Dave’s Ramble

The old farmer pondered the idea of the most productive farm day of the year! At first it seemed like a tough question, but a great smile settled across his face. Indeed so satisfied with his conclusion on this matter he rendered it without hesitation. “Why that would be July 3rd of course!” The rest of the farmers immediately agreed. For on this day the farm is at a fever’s pace with everyone working towards a common goal of a possible afternoon picnic on the morrow. I am certain that the founding fathers of this great nation were also heavily contemplating farming productivity when they convened to sign the Declaration of Independence. Maybe intentionally they set out to very purposefully pause America on the busiest agricultural day of the year. The farmers often remember finding themselves also on the tractor seat even on July 4th—the picnic would just have to wait. After all, the last of the wheat crop had just been combined with windrows of golden straw feeding into the balers, followed by the fertilizer buggy and the grain drill filled with soybeans; the 3rd cutting of alfalfa down with chopper in the field and wagons bustling with haylage to and from the silo. The cows were lined up for milking while the overhead feeders delivered ensilage to the feed bunks. There was hammering in the shop, with excited shouts as the entire farm seemed to shake at its foundation.

As the evening sun sets, the July air thickens and stillness blankets the countryside so peacefully. The sweet perfume smells of bright wheat straw and cured alfalfa hang. The old farmer shuts down the tractor and steps down into the mown alfalfa field. Silent, save a few distant firecracker snaps as that same satisfied smile beams across his face. Nightfall besets with a few swigs of water from the thermos, as the fireflies begin to light the way home. Finally a brief pause, so thankful for liberty and its declaration; the old farmer knew that preservation of all freedoms was exhaustibly linked to the productivity of this long July day.

Calendar of Events

Mark Your Calendars --- Plan To Participate

♦ July 30 - BARC Organic Field Crops Tour
♦ August 7 - Crops Twilight & Barbecue - CMREC
♦ August 16 - Sheep & Goat Parasite Workshop

Inside This Issue

□ Summer Meetings
□ Vegetable Crop IPM Updates
□ Agronomic Crop IPM Updates
□ Wheat Lodging
□ Grain Marketing Highlights
□ Timely Viticulture
□ Scouting & Managing Japanese Beetles
□ White Grape Production Guide
□ Pest Net
□ Squash Bugs and Pumpkins
□ Resistant Brown Rot on Stone Fruit
□ Mastering Marketing
□ Wild & Wooly
□ Pesticides Persist in Ground Water
□ Farmers’ Guide to Disaster Assistance
□ Westfield Annapolis Farmers’ Market
□ Gypsy Moth Spray Program Completed
□ MACS Manual Now on Line
□ Nutrient Management Reminder to Producers

It is the policy of the University of Maryland, Agricultural Experiment Station and Maryland Cooperative Extension, that no person shall be subjected to discrimination on the grounds of race, color, gender, religion, national origin, sexual orientation, age, marital or parental status, or disability
Annual Field Crops Research Twilight
Barbecue & Ice Cream Social
August 7, 2008

You are invited to attend a twilight wagon tour of the University of Maryland Upper Marlboro Research Farm, on Thursday, August 7, 2008 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
- Apple, Peach & Beach Plum Research
- Blueberry Project
- High Tunnel Specialty Vegetable Production
- Strip-Till/No-Till Vegetable Production Techniques

Sheep & Goat Parasite Management Workshop
Saturday, August 16, 2008
9:30 am – 2:00 pm
Zekiah Farms
Bryantown, Maryland

Gastro-intestinal parasites:
- The primary health problem affecting sheep and goats.
- Are causing increasing problems, as many of the worms have developed resistance to all the major classes of drugs (anthelmintics).

Manage these problems in your herd:
- Using the new FAMACHA system (named for the man who developed it, it’s South African livestock pathologist Francois “Fafa” Malan’s chart)
- By identifying sheep and goats that need dewormed vs. treating all animals on a regular schedule (it’s similar to integrated pest management (IPM) for crops)
- Treat animals if and when they need it, when they are showing clinical signs (critical threshold).

Attend this workshop:
- Participating in this approved training is the only way to get a FAMACHA card/chart.
- It covers all aspects of internal parasite control, in an integrated, holistic approach combining hands-on learning activities with lectures and discussions.

Registration Fee: $30 per farm/family, covers the FAMACHA chart ($10), a booklet of reference materials ($10), supplies for doing fecal analysis ($5; slides, cover slips, flotation solution etc.) and a light lunch.

For further information and registration: Call your local Southern Maryland Cooperative Extension office or (301)753-8195. Prepayment is required to ensure adequate materials.

If you need special assistance to participate in this program, please contact Pamela B. King, Charles County Cooperative Extension, at 301-934-5403 by August 1, 2008. Use the Maryland Relay Service at 7-1-1 for text telephone service to our voice number.

Missed the Strawberry Twilight?
The entire 2008 Wye Research and Education Center Strawberry Twilight Booklet is now available for viewing or reproduction in PDF format at the WREC webpage: http://agresearch.umd.edu/RECs/WREC/ under “Recent Events”.
If you have need of a hard copy, there are a few still available by contacting Debby Dant (ddant@umd.edu) or by phone 410-827-8056 X115.
Open Enrollment for the Fall Semester of The General Forestry Online Course Begins August 1

The University of Maryland Cooperative Extension is announcing the opening for the fall 2008 semester of the General Forestry Online Course. The course begins September 1 and runs until December 15, 2008.

