Sweet Corn Seed and Planting - Ed Kee, Extension Vegetable Crops Specialist; kee@udel.edu

As mentioned last week, sweet corn planting is underway, and will continue through May and into June. The kernel, or seed, is composed of three principal parts: pericarp, endosperm, and embryo. The pericarp is the protective layer. The endosperm is the source of stored energy, or carbohydrates, or simply said, starch. It is this starch that fuels the growth of the embryo, which is essentially the main stem and modified leaves. Most corn varieties have five embryonic leaves in the seed, fed as the seed germinates by the stored food in the endosperm. Corn has a relatively large embryo and endosperm, allowing it to germinate quickly under ideal conditions, and even to survive under cooler conditions. We have all seen sweet corn emerge in 2-3 days when soil temperatures are 75°F, and we have all gone through the anxiety of 14 days or more of germination under cool, wet conditions with soil temperatures down in the low 50°F's and even the 40°F's.

Over the last twenty years, sweet corn varieties have been developed that utilize genes that trigger higher sugar content. Depending on the genes involved, they are known as supersweets, sugar enhanced, sweet breeds, or syngertistic types. While this is great for sweeter tasting hybrids that last longer in the market place, it does present challenges at planting time. These varieties have lower levels of stored carbohydrates, or starch in the endosperm, making germination a “iffier” proposition, especially under stressful, cooler conditions.

The seed industry and growers have been successful in resolving this potential problem by using slower drying techniques during seed processing, carefully handling the seed to reduce cracking damage to the kernels, fungicide and other seed treatments, planting at shallow depths, and planting these types during later, warmer periods of the planting season.

Farmers in Delaware and on the Eastern Shore of Maryland plant over 30,000 acres of sweet corn destined for fresh market and processing.

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

Springtails.
After a period of rain, we often receive calls asking about “heavy flea beetle populations” as well as complaints about soil insecticide failures on potatoes and sweet corn. On closer inspection, what we generally find are garden springtails. They are tiny wingless insects with distinctive heads and a hump-backed appearance. Their name comes from a forked
structure attached to the underside of the abdomen that acts like a spring to flip them into the air. This behavior gives them the appearance of tiny flea beetles or fleas. In most cases, they rarely cause enough damage to warrant control measures. Most springtails live in rich soil or leaf litter, under bark or decaying wood, or associated with fungi. Many are scavengers, feeding on decaying plants, fungi, molds, or algae. Springtails become abundant in wet soil and plant material. Most springtails do not survive in dry conditions. As the soil dries out, populations should decline rapidly.

**Potatoes.**
Since the earliest planted potatoes have emerged, begin sampling for Colorado potato beetle adults, especially if Admire, Platinum or Tops MZ Gauchio were not used at planting. A treatment should not be needed for adults until you find 25 beetles per 50 plants and defoliation has reached the 10% level. Actara, Spintor or Provado will provide good control of adults and larvae. We have not caught any corn borer moths in our blacklight traps so far this season.

**Sweet Corn.**
As soon as the first plants emerge be sure to look for cutworm feeding damage. Variegated cutworm is often present in early-planted fields. In general, this species is the first cutworm causing damage to early-planted sweet corn. Regardless of the species, a cutworm treatment should be applied if you find 10% leaf feeding or 3% cut plants in one-two leaf stage corn. A pyrethroid or Lorsban will provide control. Fields should be treated early in the morning or early evening when cutworms are close to the soil surface to achieve the best control. In addition to cutworms, be sure to watch for flea beetles on your earliest planted corn. 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. A pyrethroid or Sevin will provide control.

---

**Field Crops**

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

**Alfalfa Weevil.**
We are starting to see an increase in alfalfa weevil feeding so be sure to check fields for larvae during the next 7 day period. Since third instar larvae can now be found, we should begin to see a significant increase in feeding damage. Once larvae are detected, the following thresholds should be used: up to 11 inches tall - 0.7 per stem; 12 inches - 1.0 per stem; 13 - 15 inch - 1.5 per stem; 16 inches tall - 2.0 per stem and 17-18 inches tall - 2.5 per stem.

**Field Corn.**
During the past week, black cutworm trap catches increased significantly in most areas of the state (for the most recent trap catches see trap catch table on the last page or check our website at http://www.udel.edu/IPM/traps/currentbcwtrap.html). Although moth catches of 9 to 15 moths per 7-day period can indicate a moderate to high potential for outbreaks, weather conditions, predation and disease after egg laying can also dictate if you will see a potential problem. Since populations peaked in most locations, you can expect to see cutting activity around 300 degree-days, base of 50°F starting April 20 (peak catch). As soon as corn emerges, watch for early signs of cutworm leaf feeding which could appear as small pinholes when larvae are small. This damage often provides an indication of where you will see cut plants in the next week. No treatment will be needed until you find 10% leaf feeding or 3% cut plants on 1-2 leaf stage corn. On 3-4 leaf stage corn, the treatment threshold is 5% cut plants.

