Vegetables

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

**Blacklight and Pheromone Trap Catches.**
Trap catches have started to increase, especially corn borers. Since this information can be used to make treatment decisions on sweet corn, snap beans and peppers, you will need to check for the most recent trap catches at least twice a week. Trap catches are updated twice a week (generally Monday and Thursday PM late) on our website (http://www.udel.edu/IPM/traps/latestblt.html) or on the Crop Pest Hotline (1-800-345-7544 - in state only or 1-302-831-8851 - out of state).

**Cucumbers.**
Continue to scout for aphids. A treatment should be applied for aphids if 10 to 20 percent of the plants are infested with 5 or more aphids per leaf.

**Lima Beans.**
The earliest planted fields with pin pods should be scouted for lygus bugs and stinkbugs. Treatment should be considered if you find 15 adults and/or nymphs per 50 sweeps. Lannate, Capture or Mustang can be used if both species are present. The higher labeled rates of Capture (4 oz/A) and Mustang (4.3 oz/A) will be needed if stinkbugs are the predominant insect present. You should also start scouting the earliest planted fields for corn earworm. A treatment will be needed if you find one corn earworm larvae per 6 ft-of-row from late flat pod stage until harvest.

**Melons.**
Continue to scout all melons for aphids, cucumber beetles, and spider mites. We continue to see an increase in the number of fields with spider mite, aphid, and cucumber beetle infestations. Since beetles found now can often lead to damage to rinds, be sure to watch fields carefully and treat as soon as you see an increase in the populations. Be sure to watch for bees foraging in the area and avoid insecticide applications on blooming crops.

**Peppers.**
In areas where corn borer trap catches are above 2 per-night and pepper fruit is ½ inch in size or larger, fields should be sprayed on a 7-day schedule for corn borer control except in the Harrington, Greenwood and Laurel areas where sprays are needed on a 5-day schedule. You will also need to consider a treatment for pepper maggot. If Orthene is used for corn borer control, it will also reduce damage from pepper maggot. Otherwise, dimethoate should be added to the mix. You should also watch for beet armyworm (BAW) larvae. Economic damage is starting to show up and small larvae can be readily found. No threshold is available, so you need to watch for the first small larvae as well as their feeding. You will also need to use a product like Spintor, Avaunt, or Intrepid which provide BAW control.
**Potatoes.**
Continue to scout fields on a weekly basis for Colorado potato beetle (CPB) adults and larvae. We continue to find economic levels of green peach aphids. A control will be needed if you find 2 aphids per leaf pre-bloom, 4 aphids per bloom - post bloom and 10 aphids per leaf at 2 weeks from vine kill/harvest. If melon aphids are found, the threshold should be reduced by $\frac{1}{2}$. If green peach aphid is the predominant species, Fulfill, Lannate, Monitor, Provado, or Vydate will provide control. If Fulfill is used, a penetrating surfactant is needed to achieve good coverage and achieve optimum control.

**Snap Beans.**
Continue to scout all seedling stage beans 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 $\frac{1}{3}$. Dimethoate, Lannate, Asana, Capture, or Warrior will provide control of both insect pests. At this time, all fresh market and processing snap beans in the bud to pin stages should be sprayed for corn borer. Acephate should be used at the bud and pin stages on processing beans. After the pin spray on processing beans, sprays will be needed on a 5-6 day schedule except in the Harrington, Greenwood and Laurel areas where sprays are needed on a 4-day schedule and the Concord area where sprays are needed on a 5-day schedule. Once pins are present on fresh market snap beans, sprays should be applied on a 7-day schedule for corn borer control except in the Harrington, Greenwood and Laurel area where sprays are needed on a 5-7 day schedule. Lannate, Asana, Capture, Warrior or Mustang are labeled. Acephate has a 14-day wait until harvest. Since moth catches can change quickly, be sure to check our website for the most recent trap catches and information on how to use this information to make a treatment decision in processing snap beans (http://www.udel.edu/IPM/traps/latestblt.html and http://www.udel.edu/IPM/thresh/snapbeanecbt hresh.html).

