



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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May 23, 2008

Vegetables

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

Cabbage

Economic levels of diamondback and imported cabbage worm larvae continue to be found. A treatment should be applied when 5% of the plants are infested and before larvae move to the hearts of the plants.

Melons

Continue to scout all melons for aphids, cucumber beetles, and spider mites. Economic levels of aphids continue to be found. Also, we are starting to get reports of cucumber beetles, especially in cantaloupe fields. As soon as we get a day of warm, sunny weather we could see a significant increase in activity. So be sure to scout carefully since damage can occur quickly. Since beetles can continue to re-infest fields, as well as hide under the plastic, multiple applications are often needed to achieve control. Foliar products labeled for cucumber beetle control on melons include a number of pyrethroids, Lannate, Sevin and Thionex. The Actara label only states cucumber beetle suppression. Assail 30SG also received a label for cucurbits this season for cucumber beetle and aphid control (<http://www.cdms.net/LDat/ld8II003.pdf>). Venom 70SG also has a 2ee label for cucumber beetle control on cucurbits (<http://www.cdms.net/LDat/ld76N019.pdf>). It

should also be noted that the Venom label says aphid suppression only. Be sure to check all labels for rates, precautions and restrictions, especially as they apply to pollinators.

Peppers

Continue to sample for thrips and corn borers. On young plants, corn borer larvae can bore into the stems and petioles. In areas where peppers are isolated or corn is growing slowly, moths are often attracted to young pepper plants. Therefore, you should watch for corn borer moths laying eggs in all fields. As a general guideline, treatment may be needed if there is no corn in the area or you are using rye strips as windbreaks. You should also look for egg masses on the leaves. For the most recent trap catches, you can check our website at (<http://ag.udel.edu/extension/IPM/traps/latest/blt.html>) or call the Crop Pest Hotline — in state: 1-800-345-7544; out of state: 302-831-8851.

Potatoes

We are starting to see an increase in Colorado potato beetle egg laying and the first small larvae have been detected. A treatment should be considered for adults when you find 25 beetles per 50 plants and defoliation has reached the 10% level. Once larvae are detected, the threshold is 4 small larvae per plant or 1.5 large larvae per plant. If adults are the predominant stage, the following neonicotinoids are labeled but should not be used if an at-planting neonicotinoid was applied: Actara, Assail, Endigo, Leverage, Provado (imidacloprid), or Venom. These materials

should provide control as long as beetles are not resistant to this class of chemistry. Once eggs hatch and larvae are present, the previous materials as well as Avaunt + PBO, Agri-mek (abamectin), cryolite, Radiant, Rimon, or Spintor have provided control. Be sure to read all labels to select the correct rate. Observe maximum number of applications and resistance management statements on the labels. We are starting to see an increase in corn borer activity and the earliest planted fields will be attractive to egg laying moths. 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 counting infested terminals, the first treatment should be applied when 10% (fresh market) or 20-25% (processing) of the terminals are infested with small larvae. A number of insecticides are labeled for corn borer control. Please refer to the commercial vegetable recommendation guide for labeled materials (<http://ag.udel.edu/extension/vegprogram/pdf/DEvegrecs2008.pdf>). Additional labeled materials for European corn borer include Endigo, which is a combination of thiamethoxam (same active ingredient as Actara) plus lambda-cyhalothrin (same active ingredient as Warrior), and Warrior which are new labels for this season.

Snap Beans

Continue to sample all seedling stage fields for leafhopper and thrips activity. 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 $\frac{1}{3}$. If both insects are present, Lannate, bifenthrin, Proaxis and Warrior (lambda-cyhalothrin) are labeled for both insect pests on snap beans. In addition, be sure to watch for bean leaf beetle. Damage appears as circular holes in leaves and significant defoliation can quickly occur. As a general guideline, a treatment should be considered if defoliation exceeds 20% prebloom. A pyrethroid, dimethoate or Sevin are labeled for control.

