in wide-row fields (20 inches or greater).

Assessing Nitrogen Status in Corn - Gordon Johnson, Extension Ag Agent, Kent Co.; gcjohn@udel.edu

This has been a challenging year with excess moisture until mid-June. It was difficult to get on some fields and even more difficult to determine how much nitrogen (N) to sidedress, especially in fields with significant water damage or replant acreage. In looking at many fields, I can see some lower leaves that have yellowed or browned, indicating N deficiency. Did you have enough N? The following is some information to consider from Penn State University.

“Research done in central and southeastern PA has shown that when 4-5 green leaves are present at and below the corn ear leaf there is

no N deficiency over 95% of the time. This research went on to state that of those plants with less than 4 green leaves only 50% were N deficient. Therefore, at harvest time brown leaves can be present on a perfectly healthy plant. Additionally, a plant that is green the whole way to the ground may have had N over applied, an expensive mistake that should be accounted for next year.”

The end-of-season corn stalk nitrate test would be a good tool to use to see if adequate N was available for your corn crop this year with the wet spring and delayed sidedressing in many fields. It is also very useful for evaluating N fertigation programs in irrigated corn. It is used to assess the N status of a corn crop at the end of the growing season. The following is more information on this test from a UD fact sheet on the subject.

Basis of the Corn Stalk Nitrate Test

Corn plants that do not have an adequate supply of available N in the soil translocate N from stalks and leaves to the grain during the grain-filling period. Under conditions of extreme N-deficiency, this translocation of N results in pale or “yellowed” plants. However, corn plants can experience yield-reducing deficiencies of N without showing obvious visual symptoms. On the other hand, corn plants that have more N than needed to achieve maximum yields tend to accumulate N in their leaves and lower stalks. This may result in plants that appear dark green. However, visual differences between plants with adequate N and plants with excessive N usually are not apparent. Where visual differences are apparent, they are often not related to differences in grain yields.

The end-of-season corn stalk nitrate test makes use of the fact that corn plants either remove N from, or accumulate N in, the lower stalk based on soil N availability. Studies over a wide range of conditions have found remarkably similar relationships between the amount of N found in the lower stalks late in the growing season and the likelihood that corn has been under or over-fertilized.

Collecting Corn Stalk Nitrate Samples

Corn stalks should be sampled at least one week

after black layers have formed on about 80% of the kernels of most ears. Sampling can be performed up to harvest. Areas selected for sampling should be on a uniform soil type and management history.

Collect the corn stalk samples by cutting the 8-inch segment of stalk found between 6 and 14 inches above the soil. Leaf sheaths should be removed from stalk samples. Severely damaged or diseased stalks should be avoided. Fifteen 8-inch segments should be collected from every 10 acres of corn and combined to form a single sample.

Corn stalk samples should be shipped immediately to a soil and plant testing laboratory that is familiar with this test. University of Delaware Cooperative Extension can assist in locating reliable testing laboratories. The stalk samples should be stored in paper bags, not plastic, to allow for some drying and to minimize the growth of mold. Samples that cannot be shipped to the testing lab within 24 hours should be refrigerated until shipping.

Interpreting Corn Stalk Nitrate Test Results

The concentration of nitrate in stalks at the end of the season is a consequence of all the factors that influenced growth during the season; not just N management. For this reason, care must be taken when interpreting the results of the stalk nitrate test. For example, any factor that limits crop yields, such as unusually wet or dry weather, may result in high concentrations of nitrate in corn stalks. The same may be true when yields are limited by deficiencies in other essential plant nutrients

The amounts of N in corn stalks are commonly expressed as concentrations of nitrate-N in parts per million (ppm). These concentrations can be divided into four ranges:

Low (< 250 ppm): Stalk nitrate concentrations in the *Low* range indicate a high probability that additional fertilizer or manure N would have resulted in higher yields. Visual signs of N deficiency usually are obvious when nitrate concentrations are within this range.

Marginal (250-700 ppm): Stalk nitrate concentrations in the *Marginal* range indicate that N availability was very close to the minimal amount needed to maximize grain yields. Visual signs of N deficiency are less common when nitrate concentrations are in this range. Although yields usually are not adversely affected by N deficiencies of this magnitude, this range is too close to the economic penalties associated with N deficiencies to be the target for good N management.

Optimum (700-2000 ppm): Stalk nitrate concentrations in the *Optimum* range indicate a high probability that the amount of soil, fertilizer, and manure N available during the growing season was sufficient to maximize profits for the producer.