**Sweet Corn.**
All fresh market silking sweet corn should be sprayed on a 3-4 day schedule throughout the state except in the Dover, Laurel, Greenwood, Seaford and Wyoming areas where sprays are needed on a 3-day schedule. In many years, dry weather conditions often lead to quick increases in corn earworm populations, so be sure to check trap catches frequently. You can check trap catches and treatment decision guidelines on our website (http://www.udel.edu/IPM/traps/latestblt.html and http://www.udel.edu/IPM/thresh/silkspraythres h.html). You should also watch for fall armyworm feeding in the whorls. A treatment is needed if you find 12-15% of the plants infested. Generally, 2-3 whorl sprays are needed to achieve control. In whorl stage corn, Avaunt, Lannate, Larvin and the high rate of Warrior have provided the best control in recent years. However, worms must be small at treatment time to achieve effective control.

**Vegetable Crop Diseases** - Bob Mulrooney, Extension Plant Pathologist, bobmul@udel.edu

**Late Blight Advisory.**

**Disease Severity Value (DSV) Accumulation as of July 14, 2004 is as follows:**
Location: Joe Jackewicz Farm, Magnolia, DE. Greenrow: April 25, 2004

<table>
<thead>
<tr>
<th>Date</th>
<th>Daily DSV</th>
<th>Total DSV</th>
<th>Spray Recommendation</th>
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</thead>
<tbody>
<tr>
<td>4/25-5/18</td>
<td>4</td>
<td>18</td>
<td>7-day</td>
</tr>
<tr>
<td>5/19</td>
<td>4</td>
<td>22</td>
<td>7-day</td>
</tr>
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</table>
After this week's storms, potatoes that have not been sprayed in the last week will need a protectant spray as soon as possible. Hopefully applications of Ridomil or UltraFlourish at planting or later will pay off if potatoes are in waterlogged soils. Bacterial soft rot decay and pink rot are both threats where soils stay saturated for any length of time.

Application rates for protectant fungicides (Dithane, Bravo, etc.) should be at the high end of the rate with the amount of foliage present. For specific fungicide recommendations, see pages F132-33, 2004 Delaware Commercial Vegetable Production Recommendations Book. EB 137.

**Vegetable Crop Diseases** - Kate Everts, Extension Plant Pathologist, University of Maryland and University of Delaware, everts@udel.edu; Bob Mulrooney, Extension Plant Pathologist, bobmul@udel.edu; Ed Kee, Extension Vegetable Specialist, kee@udel.edu

**Downy Mildew Alert on All Curcurbits:** Including Pickles, Cantaloupes, Pumpkins and Watermelon.

Downy mildew has been identified on pickling cucumbers and pumpkins in Sussex County. This is very unusual when downy mildew occurs this early on pumpkins and is almost rare for downy mildew to infect pickling cucumbers here. If conditions for downy mildew infection and spread continue to be favorable large amounts of foliage can be destroyed in a short period of time. In areas where pickles are grown and pumpkins are present, applications of Ridomil Gold/Bravo or Flouranil are recommended especially if no fungicides have been applied yet. If downy mildew on pumpkin gets started and the weather is favorable for infection, downy mildew can be difficult or impossible to stop. Prevention is the best treatment. If
Bravo, maneb or copper have been used it may be the best thing to apply one of those materials again within 7 days or apply Ridomil Gold/Bravo, Gavel plus copper, or Acrobat plus copper every 14 days and spray with chlorothalonil (Bravo, Echo) on alternate weeks. Check the Commercial Vegetable Production Recommendations for more choices, rates and programs. As mentioned in the article on downy mildew on pickles the spores travel north on the prevailing winds and growers in Kent and New Castle need to have their protective fungicides applied to prevent downy mildew.

Downy Mildew and Other Disease Considerations on Pickling Cucumbers.

Downy mildew (*Pseudoperonospora cubensis*) has been identified in many pickling cucumber fields on Delmarva. The downy mildew that infects pickling cucumbers and other cucurbits is caused by a different species of fungus than downy mildew on lima bean. Cucurbit downy mildew cannot survive here and must spread from the southern U.S. northward, by airborne spores. Symptoms of downy mildew on cucurbits begin as angular yellow or chlorotic areas on the upper surface of older, crown, leaves. Lesions at this early stage may appear “water-soaked”. Sporulation occurs on the underside of leaves and appears as brown to gray. The sporangia can be seen with a 10X hand lens and appear as barely distinguishable black or purple spots. Relatively cool temperatures (57 to 68 F) favor the production of downy mildew sporangia. However, some disease develops even at higher temperatures. The incubation period is 4 to 12 days; the length depends on temperature and photoperiod. In other words, if temperatures, especially nighttime temperatures, increase the epidemic should slow, but it won’t go away.