**Small Grains.**
We continue to find low levels of cereal leaf beetle eggs and the first larvae have been found on the lower shore. In addition, we are just starting to see our first true armyworm moths flying and laying eggs in fields. With the overall cooler conditions, cereal leaf beetle egg hatch
and moth flights are delayed so be sure that you do not apply your insecticides too early.

The following information was reported by Ames Herbert, from VPI at the end of last week:

"After searching wheat fields for nearly 5 weeks, we are finally finding a few fields with adult beetles and eggs. The outbreak is considerably later than normal because of the late spring. Late spring cool temperatures delayed adult activity and egg laying. Based on what we are finding in many of the fields we have searched and based on the input from several of you, CLB populations seem to be very spotty - that is, they are absent in many fields and present in just a few. However, we have found at least one field with a large population - an average of almost 40 eggs per row foot of wheat which is almost twice the economic threshold. They are following the known pattern, that is, CLB populations are most abundant in fields with sparse wheat foliage, cover-crop plantings, or late planted fields.

What do we recommend? Scout fields to find the threshold populations (25 eggs/small larvae per 100 stems). Tank mix insecticides with other treatments (fungicides) if they are going to be applied. If applications are for CLB populations that are mostly in the egg stage, use the high rate of Mustang Max (4.0 oz/acre) or 2.0 oz of Warrior T. Based on our past field tests, it will take this higher rate of Mustang Max to provide the same level of residual control as the Warrior T, that is needed to last the rest of the infestation period. If you wait to treat until the population is older (all eggs hatched and only larvae present), then lower rates of Mustang Max will work well."

Field Crops Diseases - Bob Mulrooney, Extension Plant Pathologist, bobmul@udel.edu

Wheat.
Disease pressure is fairly light at the present time. I am still seeing what I believe is wheat spindle streak mosaic virus in some fields, on the lower leaves. Powdery mildew occurrence appears to be low at the present time.

Fungicides for Disease Control.
Quilt fungicide, manufactured by Syngenta, has recently been labeled for use on several crops, including wheat. Quilt is a combination product containing 11.7% propiconazole + 7.0% azoxystrobin. By way of reference, the other Syngenta foliar fungicides labeled for wheat, Tilt and Quadris, contain 41.8% propiconazole and 22.9% azoxystrobin, respectively. Quilt is a broad-spectrum fungicide with some curative properties, but it is best used preventively, before significant infection by fungal pathogens occurs.

Quilt is labeled for use at 7-14 fl. oz./A. The other propiconazole products, Tilt, and the Bayer product, Stratego, have 24 c registrations that allow application up to head emergence, Quilt must be applied BEFORE complete flag leaf extension occurs. This use restriction greatly limits the use of Quilt in our area. Tilt and Stratego are excellent fungicides as well, and can be applied when disease control needs are greatest, head emergence. Flag leaf or earlier applications have been shown to be economical only when early powdery mildew is a problem or the rare times when epidemics of other foliar diseases “kick in” earlier than normal. Nevertheless, almost all research and experience in Kentucky over the past 20 years indicates that flag leaf applications simply do not provide the late-season disease protection needed in most years. In Delaware, if fungicides can be delayed as late as possible according to the label, protection of the upper leaves from powdery mildew, Septoria leafspots, tan spot and rust usually occurs. The current label for Quilt limits its effectiveness for use in Delaware. If there is no or little powdery mildew present, I would recommend using Tilt or Stratego at head emergence or if powdery mildew is not present or you have a powdery mildew resistant variety wait until full head emergence and apply Quadris or Headline. Of course if disease is present in sufficient amounts to warrant sprays, applications need to be made at the appropriate time. The benefits of applying Tilt, Quadris, or Headline for straw brightness and control of...
sooty molds on the heads depends on the late application as well.

After all of the late foliage diseases such as Septoria last season many growers are not taking any risks in their disease control program and that is understandable, but disease pressure now seems to be low. Powdery mildew in our field plots has not appeared yet and no other diseases are present. Delaying applications as long as labeled should provide protection if the weather should be warm and rainy during flowering, grain fill, and ripening from Septoria leafspots and glume blotch, tan spot and rust.

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

Commodity Markets Remain Strong Based Upon Favorable Fundamentals.

Corn and soybean futures contracts continue to bid in a volatile manner as fundamental news begins to unfold for ’04 crop production. Recent examples of favorable news items worthy of mentioning include: "February ethanol output sets another record", "brisk pace to new crop soybean sales", "Brazilian agricultural ministry cuts their crop to 50.2 mmt (below trade and USDA forecasts)", "a potential frost warning in the Northwest section of the corn belt is forecast again for this weekend", and "hot and very windy conditions were reported in the Western portion of the corn belt yesterday". Perhaps a negative factor pertains to ‘the rapid pace of ’04 corn and soybean plantings’.

