Dave’s Ramble

Summer dirt, it has to be good for the soul and possibly healthy too! There is something fun, whimsical about getting absolutely dirt covered. Nothing lightens the mood more then watching a 4-H'er's expression as the show duck, which they are so proudly holding, craps on their pants. Finally, it’s in the summer when mothers quit fussing about being clean and just give in to the inevitable dirt bath of their children; it’s not just children either.

I remember working in the crawl space of my grandmother's house when “Whew!” My grandfather burst into laughter for no apparent reason. After regaining his composure he exclaimed, “Just listen! Your grandmother’s pacing upstairs. She can’t bear the thought of us wallowing in this filth and coming back into the house. We will be forced to strip!” We did not even make it to the first step before the door opened and the reentry orders were issued.

Mothers seem to have the most angst with their children’s summer dirt baths. This may be due to some ingrained imaginations of the Queen Mother making a surprise visit at the height of the little darlings' earthly play. It never ceases to amaze me how often children are told, “Don’t get your clothes dirty!” In the summer children need to be in play clothes and old sneakers at all times. They should be encouraged to run, jump and roll in as much dirt and dust as avails. They will beam with pride, certainly a great satisfaction, as their mother exclaims,

“Look how dirty your bath water is!” The truly remarkable thing is how well we all clean up after a nature romping.

Our society needs to lighten up and declare that dirt filled summer fun is back! Get those kids out of the house and outside where they belong. Just let dirt happen; it’s bound to!
**Annual Field Crops Research Twilight Barbecue & Ice Cream Social**

CMREC, Upper Marlboro Farm
August 9, 2007

You are invited to attend a twilight wagon tour of the University of Maryland Upper Marlboro Research Farm, on Thursday, August 9, 2007 from 4:30 p.m. to 8:30 p.m. Maryland Cooperative Extension will host this Annual Field Crops Research Twilight Barbecue & Ice Cream Social.

Served after the barbecue, “Old-fashioned” homemade ice cream! It’s “old fashioned” ice cream because we will be using a 1929 Fair-Banks Morse antique gas engine to do the cranking.

This event will highlight all field crops, agronomic and horticultural research projects currently conducted at the CMREC Upper Marlboro Farm, possibly including but not limited to the following:

♦ Vegetable IPM
♦ Weed Control
♦ Vineyard Projects - Table and Wine Grapes
♦ Corn Stalk Nitrate Test Study
♦ P Phyto-Remediation Grain vs. Forage Systems
♦ Peach & Beach Plum Research
♦ Ethnic and Specialty Vegetables
♦ Strip-Till/No-Till Vegetable Production Techniques
♦ Blueberry Project

**2007 MDA Pesticide Container Recycling Collection**

There is one relatively close site for Anne Arundel and Prince George’s County farmers to dispose of their empty and rinsed pesticide jugs. Central and Southern Maryland farmers may also drop-off their rinsed pesticide containers for recycling at the Beltsville, USDA Research Center, Building 302, Visitor Center on Powder Mill Road, on July 19, 2007; August 23, 2007; and September 27, 2007, from 9:00 a.m. to 3:00 p.m. each collection day.

Additional information on the required rinsing of the pesticide containers and the recycling program can be obtained by calling the MDA Pesticide Regulation Section Office at 410 841-5710.

**Vegetable IPM**

**Cucurbit Downy Mildew**

Ed Kee; Extension Vegetable Specialist, kee@udel.edu; Bob Mulrooney; Extension Plant Pathologist, bobmul@udel.edu; Kate Everts; Vegetable Pathologist, University of Delaware and University of Maryland, keverts@umd.edu

Downy mildew is now widespread in eastern North Carolina. Before this outbreak, the only field confirmations were in Florida and southern Texas. There was an infected greenhouse in Ontario, Canada, which resulted in limited disease spread to Ohio and possibly Michigan. Despite the presence of cucumbers in Georgia and South Carolina, the fungus seems to have jumped those states, or infection in those states has gone unreported.

We are recommending that cucumber fields that have fruit less than ¾ inch long be sprayed preventatively for downy mildew. Growers need to be vigilant by scouting for early infections and watching the website reports from North Carolina State at: http://www.ces.ncsu.edu/depts/pp/cucurbit/

The latest forecast states “Special note...though growers in the Delmarva peninsula region are considered as low risk, they should pay attention over the next few days”. It is not known how long the eastern areas of North Carolina have been infected and producing spores that have blown our way over the last week. The forecast does not take previous days into account. Our experience since the epidemic year of 2004 indicates that with the earliest possible detection, we can get ahead of the disease and stay ahead with aggressive spray programs. Pickles that have fruit larger than ¾ inches long may be close enough to harvest that any spores that arrive soon would not be able to damage the crop and would not require a protective spray at this time. Previcur Flex and chlorothalonil, followed by Tanos and mancozeb seven to ten days later remains the core of the program.

**Fungicide programs should contain either:**

♦ Previcur Flex 1.2 pt plus Bravo 2 pts or Ranman plus an organosilicone adjuvant such as Silwet 2 oz/A alternated with Tanos 8 oz plus 1.5-2.0 lbs Manzate or Dithane DF or
♦ Tanos 8 oz plus Bravo 2 pts alternated with Ranman 2.75 oz plus 2 oz Silwet.