Excessive (> 2000 ppm): Stalk nitrate concentrations in the *Excessive* range indicate a high probability that the amount of fertilizer or manure N applied was greater than necessary to maximize profits for the producer. Nitrate leaching to ground waters is a serious concern when corn stalks have nitrate concentrations in the excessive range. Nitrogen management practices used this year should be reviewed carefully and modified in the future to avoid over-fertilization with N which is uneconomic and can contribute to nonpoint source pollution of ground and surface waters.

After appropriate consideration of weather and other factors, fertilizer and manure rates should be increased on fields that usually test below the optimal range and decreased on fields that usually test in the excessive range. The test does not, at present, directly indicate how much N rates should be increased or decreased for a given stalk nitrate concentration. However, use of the test for several years will allow corn producers to identify N management practices, including rates, forms, and times of application, that tend to result in optimum amounts of plant-available N.

The University of Delaware is currently conducting research to further refine the stalk nitrate test.

Information from a factsheet prepared by Dr. David Hansen, Dr. Greg Binford, and Dr. Tom

*Sims, Department of Plant and Soil Sciences,
College of Agriculture and Natural Resources,
University of Delaware. Information on the
Penn State research is from the current
edition of the Penn State Field Crop News.*

Grain Marketing Highlights - *Carl German,
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USDA Export Sales Report – Week Ending 7/30/09

The weekly export sales report is viewed as neutral to bullish across the board for the week ending July 30. Either the total export sales reported has surpassed USDA's projection for the '08/'09 marketing year (as is the case with corn and soybeans) or is keeping pace with USDA's projection (the case for wheat).

Pre-report estimates had weekly corn export sales at 33.5 to 45.3 million bushels combined old-crop and new-crop sales. The weekly report showed export sales of 16.6 million bushels in old-crop corn, bringing total sales to 1.863 billion bushels above USDA's projection for 1.8 billion bushels for the '08/'09 marketing year, while new-crop sales were 28.7 million bushels. Total shipments of 46.8 million bushels were below what was needed this week.

Pre-report estimates for soybeans ranged between 77.2 to 86.3 million bushels of combined old-crop and new-crop sales. The weekly report showed export sales of 18.2 million bushels in old-crop soybeans, making total sales for the year 1.305 bb – above USDA's revised projection for 1.26 billion bushels, new-crop sales were 88.5 million bushels. Total shipments of 8 million bushels were below what was needed this week.

Pre-report estimates for wheat ranged between 14.7 to 18.4 million bushels of export sales. The weekly report showed export sales of 20.3 million bushels, above the 15.9 million bushels needed to stay on pace with USDA's revised projection of 925 million bushels. Shipments of 8 million bushels were below what was needed this week.

Market Strategy

New crop corn and soybean prices have bounced back further this week from recent lows set July 22 (\$3.14) and July 16 (\$8.85), respectively. The recent price rally is attributed to strength in the Dow and crude oil prices, weakness in the dollar, and non-commercial speculative buying.

The short-term trend for the corn market is higher due to non-commercial buying and outside market forces. The nearby September futures contract is set to test resistance near \$3.70. Longer term the corn market remains fundamentally bearish. Any trek higher is likely to be short lived in the event that a weather problem (early frost) does not occur. Next week's USDA August Supply and Demand report is likely to take new crop corn prices lower if USDA follows private forecasts being released this week and increases the production estimate for corn. What has to be decided is whether current price offerings offer any pre-harvest sales opportunities. Dec '09 corn futures closed at \$3.57 on Wednesday afternoon, 29 cents per bushel better than last week and 40 cents per bushel better than the recent low.

The trend for new crop '09 soybean futures remains up with resistance now placed at \$10.99 1/2, the June High. Considering the fact that the soybean market is being buoyed by bullish underlying fundamentals, a retest of the June high now appears possible. Nov '09 soybean futures closed at \$10.45 per bushel on Wednesday, August 5, \$1.29 per bushel better than last week and \$1.60 per bushel better than the recent low.

For technical assistance on making grain marketing decisions contact Carl L. German, Extension Crops Marketing Specialist.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of July 30 to August 5, 2009

Readings Taken from Midnight to Midnight

Rainfall:

0.01 inch: July 30
0.50 inch: July 31
0.01 inch: August 1
0.35 inch: August 2
0.01 inch: August 3

Air Temperature:

Highs ranged from 88°F on July 31 to 85°F on August 1 and August 2.

Lows ranged from 74°F on July 30 to 66°F on August 1.

Additional Delaware weather data is available at
http://www.deos.udel.edu/agirrigation_retrieval.html
and
<http://www.rec.udel.edu/TopLevel/Weather.htm>

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