



## S ummer 2011



Area farmers Bubby Norris and Barry Roache talk to local elementary school students as part of the annual Farm to School week held every year in September. See the complete article for information on how you can participate this year.

### Greetings,

Summer has arrived once again. It looks to be another scorcher. It is also one of the most variable crop years I have seen. Depending upon your location, crops look great to very poor. Some areas have gone 55 days with no rain. Others have received intermittent rain on a regular basis. Most corn stands have some variability due to spring rain patterns, sidewall compaction and uneven emergence. Soybeans are finally beginning to make some progress with the later rains.

Vegetable crops are faring fairly well, though the higher heat is causing some ripening

# U P C O M I N G E V E N T S

### July 25:

Vegetable IPM and  
Production Twilight  
Walk  
6:00-8:00 pm  
Loveville, MD

### August 1:

Southern Maryland  
Cut Flower Tour;  
8:30 am-2:00 pm  
Mechanicsville,  
Loveville, Helen

### August 4:

Annual Field Crops  
Research Twilight  
Tour, Barbecue & Ice  
Cream Social  
CMREC, Upper  
Marlboro Farm

issues and fruit set problems. With all crops continue to keep a watch out for hot weather pest. Spider mites are beginning to reach threshold levels in some areas. Brown Marmorated Stink Bugs have not been a major issue for our area as of yet. We will continue to monitor populations and will send out alerts if populations build.

On another note, every county in Maryland is now participating in the Maryland Farm-to-School lunch week. The Jane Lawton Farm to School Program, named in honor of the late Maryland House of Delegates member Jane

Lawton of Montgomery County, was created during the 2008 Session of the Maryland General Assembly. The 2011 Homegrown School Lunch Week will be held September 12 – 16. Educating the non-farming public about agricultural issues is critical to the continued viability of farming in Maryland. Sponsored by the Maryland Department of Agriculture and the Maryland State Department of Education in conjunction with local partners, the Farm to School program “works to bring more Maryland-grown products to school lunches with the aim of educating students about where their food comes from, how it is produced, and the benefits of a healthy diet”. What a great opportunity to educate future generations about agriculture and the positive role of food in a healthy diet.

Every county sponsors events and activities in support of Farm-to-School week. Contact your local Farm Bureau, School System or Extension office to find out where you may help out.

Upcoming  
Events



**Vegetable Production and IPM Twilight  
Walking Tour  
Evening of Monday, July 25, 2011  
6 p.m. -8 p.m.**

If you are currently growing vegetables or considering it as a future crop, plan to attend the Vegetable Twilight Tour.

Information pertaining to our local area will be presented, including Brown Marmorated Stink Bug (BMSB), powdery mildew disease control, squash bug efforts, considering blueberry and small fruit on the farm, late-season worm control, other disease and insect pest control options, fertilizer programs and variety selection. The tour will be held at the farm of Ivan Wenger.

Information will be presented by University of Maryland Extension Specialists and Agents. This will be an informal tour, with plenty of opportunity to discuss your vegetable questions with other growers. Handouts and other brochures will be available.

**Directions:**

Take Rt. 5 south toward Leonardtown. Continue on Route 5 to the town of Loveville. Turn left onto Rt. 247 (Loveville Rd). Follow Route 247 for 1 mile, passing the Loveville Produce Auction, to the driveway on the right. There is a Coonhunters Club Sign across from the driveway and a sign for Weavers Cut Flowers at the driveway. Follow the gravel road to the very end.

Handouts and other brochures will be available.



**Southern Maryland Cut Flower Tour  
August 1, 2011  
St. Mary's County  
8:30 a.m. -3:30 p.m.**

If you are growing cut flowers, don't miss this opportunity to visit area cut flower operations and learn from your neighbors and University of Maryland Specialist.