**Other fungicide programs that have shown promise in replicated university trials include:**

♦ Tanos 8 oz plus 3 pts Bravo alternated with 3 pts Bravo
♦ Tanos 8 oz plus Manzate 1.5-2.0 lbs alternated with Curzate 3.2 oz plus 2 pts Bravo.

One of the most dependable programs over the last few years has been the Previcur Flex 1.2 pts plus Bravo Weather Stik 2 pts alternated with Tanos 8 oz plus 1.5-2.0 lbs Manzate Pro-Stick or Dithane DF.

A conservative (less expensive) approach to consider might be to apply 2.0 lbs of an EBDC fungicide (Manzate or Dithane) or Gavel at 2 lbs preventatively until the disease is confirmed in the area then switch to Previcur or Ranman alternation with Tanos.
Each spray costs approximately $25 per acre. With 6,000 acres of pickling cucumbers in the region this is $150,000 per spray; or for a grower with 300 acres of pickles, it’s $7,500 per spray. Multiply the cost by two or three sprays per planting and the economics pressurize the profitability of the crop. However, one could argue that with an outbreak of downy mildew, there is a risk of total crop loss. This, fortunately, has not been the case with the early detection during the last three years. However, we have learned from research that preventative sprays are the best and therefore, when downy mildew is very close by, sprays should be applied.

This approach of vigilance, scouting, and watching the website works here because of the great cooperation between consultants, scouts, the industry and the growers. If and when downy mildew is confirmed on Delmarva, the word spreads quickly and the industry reacts quickly. Consequently, real money is saved by detection early in the season.

**Potato Disease Advisory**

*June 29, 2007*

Bob Mulrooney, Extension Plant Pathologist

**Disease Severity Value (DSV) Accumulation as of June 28, 2007** is as follows:

<table>
<thead>
<tr>
<th>Date</th>
<th>Late Blight DSV</th>
<th>Early Blight DSV</th>
<th>Spray Recs</th>
<th>Accumulated P days*</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/8-6/11</td>
<td>0</td>
<td>10</td>
<td>10 days</td>
<td>324</td>
</tr>
<tr>
<td>6/12-6/13</td>
<td>2</td>
<td>12</td>
<td>10 days</td>
<td>341</td>
</tr>
<tr>
<td>6/14-6/18</td>
<td>0</td>
<td>12</td>
<td>10 days</td>
<td>383</td>
</tr>
<tr>
<td>6/19-6/20</td>
<td>2</td>
<td>14</td>
<td>10 days</td>
<td>400</td>
</tr>
<tr>
<td>6/21-6/25</td>
<td>0</td>
<td>14</td>
<td>10 days</td>
<td>443</td>
</tr>
<tr>
<td>6/25-6/26</td>
<td>1</td>
<td>15</td>
<td>10 days</td>
<td>449</td>
</tr>
<tr>
<td>6/26-6/27</td>
<td>0</td>
<td>15</td>
<td>10 days</td>
<td>454</td>
</tr>
<tr>
<td>6/27-6/28</td>
<td>1</td>
<td>16</td>
<td>10 days</td>
<td>460</td>
</tr>
</tbody>
</table>

* P days: We use the predictive model WISDOM to determine the first fungicide application for prevention of early blight as well. The model predicts the first seasonal rise in the number of spores of the early blight fungus based on the accumulation of 300 physiological days (a type of degree-day unit, referred to as P-days) from green row. To date, **454 P-days** have accumulated at the site.

**Early blight and black dot.** Many fields are flowering or have flowered and this is a good time to consider switching to an application or two of Gem, Headline or Quadris (Amistar) for early blight susceptible varieties. This can also be helpful for late season varieties including russets if stress makes plants susceptible to black dot later. Make one or two applications at the end of flowering and repeat 14 days later. Apply mancozeb or chlorothalonil 7 days later between the two applications.

For specific fungicide recommendations, see the EB 236 2007 Maryland Commercial Vegetable Production Recommendations Book.

**Bacterial Leaf Spot on Pepper**

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

Bacterial leaf spot (BLS) is a common problem in peppers. Initial lesions are small brown or black spots that have a yellow “halo”. Lesions will expand and be irregular and infected leaves often will fall off the plant. Under the right conditions the lesions look “glossy”. There are several pre-plant practices that will minimize damage from this disease. For information on cultivar resistance, seed disinfection, minimum rotation and transplant production see Delaware Extension Bulletin 137 or Maryland Extension Bulletin 236.

If BLS is present in your field there are several practices that will minimize (but not eliminate) losses. In fields where disease is not widespread, rouge infected plants. Protect pepper plants and reduce the spread of BLS with applications of fixed copper at 1 lb active ingredient/A plus either Tanos at 8-10 oz 50WDG/acre or maneb at 1.5 lb 75DF/A. Begin applications shortly after transplanting and apply on a 7 to 10 day schedule.

Two practices also may minimize losses to BLS during the growing season. First, avoid field operations when the foliage is wet because the bacterium is easily spread in water. Second, maintain a high level of fertility to help the plants reproduce leaves lost due to disease. However, do not over-fertilize, because fruit set and yield may be reduced.