Registration opens August 1. To register, go to our website at: http://www.agnr.umd.edu/extension/elearning/generalforestry.

As there are no formal classes, you work from the comfort of your home using your own woodlot, a friend’s or a public forest. In this web-based course, the text and appendices are electronic. You will learn how to protect your trees from insects, diseases and fire; step-by-step procedures will walk you through a forest inventory and stand analysis; and the details of the forestry business are presented, including tax nuances and the sale and harvest of forest products. Ultimately, the course exercises help you develop the framework for a management plan for your forest.

The cost for this forestry course is $300.00. Included in the cost are copies of the supplemental readings (A Sand County Almanac, The Woodland Steward, American Forests: A History of Resiliency and Recovery, and a small pamphlet entitled What Tree Is That?), interactive discussion with other enrollees, and a CD of the text and appendices. A certificate of completion is awarded when all assignments are completed.

But don’t take our word for it. See it for yourself on our website at: http://www.agnr.umd.edu/extension/elearning/generalforestry/

There you can read a lesson from the text, view an interactive exercise, read through detailed course information and FAQs.

For more information, contact Nancy Stewart at the University of Maryland Cooperative Extension, Wye Research and Education Center, P.O. Box 169, Queenstown, MD, 21658; phone 410/827-8056, ext. 112; or email nstewart1@umd.edu. Remember, registration opens August 1. Check for details on our website today and mark the date for open enrollment on your calendar!

Vegetable Crop Insect Update

Joanne Whalen, Extension IPM Specialist jwhelan@udel.edu

Melons
Continue to scout all melons for aphids, cucumber beetles, and spider mites. As a general guideline, a treatment should be considered when you find 20-30% of the plants infested with 1-2 mites per leaf. Acracite (one application only), Agri-Mek, bifenthrin, Danitol, Oberon, and Zeal (one application only; ground application only) are labeled on melons for mite control. Be sure to check all labels for rates, precautions and restrictions, especially as they apply to pollinators. Just a few comments about our newer miticides:

Oberon is considered active against all life stages including eggs (juvenile stages are often more susceptible than adults). It has surface and translaminar activity. See link for technical bulletin for more information (http://www.bayercropwest.com/=file:District-Literature/11170437173294490a02022173973622/doc).

Zeal is described as predominately an ovicide/larvacide. Adult mites will not be controlled so initial activity may appear slow, although eggs laid by treated mites will not be viable (sterilizes the adults). In evaluations in other states, it has been highly effective and long lasting, but results may not be apparent for one week — so do not evaluate control soon after treatment. In a recent evaluation on melons, it appears to have provided good control but we will continue to evaluate this study and keep you updated. It has both contact and translaminar activity. See the following link for more information (http://www.plantmanagementnetwork.org/pub/php/news/2005/zelal/).

As a reminder, this material cannot be applied by air.

Peppers
As soon as the first flowers can be found, be sure to consider a corn borer treatment. Depending on local corn borer trap catches, sprays should be applied on a 7 to 10-day schedule once pepper fruit is ¼ - ½ inch in diameter. Be sure to check local moth catches in your area by calling the Crop Pest Hotline (in state: 1-800-345-7544; out of state: 302-831-8851) or visiting our website at (http://ag.udel.edu/extension/IPM/traps/latestblt.html). You will also need to consider a treatment for pepper maggot. Be sure to watch carefully for beet armyworm larvae since they can quickly defoliate plants.

Potatoes
Continue to scout fields for Colorado potato beetle (CPB), aphids and leafhoppers. Controls will be needed for green peach aphids if you find 2 aphids per leaf during bloom and 4 aphids per leaf post bloom. This threshold increases to 10 per leaf at 2 weeks from vine death/kill. If melon aphids are found, the threshold should be reduced by half.

July 4, 2008 Weekly Crop Update Volume 16, Issue 16 2

Snap Beans
Continue to scout for leafhopper and thrips activity in seedling stage beans. As a general guideline, once corn borer catches reach 2 per night, fresh market and processing snap beans in the bud to pin stages should be sprayed for corn borer. Sprays will be needed at the bud and pin stages on processing beans. Acephate can be used at the bud and pin stages on processing beans but remember it has a 14-day wait until harvest. Additional sprays may be needed after the pin spray on processing
beans. Since trap catches can change quickly, be sure to check our website for the most recent trap catches and information on how to use this data to make a treatment decision in processing snap beans after bloom (http://ag.udel.edu/extension/IPM/traps/latestblt.html and http://ag.udel.edu/extension/IPM/thresh/snapbeanecbthresh.html). Once pins are present on fresh market snap beans and corn borer trap catches are above 2 per night, a 7 to 10-day schedule should be maintained for corn borer control.