**Locations**

Sites in Mechanicsville and Loveville, Maryland

**Sponsored by:**

University of Maryland Extension

**In cooperation with:**

Association of Specialty Cut Flower Growers  
Maryland Greenhouse Growers Association

**Program:**

**Tour of Stoltzfus Farm**

Mechanicsville, MD

Benjamin Stoltzfus and his family raise a large selection of cut flowers, including sunflowers, lilies, zinnias, lisianthus, and other flowers.



### **Weaver's Cut Flower Farm**

Mechanicsville, MD

The Weavers produce cut flowers in roll-up side greenhouses and in the field on approximately 3 acres. They have a large variety of seasonal cut flowers year round, available by the stem or ready-made bouquets. They can also make floral arrangements and bouquets to your specifications.

### **Loveville Produce Auction**

Loveville, MD

This auction is in a 14,000 square foot facility that held its first auction in April 2006. Auction days are Mondays, Wednesday and Fridays. Produce, plants and cut flowers are sold at this auction.

### **Suttler Post Farm**

Mechanicsville, MD

Judy and John Mast grow cut flowers in the field at their family farm. They have been growing cut flowers at Suttler Post Farm for about 6 years. They produce the flowers on black plastic with drip irrigation. Crops grown include sunflowers, zinnias, purple coneflower, and liatris among others. Suttler Post sells cut flowers on Saturdays at the Silver Spring Farm Market.

### **University of Maryland Extension Talks**

Extension personnel will give short (10 to 15 minute) talks at several of the sites during the day. Topics will include insects and diseases on cut flowers, weed control options and woody cut stems.

### **Extension Speakers:**

Ben Beale, St. Mary's County

Brian Clark, Prince George's County

Stanton Gill, Central MD Research and Education Center

Karen Rane, Plant Diagnostic Lab

Ginny Rosenkranz, Worcester, Wicomico and Somerset Counties

Chuck Schuster, Montgomery County

The first site will be the farm of Benjamin Stoltzfus which is located at 28660 Rollins Lane, Mechanicsville, MD 20659

**For more information call 301-596-9413 or 301-475-4482.**



## **Annual Field Crops Research Twilight Barbecue & Ice Cream Social CMREC, Upper Marlboro Farm August 4, 2011**

You are invited to attend a twilight wagon tour of the University of Maryland Central Maryland Research And Education Center, Upper Marlboro Farm, on Thursday, August 4, 2011 from 4:30 p.m. to 8:30 p.m. The University of Maryland Extension will host this Annual Field Crops Research Twilight Barbecue & Ice Cream Social; Served after the barbecue, "Old-fashioned" homemade ice cream. This event will highlight field crops, agronomic and horticultural research projects currently conducted at the CMREC, Upper Marlboro Farm.



Barbecue Begins at 4:30 p.m.  
Ice Cream Served at 5:30 p.m.  
Wagon Tour Begins Promptly  
at 6:00 p.m.

University of Maryland Extension Educators and Specialists will showcase their field crop, vegetable and fruit research plots. The twilight tour highlights will include: Vegetable integrated pest management and reduced risk control methods; Field crops research updates; Meadow orchard concept and Fruit research update for apples, peentos, blueberries and beach plums; and a vineyard research update for wine grapes.

Please call the Anne Arundel Extension Office at 410 222-6759 by August 2nd to reserve your meal ticket. There is no cost to attend; RSVP is required for the meal. If you need special assistance to participate, please contact the Anne Arundel County Extension office at 410-222-6759 by August 2nd, 2011.



**New Farmers Market for St. Mary's Now  
Under Construction:  
Slated to Open in August 1.**

Building Underway! Completion expected around the beginning of August.

Finally after 4 years, a new farmer's market is under construction along Route 235, south of Patuxent River Naval Air-station Gate 3. Once completed this market will consist of a 50' x 126' building for everyone's local shopping pleasure.

