**Reminder...**

**The Weekly Schedule Begins - April 7**

If you would like to continue to receive Weekly Crop Update for the rest of the growing season, please fill out the blue form enclosed with this issue. The weekly issues will begin on April 7, 2000 and continue through the month of September. The Weekly Crop Update can be obtained by mail, fax or from the Internet at [http://www.rec.udel.edu/Update00/current.htm](http://www.rec.udel.edu/Update00/current.htm).

If you would like to receive Update by mail or fax, the cost of subscription will remain at $30 (same as last year). If you can access the newsletter via the Internet, there is no charge. We also offer to send an e-mail reminder to those of you who wish to receive one each week. Please forward your e-mail address on the enclosed form or at my e-mail address below. If you received an e-mail reminder in 1999, I will still need to hear from you for 2000. Please forward any comments or concerns to me at 302-856-7303 or at wootten@udel.edu. Thank you.

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**Vegetables**

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

**New Insecticide Registration:** Danitol 2.4 EC insecticide/miticide from Valent recently received a supplemental label for additional uses for a number of crops grown in our area including apples, grapes, head and stem brassica, melons, pear, strawberry and tomato. During the past two seasons, we have tested this pyrethroid insecticide in our spider mite trials on melons. It will provide a good rotational material with Agri-Mek. The use rate for mite control on melons is 10 2/3 oz per acre.

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**Pea Planting Progress and Weed Control** -

Ed Kee, Extension Vegetable Crops Specialist; kee@udel.edu

Pea planting moved along smoothly with good weather until the rains of March 21 and 22. Peas are starting to emerge from the earliest planted fields. It is important to check fields early for emerging weed problems. The only post-emergence herbicide for broadleaf weeds in peas is Basagran. Basagran is more effective when the weeds are small.
Basagran can be applied 1.5 to 2 pints per acre. Do not use crop oil or any other additives with Basagran when sprayed on peas. Check the label for details.

**Phosphorus on Peas** – Ed Kee, Extension Vegetable Crops Specialist; kee@udel.edu

Last year we conducted a strip test in a commercial field of peas to measure response to phosphorus when the soil test was high in Phosphorus. The plots were over 1,000 feet long and replicated six times. We compared zero phosphorus versus 78 pounds of P₂O₅ broadcast before planting. All other nutrients were the same. Yields and tenderometer readings were equal, and the phosphorus content in the leaf tissue samples were exactly the same.

This trial was planted on April 8, near Lewes, with the variety ‘Early Freezer 680’. Nitrogen was applied at 70 pounds per acre for each treatment.

With no response in yield, maturity, or tissue content, it suggests that fertilizer applications of phosphorus on peas when the soil test levels are high are not necessary.

**Winter Temperature Index For Predicting Stewart’s Wilt in Sweet Corn 1993-2000**
- Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu

Corn flea beetles are the overwintering host and vector of *Erwinia stewartii*, the bacterium that causes Stewart’s wilt. Winter survival of the flea beetles can be predicted using a winter temperature index which is calculated by adding the average temperature for Dec., Jan., and Feb. Flea beetles do not survive well when the average temperature is below 27°F for any month. If the temperature is above 33°F, flea beetles may be present in early plantings of sweet corn. The occurrence of Stewart’s wilt on early-planted sweet corn usually corresponds with the ability of flea beetles to overwinter. The following table shows that overwintering is very likely again in Delaware and the prediction would be for a severe Stewart’s wilt season.

Fortunately for Delaware growers resistant varieties of sweet corn have been available for most processing sweet corn. A dependable level of resistance in fresh market sweet corn has been more elusive. Despite years of favorable flea beetle overwintering, we continue to have few losses from Stewart’s wilt. Why? Growers have planted resistant varieties and have effectively used the insecticides that have been available. Growers need to continue to plant the most resistant varieties available and scout sweet corn for flea beetles and treating with insecticides when thresholds are exceeded. The use of seed treatments to control flea beetles is another avenue that is being carefully examined and research is currently underway to see if it will be of value to Delaware growers.
Average monthly temperatures in °F at Georgetown, DE  REC.  1993-2000.

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<tbody>
<tr>
<td>December</td>
<td>40.3</td>
<td>41.3</td>
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<td>42.6</td>
<td>35.0</td>
<td>33.5</td>
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<td>February</td>
<td>39.7</td>
<td>38.7</td>
<td>40.6</td>
<td>41.5</td>
<td>34.7</td>
<td>33.8</td>
<td>36.0</td>
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</table>

INDEX  113.9  119.5  122.5  118.5  101.7  115.8  102.0

Severity Index: < 90, usually absent; 90-100, intermediate; >100, usually severe.