Sweet Corn

Continue to sample for cutworms and flea beetles. As a general guideline for cutworms, 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 mid-day when beetles are active. A treatment will be needed if 5% of the plants are infested with beetles. Small corn borer larvae can be found in the whorls of the earliest planted fields. A treatment should be applied if 15% of the plants are infested. The first silk sprays will be needed for corn borer and corn earworm as soon as ear shanks are visible. You can call the Crop Pest Hotline for the most recent trap catches — in state: 1-800-345-7544; out of state: 302-831-8851 or check our website at <http://ag.udel.edu/extension/IPM/traps/latestbit.html>.

Seed Corn Maggot in Melons - *Jerry Brust, IPM Vegetable Specialist, University of Maryland; jbrust@umd.edu*

The recent very wet and cool temperatures we have had over the last two weeks have resulted in several fields of early planted cantaloupe and watermelon having seed corn maggot infestations. Seed corn maggots (SCM) overwinter in the soil as a maggot inside a brown case. In March and April small, grayish-brown flies emerge. Adult flies are most active from 10 a.m. - 2 p.m. and are inactive at night, in strong winds and when temperatures are below 50° F or above 80° F. Eggs are oviposited in soils with decaying plant material or manure. The adults are also attracted to the media around the roots of transplants and to germinating seeds. That is why fields that have been fumigated can still have problems with SCM. SCM flies are often found dead stuck to vegetation during periods of warm wet weather. These flies have been infected by a fungus, but the infection rate is rarely enough to reduce the SCM population and stop infestations. Soil temperatures two inches deep in the planting hole that are at or above 70° F reduce SCM egg laying and larval survival. If soil temperatures are above 70° F at planting but fall below this level for several days in a row, SCM adults will begin to oviposit eggs at the base of transplants. When wilted transplants are inspected in the field, maggots are often not found (they have already pupated), but their

tell-tale damage can be seen as a hollowed out stem or root held together by a few strands of plant material. The use of treated seed gives only marginal control of SCM. Replacing dead transplants is the only solution after SCMs kill a plant.

Thrips in Strawberry Flowers Rarely a Problem - Jerry Brust, IPM Vegetable Specialist, University of Maryland; jbrust@umd.edu

In several strawberry fields I have visited over the last two weeks I have found thrips in the flowers. Almost all of the thrips were eastern

flower thrips. The number of thrips found in a flower varied from 0 to 10. Thrips were feeding on pollen and not on any part of the ovary. Though studies vary as to the number of thrips needed per flower before they are considered above threshold, the studies agree that 10 thrips/flower are needed before any treatment is justified. After the fruit begins to develop and there is little pollen left in the flower most thrips will leave the fruit. However, if the thrips do not leave they will begin to feed on the developing fruit and seeds, interfering with proper fruit development. Densities of 3-5 thrips/fruit can lead to fruit damage and thrips populations need to be closely watched during the first two to three weeks after fruit set.

Potato Disease Advisory #4 - May 22, 2008 - Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu

Late Blight Advisory

Disease Severity Value (DSV) Accumulation as of May 21, 2008 is as follows:

Location: Broad Acres, Zimmerman Farm, Rt. 9, Kent County

Greenrow: April 27

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

| Date | Total DSV | Spray Recommendation |
|-------------|-----------|----------------------|
| 4/27 - 5/6 | 7 | None |
| 5/8 - 5/10 | 16 | None |
| 5/11 - 5/12 | 21 | 5-day spray interval |
| 5/12 - 5/14 | 21 | 5-day spray interval |
| 5/16 - 5/17 | 27 | 7-day spray interval |
| 5/18 - 5/21 | 32 | 5-day spray interval |

The rain event on Tuesday produced another period of favorable conditions for late blight infection. **The DSV threshold of 18 is exceeded and sprays should be initiated if not already done.** Remember that these values are for potatoes that would have had about 50% emergence and made a row that you can see on or before April 27.

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. At this point weekly fungicide applications would be suggested.

For specific fungicide recommendations, see the 2008 Delaware Commercial Vegetable Production Recommendations Book.

Watermelon and Cantaloupe Disease

Update - Kate Everts, Vegetable Pathologist, University of Delaware and University of Maryland; keverts@umd.edu

The cool nighttime temperatures and overcast and rainy days are holding back growth of watermelon and cantaloupe transplants that have been planted in the field. Although I've received several watermelon transplants for disease diagnosis, most of the damage on the samples is weather related - not disease. However, continue to carefully examine transplant lots going to the field.