**Deformed & Poorly Ripening Tomato Fruit**

Jerry Brust, IPM Vegetable Specialist, University of Maryland, jbrust@umd.edu

Several growers have complained that their second set of tomatoes is catfaced or is deformed and ripening poorly. Their first set of tomatoes looked good, but the second set is having problems in scattered areas throughout the field. The problem is most probably due to stressful growing conditions and the cool (even cold) night temperatures we had about 40 days ago. Tomato fruit take approximately 45 days from flower to harvest and usually do not develop or pollinate properly when temperatures fall below 52°F. Back in the second and third weeks of May we had 10 nights of temperatures below 52°F in many areas on the peninsula. In Salisbury we went down to 39°F on one night in late May. Day temperatures during some of this time were in the upper 80s or low 90s so the fluctuation between day and night temperatures was extreme during several 24 hour periods. These large fluctuations in temperature and the lack of rain we have had can cause stressful growing conditions for the plant as the fruit develops. Some varieties
will be more sensitive to these fluctuations than others. Nothing can be done for these misshapen fruits as the damage was done either before the flowers appeared on the plant or soon after pollination.

“Zippering” symptom on fruit caused by pollination problems or stressful growing conditions

“Catfacing” caused by air temperatures below 52°F before flower appeared on plant

Where Are All the Cucumber Beetles?

Jerry Brust, IPM Vegetable Specialist, University of Maryland, jbrust@umd.edu

I have been amazed this year as I walk cantaloupe, watermelon and squash fields how few cucumber beetles there are. It may have something to do with the winter we had of unusually warm temperatures into January and then the very cold temperatures in February and March. The dry weather we have been having this year also may have something to do with the low populations. If you also have seen few beetles hopefully you have cut back or cut out your foliar sprays for cucumber beetle control. Plants are generally so big now that it would take many beetles per plant to infect the plant with bacterial wilt. Fruit should be watched to make sure beetles, if they do come in late, are not feeding on the rind. A low population this summer does not, unfortunately, translate into low populations for next year.

Strawberry Renovation & Summer Cultural Practices

Gordon Johnson, Kent County Extension Agriculture Agent, gcjohn@udel.edu

With the relatively cool spring and late start, strawberry harvest was extended well into mid June in many locations. Renovation is necessary after the last harvest in matted row systems and plasticulture beds that will be carried over a second year.

Matted Row Systems

In matted row strawberries, the goals in renovation are to reduce plant numbers by narrowing the rows, remove old foliage (reduces diseases), control weeds, reduce insect and mite pests, and promote new runner development (production of daughter plants). After renovation, regular irrigation and weed control are essential. High yields next year depend on having large, healthy, vigorous plants when fruit buds are initiated in late summer.

With matted rows, renovation starts with an application of 2,4-D amine herbicide (Formula 40) after the last harvest. If grasses are a problem a sequential application of sethoxydim (Poast) or clethodim (Select) may be necessary (do not tank mix with the 2, 4-D). After the last herbicide application, wait 3-5 days and then mow off the strawberries to just above the crown (do not damage the crown). Apply nitrogen fertilizer (25-60 lbs N/acre) at this time. Using a split N application, half at renovation and half 4 weeks later, is preferable. If other nutrients were low or deficient (as indicated by tissue tests prior to fruiting) then apply at this time. Subsoil fields with compaction from equipment or heavy foot traffic between the rows (U-pick plantings for example).

Next, narrow the rows with a cultivator, coulters/discs, a rotary tiller/multivator or other devices to 12-18 inches at the base. Matted row strawberries are edge bearers and benefit greatly from this narrowing. Strawberries produce new roots higher on crowns each year so try to throw about 1 inch of soil over the row (without covering the crowns). This will also help new daughter plants root (runners produced from mother plants). After narrowing the rows apply preemergence residual herbicides. Apply 2-4 ounces of terbacil (Sinbar). This is one half the annual rate. Sinbar can injure some varieties and attention should be paid so as not to have overlaps. If Sinbar is not used, napropamide (Devrinol at 4 lb/acre) or DCPA (Dacthal at 8- 12 lb/acre) should be applied at this time. These materials require adequate rainfall or overhead irrigation for activation. Devrinol and Dacthal benefit from being lightly incorporated (possible in row middles). During the summer, cultivate between rows to remove weeds and to sweep runners into the row. From late summer on, cut off any additional runners during cultivation (discs or coulters work best).

Weeds in the rows must be controlled throughout the summer. Sethoxydim (Poast) or clethodim (Select) may be sprayed over the top to control grass weeds. Clopyralid (Stinger 3A) has a 24c label for use in MD, NJ, VA, and PA for over the top control of some broadleaf weeds. (The legal use of this product may require a waiver of liability
that has been signed by the grower, and returned to Dow AgroSciences.) Additional herbicide options include: 2,4-D amine (for broadleaf weeds), Sinbar (for residual control of broadleaf weeds), paraquat (as directed spray to row middles), and Daacthal (residual control of mostly grass species). Remember that 2,4-D is volatile and can injure sensitive plants in the near vicinity. It should not be used with windy conditions, nor when temperatures of 85°F or greater are expected. Hand hoeing will be necessary for removal of remaining weeds.

Irrigate strawberries so that they receive 1.5 inches of water (combined rainfall and irrigation) each week during the summer. Irrigation during late July and August are very critical to produce large plants as flower buds will be initiated starting in August. Continue irrigation through the fall until dormancy (at reduced rates). Strawberries may benefit from low amounts of additional nitrogen fertilizer (25 lbs of N/acre) later in summer. Irrigation during late July and August are very critical to produce large plants as flower buds will be initiated starting in August. Continue irrigation through the fall until dormancy (at reduced rates). Strawberries may benefit from low amounts of additional nitrogen fertilizer (25 lbs of N/acre) later in summer. Irrigation during late July and August are very critical to produce large plants as flower buds will be initiated starting in August. Continue irrigation through the fall until dormancy (at reduced rates). Strawberries may benefit from low amounts of additional nitrogen fertilizer (25 lbs of N/acre) later.