**Sweet Corn**
Continue to sample seedling stage fields for cutworms and flea beetles. You should also sample all fields from the whorl through pretassel stage for corn borers and corn earworms. The first silk sprays will be needed for corn earworm as soon as ear shanks are visible. Be sure to check both blacklight and pheromone trap catches for silk spray schedules since the spray schedules can quickly change. Trap catches are generally updated on Tuesday and Friday mornings (http://ag.udel.edu/extension/IPM/traps/latestblt.html and http://ag.udel.edu/extension/IPM/thresh/silkspraythresh.html). You can also call the Crop Pest Hotline (in state: 1-800-345-7544; out of state: 302-831-8851). Be sure to watch for the first fall armyworm larvae in whorl stage sweet corn. A treatment should be considered when 12-15% of the plants are infested. Since fall armyworm feeds deep in the whorls, sprays should be directed into the whorls and multiple applications are often needed to achieve control.

**Vegetable Crop Disease Update**
*Bob Mulrooney, Extension Plant Pathologist, bobmul@udel.edu*

**Tomato Spotted Wilt Virus**
Tomato spotted wilt virus was indentified and confirmed today by ELISA on tomato plants from across the line in MD. We don't see this very often but the symptoms are pretty obvious most of the time. It can be a problem when tomato transplants are produced with ornamental bedding plants, which harbor the virus. The virus is often then transmitted to tomatoes by Western flower thrips. The virus can be transmitted from weeds and perennial ornamentals as well by nine species of thrips. Young leaves are bronze colored and later develop numerous small dark spots. Growing points may die and stems of terminals may be streaked. Tomato spotted wilt on tomato.

*July 4, 2008 Weekly Crop Update Volume 16, Issue 16

**Bacterial Wilt in Cucurbits***
Symptoms of bacterial wilt will vary depending on the cucurbit crop. In general, plants may wilt during the day in hot weather and 'recover' during cooler parts of the evening and morning. Margins and interveinal areas of leaves become necrotic which cause leaves to appear ‘scorched’.

Look for beetle feeding scars on cotyledons and stems of young plants. Healthy green plants will turn chlorotic (yellow) with time and infected plants will eventually collapse and die, exposing fruit to sunscald injury. Cutting through stem tissue at the base of infected plants often reveals a coppery-tan color where the bacterium causes the vascular tissue to ‘plug up’. Control of bacterial wilt begins with controlling striped and spotted cucumber beetles which vector the pathogen early in the growing season as plants emerge. Late-season beetle control will remain important as fruit begins to mature. Late-season beetle feeding may cause injury to stems ruining aesthetic quality. For more information on cucumber beetle and bacterial wilt control please see the 2008 Delaware Commercial Vegetable Production Recommendations Guide.

**Anthracnose of Pepper**
Symptoms of anthracnose infection in pepper fruit include sunken, circular spots which develop blackish-tan to orange concentric rings as lesions develop. Lesions on stems and leaves appear as grayish-brown spots with dark margins and can easily be overlooked. Control of anthracnose begins with using cleanfree seed and/or transplants. A three-year crop rotation with non-solanoaceous crops is recommended. After the harvest season, pepper fields should be disced and plowed under thoroughly to bury crop debris. Beginning at flowering and as small fruit begin to set, alternate maneb (M3) at 1.5 to 3 lb/A 75DF with one of the following FRAC code 11 fungicides:
- aoxystrobin (Quadris at 6.2 to 15.4 fl oz 2.08F/A)
- or Flint (trifloxystrobin) 50WDG at 2 to 4 oz/A
- or Cabrio (pyraclostrobin) 20EG at 8 to 12 oz/A
- or Tanos (famoxadone + cymoxanil, 11 + 27) at 8 to 20 50WDG/A.

**Bacterial Leaf Spot of Pepper***
Symptoms of bacterial spot on pepper leaves include small, brown water-soaked lesions that turn brown and necrotic in the centers. Spots may coalesce and form large blighted areas on leaves and premature defoliation can occur. On fruit, brown lesions can form which have a roughened, cracked wart-like appearance. High temperatures, high relative humidity and rainfall favor bacterial spot development. Loss from bacterial spot can be reduced somewhat by maintaining high levels of fertility, which will stimulate new growth. Applying a fixed copper (M1) at labeled rates plus maneb (M3) at 1.5 lbs 75DF/A or 8 to 10 oz Tanos (famoxadone + cymoxanil, 11 + 27) may help suppress spread. For more information on control of bacterial leaf spot of pepper please see the 2008 Delaware Commercial Vegetable Production Recommendations.

*From Andy Wyenandt, Rutgers University*
Managing Downy Mildew of Cucurbit s
Margaret Tuttle McGrath, Cornell Plant Pathology

Downy mildew is expected to occur in cucurbit crops in PA in 2008. As of 3 July, downy mildew had been found in Ontario, Canada, and in the southern US with the closest sources being in SC. Thus the pathogen could move to PA from the south or northwest. Planting infected transplants produced in an infested area is another way the pathogen could be moved into PA this season. The pathogen is not known to be able to survive winter in cold climates. This is a potentially very devastating disease that can develop any time during crop production, in contrast with powdery mildew. Young seedlings, even those just at the cotyledon stage, are especially susceptible.