Gummy stem blight remains the most common seedling disease in our production region. Look for infected necrotic cotyledons and water-soaked lesions extending from the cotyledons into the stem. As the disease advances, stem lesions will become tan and small pycnidia can be seen with a hand lens.



Gummy stem blight in tray. Note the necrotic cotyledons, tan lesion on stem and the tiny black spots, which are the fruiting bodies of the pathogen.

I have seen one case of suspect **angular leaf spot (ALS)** on cantaloupe this spring. This bacterial disease occurred in Delmarva's greenhouses in 2003. Symptoms are small dark brown irregular lesions on cotyledons or leaves. Lesions may have a chlorotic halo and may appear "shiny" (due to bacteria on the lesion surface). ALS is favored by cool, wet weather.

There are several bacteria (*Pseudomonas viridiflava*, *P. syringae* pv. *lachrymans*, and possibly others) that cause similar symptoms and vary in their ability to cause damage. Past experience with the strains that have appeared here on Delmarva is that conditions after transplanting to the field do not favor ALS disease development. However, it is important to have the disease identified. If ALS is confirmed in the field applications of fixed copper plus mancozeb will minimize spread of disease. Also, avoid working fields when foliage is wet.



Angular leaf spot. Note the angular tan appearance of lesions, and the "shine" on the cotyledons.

Agronomic Crops

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

Alfalfa

When checking regrowth for damage from weevils, be sure to also consider damage from adults. If economic levels were present before cutting and no spray was applied, both adults and larvae can hold back re-growth. With the cool conditions we have had, there would not have been enough "stubble" heat to control the

weevils with a cutting. Potato leafhoppers are now present in fields so be sure to sample on a weekly basis after the first cutting. 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

Slugs continue to be the main pest of concern in many fields. Options to reduce damage and allow plants to grow ahead of the damage include the use of Deadline M-Ps and 30% nitrogen applied at night when the plants are dry (the rate used in past years was 20 gallons/acre of 30% N on corn in the spike to one-leaf stage and the mix was cut 50/50 with water to reduce, not eliminate, plant injury). Also, slugs seem to be most active on the plants between midnight and 3 a.m. so applications of nitrogen have been most effective when applied between those hours. As indicated in past newsletters, the best control with the Deadline M-Ps has been observed when applications were made and there was at least one day of sunny weather after an application. In general slugs stop feeding in 2-3 hours even though it may take the slugs 2-3 days to die. If conditions remain extremely wet, slugs sometimes can absorb enough moisture to compensate for the water lost in mucus production so a second application may be needed. We have also had reports and have seen good results in commercial fields where a potash application was needed and slugs were also present in the field. It has probably been effective due to its high salt index. Remember that when it comes to slug management all of the available control tactics only reduce the slug activity - buying time to enable the crop to outgrow the problem.

In 2003 when we had the last significant problem from slugs, the following was reported by *Galen Dively from the University of Maryland* regarding his research on slug damage in field corn:

"I conducted a field study several years ago to measure the corn plant's ability to withstand slug damage. The work was done in a no-till field with closed seed slots and an average of ten slugs per plant at emergence. At the 2-3 leaf

stage, individual plants were rated for damage and then flagged for later assessments of seedling mortality and plant growth at 1, 2, and 4 weeks after the initial rating. No controls were applied, so the slug population present at plant emergence was allowed to develop and feed on seedlings after the damage ratings were made. The rating categories included: 1= seedling completely severed at ground level; 2= all leaves consumed except one remaining intact (greater than 75% defoliated); 3= all leaves showing moderate damage, but entire plant intact (25 to 50% defoliated); 4= only one leaf showing damage (less than 25% defoliated); 5= no damage. Approximately 100 plants were rated in each category and the following data were obtained:

| Damage Rating | Avg. % Seedling Mortality | | Avg. # of leaves |
|---------------|---------------------------|-----------|------------------|
| | At 1 wk | At 2 wks. | At 4 wks. |
| 1 | 48 | 68 | 5.1 |
| 2 | 11 | 17 | 5.8 |
| 3 | 0 | 0 | 6.2 |
| 4 | 0 | 0 | 7.6 |
| 5 | 0 | 0 | 7.5 |