There are several possible fungicide programs to control downy mildew, Phytophthora, and Rhizoctonia (belly rot). Table 1 identifies the material, the timing, disease target, and relative cost of three approaches.

Table 1 uses the following rates for each material:
- Bravo – 2pts/Acre
- Acrobat – 6.4 oz/Acre (Gavel has slightly better downy mildew activity than Acrobat and is equal in its control of Phytophthora blight.)
- Copper – 2 lbs./Acre
- Ridomil Gold Bravo – 2 lbs./Acre
- Amistar – 5 oz/Acre

Table 1. A comparison of three possible fungicide programs for pickling cucumbers.

<table>
<thead>
<tr>
<th>Program</th>
<th>Material</th>
<th>Timing</th>
<th>Target</th>
<th>Cost/A</th>
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<tbody>
<tr>
<td>A</td>
<td>Bravo</td>
<td>Pre-Flop</td>
<td>Downy mildew (DM)</td>
<td>$12</td>
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<tr>
<td></td>
<td>Ridomil Gold Bravo</td>
<td>1-inch pickles</td>
<td>Phytoph. + DM</td>
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<tr>
<td></td>
<td>Ridomil Gold Bravo</td>
<td>3-inch pickles</td>
<td>Phytoph. + DM</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>$80</strong></td>
</tr>
<tr>
<td>B</td>
<td>Bravo</td>
<td>Pre-Flop</td>
<td>DM</td>
<td>$12</td>
</tr>
<tr>
<td></td>
<td>Gavel or Acrobat + copper</td>
<td>1-inch pickles</td>
<td>Phytoph. + DM</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Gavel or Acrobat + copper</td>
<td>3-inch pickles</td>
<td>Phytoph. + DM</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>$40</strong></td>
</tr>
<tr>
<td>C</td>
<td>Bravo</td>
<td>Pre-Flop</td>
<td>DM</td>
<td>$12</td>
</tr>
<tr>
<td></td>
<td>Ridomil Gold Bravo</td>
<td>1-inch pickles</td>
<td>Phytoph. + DM</td>
<td>34</td>
</tr>
</tbody>
</table>
Ridomil Gold Bravo 3-inch pickles Phytoph. + DM 34
Amistar Pre-Flop to 1 Belly Rot 28
Inch pickles

TOTAL $108

(Gavel could be used instead of Acrobat in the above scenarios).

**Which Program to Use:** Growers are confronted with several choices, some outlined above, and there may be good reason to use various combinations other than those outlined above. For example, another program would be to use Gavel or Acrobat + copper for the 1-inch stage, and Ridomil Gold Bravo for the 3-inch stage. Or, it may be that only two of the applications are needed. The fungicide program decision should be based on relative efficacy of product, field history, weather conditions, and observations on the disease pressure present. The grade and quality of harvested product is also a factor to consider. If there has been Phytophthora in earlier plantings, or downy mildew in earlier plantings, then more stringent controls are necessary.

As for downy mildew and Phytophthora blight, Ridomil Gold Bravo is probably the best material in terms of efficacy on both diseases (unless a field has had a history of Ridomil applications). Chlorothalonil (Bravo or Echo) is a good product when used preventatively. Acrobat + Copper has also performed well in trials in Michigan. For Delmarva producers, if there is no history of Ridomil use, or no identification of Ridomil resistant strains of Phytophthora, Ridomil Gold Bravo may be the best choice. Otherwise, the Acrobat + Copper or Gavel + Copper combinations are effective. The relative cost differences in Table 1 are based on a general survey of retail costs, and may also be considered in the decision-making process. However, local prices may vary.

**Pumpkins.**

***Downy mildew is present in Maryland and Delaware. If you haven’t applied a fungicide spray to pumpkins, apply a spray now. See the downy mildew alert above.***

The following are fungicide schedule options that are designed to be effective on most pumpkin diseases, including downy mildew. The core of the program is chlorothalonil, which is a good preventative material for downy mildew. This program will manage most diseases of pumpkin, but it is still necessary to scout for development of Phytophthora blight.