An important tool for managing cucurbit downy mildew is the forecasting system being run at North Carolina State University. Forecasts are posted at www.ces.ncsu.edu/depts/pp/cucurbit/ thrice weekly. Use the forecasts to determine when to begin applying fungicides for downy mildew. Reports of disease occurrences are posted as well. This information is valuable for determining the crops most at risk. The forecasting system has been developed to predict where downy mildew will occur in the eastern USA and Canada based on forecasted wind trajectories and weather from spore production through infection. Checking the forecast at least twice a week is a critical component of downy mildew management.

Scouting routinely for symptoms of downy mildew is another important component of an effective management program. Scout 5 to 7 days after rain. Forecasting is dependent on knowledge of downy mildew outbreaks. It is possible that there are undetected occurrences that could be more important sources of the pathogen for PA than those that have been reported.

There are several fungicides recommended for downy mildew. A contact protectant fungicide could be used before downy mildew is forecast when it is desirable to have a preventive treatment, such as with a high value crop. A contact protectant fungicide alone is also recommended when the forecasted risk of downy mildew is moderate and before downy mildew has been found in the area. An EBDC fungicide (e.g. maneb or mancozeb) is a good choice when powdery mildew is not also a concern; otherwise, a chlorothalonil fungicide is a better choice. A fungicide specific for downy mildew could also be applied when there is a moderate risk or when the forecast risk is high.

Fungicides with specific activity for downy mildew that are mobile in the plant (systemic, translaminar) include Curzate, Tanos, Ranman, Previcur Flex, Forum, Gavel, Presidio, and Revus. The last 2 were just registered this year. Gavel can be used on cucumber, melon, summer squash, and watermelon but not currently on pumpkin and winter squash because it contains mancozeb. Reason and phosphorus acid fungicides are also labeled, but they have not performed as well against the cucurbit downy mildew fungus as the other fungicides. QoI and Ridomil fungicides are no longer recommended because the pathogen has developed resistance to these types of fungicides. In university fungicide efficacy experiments, Ranman and Presidio have performed slightly better than Previcur Flex, followed by Tanos and Curzate, which are considered slightly better than Forum, Revus, Gavel, and phosphorus acid fungicides.

If symptoms are found during routine scouting before a fungicide specific for downy mildew has been applied, then the best option is Curzate or Tanos. These fungicides have an active ingredient (cymoxanil) that has kickback activity. Tanos also has an active ingredient in the QoI chemical group that is not expected to contribute to control because of resistance. Cymoxanil has short residual activity, thus another fungicide for downy mildew should be applied about 4 days later.

It is critical to initiate treatment promptly because delaying fungicide application until after disease onset increases selection pressure for resistance development and greatly decreases the degree of control achieved. Apply fungicides every 5-7 days depending on weather.

It is important to use a fungicide program designed to delay development of resistance to prolong efficacy of all the fungicides specific for downy mildew. The downy mildew pathogen is prone to developing fungicide resistance and also all mobile fungicides are at risk for resistance due to their specific mode of action. These fungicides should be used in alternation (with the exception of Curzate and Tanos which have the same active ingredient) and also tank-mixed with a protectant, except for Gavel which is formulated with a protectant.

Cucumber is most at risk for downy mildew because it is susceptible to all pathotypes of the pathogen. With another cucurbit crop, it is valuable to know whether this crop is infected at sites that could serve as the source of the pathogen. The downy mildew pathogen exists as pathotypes that vary in their ability to infect the different cucurbits. Certain pathotypes can infect all cucurbits while others are able to infect only cucumber and cantaloupe but not watermelon, squash or pumpkin. Races and strains have been described within pathotypes based on variation in virulence and fungicide sensitivity. Races and strains often develop in response to selection pressure from management practices. This is what happened with cucumber. Before 2004, when a new pathogen race became widespread, most cucumber varieties were bred to have genetic resistance that resulted in them being highly suppressive to the pathogen strains present in the USA then.
Downy mildew is very challenging to manage in organically-produced crops due to current lack of adequately effective resistant varieties, cultural practices and approved products. Serenade and Sonata have not been effective when tested in fungicide efficacy experiments with conventionally managed crops. Copper fungicides provided limited to no control.

Additional information on downy mildew and its management plus photographs of symptoms can be found at http://vegetablemdonline.ppath.cornell.edu and also at www.ces.ncsu.edu/depts/pp/cucurbıt/.

Please Note: The specific directions on fungicide labels must be adhered to -- they supersede these recommendations, if there is a conflict. Any reference to commercial products, trade or brand names is for information only; no endorsement is intended.

Agronomic Crop Insect Update
Joanne Whalen, Extension IPM Specialist
jwhalen@udel.edu

Alfalfa
Continue to sample for potato leafhoppers on a weekly basis. The treatment thresholds are 20 per 100 sweeps on alfalfa 3 inches or less in height, 50 per 100 sweeps in 4-6 inch tall alfalfa and 100 per 100 sweeps in 7-11 inch tall alfalfa.

Soybeans
We can find a number of insect pests as well as spider mites feeding on soybeans. A number of defoliators can be found including grasshoppers, green cloverworm, velvet bean caterpillar and Japanese beetles. In some fields, growers and consultants are reporting significant defoliation from green cloverworm (over 30% in some fields). Green cloverworm larvae are light green with three pairs of white stripes running the length of the body. In addition to the three pairs of legs near the head, they have three pairs of fleshy legs near the middle of the body, and one additional pair at the end of the body. Larvae wiggle vigorously when disturbed. Smaller larvae may drop from the leaf when disturbed. Young larvae skeletonize the underside of the leaf.