"The study showed that a considerable amount of slug injury could be tolerated before plant density and growth is severely affected. Although regrowth delayed the production of leaves, 32% of the severed plants and 83% of the plants that were more than 75% defoliated recovered after 2 weeks from the initial onset of injury. All plants in categories 3 (25 to 50% defoliated) and 4 recovered completely and were not significantly different from undamaged plants with respect to the number of leaves and plant height later in the season. Although individual plant yields were not determined, there were no observable differences in plant or ear size at harvest between damaged and undamaged plants; thus, any yield loss from slug damage is probably directly related to stand reduction.

"Based on this study, populations of five or more slugs around each plant prior to the 3-leaf stage may be economic, especially if injury is heavy, plant growth is slow, and cool, wet conditions prevail. If the weather turns hot and dry, 10 or

more slugs per plant may be tolerated if the seedlings reach the 3-leaf stage. Generally, if a heavily infested field reaches the 3-leaf stage without severe seedling mortality, the crop has survived the critical period and should outgrow further slug injury, regardless of the population pressure."

Small Grains

Fields that were treated with a combination fungicide/insecticide spray and have been re-scouted for insects are still free of insect activity so it appears that those applications are still providing control. However, we continue to find "worms" in barley and wheat fields that were not treated so be sure to check fields as soon as it is dry enough to do a good job scouting. In many cases populations are lower than might be expected with the high trap catches experienced in early May, which indicates that the weather conditions helped to reduce population levels.

Soybeans

As the earliest beans emerge, slugs, bean leaf beetles and grasshoppers can be found feeding on seedling stage plants. After last season, we all know that grasshoppers can be extremely difficult to control and multiple applications will be needed. Unfortunately, the warm winter conditions could result in significant problems again this year so be sure to check for grasshoppers as soon as plants emerge. Early detection and control of small grasshoppers is necessary to achieve control. Numerous products are labeled for grasshopper control including a number of pyrethroids, dimethoate, Furadan (currently under review by EPA for cancellation but FMC Rep says it should be available this year), Lorsban, Orthene 97 and Sevin XLR. ***As a reminder, OP insecticides (like dimethoate or Lorsban) cannot be combined with SU/ALS herbicides (like Harmony GT).*** Since other materials may also state restrictions regarding combinations of insecticide and herbicides, you should be sure to check all labels carefully before combining insecticides and herbicides. Combinations of certain formulations, especially emulsifiable concentrates (ECs), can cause significant phytotoxicity.

Phytotoxicity in Small Grains -Gordon Johnson, Extension Ag Agent, Kent Co.; gcjohn@udel.edu

I have seen several instances now where foliar fertilizers have been mixed with fungicides and insecticides and this mixture has caused considerable injury on flag leaves in wheat. The labels of the fungicides involved state that there is potential for injury when mixing with fertilizers. Each material would likely be perfectly safe if applied alone, but together, they interacted to cause the phytotoxicity (plant damage). Applicators should be cautious when mixing materials that may cause potential crop injury. Weather conditions, time of day, and plant conditions can all have an influence on whether or not injury will occur. Hot, sunny days and tender plants will increase the risk of injury. When in doubt, leave the foliar fertilizer out of fungicide/insecticide applications in small grains when applied near or at heading. Alternatively, apply the fertilizer in a separate application. It is important to note that 2/3 of the yield potential in small grain is dependent on the flag leaf and any injury will have the potential to reduce yields.