**Plasticulture Systems**

With the high cost of establishing strawberries planted on plastic mulch, many growers choose to carry them over for another year. First, evaluate the disease pressure on the planting. If anthracnose was a major problem, you should not carry the planting over. If disease pressure was low, then renovation can proceed.

Goals in renovating plasticulture strawberries are to remove old foliage, remove any runners formed, remove diseased plant material from the field, control weeds, reduce insect and mite pests, and reduce crown size of very large plants. Mow the strawberries as close to the crowns as possible without damaging them. Remove any diseased plant material from the field. Plants with more than 5 branch crowns may benefit from thinning. Using an asparagus knife, remove one half the crown. Apply weed control measures between plastic beds (herbicides, cultivation, or combination) being careful not to apply herbicides over the plastic beds. Irrigate strawberries so that they receive 1.5 inches of water (combined rainfall and irrigation) each week during the summer. Fertigate with 40 to 60 pounds of nitrogen per acre in late August and add any additional nutrients as suggested by tissue tests. Continue irrigation as needed throughout the fall.

**Goals in renovating plasticulture strawberries are to remove old foliage, remove any runners formed, remove diseased plant material from the field, control weeds, reduce insect and mite pests, and reduce crown size of very large plants. Mow the strawberries as close to the crowns as possible without damaging them. Remove any diseased plant material from the field. Plants with more than 5 branch crowns may benefit from thinning. Using an asparagus knife, remove one half the crown. Apply weed control measures between plastic beds (herbicides, cultivation, or combination) being careful not to apply herbicides over the plastic beds. Irrigate strawberries so that they receive 1.5 inches of water (combined rainfall and irrigation) each week during the summer. Fertigate with 40 to 60 pounds of nitrogen per acre in late August and add any additional nutrients as suggested by tissue tests. Continue irrigation as needed throughout the fall.**

**Plasticulture Systems**

With the high cost of establishing strawberries planted on plastic mulch, many growers choose to carry them over for another year. First, evaluate the disease pressure on the planting. If anthracnose was a major problem, you should not carry the planting over. If disease pressure was low, then renovation can proceed.

Goals in renovating plasticulture strawberries are to remove old foliage, remove any runners formed, remove diseased plant material from the field, control weeds, reduce insect and mite pests, and reduce crown size of very large plants. Mow the strawberries as close to the crowns as possible without damaging them. Remove any diseased plant material from the field. Plants with more than 5 branch crowns may benefit from thinning. Using an asparagus knife, remove one half the crown. Apply weed control measures between plastic beds (herbicides, cultivation, or combination) being careful not to apply herbicides over the plastic beds. Irrigate strawberries so that they receive 1.5 inches of water (combined rainfall and irrigation) each week during the summer. Fertigate with 40 to 60 pounds of nitrogen per acre in late August and add any additional nutrients as suggested by tissue tests. Continue irrigation as needed throughout the fall.

**Plasticulture Systems**

With the high cost of establishing strawberries planted on plastic mulch, many growers choose to carry them over for another year. First, evaluate the disease pressure on the planting. If anthracnose was a major problem, you should not carry the planting over. If disease pressure was low, then renovation can proceed.

Goals in renovating plasticulture strawberries are to remove old foliage, remove any runners formed, remove diseased plant material from the field, control weeds, reduce insect and mite pests, and reduce crown size of very large plants. Mow the strawberries as close to the crowns as possible without damaging them. Remove any diseased plant material from the field. Plants with more than 5 branch crowns may benefit from thinning. Using an asparagus knife, remove one half the crown. Apply weed control measures between plastic beds (herbicides, cultivation, or combination) being careful not to apply herbicides over the plastic beds. Irrigate strawberries so that they receive 1.5 inches of water (combined rainfall and irrigation) each week during the summer. Fertigate with 40 to 60 pounds of nitrogen per acre in late August and add any additional nutrients as suggested by tissue tests. Continue irrigation as needed throughout the fall.

**Minimizing Herbaceous Character In the Vineyard**

Joseph A. Fiola, Ph.D., Specialist in Viticulture and Small Fruit, University of Maryland jfiola@umd.edu

Herbaceous aroma in wines, such as “bell pepper” or “stemmyness,” is caused by a family of chemicals known as methoxypyrazines (MPs). They are very important in wines because highly perceivable at very low concentrations, and are associated with under-ripe and generally undesirable aromas and flavors. High levels of MPs are associated with wine growing regions known for vigorous vine growth and moist soil and weather conditions during grape ripening, such as the mid-Atlantic.

- Concentrations of MPs in the order of 1-35 parts per trillion are responsible for varietal character of Cabernet Sauvignon, Cabernet Franc, and Sauvignon Blanc.
- Higher concentrations are undesirable, often leading to a “bell pepper” or “raw potato” aroma in the finished wine.
Properly managing vegetative growth and encouraging full and even ripening, can avoid unripe and vegetative flavors in finished wines.