The Home Grown Farm Market is a producer only market aimed at providing fresh produce, flowers, plants, meats, cheeses and baked goods to the Southern Maryland community while promoting sustainable agriculture. Sustainable agriculture requires economic viability, eco-friendly production techniques that preserve water and soil resources, limited transportation of food and dependence on fossil fuels, and a strong connection between the producers and the consumers.

Interested in Being A Vendor? We are looking for a variety of vendors offering a variety of Southern Maryland products. The market will be tentatively be open Tuesdays and Thursdays. Contact us for more information at:  
**[homegrownfarmmarket@gmail.com](mailto:homegrownfarmmarket@gmail.com)**



Visit the Home Grown Farmers market website for more information and photos:

<http://homegrownfarmmarket.webs.com/>



**Wild and Woolly Newsletter Available**

The Summer 2011 issue of Wild & Woolly has been published to the web at <http://www.sheepandgoat.com/news/Summer2011.html>. A PDF version of the newsletter, in its originally graphics format, may be downloaded from <http://www.sheepandgoat.com/news/PDF/Summer2011.pdf>.

Previous issues of the newsletter (2002-2010) can be viewed and downloaded from the main newsletter page at <http://www.sheepandgoat.com/news/main.html>.

Wild & Woolly is a quarterly newsletter for sheep and goat producers and anyone else interested in small ruminants. It is published by the Western Maryland Research & Education Center.

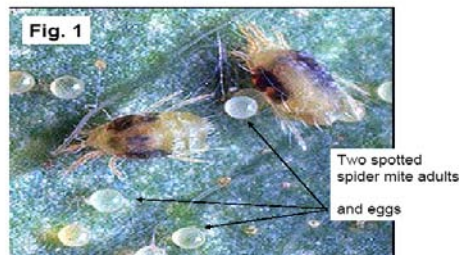


**Spider Mite Alert  
Ben Beale  
Extension Agent, St. Mary's County**

The hot and dry weather as of late has added another concern for soybean and vegetable growers. Spider mites thrive in hot, dry conditions and are prevalent in many area soybean fields. Spider mites are small 8 legged arthropods barely visible to the human eye. The two-spotted spider mite will have 2 black spots located on their back.

Soybean growers should scout fields now. We have been observing mite outbreaks for about 2 weeks in soybean fields. Damage in soybean fields normally is first visible from field edge rows as mites migrate in from grass borders.

Older beans and areas under stress are often affected first. Growers may notice small circular areas in the field that expand outward. Soybeans will have a yellowish and stippled or sandblasted appearance. Leaves on severely affected plants will eventually turn brown and drop off. Damage can be severe in hot dry weather. Spider mites feed on the underside of leaves. Pressing the underside of the leaf against white paper will reveal the crushed mites.



Control for Soybean Growers: Mites in drought stressed soybeans are difficult to control. Only three products are effective and registered for spider mite control in soybeans: Dimethoate 4EC applied at 1 pint per acre or Chlopyrifos (Lorsban 4E) applied at 1/2-1 pint per acre per acre or bifenthrin( various generics available). When using dimethoate, apply immediately after mixing. The product will degrade if left in the spray tank. Using spray water with a high pH and the presence of iron in the spray water will quicken the degradation process. The use of pyrethroids such as Baythroid or Warrior is discouraged because they may lead to mite population outbreaks. Growers who are regularly adding a pyrethroid such as Warrior to the tank when spraying Roundup as cheap insurance against insects may inadvertently be spurring spider mite reproduction.

Adequate spray coverage is critical to achieve satisfactory control. A fine spray that will reach the underside of leaves in at least 20 gallons of water per acre should be used.

Spider mites will also feed on many vegetable crops including watermelons, cucumbers, tomatoes, beans and eggplants. There are numerous products registered for use on vegetables including Acramite, Agrimek, Bifenthrin (Capture), Kelthane, and Danitol. Consult EB 237 Vegetable Production Guide for specific crop recommendations. Not all products are labeled for all crops.