1\textsuperscript{st} Fungicide Application : mefenoxam plus chlorothalonil (Flouronil, Ridomil Gold Bravo)--2 lb 76WP/A. (If you have already applied a fungicide, reapply chlorothalonil within 7 days of the previous spray).

2\textsuperscript{nd} and 4\textsuperscript{th}, etc.: Chlorothalonil (such as Bravo Ultrex 2.7 lb/A or Echo) plus copper (such as Kocide DF 1.5 lb/A) plus Nova (2.5 oz./A) or Procure (4-8 oz 50WS/A).

3\textsuperscript{rd} and 5\textsuperscript{th}, etc.: Use one of the following combinations:
- mefenoxam plus chlorothalonil (Flouronil, Ridomil Gold Bravo)--2 lb 76WP/A.
- Pristine 12.5-18.5 oz 38W/A,
- Tanos 8 oz 50WDF/A (must be tank mixed with either chlorothalonil, maneb or copper),
- Gavel 2 lb 75 DF/A.

Ridomil Gold Copper and Acrobat have some efficacy on downy mildew. Use Acrobat (6.4 oz/A) for Phytophthora blight later in the season if it is a problem. These fungicides should be applied at regular intervals.
**Field Crops**

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

**Alfalfa.**
Continue to sample all fields on a weekly basis for potato leafhopper (PLH) adults and nymphs. Sprays may be needed on multiple cuttings. Remember, controls are most critical on small plants. 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.

**Soybean.**
Spider mites continue to be found at economic levels, especially on beans that were drought stressed. With the rains this week, plants have begun to actively grow again so it will be a good time to treat fields that had spider mites before the rains. Although rainy weather can help reduce populations, we generally do not see populations crash until we have 3-5 days of rainy weather with warm days and cool evenings to get diseases started that crash populations. **Early treatment is needed to achieve control - once significant yellowing occurs it will be extremely difficult to achieve control and multiple treatments will be needed.** A treatment is recommended if you find 20-30 mites per leaflet or 10% of plants with 1/3 or more leaf area damaged. At this point, the only materials available for mite control in soybeans are dimethoate and Lorsban. If dimethoate is used, the addition of a penetrating surfactant like Li-700 or Penetrator plus or a material like Helena’s Hyperactive should be used to improve control, especially in drought stressed fields. Multiple applications may be needed 5-7 days apart. Remember, Lorsban only provides contact control, so multiple applications are needed 5-7 days apart. The addition of a crop oil or an organosilicone like Silwet has also improved control with Lorsban when applied by air.

In addition to green cloverworm, we can find Japanese beetles defoliating soybeans. No controls will be needed until you find 30% defoliation pre-bloom and 15% during bloom. As a general guideline, you should also find 10-15 cloverworms or 7 Japanese beetles per foot of row. Unfortunately, we do not have a threshold for the number per sweep.

You should also continue to scout on a weekly basis for soybean aphid. We have found very low levels of the first soybean aphids in Sussex and New Castle Counties. Ames Herbert from Virginia also reported that they have found low levels of aphids in 19 counties ((Accomack, Northampton, Lancaster, Northumberland, King William, King & Queen, Mathews, New Kent, Charles City, Henrico, VA Beach, Chesapeake, Suffolk, Southampton, Greensville, Goochland, Amelia, Nottoway and Powhatan). As Ames describes - “Basically, if you find wingless aphids on soybean leaves or stems, light to dark yellowish in color, especially if in colonies of 2 or 3 or more - you have soybean aphid. This is the only known aphid species that develops on soybean. Under the right conditions, they can reproduce very rapidly going from 10 to 1000 per plant in less than 2 weeks. They prefer somewhat cooler temperatures, 68-77°F, so may not build up rapidly given our rather hotter summertime temperatures. They are also subject to predation by several insects like lady beetles, lace wings and others. Hopefully, the combination of hot weather and action by these natural enemies will prevent economic aphid levels, but we won’t know unless fields are monitored. “ Although levels are low, populations can increase so fields should be scouted on a weekly basis for aphids. You should sample both full season and double crop fields - although double crop may be at more risk at this time. You will need to look at the entire plant when sampling for aphids. The treatment threshold is 250 per plant up to growth stage R-3/R-4 with 80% of the plants at that level. After R4, the threshold increases to 1,000-1,500 aphids per plant. Numerous products are now labeled for soybean aphid including Asana, Baythroid (suppression only), Mustang MAX, Warrior, and Lorsban. Dimethoate has not provided adequate control and Furadan 4F only has a 2ee label for the Midwestern states.
Grain Marketing Highlights - Carl German, Extension Crops Marketing Specialist; clgerman@udel.edu