- Vine spacing at 800 to 1400 vines per acre (6x10 ft. or 4x8 ft spacing respectively) is an ideal planting density. Research has shown that 1600 vines/A leads to higher MP levels in grapes and finished wines.
- For spur-pruned vines, thin to 3-5 fruit-bearing shoots per linear foot of cordon. Sunlight exposure has been shown to degrade MPs.
- Hedging vines is necessary to minimize shade on clusters. Primary leaves near the clusters are mostly responsible for photosynthesis of sugars and ripening of the fruit. Hedge at bunch-closing stage, usually in mid-July. Hedge the vines so shoots have about 15 nodes above the cluster. Remove lateral shoots, as they will shade fruit and primary leaves.
- Leaf removal is recommended. Leaf removal promotes sunlight exposure of primary leaves and grape clusters. The fruit zone is less humid after leaf removal. Fruit that matures under drier conditions has lower MP levels. Leaf pull 50-60% of leaves two to four weeks after fruit set. Remove leaves a second time around and/or after veraison if necessary. Vegetative aroma and taste tend to decrease with crop load.
- The ideal crop load is variety and site dependent. In general, two to four tons/acre for most vinifera. Three to six tons/acre may be possible for premium hybrids on desirable sites. Decrease in MP concentration and herbaceousness are drastic during ripening.
- Two additional weeks of ripening can mean a decrease of 50% of MP concentration in the finished wine.
- Leaves active in photosynthesis contribute to MP concentration in grapes. Leaf maturity should be taken into account when deciding when to harvest. By the time leaves begin to change color, MPs and herbaceousness will be minimal.

**Nitrogen Fertilization In the Vineyard**
Joseph A. Fiola, Ph.D., Specialist in Viticulture and Small Fruit University of Maryland, jfiola@umd.edu

The annual goal in the established vineyard is to have the vines fill their allotted trellis space, and produce a crop that is in balance with the vegetative vigor.

- For many grapevines (especially vinifera varieties), excessive nitrogen may lead to excessive vigor and unbalanced vines. This ultimately leads to poor fruit quality due to shaded fruit and delayed ripening.
- Overall, excess vigor is a problem with grapevines, so a conservative approach typically taken with N fertilization.
- On heavy soils adding too much N during the growing season may result in the vine actively growing late into the fall with poorly hardened wood that has increased sensitivity to winter damage.
- Nitrogen is a very dynamic element in the soil and plant. Many of the N compounds are very soluble and are easily taken up by the plant and leached from the soil.
- Nitrogen is a major component in proteins and growth regulators (cytokinin and auxins) in plants, and therefore is utilized in large quantities.

Nitrogen requirements are best determined by growth and performance. The grower needs to determine rates of N for each variety for each block of the vineyard.
- Soil tests for nitrogen have not proven useful in determining plant needs, so leaf analysis is the best tool for determining fertilizer needs in bearing vineyards.
- When planning a nutrient management program, leaf analysis, soil types, and vineyard vigor observations including shoot growth rates, leaf color, productivity, and pruning weights should all be taken into account.
- For vinifera, N needs and applications should be based on tissue testing in conjunction with observation on vigor and productivity. Typically grafted vinifera vines are very vigorous and do not require annual N applications, except maybe on high sand content soils.
- Premium and Grafted Hybrids will typically respond similarly to vinifera varieties and may require little or no fertilizer. Vinifera and premium hybrids are managed for moderate yield and maximum fruit and wine quality. Thus N supply is in the lower end of spectrum.
- Self-rooted Hybrids and American varieties require regular annual applications to maintain vigor and balance productivity.
- Nitrogen is supplied naturally in the soil primarily through the breakdown of organic matter. Every 1% of organic content in the soil supplies 15 to 20 lbs of N/acre/year.
- As a guideline, the annual N requirement for vinifera and premium hybrids ranges between 0- 30 lb/acre.
- For premium hybrids, annual N requirement ranges between 0- 50 lb/acre.
- Self rooted hybrids and Americans my require 20-60 lb/acre annually. The early spring growth of the vine is primarily fueled by reserve N stored in the trunks and other permanent wood and this typically runs out around bloom. Most N (75%) is stored in the roots of dormant vines.
- Most N uptake by the vine occurs at 2 periods: 2-3 weeks prior to bloom and 2- 6 weeks after bloom. Vines take up only 10% of N applied at bud break, but double the rate of N uptake near bloom. Thus, it is not recommended to apply N at bud break.
- It is therefore recommended to make the first N application around full bloom, in late may or early June.
- A second application, if necessary can be made no later that mid-July if the growth of the vines has slowed on stopped by that point or the leaves look light or chlorotic.
- Vineyards on sandy soils typically require more N during the growing season, and depending on the soil organic matter content, it is best to split the application.
- Fertigation, if possible, is the desired and most efficient mode of application as it concentrates the N in the root zone.
- Dry fertilizer is typically banded under the row to feed the grapevines and not the turf middles.