Field Crops

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

Wheat.

During the last week in March and the first week in April, begin to watch wheat fields for the presence of cereal leaf beetle adults.

Adults are small beetles, 5 to 6 mm in length. The head and wing covers of the adult beetles are a metallic blue-black and the area behind the head reddish brown. Although we do not spray for adults, they are a good indication that egg laying will soon begin. In recent years, the threshold for cereal leaf beetle has been adjusted to include sampling for eggs, especially in high management wheat fields. The eggs are elliptical, about 1/32 inch
long, orange to yellow in color when first laid changing to a burnt orange prior to hatching. Generally, eggs are laid singly or in small scattered groups (end-to-end) on the upper leaf surface and parallel to the leaf veins.

You will find most of the eggs within 22” to 4 ½ inches of the main stem. For high management fields, the threshold is based on the presence of eggs and small larvae. Cereal leaf beetle larvae are brown to black, range in size from 1/32 to 1/4 inch long, and eat streaks of tissue from the upper leaf surface. Since cereal leaf beetle is often unevenly distributed within the field, it is important to carefully sample fields so that you do not over or under estimate a potential problem. Eggs and small larvae should be sampled by examining 10 tillers from 10 evenly spaced locations in the field while avoiding field edges. This will result in 100 tillers (stems) per field being examined. Eggs and larvae may be found on leaves near the ground so careful examination is critical. You can also check stems at random while walking through a major portion of the field and sampling 100 stems. In high management fields with good yield potential and/or where the potential for cereal leaf beetle problems is high, the threshold of 25 or more eggs and/or small larvae per 100 tillers should be used. If you are using this threshold, it is critical that you wait until at least 50 - 60% are in the larval stage (i.e. after 50% egg hatch). If the egg/larva threshold is not used, the threshold of 0.5 larvae per stem and 10% defoliation can provide enough lead-time to provide good control if fields are scouted on a routine basis. A number of products are labeled for cereal leaf beetle control. Sevin will provide good control although experience in 1996 demonstrated that it could result in aphid explosions by reducing predator populations. Furadan provides good control; however, it can not be applied once grain is heading. Lannate and Warrior provide good control of the entire insect complex present in small grains (cereal leaf beetles, aphids, armyworm and grass sawfly). If you are using the egg threshold, Warrior may be the best option due to its longer residual nature. Warrior is still only labeled on wheat.

**Winter Wheat - Did This Week’s Heavy Rain Affect Nitrogen Availability?** - Richard W. Taylor, Extension Agronomist; rtaylor@udel.edu

Many are probably wondering what effect this week’s rainfall had on the amount of nitrogen available to their winter wheat crop. The answer is not necessarily clear since it can be influenced by many factors. Factors can include how recently the nitrogen was applied, how much was applied, whether nitrogen will be applied in multiple applications, what form the nitrogen was in, how large the wheat plants were, how much applied nitrogen was taken up by the wheat, temperature, soil type (top soil and subsoil), and many more. Certainly late-planted wheat growing on sandy soil that was topdressed very recently will be most at risk if a split application was not planned.

Is there anything that can be done other than waiting and watching for nitrogen deficiency symptoms to appear? A wheat tissue test can be taken around Feekes growth stage 4 or 5 which is after full tillering and when the leaf sheaths begin to lengthen (Feekes 4) or when the leaf sheaths are strongly erect (Feekes 5). The closer you sample to Feekes 5 the more accurate the test is for predicting whether the plant has optimum N uptake for maximum economic yield. If you make arrangements with a commercial lab ahead of time, turnaround time is minimal and the results can be faxed to you or you can call in for the results so there will be time to apply a final nitrogen application if called for by the tissue test.

To take a tissue test, you need to obtain a good plant tissue sample about the size of what can be held in one hand. The process is similar to taking a good soil sample. Unusual areas of the field should be avoided. A tissue sample is taken by cutting a handful of wheat at 20 to 30 representative areas across a field. The top growth should be cut about ½ inch above the soil line and all soil particles and dead leaf tissue should be
removed. Place the samples in a large, clean paper bag and mix the total sample after collection. Take about three handfuls of the mixed sample and place it in a clean paper bag or in the sample bag provided by the laboratory. Ship samples as quickly as possible to the lab, do not store longer than 24 hours after collection, and never package tissue in plastic bags.