### Some Common Types of Dry Fertilizers for Pastures

**Phillip Sylvester**  
**Kent County Extension Agent, Agriculture**  
**University of Delaware**  
**E-Mail: [phillip@udel.edu](mailto:phillip@udel.edu)**

County agricultural agents often get questions from grazers on how to interpret their soil test report recommendations and which fertilizers are appropriate to use on pastures. The following summarizes dry forms of fertilizer that are available for grazers to use on their pastures .

#### Fertilizers for Pastures

**Ammonium Sulfate (21-0-0-24S):** Contains 21% nitrogen and 24% sulfur in the dry form. Good fertilizer to apply in spring and summer. Supplies sulfur, a necessary nutrient for plant growth which can be limiting in some Delaware soils. This is one of the most acidifying fertilizers so be sure to soil test regularly and test for the surface 0 to 2 inch soil pH so lime can be applied as soon as it's needed. When legumes make up 25 to 50% of the forage available to grazing animals, nitrogen applications should be limited to no more than 25 lbs/N/application; and if legumes make up over 50% of the available forage, no nitrogen fertilizer will be needed.

Urea (46-0-0): Contains 46% nitrogen, the highest analysis of nitrogen available in dry form. Urea should be applied before rain to minimize nitrogen loss to volatilization. Works well as a spring time green-up fertilizer because of lower temperatures and increased chances for rain to reduce volatilization. Urea is completely water soluble and rapidly converts to a plant available form.

MAP-Monoammonium phosphate (11-52-0)- Contains 11% nitrogen and 46% phosphorus. Good fertilizer to blend with other components to make a custom blend. Before using MAP, a soil test should be performed to determine amount of phosphorus in soil. For environmental reasons, MAP should not be applied if soil test phosphorus levels are excessive.

Muriate of Potash or Potassium Chloride (0-0-62)- Contains 60-62% potassium. Use a soil test to determine application rates. Pastures with legumes (clovers, alfalfa, vetches, or lespedeza) require a lot of potassium which should be applied in two applications, the first in late spring and the second in late summer or early fall.

Potassium Magnesium Sulfate or K-Mag (0-0-22-11Mg-22S)- Contains 22 pounds of potassium, 11 pounds of magnesium, and 22 pounds of sulfur. Besides potassium, K-Mag supplies magnesium and sulfur and is a good fit for legume pastures, especially those with alfalfa.

Mixed Blends- There many mixed blends available as well and can be complete (containing N P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O such as 15-15-15) or incomplete (not containing all three major nutrients such as 4-0-49). Additional nitrogen only fertilizers (ammonium sulfate, urea) may be needed to bring the amount of applied nitrogen up to 40-50 pounds nitrogen per acre (see above under ammonium sulfate for comment about legume content of pasture).



## Squash Bugs in Pumpkin Fields

**Jerry Brust**  
IPM Vegetable Specialist, UME  
jbrust@umd.edu

Every year it seems just as pumpkin plants are coming up squash bugs magically appear. This year is no exception as squash bugs were found feeding at the base of 3-5 leaf pumpkin plants (fig. 1). The adults are very difficult to see when they hide out at the base of plants whether the plants are on plastic or in dead mulch. Growers need to be sure to check the base of their pumpkin plants for the adults. Heavy feeding at this early stage of pumpkin development can cause plants to wilt and die or at least fall behind in development by a few weeks. Sprays need to be directed at the base of the plant, using an air-blast sprayer may not get enough material down to the base of the plant.