The significance of the types of rumors, and forecasts expressed above is that until ’04 crop development becomes more defined, these fundamental rumors and forecasts are likely to be price supportive at least until the rumor or forecast becomes fact. Remember the old adage ‘buy the rumor, sell the fact’. There appears to be enough favorable fundamental factors impacting the commodity futures markets right now to continue placing a hold on advancing new crop sales. Those with all of their ’04 crop production unpriced may want to consider taking 10 to 20% of intended new crop production at current price levels. Contact Carl German at 302-831-1317 for technical assistance.

**UPCOMING MEETINGS:**

**ATTENTION HORSE OWNERS!**

YOU’RE INVITED!

All equine owners are invited to a Colic Seminar on Saturday, May 15, 2004 at the Kent County Extension Office in Dover, DE from 9:00 – 11:00 a.m. Dr. David Marshall, Equine Extension Veterinarian of the University of Delaware, will be speaking on colic prevention, symptoms, and treatment. A short “Ask the Vet” question and answer session will follow. Light breakfast refreshments will be available. For directions and to register for this event, please call (302) 730-4000 by May 13th.

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

**2004 Wye Research Center’s Spring Strawberry Twilight Meeting**

What: The 2004 Wye Research Center’s Spring Strawberry Twilight Meeting
Where: University of Maryland  
Wye Research and Education Center  
Queenstown MD

When: Thursday, May 20, 2004  
6:00 PM

Who: University and USDA Small Fruit Specialist

What will I see?
1) 2003/04 Annual plasticulture system: evaluation of Fall deployment date of floating row covers, planting date and varieties.
2) High tunnel production for Fall and Spring harvest
3) Greenhouse production system for early Spring harvest, utilizing, dormant, multi-crowned plants.

Pre-registration not required.

For more information and directions:
Contact: Debby Dant at 410-827-8056, ddant@umd.edu or Michael Newell at 410-827-7388, mnewell@umd.edu

Weather Summary
http://www.rec.udel.edu/TopLevel/Weather.htm
Week of April 23 to April 28, 2004

Rainfall:
0.25 inches: April 23
0.58 inches: April 26
0.11 inches: April 27

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

Air Temperature:
Highs Ranged from 84°F on April 23 to 58°F on April 25 & 28.
Lows Ranged from 56°F on April 26 to 40°F on April 28.

Soil Temperature:
62°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:
Tracy Wootten
Sussex County Extension Agent - Horticulture
University of Delaware

Univeristy of Maryland  
Wye Research & Education Center  
Spring Crops Tour

May 19, 2004  
6:30 p.m.

The Wye Research and Education Center's Spring Crops Twilight tour, originally scheduled for May 20, has been rescheduled to May 19th at 6:30. Topics of interest will be small grain varieties, current weed, disease or insect issues and any topic of immediate agronomic concern.

Refreshments will be supplied. Event will be held rain or shine. Call Mark Sultenfuss at 410-827-7388 with any questions or topic suggestions.

Cooperative Extension Education in Agriculture and Home Economics, University of Delaware, Delaware State University and the United States Department of Agriculture cooperating. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Delaware Cooperative Extension, University of Delaware. It is the policy of the Delaware Cooperative Extension System that no person shall be subjected to discrimination on the grounds of race, color, sex, disability, age or national origin.
### 2004 Black Cutworm Pheromone Trap Counts

**Trapping date: April 20 - 26, 2004**

<table>
<thead>
<tr>
<th>Location</th>
<th>Count</th>
<th>Location</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridgeville</td>
<td>49</td>
<td>Little Creek</td>
<td>67</td>
</tr>
<tr>
<td>Delmar</td>
<td>27</td>
<td>Magnolia</td>
<td>28</td>
</tr>
<tr>
<td>Ellendale</td>
<td>2</td>
<td>Milford</td>
<td>5</td>
</tr>
<tr>
<td>Felton</td>
<td>2</td>
<td>Millsboro</td>
<td>7</td>
</tr>
<tr>
<td>Frederica</td>
<td>38</td>
<td>Milton</td>
<td>4</td>
</tr>
<tr>
<td>Georgetown (UD REC)</td>
<td>13</td>
<td>Sandtown</td>
<td>3</td>
</tr>
<tr>
<td>Greenwood</td>
<td>11</td>
<td>Seaford</td>
<td>11</td>
</tr>
<tr>
<td>Harrington</td>
<td>3</td>
<td>Selbyville</td>
<td>8</td>
</tr>
<tr>
<td>Kenton</td>
<td>10</td>
<td>Smyrna</td>
<td>13</td>
</tr>
<tr>
<td>Laurel</td>
<td>62</td>
<td>Wyoming</td>
<td>20</td>
</tr>
<tr>
<td>Leipsic</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lewes</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lincoln</td>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>