For interpretation when the tissue nitrogen level is determined, use the following guidelines from Virginia. If the percent nitrogen is 4.85 or higher, no additional fertilizer is needed. At 4.5 percent, apply 15 lb N/A. At 4.0 percent, apply 35 to 40 lb N/A and at 3.5 percent apply 60 lb N/A. Finally, at 3.0 percent, a full shot of 80 lb N/A will be needed.

For those growing barley, I have not seen data that reliably predicts yield from tissue nitrogen levels. Since barley is usually so much ahead of wheat and has a much lower tolerance of excessive nitrogen fertilizer, the best advice for barley is not to add more nitrogen at this stage. Barley was likely to have been large enough to have accumulated adequate nitrogen by the time the rains fell.

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**Weeds Resistant to ALS-Inhibiting Herbicides** - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Weeds resistant to ALS-inhibiting herbicides have been identified in Maryland and there are suspected fields in Delaware. These fields have had a history of repeated use of the same herbicide (mostly Pursuit). All ALS-inhibiting herbicides work on the same enzyme in the plant, these herbicides are very specific to this one enzyme (acetolactate synthase, hence ALS-inhibiting herbicide). Furthermore, these herbicides have soil-activity as well as foliar-activity so the weeds are exposed to the herbicides over a period of time. Usually weeds resistant to one ALS-inhibiting herbicide are often resistant to other ALS-inhibiting herbicides even though the second herbicide has never been used in the field. This is referred to as “cross-resistant”. Take home message is do not use herbicides repeatedly with the same mode (or site) of action in the same field. Do not make more than two consecutive applications of herbicides with the same mode of action to the same field unless other effective control practices are included in the management system.

A list of ALS-inhibiting herbicides follows. Prepackaged mixtures with ALS-inhibiting herbicides are also given with the specific herbicide in parenthesis. Some prepackaged mixtures contain more than one ALS-inhibiting herbicide.

<table>
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<tr>
<th>Com Hericides</th>
<th>Soybean Herbicides</th>
<th>Others</th>
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<tr>
<td>Python</td>
<td>Classic</td>
<td>Harmony</td>
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<td>Accent</td>
<td>FirstRate</td>
<td>Extra</td>
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<td>Beacon</td>
<td>Pinnacle</td>
<td>Matrix</td>
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<td>Permit</td>
<td>Pursuit</td>
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<td>Pinnacle</td>
<td>Raptor</td>
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<td>Scepter</td>
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<td>Premixes:</td>
<td>Premixes:</td>
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<tr>
<td>Basis</td>
<td>Backdraft</td>
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<tr>
<td>(Pinnacle/ Matrix)</td>
<td>(Scepter)</td>
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<tr>
<td>Basis Gold</td>
<td>Broadstrike+Dual SF</td>
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<td>(Accent/ Matrix)</td>
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REMINDER…
New Weed Control Guides Are Available - They Are Free - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Available from your county extension office are two weed management guides for assistance in weed control in corn and soybeans. There is a separate guide for corn and soybeans. The first half of each guide deals with soil-applied herbicides and the second half is for postemergence herbicides. These guides have pre-mixes and what is in the pre-mix, expanded weed control tables, information on application timing, comments for each of the herbicides, and much more. Contact your county extension office for these free guides.

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

Drought Concerns Become Major Factor in Commodity Markets
Until recently, the futures market has paid little attention to the fact that most of the U.S. soybean and corn
cropping area has been precipitation deficient since the beginning of July 1999. A substantial amount of snow and rain normally accumulates over the corn belt through the fall and winter months. The moisture shortage is probably due to the ongoing effects of the La Nina weather phenomena. In any event, the opportunity to substantially correct 'subsoil' moisture conditions has probably passed. Recent rains and snows have been sufficient only to marginally improve 'topsoil' moisture.

Topsoil moisture conditions may be expected to improve over the month of April as the planting season approaches. However, it is unlikely that enough precipitation will be received to amend subsoil moisture conditions (the jury is still out on the overall effect on the corn belt of this week's rains, however, large areas in corn belt states such as Illinois, Indiana, Iowa, Nebraska, and Ohio are in need of substantial rainfall in order to alleviate drought concerns). The lack of subsoil moisture will make timely rains during the growing season much more important than usual. Repeated news service stories about these conditions will increase the markets focus on new crop corn and soybean growth and development. The resulting news "over play" will expand speculative activity in the commodity markets.