Fig. 1 Squash bugs feeding at base of pumpkin plant



## **Vegetable Alert: Downy Mildew Cucumber**

**By Kate Everts; Vegetable Pathologist  
University of Delaware & University of Maryland  
keverts@umd.edu**

July 6, 2011

Downy mildew on cucumber was found in three counties in Maryland over the 4th of July weekend (Dorchester, Caroline and Talbot). Growers in that area should apply targeted fungicides to cucumbers. Tank-mix Presidio, Ranman, or Previcur Flex with a protectant fungicide and alternate sprays with a material with a different mode of action. Because downy mildew has only been found on cucumber, targeted sprays on other cucurbit crops (pumpkin, squash, watermelon, etc.) are not necessary, at this time. Instead scout aggressively and continue a broad-spectrum spray program. Likewise, in other areas of Maryland (away from the eastern shore), scout cucumber fields aggressively and continue a broad-spectrum spray program until downy mildew is found.

All abandoned cucumber and summer squash fields should be sprayed with Gramoxone or disked under immediately after last harvest to kill the foliage! Abandoned fields left unattended after use will only serve as a source of inoculum for other fields as downy mildew makes its way into our area.

Please see the 2011 Commercial Vegetable Recommendations Guide for specific fungicide recommendations.

Commercial Vegetable Production  
Recommendations Maryland EB 236 On-Line at:  
<http://extension.umd.edu/agriculture/mdvegetables/files/2011%20COMPLETE%20MARYLAND%20BOOK%20.pdf>

Also available in a new very interactive format at the Delaware Extension site at:

<http://ag.udel.edu/extension/vegprogram/publications.htm#vegrecs>



## **Controlling Powdery Mildew in Cucurbits**

**Kate Everts, Vegetable Pathologist, University of Delaware and University of Maryland;  
[keverts@umd.edu](mailto:keverts@umd.edu)**

Powdery mildew is a problem on cucurbits each year. All cucurbits are susceptible, however host plant resistance in many cucumber and cantaloupe cultivars has successfully managed the problem. Susceptible varieties as well as other crops like pumpkin and squash are hit hard by powdery mildew. Disease builds up during July and becomes severe in August and September. Powdery mildew is a challenge to manage, especially in hot dry conditions. Also, there is resistance in the powdery mildew pathogen to many of our fungicides such as Quadris. Therefore, fungicides must be chosen carefully.

To manage powdery mildew, select cultivars (varieties) with resistance or tolerance. Even a moderate level of resistance will improve the efficacy of a fungicide spray (and help reduce the damage if you miss a spray). Scout the field and apply the first powdery mildew spray when you see one lesion on the underside of 45 old leaves.

Always follow good resistance management guidelines. 1) Keep on a good spray schedule (a 7-day interval for powdery mildew). 2) Apply fungicides at label rate (don't cut the rate). 3) Be sure you are getting good fungicide coverage of your plants. 4) Be aware of products that are at risk for resistance development. 5) Materials with different modes of action (FRAC codes)

should always be alternated. 6) Late in the season when powdery mildew has become well established, only apply protectant fungicides such as chlorothalonil or sulfur.

Below are the fungicide programs suggested for the various crops.

**Summer Squash or Cucumber:** Alternate a tank mix that contains chlorothalonil and either Procure, Rally, Folicur, or Inspire Super, with a tank mix containing Pristine plus chlorothalonil.

**Muskmelon:** Alternate Quintec plus chlorothalonil, with a tank mix containing chlorothalonil and either Procure, Rally, Folicur, or Inspire Super.



Extensive white sporulation of powdery mildew on pumpkin leaves.

**Pumpkin:** Alternate Quintec plus chlorothalonil with a tank mix containing chlorothalonil and either Pristine, Procure, Rally, Folicur, or Inspire Super. An alternative and less expensive option is to alternate Micronized Wettable Sulfur with one of the above options. Sulfur may injure plants, especially at high temperatures, which is why it is only recommended for pumpkin. Certain varieties can be more sensitive.