Older larvae chew irregular shaped holes in the leaves and can eat all of the leaf except large veins. There are also velvet bean caterpillars present in fields. This insect is a migratory pest and has four pairs of fleshy prolegs which will help to distinguish it from the green cloverworm. Large larvae can also consume the entire leaf, except for the leaf veins. Please follow this link for pictures of both larvae (http://www.ag.ndsu.nodak.edu/aginfo/entomology/ndsucpr/Years/2007/august/16/ent_16aug07.htm).

Although populations of green cloverworm generally increase in number from July through September, the dry weather may have resulted in earlier than normal populations. In addition, fungal pathogens often crash populations; however, under dry weather conditions this will not occur. We are just starting to see an increase in Japanese beetles so be sure to watch carefully for them in the next week. With the continued dry conditions, as well as increased value of soybeans, you should consider using a lower defoliation threshold to make a treatment decision.

A general guideline, you may want to reduce thresholds by at least 1/3. In addition, remember that double crop soybeans can not tolerate as much defoliation as full season beans so be sure to watch newly emerged fields carefully. We continue to find mites in a number of fields and economic levels can now be detected.

Control options include dimethoate, Lorsban (chlorpyrifos) and Hero. Remember, with all of these products early detection will be needed to achieve control.

We have also started our soybean aphid survey and no aphids have been detected so far. In states where aphids overwinter (remember they are still considered a migratory pest for us) either no or very low levels of aphids have been detected. A combination of low aphid overwintering plus numerous beneficial insects are combining to keep aphids at low numbers in areas to our north and west. As always, the situation can change quickly so we will keep you updated throughout the season.

Agronomic Crop Disease Update
Bob Mulrooney, Extension Plant Pathologist
bobmul@udel.edu

Corn
Gray leaf spot was identified this week from an irrigated field in Sussex County. The lesions were on the lowest leaves and not very numerous but a cause for concern since it is relatively early for this diseases to be showing up. The corn was just beginning to tassel so this field is a good candidate for a yield response from a fungicide application. If strobilurin fungicides (Quadris, Headline, Stratego) are used on corn be sure to wait until tassel emergence, there have been some problems in the Midwest with early fungicide applications causing some strange symptoms on corn especially “beer can ears”. Early symptoms of gray leaf spot – note rectangular lesions.

Soybean Rust Update
Things are slow on the soybean rust front. However there was more rain last week in northern Florida and south Georgia so we may see some activity this coming week. Let’s hope not. Soybean rust was confirmed in Taylor County, Florida, on kudzu on J une 20th. This is the first find in that county in 2008. Since the beginning of 2008, soybean rust has been reported on kudzu in one county in Alabama; eleven counties in Florida (two of these counties had reports on coral bean and snap bean, and one county had a report on soybean); three counties in Louisiana; one county in Mississippi, and three counties in Texas. Reported infected kudzu sites in many counties have been destroyed. Rust was also reported in three states (5 municipalities) in Mexico on yam bean and soybean. These too have been destroyed or are no longer active, except for the find in Chiapas.
During 2008, we have seen considerable lodging in wheat. It has been some years since lodging has been pronounced, which I believe is a testament to the way farmers have managed their nitrogen (N) in the region. The amount of lodging we have seen this year is the result of the extremely wet and windy conditions that occurred in the region (6-10 inches of rainfall between May 9 and 12) coupled with, in many cases, the excessive amounts of residual N that remained following last year’s drought stricken corn crop. On top of this, you can add the spring N applied to this year’s crop creating a situation perfect for lodging.

Low spots, turn rows, and areas that had overlap in N application have been especially susceptible. In Maryland, wheat began to head during the last week of April and continued during the first 10 days of May. This insured that the wheat was at a growth stage that made it susceptible to significant yield reduction attributable to this early lodging. Additionally, wheat at this stage is still prone to lodging for at least another month to six weeks in those areas of fields that have dense stands and have not yet lodged but could do so as the heads become progressively heavier.

Two types of lodging, stem and root, can occur. Stem lodging is the irreversible bending and breaking of the lower internodes. The tendency of a crop to have stem lodging is dependent on its straw length (plant height) and straw strength. Some of the factors that will increase the length of the stem include: the genetics of the cultivar; high N fertility level; low solar radiation (i.e. cloudy weather) during the formative growth; and stem diameter and stem-wall thickness (particularly the basal internodes). Root lodging is the failure of the root system to hold the plant upright allowing the plants to uproot (that is, bending or breaking of the roots). Typically, stem lodging will cause greater yield reduction due to restricted movement of water and nutrients in the plant but both kinds of lodging have negative impact on crop performance.