**Vineyard Article Resources:**
Dr. Terry Bates Cornell University; Dr. Tim Martinson, Cornell University; Dr. Imed Dami, OARDC
Soybean Rust Update

Soybean rust was confirmed on soybean leaves from a soybean sentinel plot in Baldwin County Alabama on June 27. This is the first report of soybean rust on soybeans in Alabama in 2007. Soybean rust was reported in three new locations June 21. One was in Cameron County, Texas in a commercial field. The other two were in Louisiana in soybean sentinel plots located in Avoyelles and Rapides Parishes. These parishes are in the central portion of the state approximately 80 miles north of the positive kudzu sites in the coastal parishes of Iberia and St. Mary. Frequent scattered showers around the Gulf coast have produced conditions very favorable for soybean rust development. Other areas north of the Gulf are in drought conditions and rust is not being found. There is not much soybean rust activity in the Southeast which is good news for the East coast. There are very few spores to be moved with the June 8, 2007 issue of Weekly Crop Update at: http://www.westernmaryland.umd.edu/viticulturesmallfruit.htm

Agronomic Crop Disease Updates

Bob Mulrooney; Extension Plant Pathologist; bobmul@udel.edu

Corn Fungicides for Plant Health

Bob Mulrooney; Extension Plant Pathologist; bobmul@udel.edu

Most field corn will be tasseling soon and this brings up the issue of applying strobilurin fungicides such as Quadris and Headline in the absence of disease for plant health benefits. Many growers have done this or may be experimenting with it. From the labeling and experience in this area, generally a single application is made at tassel emergence through tasseling for the best effect. The real question is whether the corn will respond with a yield increase to pay for the treatment. For many growers that is a question only they can answer for themselves.

Experimental work has shown that corn does respond in many cases but not all the time. We conducted three separate trials in 2004 and saw a slight reduction in disease in one test (overall disease levels were low) but no significant yield increases. There is so much that determines yield and profitability that it is not a sure thing. Irrigated corn with high inputs may respond if diseases become a limiting factor later in the season. Hybrid selection may play a role, as well as many other factors such as stress, fertility, plant population, etc. The lowest rate that I have seen used in this area is 6 oz/A for Headline and 6.2 oz for Quadris (lowest labeled rates for corn) and I would not expect to see a response at lower rates unless someone can show you that information. The rate range that has been tried has been 6-9 oz. The bottom line is to try it and see if it improves your bottom line.

We have not had weather conditions that have been favorable for corn diseases Fungicides applied now would help later if the hybrid were susceptible to whatever might show up later. The disease control issues aside, there are the physiological effects that have been documented for the strobilurins on corn and they include reduced respiration, reduced ethylene production and increased nitrate reductase production. Reducing respiration lets the plant keep more of the manufactured sugars for grain fill rather than burning them up during respiration when the plant take in oxygen and produces carbon dioxide, usually at night. Reducing ethylene delays maturity so the plants stay green longer which has the potential to increase ear fill by keeping the plant green longer= photosynthesis goes longer. Nitrate reductase increase means that the roots have the potential to convert more nitrate to nitrite which the plant can absorb if it is limiting. These are pretty simplified explanations to pretty complex biochemical processes that affect corn and other plants. All three physiological responses added to the potential disease control benefits can result in the yield increases, stay green and standability that have been seen with applications of strobilurins. It may be worth a try in strips on your own farm. Do your own test but in a manner that lets you compare treated and non-treated corn. It is also important to realize that if you tried it once and got a response, you may not get the same level of response the next time.

It is also important to note that the best response is coming from the strobilurin fungicides. Prepackaged blends of strobilurins with other fungicides such as Quilt and Stratego have a lower rate of the strobilurin component and thus have been less likely to produce a response in the absence of a disease. Quilt has 4 oz of Quadris so additional 2-5 oz of Quadris has been suggested to increase the strobilurin rate. If the fungicides are applied strictly for disease control the rates are a little different depending on the diseases that are controlled. Quadris is labeled at 6.2-9.2 oz/A for common rust control and the other diseases are labeled at 9.2 to 15.4 fl oz/A. Headline is labeled at 6-9 oz for common rust, southern rust and gray leaf spot control. For control of the other diseases the rate is 9-12 fl oz/A for northern and southern corn leaf blight, anthracnose, and a few others. In most seasons we have not needed fungicides for field corn foliar diseases unless the hybrid had little resistance to a particular leaf disease which resulted in stalk rot and lodged corn.
Postemergence Control of Glyphosate-Resistant Horseweed
Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

Options for controlling horseweed resistant to glyphosate after the soybeans have emerged are very limited. FirstRate or Classic are the only postemergence herbicides to provide some horseweed suppression. However, neither FirstRate nor Classic will kill large horseweed plants. These herbicides may provide some suppression, but results have been quite erratic the past few years. Horseweed plants are generally not very tolerant of shade and most soybeans will begin to canopy over the horseweed and out-compete them. In most cases, I have recommended to not spray emerged horseweed plants with another herbicide. Rather, make postemergence applications of glyphosate based on need to control other weed species. Additional glyphosate applications will provide some suppression of horseweed.

Hay Harvesting & Cutting Height
Richard Taylor, Extension Agronomy Specialist; rctaylor@udel.edu

Over the past several years, a number of producers have complained of poor survival of orchardgrass stands as well as other grass hay crops. At our last Maryland-Delaware Forage Council meeting, I learned from Dr. Les Vough, retired Extension Forage Specialist from University of Maryland, that there was some concern that this might be related to the use of disicnange mower conditioners that have allowed producers to mow fields quite close. Although research is not available to say directly whether very close mowing (what some might call scalping) causes stand losses in grass hay fields, I want to caution hay producers to avoid cutting hay fields, in particular orchard grass, too close. Certainly when I studied forages in school (too many years ago to mention), I was taught that certain grasses store their reserve carbohydrates (food for recovery from cutting) in the lower stems. Mowing at ½ to 1 inch to increase the hay yield from a field, in my opinion, will significantly damage the ability of grasses that store energy reserves in the lower stems to recover and survive. Multiple close mowing over a growing season or two could significantly reduce stands. Since orchardgrass is often stressed by the heat, humidity, and dry weather (especially on sandy soils) on Delmarva, the added stress of close mowing may be contributing to the loss of stands we've been seeing the past few years.