## Physiological Leaf Cupping and Rolling in Vegetables

**Gordon Johnson, Extension Vegetable & Fruit Specialist; University of Delaware**  
gcjohn@udel.edu

Leaf cupping and rolling in vegetables can be caused by virus diseases, aphid infestations, herbicides and growth regulators. However, late spring and early summer is the time of the year that we often see leaf cupping and rolling disorders appear in vegetable crops that are not related to pests or chemicals. This can be seen in tomatoes, peppers, potatoes, watermelons, beans, and other crops. This is a physiological disorder that may have many contributing factors.

In tomatoes, leaf roll starts at the margins which turn up, then roll inward, most commonly on the lower leaves. Upward cupping is also found commonly in watermelons and potatoes. Beans, peppers, and other vegetables may cup downwards. Leaves may stay in this rolled or cupped state for a short period of time and then return to normal, or they may remain permanently rolled or cupped. Rolled leaves may become thicker but are otherwise normal. Physiological leaf roll or cupping is often variety dependent with some varieties being more susceptible than others.

There are several possible causal factors for physiological leaf roll or cupping. Water relations are suspected in many cases where there has been a reduction in water uptake or increased water demand placed on the plant. The plant responds by rolling the leaves which reduces the surface area exposed to high radiation. High temperatures, excessive pruning, cultivation, and vine moving activities may also trigger leaf rolling. High nitrogen fertility programs followed by moisture stress may also

trigger this type of leaf roll. Inadequate calcium moving to leaf margins may also cause a different type of leaf cupping. This is also related to interrupted water movement.

In most cases, yields are not affected by physiological leaf rolling or cupping. However, growers may choose to select varieties that are less susceptible to this disorder.



### **Leafhoppers Causing Damage in Area Alfalfa fields**

**Ben Beale, Extension Educator, St. Mary's**

Leafhopper damage to area alfalfa fields is widespread this year. The Potato Leafhopper is the most damaging pest of alfalfa in Southern Maryland. Initial feeding normally begins in early June and results in a wedge shaped yellowing pattern on leaves. As feeding damage continues, the field will develop a notable yellow cast referred to as "Hopper Burn". Severely affected fields will turn yellow and remain stunted. Significant damage has already occurred on fields with "hopper burn".



Leafhopper damage is long-lived. The leafhopper injects a toxin when feeding which can stunt the plant for several cuttings. New seedlings can be killed and older stands may have reduced over-wintering ability and yield.

Growers are advised to walk fields and scout for damage. If severe yellowing has already occurred it is best to cut the field and continue monitor for leaf hoppers in stand re-growth. Below is an article from the University of Delaware on scouting instructions and threshold levels. For full article see:

<http://ag.udel.edu/extension/IPM/ExtensionFactsheets/PotatoLeafhopperIPM-2.pdf>



### **Leafhopper IPM Guidelines University of Delaware**

**J. Whalen & B. Cissel Revised March 2011**

#### **Sampling and Decision Making**

On new spring seedings, begin sampling by mid-May, or as soon as plants are 3 inches tall. On established stands, begin sampling within a week after the first cutting and continue on a weekly basis until the final harvest. Take sweep samples any time during the day as long as the foliage is dry. Take 10 sweeps in each of 10 locations to determine the number of leafhoppers per 100 sweeps. Examine 20 random stems to determine the plant height and plant growth stage.

If alfalfa is more than 60 percent bud or flowering, consider harvesting in the next 7 days to avoid spraying. In this situation, the field should be resampled for control. If the field cannot be harvested in 7 days and economic population levels are present, apply a short residual insecticide. If the alfalfa has experienced "hopper burn," significant yield loss has already occurred and the field should be cut instead of sprayed.

#### **Potato Leafhopper Chemical Control Options:**

Baythroid XL (beta-cyfluthrin); Dimethoate 4 EC (dimethoate); Proaxis (gamma-cyhalothrin); Lorsban 4 E (chlorpyrifos); Mustang MAX 0.8 EC (zeta-cypermethrin); Permethrin 3.2 EC (permethrin); Warrior II (lambda-cyhalothrin); Tombstone 2 EC (cyfluthrin)

**NOTE** – The label is the law. Be sure to read the label before making any pesticide applications and observe all label restrictions.