Comments on Late Spring Burndowns for Soybeans - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Many soybean fields have not been treated yet and require careful consideration for herbicide application. Weeds are large and thus it is difficult to achieve good weed control because higher herbicide rates are necessary, and it is often difficult to achieve adequate spray coverage due to weed density. Control at this time will have little to no impact on seed production of winter annual species. Use common sense when considering 2,4-D because sensitive crops or plants could be in close proximity (when in doubt, leave it out). Also, remember if 2,4-D is used the labeled rate is well below what is required for consistent horseweed control at this time, and allow for soybean planting in a timely manner. Use a residual herbicide, but choice of product and rate is dependent on what is required. You will

need to determine if the residual herbicide is only for control of some summer annual weeds or you need the residual herbicide to assist with control of the emerged weeds. If you need help with horseweed control, use a product that contains chlormuron (Classic) at a rate to provided enough product to get maximum effect (although 100% control may not be achievable with large horseweed plants). The Classic rate should be 1.5 oz/A of product. To get enough chlorimuron (Classic) use the following rates: Synchrony = 1.76 oz; Canopy = 3.5 oz; Canopy EX = 1.68 oz; Envive = 4.06 oz; and Valor XLT - is not currently labeled for this rate. Due to weed size in most situations, glyphosate is the better choice for burndown at this time.

Precaution: reliance on chlorimuron products to control horseweed could accelerate the development of ALS-resistant horseweed. So this is not an approach you want to use every year.

Be Sure to Scout Early-Planted Corn - *Mark VanGessel, Extension Weed Specialist;*
mjv@udel.edu

It is important to start to get over the early planted corn ground to check if there are weed breaks. Crabgrass is one that worries me since it is very difficult to control with a postemergence spray. Most of the postemergence grass herbicides (Basis Gold, Steadfast, or Option) will not control crabgrass over 1 to 2 inches tall and Impact and Laudis are labeled up to 3 inch tall crabgrass. Herbicide-resistant corn (Liberty Link or Roundup Ready) gives you a wider window for crabgrass control. Be sure to check your fields early. These products will control other species as well. A special note about Impact and Laudis, they will not control fall panicum.

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

Index Funds Surge Commodity Markets Higher
Just about the time that the commodity markets were beginning to seem 'tired', perhaps reaching an exhaustion gap, several analysts began to

suggest that the markets had run their course for the time being. Maybe we were beginning to see the grains and oilseeds depart from the influence of the energy markets. The problem with that mode of thinking is that in reality nothing has changed. The Index Funds are still investing huge sums of money into the commodity futures markets, invariably causing prices to bid much higher than the fundamentals (supply and demand) would dictate. In fact, due to swaps and the way that non-commercial traders can get classified as commercials there actually may be no end in sight to the seemingly ever increasing commodity prices. Index Funds invest a percentage of their investment funds in 25 commodities. Assets allocated to commodity index trading strategies have risen from \$13 billion at the end of 2003 to \$260 billion as of March 2008, and the prices of the 25 commodities that compose these indices have risen by an average of 183% in those five years.

This information is important for several reasons: first, something has to be done in order to restore the integrity of the commodity futures markets for commercial use (market participants with an interest in the physical commodity). Second, corn for ethanol and exports is currently getting a bad rap. The reality is that the commodity markets would be functioning just fine at the current time if the Index Funds had to abide by the same rules for trading commodities as all other participants. There is a crucial distinction between Traditional Speculators and Index Speculators: Traditional Speculators provide liquidity by both buying and selling futures. Index Speculators buy futures and then roll their positions by buying calendar spreads. They never sell. Therefore, they consume liquidity and provide zero benefit to the futures markets. Speculators have been and always will be important to the viability and function of the commodity futures markets. However, it is the job of the Commodity Futures Trading Commission to regulate the commodity futures market.

When Congress passed the Commodity Exchange Act in 1936, they did so with the understanding that speculators should not be allowed to dominate the commodities futures markets. Unfortunately, the CFTC has taken deliberate

steps to allow certain speculators virtually unlimited access to the commodities futures markets. For example, the CFTC has granted Wall Street banks an exemption from speculative position limits when these banks hedge over-the-counter swaps transactions. When index speculators enter into commodity index swaps, which 85-90% of them do, they face no speculative position limits. CFTC recently held a public forum to address some of the issues that the commodity futures markets are facing and their impact on the consumer's wallet. It is time for the CFTC to act, even if it takes an act of Congress. Farmers are beginning to report the realization that a \$6.00 corn price may not be high enough to produce corn in the United States next year.