If you do cut hay with a disicnance, consider raising the cutting height to 3 or 4 inches on grasses like orchardgrass. Grasses with many basal leaves or a vigorous rhizome or stolon system can be mowed a little closer but always try to leave at least some green material or at least basal growing buds to allow the grass to recover from mowing. The longer it takes the crop to recover and reestablish a canopy of leaves the more of its energy reserves it will have to use and the more opportunity there will be for weeds to germinate and establish a foot-hold in the field. Weed competition against the established grass can be as serious a risk for stand loss as close mowing of fields.

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

Weekly Export Sales Continue to Outpace USDA Projections

U.S. corn exports were reported at 30 million bushels for the week ending June 21, 2007. This was well above the 12.2 million bushels needed this week to stay on pace with USDA's projection of 2.15 billion bushels for the '06/'07 marketing year.

U.S. soybean exports, reported at 8.81 million bushels, have already brought the total annual sales above USDA's projected 1.08 billion bushel projection for the current marketing year with ten weeks left to go.

U.S. wheat exports were reported at 22.9 million bushels, well above the 16.1 million bushels needed to stay on pace with USDA's projected 1 billion bushel total wheat exports for the '07/'08 marketing year.

Overall the report should be viewed as bullish.

General Comments

USDA's June Acreage & Stocks in All Positions report will be released at 7:30 CT, Friday, June 29th. Noted grain analysts throughout the country are divided on whether they think the acreage numbers for corn, soybeans, and wheat will increase or decrease. Regardless of the outcome the June reports are not likely to cause much more than a blip, a higher and/or lower open, in the commodity trading pits. An analysis of the June report will be released to the e-grain marketing discussion group on Friday morning.

Currently, Dec '07 corn futures are at $3.62; Nov '07 soybean futures at $8.37; and July '07 wheat futures at $6.06 per bushel.

Farm Fires

Ron Jester; Extension Safety Specialist (retired); rclester@udel.edu

Fire has been a constructive part of our society since the dawn of civilization. Yet, this powerful servant can turn with a fury indifferent to personal status or wealth. Unfortunately, our behavior with respect to fire's potential dangers often is surprisingly casual. People smoke in bed, allow electrical and heating equipment to deteriorate, handle flammable materials improperly, and delay establishing a home fire escape plan. We often appear so nonchalant about fire and fire hazards!

I vividly recall two farm fire incidents with serious consequences – one involving handling of flammables and the other one involving children playing with matches in a barn. In the case with flammables, gasoline was being used to clean parts. The open container with gasoline in it was near a bench grinder, which provided the spark. A farm shop was destroyed and fortunately a combine was removed from the structure before it was completely engulfed with flames. In the latter case, children were playing with matches in a barn loft and ignited the straw. Two children died as a result of this incident.
Fires on farms may not be statistically significant but they do pose a serious threat due to remoteness from the fire service and water supply. Consequently it would be a good idea to have family members and farm workers trained on proper use of a fire extinguisher and knowledgeable of fire safety in the workplace. You will never eliminate fires completely, but you can better manage the risks.

The main causes of farm fires and how to better manage the risks are as follows:

**Electrical fires** - The potential for electrical-related fires is significant and usually results from defects in, or misuse of, the electrical system (wiring, grounding, fusing, etc.) or electrical equipment (motors, heating appliances, etc.). Since many farmers do their own electrical work, it is crucial that electrical inspectors approve your work before throwing the switch. The work environment including, the poultry house, dairy barn, or swine unit contain atmospheres that require regular maintenance of electrical devices. The dust, moisture, ammonia and other gases are corrosive and can cause heat build-up and electrical malfunctions. Install dust-proof electrical boxes to help remedy this potential problem. Don’t overload circuits and always use ground fault circuit interrupters.

**Flammable liquids and gases** - Gasoline, diesel fuel, degreasing fluids, and paint solvents are flammable materials that are used on farms. The vapors from these materials can be extremely explosive in the presence of flames, sparks and hot surfaces. Dangerous practices include fueling a running or hot engine, smoking when handling gasoline and using gasoline as a solvent or cleaning agent. Remember to store flammable products in their original containers in a cool place and out of the sun. Keep cleaning rags in a metal container to reduce the risk of a fire.

**Farm machinery** - Fires involving farm machinery can be costly. Common causes of such fires include defects in the ignition system, leaking fuel lines, improper refueling, smoking, overheated engine, sparks from the exhaust and friction. Common sense preventive measures can reduce these mishaps significantly. When refueling, turn off the engine and extinguish smoking materials. Watch for and repair leaks in fuel lines, carburetors, pumps, etc. promptly. Always work in a well-ventilated area when using solvents and other flammable materials. Be extremely cautious when welding and cutting that sparks are contained and combustible materials are protected from the heat. Take a few minutes during harvesting to clean crop residue away from the engine and exhaust system of equipment when a build-up occurs.