## Determination of Ear Size in Corn Well Underway

Peter Thomison, Ohio State Extension



(Editors Note: We have seen an unusual number of corn fields throughout the state with uneven stands. Fields that I have looked at in Southern Maryland show signs of sidewall compaction/smearing of the seed furrow followed by dry conditions after planting. The lack of soil moisture into the growing season aggravated these conditions. The question many are wandering now is what affect will uneven stands have on overall yield. Here is a good article from Peter Thomison that describes ear development process and a effect on yield.)

During the past two weeks corn has “exploded” in growth in many Ohio fields. Under favorable growing conditions corn plants can grow nearly three inches per day between V8 (i.e., the eight leaf collar stage) and V15. However, there is considerable variability in corn development across the state, between neighboring fields, and within fields. Some of this variation can be attributed to planting date differences - much of the corn planted in mid-May or earlier is at or beyond V14-15; some of this corn is tasseling and silking (VT/R1), whereas corn planted in early to mid June is usually at V9 or later. The variation in growth and development is also related to differences in rainfall accumulation. In areas of Ohio (especially NW Ohio) which have received limited rainfall since early June, tremendous variation in plant growth exists within fields. In most fields, plants differing markedly in plant height may differ by only one or two leaf collars. However, where moisture stress is especially severe, corn plants vary in

height by more than 12-15 in. and differ in growth stage by four or more leaf collars. What impact will these varying environmental conditions have on kernel numbers and ultimately grain yield?

As early as the V4/V5 stage, ear shoot initiation is completed and the tassel is initiated on the top of the growing point. Kernel row numbers per ear is established by V12 and perhaps as early as V8 (Nielsen, 2007). Kernel row numbers are usually less affected by environmental conditions than by genetic background. Corn hybrids characterized by "girthy" ears exhibit more kernel rows (about 18 or 20 rows) than hybrids with long tapering ears (about 14 or 16 rows). Determination of kernels per row (ear length) is usually complete by V15 stage and maybe as early as V12 (Nielsen, 2007). Unlike kernel rows per ear, kernels per row can be strongly influenced by environmental conditions. Kernels per row (ear length) can be adversely impacted by severe drought stress in the two weeks prior to pollination. Many of our late planted corn fields experiencing severe stress from a shortage of soil moisture have yet to reach V12. If these fields receive timely rains in the near future (between V12 and V17), loss of kernels per row on developing ears may be minimal and impact on potential yield limit.

### References:

Abendroth, L.J., R.W. Elmore, M.J. Boyer, and S.K. Marlay. 2011. Corn growth and development. Iowa State Univ. Ext. PMR 1009.

Nielsen, R.L. 2007. Ear Size Determination in Corn. Corny News Network, Purdue Univ. [online]  
<http://www.kingcorn.org/news/timeless/EarSize.html>. [URL accessed 7/8/09].



## The Value of Plant Tissue Testing

**Adam Lyon**  
**Nutrient Management Advisor**  
**St. Mary's County**

The importance of soil testing is well known throughout the agricultural industry. However, there are other underused testing methods available to farmers that can help monitor in-season plant nutrient uptake. Such is the case of plant tissue analysis. This method not only can monitor how much of one particular nutrient is in a plant, but can also provide insight on the interrelationship of each nutrient to another, as well as the role of soil pH and soil nutrient concentrations on plant nutrient uptake.

It is important, when sampling crops, to take the correct part of the plant at the correct time. This will ensure that nutrient levels reported are in sync with research performed on that specific crop. Nutrient concentrations vary greatly within differing parts of a plant, and at different times during the growing season, so consistency with sampling methods is prudent. Samples that are not taken at the correct stage of crop growth will be more difficult to decipher and deliver a subsequent recommendation. Therefore, they should be taken as close to the recommended sampling time as possible.