Market Strategy

Dec '08 corn futures closed at \$6.33 per bushel in yesterday's trading within 22 cents per bushel of the life of contract high; Nov '08 soybean futures closed at \$13.55 per bushel within \$1.00 per bushel of its life of contract high; July '08 soft red wheat futures closed at \$7.78 per bushel, almost \$5.00 per bushel less than the life of contract high. Jul '08 crude oil closed at \$133.17 per barrel, a new high. The June '08 U.S. Dollar Index closed at 72.08, within about ½ point of the life of contract low. For the week ending May 18th U.S. corn planting progress was reported at 73% complete, compared to 51% the week before and the 5-year average of 88%. The percent emerged was reported at 26%, as compared to 11% the week before and the 5-year average of 56%. It is becoming apparent that attaining trend line yields is less and less likely. There is no room for margin of error.

Excerpts taken from Michael W. Masters, Managing Member/Portfolio Manager, Masters Capital Management, LLC - testimony given before the Committee on Homeland Security and Governmental Affairs, United States Senate, May 20, 2008.

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

Announcements

For Current Agricultural Information from the UD Kent Co. Extension Office Visit www.kentagextension.blogspot.com

Recent Topics:

Soybean Markets
Current Grain Market Information
Spray Damage - Be Careful What You Mix Together
Grain Markets - Corn Utilization and Corn Markets
Bean Leaf Beetle in Soybean
Pre-Sidedress Nitrogen Test - PSNT
Corn Replanting Table
Corn Replant Decision Factsheet
Corn Replanting
Falling Numbers in Wheat
Early Season Weather Effects on Corn
Dairy - Get Ready for Hot Weather by Installing Sprinklers
Poultry - Migration Fences
Black Rot in Grape
Magnesium Deficiency in Corn and Other Crops
Farm Bill Highlights III - Provisions Affecting Fruit and Vegetable Growers
Selective Herbicides
Salt Injury From Wind Blown Salt Spray on Corn
Farm Bill Highlights II - Conservation Provisions Reclaiming Salt Water Affected Soils
Current Grain Market Information

Tractor Driving 101

Thursday, June 12, 2008 6:00 p.m.
DSU Smyrna Outreach and Research Center
884 Smyrna-Leipsic Rd, Smyrna, DE

Here is the opportunity to attend a hands-on training on how to safely operate and drive a compact tractor.

Light refreshments served.

Please call (302) 857-6462 to register.

This workshop is part of the 2008 Small/ Beginning Farm Workshop Series held by Delaware State University. For complete information on the workshops planned, see the brochure at <http://www.rec.udel.edu/update08/announcements/smallfarmbrochure2008.pdf>

Chronic Pain Workshop

June 9, 2008 9:00 a.m.-noon

Richard A. Henson Conference Center
University of Maryland Eastern Shore
Princess Anne, MD

The American Chronic Pain Association and the Delaware-Maryland AgrAbility Project will be presenting a chronic pain seminar entitled "Growing Well with Pain".

Penny Cowan, founder and Executive Director of the American Chronic Pain Association, will lead this workshop aimed at helping agricultural workers, their families, and the health care community to better understand chronic pain and cope with the challenges it presents.

Go to <http://www.rec.udel.edu/Update08/announcements/chronicpainworkshop.pdf> for additional details on the workshop.

Reservations are required and the seminar is free if you register by June 4, 2008. Call Sally VanSchaik to register at 1-877-204-3276.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of May 15 to May 21, 2008

Readings Taken from Midnight to Midnight

Rainfall:

0.55 inch: May 16

0.27 inch: May 20

0.03 inch: May 21

Air Temperature:

Highs ranged from 76°F on May 15 to 64°F on May 20.

Lows ranged from 57°F on May 15 to 46°F on May 20.

Soil Temperature:

61°F average.

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

Additional Delaware weather data is available at http://www.deos.udel.edu/monthly_retrieval.html and

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

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

Cooperative Extension Education in Agriculture and Home Economics, University of Delaware, Delaware State University and the United States Department of Agriculture cooperating.

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