World/U.S. Supply and Demand Highlights.
The contents of USDA's July 12th crop report are based upon area, yield, and production forecasts released July 12th for small grains. For other crops, area estimates reflect the June 30 NASS Acreage report. Survey based area, yield, and production forecasts reported by NASS will be adopted in the August 12th crop report.

WHEAT.
Projected U.S. 2004/05 ending stocks of U.S. wheat are now placed at 494 million bushels, nearly unchanged from last month. Total wheat production is forecast at 2.059 billion bushels, reduced slightly from last month and 277 million bushels less than last year. The projected price range is lowered 5 cents on each end of the price range, now placed at $3.20 to $3.80 per bushel.

World wheat production for 04/05 is up slightly from last month and although use also increases, ending stocks are projected to increase by nearly 6 million tons from last month and about 2 million tons above the previous year. This is noted as the first year-to-year increase in ending stocks since the ’99/00 marketing year.

The wheat estimates are termed neutral to bullish as all U.S. wheat production and ending stocks were below June estimates and well below expectations.

CORN.
The ’04/’05 outlook for U.S. feed grains is for larger production, increased use, and increased ending stocks. The estimate for U.S. corn production was increased by 210 million bushels from last month to a record 10.635 billion bushels, up 521 million bushels from last year. The larger crop forecast reflects increased planted area in the June 30 Acreage report with no change in the projected yield. Other than a 50-million bushel increase in corn feed and residual use, no other changes were made in ’04/’05 U.S. corn use. Ending stocks, now projected at 991 million bushels, are up 250 million bushels from last month and 95 million bushels from last year. The projected corn price range, now placed at $2.30 to $2.70 per bushel, is down 25 cents per bushel on each end of the range from last month.

Reduced export projections of 100 million bushels and an increase of 10 million bushels in the food, seed, and industrial use category leaves an additional 90 million bushel increase in the ending stocks estimate for U.S. corn for the ’03/’04 marketing year.

Global coarse grain stocks are increased nearly 10 million tons from last month, due mainly to the 6.35 million ton increase in U.S. ending stocks for the ’04/’05 marketing year. Despite this increase, global stocks are indicated to be headed for the lowest level since 1976/77.

SOYBEANS.
Ending stocks for ’04/’05 marketing year U.S. soybeans were placed at 210 million bushels, down 10 million bushels from the June estimate. Further, ending stocks for the ’03/’04 marketing year were reduced to 105 million bushels, a reduction of 10 million bushels from month ago levels. This stocks level is the lowest level since 1976/77. The reduction in old crop ending stock levels is largely attributed to a 25 million bushel increase in the soybean crush estimate, which was placed at 1,500 million bushels. The ’04/’05 production estimate for U.S. soybeans was placed at 2.940 billion bushels, a 25 million bushel decrease from the June estimate, due to a reduction in the harvested area and a slight reduction in the projected yield. The season average price for U.S. soybeans for the ’04/’05 marketing year is now placed at $5.70 to $6.70 per bushel, unchanged from last month.

Market Strategy.
The commodities market is said to be reacting in a ’Buy the rumor - Sell the fact’ fashion today, with the exception of CBT wheat futures whereby the crop report and trader expectations did not line up. Corn futures were up 1 to 2 cents per bushel for old crop and new crop contracts. Soybean futures were down hard for old crop soybeans (16 to 28 cents per bushel), while new crop soybeans were down 6 cents per bushel. Old crop and new crop wheat futures finished the day higher, up 8 to 9 cents per bushel on the old crop and 6 cents per bushel for...
the '05 crop. Farmers that are at least 50% sold on new crop corn and soybeans are going to need to pay attention to pricing opportunities that may be available in basis offerings and technical indicators. This report suggests that we could see further weakness in new crop corn price offerings from their current levels, some remaining opportunities forthcoming to increase sales levels for new crop soybeans, and a potential rally in new crop wheat futures.