**Lack of fire extinguishers and training** - Several studies have shown that combine fires often result in a total loss to the machine. In many cases, this has been due to the lack of a proper sized fire extinguisher on the equipment and often compounded by users who do not understand the proper use of the extinguisher. Other studies have indicated that there were no extinguishers readily available or charged. Therefore, check with the fire service or equipment manufacturer in regards to the proper size extinguisher, train operators on proper use, and regularly check extinguishers to keep them current and charged.

**Remember that no property is worth risking a life for!** Therefore in case of a farm fire, follow these simple rules:
- ♦ Evacuate the building or area
- ♦ Call the fire department
- ♦ Give precise directions to the scene
- ♦ Clear an exit away from the fire
- ♦ Keep bystanders and others away from the fire
- ♦ Inform the fire service of any special hazards at the scene

**Take time this week and every week to make your farm fire safe. Reducing fire hazards may save your life!**

---

**Nutrient Management Update**

By, Krista Mitchell
Nutrient Management Advisor for
Anne Arundel County

Tissue sampling season has arrived for those who produce tree fruit, brambles, grapes, and blueberries. While soil sampling is an accurate tool to assess the nutrient needs of field crops, small fruit and tree fruit need a tissue and soil sample to determine the nutrient status of the soil, and the efficiency with which the fruit can utilize those nutrients. Tissue and soil samples taken in conjunction are also the way MD Cooperative Extension creates fertilizer recommendations for Nutrient Management Plans. Tissue sampling season only comes once a year, so make sure to contact your Nutrient Management Advisor for assistance now, so that we will be able to update your next Nutrient Management Plan.

**Timing for sampling tree and small fruits:**

- Blueberries: 1<sup>st</sup> week of harvest
- Fruit trees: July 15<sup>th</sup> - September 1<sup>st</sup>
- Brambles: August 1<sup>st</sup> - 20<sup>th</sup>
- Grapes: At full bloom

The MD Department of Agriculture has come out with its latest compliance numbers. Statewide, MDA estimates that over 90% of MD’s agricultural operations are in compliance with the Water Quality Improvement Act of 1998 (the nutrient management law). MDA is hard at work trying to get everyone in compliance, so if you don’t have a current Nutrient Management Plan for your operation, call your county’s Nutrient Management Advisor and have one developed. MDA has been busy conducting random farm inspections to make sure people have a current Nutrient Management Plan and are following it, and keeping records in accordance with the law. If you have any questions about what MDA will be looking for during these inspections, consult your Nutrient Management Plan and/or contact your Nutrient Management Advisor for information.
Stephan Tubene is Taking on New Assignments at UMES

After nearly 10 years of service with Maryland Cooperative Extension (MCE) as the Small Farm Institute Coordinator, Dr. Tubene has accepted a new position at the University of Maryland Eastern Shore (UMES) as Associate Professor of Agricultural Economics effective fall 2007. At UMES, Stephan will be teaching undergraduate and graduate courses in agribusiness/agricultural economics and economics; advising undergraduate students; advising and directing graduate students in the Agriculture economics program; helping develop new graduate and undergraduate courses in agribusiness, agricultural economics, and economics; and actively seeking research and teaching grants. Stephan is expected to develop various programs to serve the agricultural sector of the state, region, nation, and the world as well as participate in interdisciplinary research.

“This is exciting for me! My work at The Small Farm Institute has given me the opportunity to work closely with farmers and ranchers, small business owners and entrepreneurs. I very much cherish these experiences, which will be put to work in classrooms where students are eager to not only learn theories but also apply them in the real world. I am leaving the Small Farm Institute, but not the agricultural sector. I will still be working and serving the agricultural community at a different level--statewide, nationally, and internationally.”---Stephan said.

Stephan received his M.S. degree from Alcorn State University (1993) and his Ph.D. degree in Agricultural Economics from Kansas State University (1997). He, then, joined the University of Maryland Cooperative Extension in May 1998 where he served until 2007.

Dr. Tubene can still be reached at 410-222-6759 and/or stubene@umd.edu until August 22, 2007.

Check Out Our Updated County Website
Visit us in Cyberspace!!!

Christie Germuth is our website designer. Christie has recently updated our website, and we hope that you find the additions helpful. The current and past newsletter additions are available for viewing or copy at:
 http://extension.umd.edu/local/AnneArundel/files/agnews.cfm

An agricultural bulletin page is also available for viewing or copy under our hot topics section at:
 http://extension.umd.edu/local/AnneArundel/files/agbulletins.cfm

Thanks for Partnering

Thanks for partnering with the Maryland Cooperative Extension, and supporting our programs. I also hope you enjoy this newsletter. If you are no longer interested in receiving this newsletter, please call or write the office for the removal of your name from the mailer.

Sincerely,

R. David Myers
Extension Educator
Agriculture and Natural Resources
Anne Arundel & Prince George’s Counties
Fruits and Vegetables

NACAA Communication Award
Individual Newsletter
2002 National Winner

Prince George’s Cooperative Extension
6707 Groveton Drive
Clinton, MD 20735
301 868-8783

Anne Arundel Cooperative Extension
7320 Ritchie Highway, Suite 210
Glen Burnie, MD 21061
410 222-6759 or 301 970-8250

Note: Registered Trade Mark® Products, Manufacturers, or Companies mentioned within this newsletter are not to be considered as sole endorsements. The information has been provided for educational purposes only.