Severe lodging is costly due to its effects on grain formation resulting in yield loss, reduction in grain quality, and other harvest associated problems. It takes about twice the time to harvest a lodged crop than a standing one. Lodging alters plant growth and development. It affects flowering if it occurs just as the wheat is heading. It reduces photosynthetic capabilities of the plant which will limit carbohydrate assimilation. Severe lodging interferes with the transport of nutrients and moisture from the soil, ultimately reducing carbohydrate storage in the developing kernels. Lodging always results in some yield loss, and if permanent lodging occurs during the ten days following heading, the yield reduction can range between 15 and 40%. Yield losses from lodging become smaller as the crop matures, but losses will continue until the kernels are completely filled. Incomplete filling results in small and shriveled kernels, lowered carbohydrate content, and lower test weight. Lodging often contributes to uneven maturity, high grain moisture content at harvest and loss of grain quality due to sprouting and possible grain molding. Excessive moisture can often delay start of harvest and may necessitate grain drying.

Lodging is generally the result of inadequate ability of the crop to stand and adverse weather conditions, such as the heavy rains and winds we have been receiving. It is a genetic characteristic that breeders are careful to select against due to its yield-limiting potential. A tall, weak-stemmed wheat cultivar has a greater tendency to lodge than a semi-dwarf variety with stiff straw which when under conditions of high rainfall and N fertility, are less prone to lodging than standard ones. Sometimes we see wheat varieties that are initially resistant to lodging (stand erect during favorable conditions) but then will lodge when exceptionally bad weather, such as heavy rain or wind, prevails. A crop that lodges early can recover somewhat (the partial lifting that sometimes is seen with a completely flat crop) through the formation of "elbow joints" at the lowest stem nodes. The cells on the lower side of the node elongate and force the stem to a more erect position. As plants mature, however, these stem cells mature and are no longer capable of elongation to enable plant recovery.

High N fertilization or high levels of residual N from a previous crop can cause wheat plants to be more susceptible to lodging. This is due to lush growth that also provides an excellent environment for the spread of diseases. In addition, increased plant densities, heavier seeding rates, and high amounts of moisture especially when followed by cloudy and humid conditions, have been found to increase the tendency of wheat to lodge. These conditions can result in lodging problems even when shorter varieties are planted.

Grain Marketing Highlights

Carl German, Extension Crops
Marketing Specialist, clgerman@udel.edu

World Corn Output Predicted to Fall; Stocks to Decline

Global corn production is expected to decline 2% in the '08/'09 marketing year to 771 million metric tons due to flooding in the U.S. Corn Belt and frost in Brazil, according to Rabobank. World corn production is expected to lag demand by about 9%, leading to a corresponding reduction in corn stocks and a moderate increase in the price of corn.
in year on year world corn stocks that will plunge them to the lowest level in 35 years.

Current high prices for corn are expected to continue due to the need to ration demand. A downside to the positive price outlook that this scenario presents is that it will also lead to some demand destruction in the process of making adjustments. Hardest hit is likely to be the livestock and ethanol industries.

World Soybean Output to Rise; Stocks to Decline

Global production of soybeans is predicted to rise 9% in the '08/'09 marketing year to 238 mmt. However, despite an expected rise in production, low carryover stocks and an expected 2.2% consumption growth, soybean stocks are expected to erode in the '08/09 marketing year.

China's consumer price inflation rate was 8.1% in the first five months of this year. China is partly sheltered from global grain-price increases because it is largely self-sufficient in grains.

Marketing Strategy

After a slow start to yesterday's trading corn, soybeans, and wheat surged higher on the day.
Dec '08 corn futures closed at $7.80 per bushel;
Nov '08 soybean futures closed at $16.30 per bushel;
July '08 SRW wheat closed at $8.65 per bushel and
Dec '08 SRW wheat at $9.03 per bushel.

Leading the way to the higher close for commodities was the energy market with nearby crude closing at $143.57 per bushel. The nearby U.S. dollar index closed at 72.405. Trading is expected to be lighter and softer in today's trading due to the holiday weekend and lower overnight closes. Predictions of adverse growing conditions (either too much rain or too hot and dry) are kicking in the afterburners of this weather. Combine the weather market with runaway energy prices and the low value of the dollar and we are once again redefining the meaning of price volatility. USDA's next supply and demand report will be released on Friday, July 11th.

July 4, 2008 Weekly Crop Update Volume 16, Issue 16 8

Scouting & Managing Japanese Beetles in the Vineyard

Joseph A. Fiola
Professor and Specialist in Viticulture and Small Fruit jfiola@umd.edu

Japanese beetles are already making their presence known in Maryland vineyards. They create large holes in the younger leaves of your vines and cause severe lacing in severe infestations. Because of the drought conditions of the past 2 years it is predicted that the JB's will not be as great a problem as they have been in some recent years. Always be extra careful in young vines as they cannot tolerate severe defoliation.

Japanese beetles (scarab beetle family) are approx. ½ inch with metallic green bodies and copper-colored wings. They are voracious feeders and attack the foliage of numerous woody and ornamental species (roses are a preferred food) as well as grapevines. Adults emerge from the soil and begin moving into vineyards in late June. Scout for damage and the presence of beetles from mid-late June through mid-late August. They tend to feed on younger leaves. They remain present for about 2 months during which they feed, mate, and the female lays eggs in the soil. Because they are constantly emerging and moving into the vineyard, constant scouting and vigilance is required and control measures may be needed quickly and even frequently.