Comments on Weed Control - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

The recent rains have put a different wrinkle into decisions for weed control. A lot of weeds have been quite inactive during the drought and are now starting to grow again. If you are concerned about these plants becoming a problem and wondering if you should spray, here are two things to consider. First, how large are the weeds and does the herbicides labeled have a reasonable chance of controlling the weeds? Second, at what stage is the crop (crops in bloom can be an issue for certain herbicides). For soybeans, most of the glyphosate products are labeled for application through blooming.

Weeds just beginning to emerge now have a wider window for postemergence control than weeds that emerged in June or earlier. Research with soybeans and snap beans has shown that crops planted in early July or later have an extended period that the weeds are most susceptible to the herbicides. Mostly, this is due to the fact weeds emerging now do not attain the same size because they begin flowering shortly after emerging and additional flushes of weeds will be even less competitive at this late of a date.

UPCOMING MEETINGS:

Attention Delmarva Beef Cattle Producers!

The Delmarva Cattlemen’s Association and the University of Delaware Cooperative Extension have some exciting upcoming events planned just for you! Please consider joining us for some of these opportunities.

Wed. July 28th - Cattlemen’s Picnic in the Schabinger building following the conclusion of the Beef Breed Show at the Delaware State Fair (approximately 3:00 p.m.). Drinks, rolls and meat will be provided. All cattlemen welcomed. Attendees are asked to bring a covered dish and to RSVP to Ron Wright by Sunday July 25th at (302) 398-3219. Many thanks to the Delaware Beef Advisory Board (providing the meat) and to Tractor Supply (water trough giveaway) and other local sponsors. Come and hear about the many benefits of belonging to an association and planned activities!

Tues. August 3rd - Grazing Tour- Bill Edwards Bison Farm, Dorchester Co. MD - Bill is a very intense manager of Eastern Gammagrass for both grazing and hay. Eastern Gammagrass is very drought tolerant, but wet soil friendly grass. Please call the Extension Office at (302) 730-4000 or truehart@udel.edu to RSVP by Friday, July 30th and for more details! A car pool will be arranged if interest warrants.
Mon. August 12th- Grazing Tour- University of Maryland Wye Angus Farm- Queenstown, MD - Planning for the establishment of warm season grasses for grazing and their management. Please call the Extension Office at (302) 730-4000 or truehart@udel.edu to RSVP by Friday, August 6th and for more details! A car pool will be arranged if interest warrants.

Sat. August 28th- Beef and Dairy Beef Quality Assurance Training- 10:00 a.m.- 2:30 p.m.- lunch provided, minimal registration fee per operation- location to be announced. Scott Wright, Pennsylvania Beef Quality Assurance Coordinator will be joining us to lead this training. Completing Quality Assurance training is simply part of good management in any livestock industry. The goal of Quality Assurance training is to assure the consumer that all cattle shipped from a beef/dairy beef production unit are healthy, wholesome and safe and that their management has met FDA, USDA and EPA standards. Please consider joining us for this valuable and important training. Contact the Extension Office at (302) 730-4000 or truehart@udel.edu for more information.

Sincerely, Susan Truehart Garey, Extension Agent, Animal Science, University of Delaware

Weather Summary

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

Week of July 9 to July 15, 2004

Rainfall:
0.18 inches: July 11
0.32 inches: July 12
0.43 inches: July 13
0.14 inches: July 14
0.06 inches: July 15

Readings taken for the previous 24 hours at 8 a.m.

Air Temperature:
Highs Ranged from 88°F on July 10 & 11 to 81°F on July 13.
Lows Ranged from 70°F on July 12 to 63°F on July 10.

Soil Temperature:
81°F average.
(Soil temperature taken at a 2 inch depth, under sod)

Web Address for the U of D Research & Education Center:
http://www.rec.udel.edu

Compiled and Edited By:
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Sussex County Extension Agent - Horticulture
University of Delaware

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