Here is a table describing proper sampling time and plant part for some crops:

<b>Crop</b>	<b>Sampling Time</b>	<b>Plant Part Sampled</b>
Corn	Initial silk	Ear leaf
Wheat	Just prior to heading	Top two leaves
Soybeans	Prior to pod set	Most recent leaf
Cucumber	Flower to small fruit set	Fifth leaf from growing tip
Tomatoes	Mid-bloom	Leaf adjacent to top flower

Much like soil testing, plant tissue tests should be taken sporadically throughout a management area, which will ensure that representative sampling has occurred. Focusing on one particular section of a field could invalidate the recommendation given for the entire area, which would waste time and resources. Now, if one section of the field shows significant differences than the rest, it may be necessary to take separate soil and tissue samples from both areas. Submitting soil samples with tissue samples is recommended, as this will give the farmer more information to determine the root cause of, or invalidate, a nutrient uptake issue.

Plant tissue tests start as low as \$15, with plant/soil combination tests starting at \$21. These tests report both Micro and Macronutrients. In comparison, a full Micro and Macronutrient soil test starts at \$12, so the value of the plant/soil combination test may be your best option. Plant tissue testing is essential for Nutrient Management in perennial fruit crops, including grapes. Therefore, it would be advantageous to sample the soil and tissue tests at the same time in these crops.

As always, if you are in need of assistance, please call me at (301)-475-4480, or contact Ben Beale at (301)-475-4481. You can also reach me by email at [adamlyon@umd.edu](mailto:adamlyon@umd.edu).



## *On the Lighter Side*

### **Everything's Bigger in Texas**

A recently retired Nebraska farmer went to Dallas for the first vacation he had taken in his entire working life. He checked into a downtown hotel, but when he got to his room he immediately called the front desk. The farmer said, "This here bed kin sleep the whole Cornhuskers football team! I only wanted a regular-sized bed."

The clerk responded, "That is a regular size bed, sir. You have to remember that everything's big in Texas!"

The farmer went to the hotel's bar and ordered a draught beer. When he was served, he said to the bartender, "This is as big as a milkin' pitcher. I only asked for a glass of beer!" The bartender answered, "That is a glass of beer, sir. You have to remember that everything's big in Texas!"

When the waiter in the hotel's dining room brought out the steak the farmer ordered for dinner, the farmer exclaimed, "That steak's as big as my thigh, the baked potato's bigger 'n a watermelon, and this corn-on-a-cob's as big as a baseball bat! Where'd this come from?" The waiter replied, "It's all local, sir. You have to remember that everything's big in Texas!"

When the waiter asked the farmer if he wanted to see the dessert menu, the farmer said he might be able to squeeze something in, but after consuming all that food and drink he needed to use the restroom first. The waiter directed him to go down the hall to the first door on the right.

By this time, the farmer was quite inebriated and mistakenly went through the first door on the

left. He walked across the tiled floor and fell into the swimming pool. When the farmer came sputtering to the surface, he yelled out, "For goodness sakes, please don't flush!"



### **The-Cricket-Sang** *by Emily Dickinson*

The cricket sang,  
And set the sun,  
And workmen finished, one by one,  
Their seam the day upon.

The low grass loaded with the dew,  
The twilight stood as strangers do  
With hat in hand, polite and new,  
To stay as if, or go.

A vastness, as a neighbor, came,--  
A wisdom without face or name,  
A peace, as hemispheres at home,--  
And so the night became.

## **Good Growing,**

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UME – St. Mary's County  
Agriculture & Natural Resources

Adam Lyon, Nutrient Mgmt. Consultant  
UME – St. Mary's County  
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Jennifer Horton, Master Gardener Coordinator,  
Program Assistant  
UME – St. Mary's County  
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Jamie Fleming, Administrative Asst. I  
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EQUAL OPPORTUNITY PROGRAMS