Remember that well-established vines can tolerate significant foliar feeding by Japanese beetles, when it is the upper younger leaves that are above the top catch wire and about to be hedged off anyway. In an extreme infestation without control vines can be completely defoliated. Younger vines tolerance is much less because total leaf area can easily be defoliated which can lead to increased winter damage and vine death. Japanese beetles become established in an area (in the turf) and populations rapidly build up over a couple of years. Once established, the chances of eradicating them from an area are slim. They have a very broad list of alternate species that they feed on and have been known to fly for up to 5 miles.
Control:
If you have a few in the vineyard, just “squish” them on the leaf. There is evidence that the dead beetles may repel others. The best materials for controlling Japanese beetles are Sevin, Danitol, Assail, and Avaunt. Imidan (14 day REI!) and Malathion are also labeled for control. Surround can be used to protect the foliage from feeding and has been very effective in some locations.
Remember the risk of using frequent, repeated sprays of Sevin is that it also kills many beneficial insects (including mite predators) which can then lead to a mite outbreak. Especially in hot dry weather. Where Japanese beetle populations are low or beetles are just beginning to be seen and fewer sprays are needed, using a “softer” insecticide can reduce the risk of mite outbreaks. Always read the pesticide label for complete information and product safety.
For further information on the biology and control of Japanese beetles, check out the following websites:
http://www.ento.vt.edu/Fruitfiles/JBGrape.html
http://www.uky.edu/Agriculture/Entomology/entfacts/trees/ef409.htm
http://ohioline.osu.edu/b919/0011.html

Wine Grape Production Guide for Eastern North America
NRAES is preparing to publish Wine Grape Production Guide for Eastern North America. The book will be a comprehensive resource for novice and experienced growers, as well as crop advisors, service providers, educators, communicators, and students.
Special pre-printing prices are available for single copies ($44 plus s+h) or bulk orders ($39 plus s+h, 25 copy minimum). The list price is expected to be $65.
The book will be over 300 pages and have 16 chapters, 174 color photos, 40 line drawings, 45+ variety descriptions, 42 tables of useful information, a key to insect and mite grape pests and a glossary.
Tony Wolf from Virginia Tech is the lead author and editor. 15 other authors contributed, and the book was improved after peer-review by 40 experts from 21 states and Canada.
Companies and organizations can sponsor the book ($2,400 Platinum, $1,500 Gold). Stakeholders also have an opportunity to show support by donating. Sponsors will be acknowledged in the book. Please help us identify potential sponsors.
The deadline for pre-press orders and sponsorship commitment is September 5, 2008. The book will be available fall 2008!
For more information, including a two-page flier, sample pages, and a chapter list, click here or go to www.nraes.org. You can place your order for books or sponsorship on the NRAES secure web site.

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If you have any difficulty subscribing or unsubscribing to the list, please send email to alwilson@umd.edu.

For more information, contact Sandra Sardanelli
Squash bugs and Pumpkins

Many of the pumpkin fields in Maryland that I have visited in the last two weeks were just coming up or had 2-5 leaves on them. I was surprised to see several squash bugs on these small plants. I also found many egg masses (Fig. 1) on the underside of leaves usually in the crotch of two veins. In some fields with plastic the squash bugs were feeding below the plastic mulch causing the plants to wilt (Figs. 2 and 3) and eventually die. Normally there are only a few fields that will have squash bugs this early, but just about all of the fields I looked at had enough squash bugs to justify treatment. Growers need to watch for squash bugs on their early pumpkin plants, especially down in the plastic hole. A spray may be needed if the plants are stressed (like they were last week from the intense heat) and there are 2 bugs or 1 egg mass per plant.

One interesting aspect of these fields with squash bugs is that all the fields that had not been sprayed had many Trichopoda pennipes Tachinid fly parasitoids (Fig. 4) in them. These medium sized, orange bellied, black winged flies will lay white eggs on the underside or “shoulder” of squash bugs (Fig. 5). The eggs will hatch on the side attached to the insect and the maggot will enter the bug and feed inside eventually killing the pest. While useful under moderate to low infestation levels of squash bugs, these parasitoids will not keep a large population of squash bugs below thresholds.
I have been working with researchers from Virginia Tech on thrips identification in their crops. They had a severe problem with thrips, especially Western flower thrips (WFT) Frankliniella occidentalis, last summer in tomato and cotton. This year they wanted to see if they were getting early (April and May) populations of WFT in their fields. Sure enough, the samples I saw from tomatoes, cotton and some winter annual weeds all had 20-50% of their thrips population as Western flower thrips. Southern parts of Maryland and the southern most part of Delaware will probably see these WFT populations move into the area in late June and early July. This is another good reason NOT to apply any pesticides to tomato unless absolutely needed, especially early in the season. My research has shown that WFT are consistently worse on farms in our area that use pesticides on a weekly basis, whether their use is warranted or not. WFT are worse because they are usually resistant to many of the pesticides we commonly use and the frequent sprays greatly reduce natural enemies of WFT. Save your chemical sprays for later in the season when worms, thrips, mites and stink bugs may become major problems.