Considering comparisons to other drought years('56,'76, and '88) and trend line yields, the range in the national corn yield estimate is from 103-134 bushels per acre. Applied to a ball park harvest figure of 70 million acres, gives a total corn crop of 7.14-9.45 billion bushels. Demand is estimated at 9.65 billion bushels for the year, so the situation we are in now indicates a mildly bullish price outlook.

**Market Strategy**
Local forward cash pricing opportunities for new crop wheat and soybeans continue to be below the 2000 loan rates ($2.67 for wheat; and $5.36 for soybeans). No forward cash sales are warranted at this time.

Initial pricing decisions for new crop corn have been completed. Considering the potential for drought in the corn belt and the fact that drought is normally not mentioned this early in the marketing year, no further sales are warranted at this time.

**REMEMBER...**

**2000 Pest Management Recommendations for Field Crops and the 2000 Commercial Vegetable Recommendations Guide Available at Local Extension Offices**

You may obtain copies of the Pest Management Recommendations for Field Crops and the Commercial Vegetable Recommendation Guide from your local county Extension office or by mail from the Research & Education Center in Georgetown. The cost of the Pest Management Recommendations for Field Crops is...
The cost for the Commercial Vegetable Recommendations Guide is $7.00. Please use the enclosed form and make checks payable to “University of Delaware” and allow one week for the delivery of the books.

UPCOMING MEETINGS:

March Pesticide Applicator Training Session & Exam

March 29 & 30

Day 1: training 8:30 a.m.-4:00 p.m.
Day 2: training 8:30 a.m.-Noon
Day 2: Exam starts at 1:00 p.m.

Poultry Grower Informational Meeting:

"Your Responsibilities Under Delaware’s Nutrient Management Law"

Tuesday, April 4
Gumboro Fire House
Gumboro, DE
7:00 – 9:00 p.m.

Thursday, April 6
University of Delaware
Research & Education Center
Georgetown, DE
7:00 – 9:00 p.m.

If you are a poultry grower in Delaware with more than 3,200 broilers or if you use poultry manure in your farming operation, in the near future, you will be required to implement an animal waste management plan or a nutrient management plan. Members of the Nutrient Management Commission (including poultry growers representing your interests on the Commission) along with the program administrator and University
Cooperative Extension Personnel will present details of the law and answer your questions. More important, this is an opportunity for you to express your views on details of the regulations as they are being developed.

This informal program will provide information on and answers to:

- An introduction to the Delaware Nutrient Management Commission and what it does.
- Review of the Nutrient Management Law.
- As a grower, if you need an animal waste management plan or a nutrient management plan.
- What will an animal waste management plan and nutrient management plan entail?
- If you use poultry litter, what will be required of you in the future?
- What are certified nutrient handlers and what are the requirements for the four categories: nutrient generator, private nutrient handlers, commercial nutrient handler and nutrient consultant?
- What are the rules on manure stockpiles?

There is no charge or registration for this meeting. If you have questions, please call Jeanie Johnson at 302-856-7303 or jeanie@udel.edu.

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**Weather Summary**

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<td>0.22 inches : M arch 12, 2000</td>
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<td>0.32 inches : M arch 16, 2000</td>
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<td>0.89 inches : M arch 17, 2000</td>
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<tr>
<td>3.13 inches : M arch 21, 2000</td>
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<tr>
<td>0.54 inches : M arch 22, 2000</td>
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Readings taken for the previous 24 hours at 8 a.m.

**Air Temperature:**

- Highs Ranged from 78 °F on March 9 to 37 °F on M arch 18.
- Lows Ranged from 56 °F on March 9 to 24 °F on M arch 18.

**Soil Temperature:**

- 50.4°F average for the week.
- (Soil temperature taken at a 2 inch depth)

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Compiled & Edited By:

Tracy Wootten
Extension Associate - Vegetable Crops

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I would like to subscribe to the **WEEKLY CROP UPDATE NEWSLETTER** for 2000
Please send $30 and this form to:

Tracy Wootten  
University of Delaware Research & Education Center  
R.D. 6, Box 48  
Georgetown, Delaware 19947

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Do you want to receive the "Weekly Crop Update" via FAX  
☐ YES  ☐ NO

Please send me ___ copy (ies) of the **2000 Commercial Vegetable Recommendations Guide**. They are $7.00/ book.

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Please send me ___ copy (ies) of the **2000 Pest Management Recommendations For Field Crops**. They are $10.00/ book.

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