For more information, contact: Jerry Brust

Development of Resistant Brown Rot on Stone Fruit

Dr. Norman Lalancette, tree fruit pathologist at Rutgers University, recently found that a 2006 isolate of the fungal pathogen that causes blossom blight and brown rot on stone fruits collected from a southern New Jersey orchard was resistant to the fungicide propiconazole. Propiconazole belongs to the DMI (demethylation inhibitor) class of fungicides, also called sterol inhibitors, which are at risk of resistance development. It is the active ingredient in Orbit, PropiMax, and Bumper, which are commonly used on stone fruit. Propiconazole resistance in this pathogen, Monilinia fructicola, has previously been reported in Georgia, Ohio, South Carolina, and New York. Excerpts from Dr. Lalancette’s article, Fungicide Resistance Discovered in New Jersey Peach Orchard, in the May 27, 2008 issue of the Rutgers Cooperative Extension Plant & Pest Advisory Newsletter, Fruit Edition follow.

The resistant isolate was originally obtained in 2006 from a commercial New Jersey peach orchard. In that year, eleven isolates of M. fructicola were collected, five from northern and central New Jersey and six from southern New Jersey. The original purpose of this collection was to obtain different genotypes of the pathogen from separate peach growing areas of the state. However, given that DMI resistance in M. fructicola has recently been reported in Georgia, Ohio, South Carolina, and New York orchards, it was decided to assay the isolate collection for resistance, even though it represented an extremely small sample size. Surprisingly, a resistant isolate was found in a sample collected from a southern NJ orchard.

How common is this resistance in New Jersey stone fruit orchards? It is entirely possible that DMI resistance is not widespread and that the single resistant isolate was found by sheer chance. However, given that the resistant isolate was discovered in such a small sample size (one out of eleven), it is more probable that DMI resistance is fairly widespread. Loss of brown rot control has not yet been reported in New Jersey, but this may be due to several interacting factors: (1) the proportion of the resistant subpopulation may still be low relative to the sensitive subpopulation; (2) mid-late summer droughts over the last two years limited development of brown rot epidemics; and (3) the use of non-DMI fungicides during bloom and fruit ripening is delaying emergence of resistant strains.

What Should Growers Do?

As noted above, no one has yet reported a control failure in New Jersey, and resistant strains have not yet been detected in Maryland or neighboring states. To delay the emergence of resistant strains, growers should follow a rotational program that alternates non-DMI fungicides from several other classes with DMIs, especially during the critical preharvest period. A number of non-DMI fungicides, singly or in combination, offer excellent brown rot control during the blossom blight and fruit rot phases of the diseases. Consult the 2008 VA-WV-MD Tree Fruit Spray Bulletin for Commercial Growers for more information. The spray bulletin may be downloaded free of charge from: http://www.ext.vt.edu/pubs/treefruit/456-419/456-419.html. Printed copies may be ordered from Virginia Cooperative Extension at $12.00/copy, including shipping. Request Publication #456-419 from:
If you have questions or comments about this publication or have clients or colleagues that would value receiving it as well, please contact Ginger Myers at gsmyers@umd.edu.

Wild & Wooly
The summer 2008 issue of Wild & Wooly, the Maryland Sheep & Goat Producer newsletter has been published to the web at: http://www.sheepandgoat.com/news/index.html. The newsletter may be viewed online or printed as a PDF file in its original graphics format.

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Pesticides Persist in Ground Water
USGS scientists examine factors influencing pesticide detection in ground water in the May-June issue of Journal of Environmental Quality.

MADISON, WI, JUNE 23, 2008–Numerous studies over the past four decades have established that pesticides, which are typically applied at the land surface, can move downward through the unsaturated zone to reach the water table at detectable concentrations. The downward movement of pesticide degradation products, formed in situ, can also contribute to the contamination of ground water. Once in ground water, pesticides and their degradation products can persist for years, depending upon the chemical structure of the compounds and the environmental conditions.

Scientists at the U.S. Geological Survey (USGS) investigated the occurrence of selected pesticides and their degradation products in ground water during a study funded by the USGS National Water-Quality Assessment (NAWQA) Program. Specifically, the authors examined several of the factors that can influence the likelihood with which pesticides and their degradation products are detected in shallow ground water—including oxidation-reduction (redox) conditions and ground-water residence times—at four study sites across the United States. Results from the study were published in the May-June 2008 issue of the Journal of Environmental Quality.

The study revealed that the pesticides and degradation products detected most frequently in shallow ground-water...
samples from all four areas were predominantly from two classes of herbicides—triazines and chloroacetanilides. None of the insecticides or fungicides examined were detected in ground-water samples. In most samples, the concentrations of the pesticide degradation products greatly exceeded those of their parent compounds. Pesticides or their degradation products were detected most commonly in ground water that recharged between 1949 and 2004, and in monitoring wells spanning the full depth range (about 2 to 52 m) examined—from the shallowest to the deepest wells—in all four study areas. Comparisons of pesticide concentrations with a variety of environmental variables indicated that redox conditions, ground-water residence times, and the concentrations of dissolved oxygen and excess nitrogen gas from denitrification (the breaking down of nitrogen compounds such as nitrate) were all important factors affecting the concentrations of pesticides and their degradation products in all four ground-water systems.

The four sites selected for this study were located in agricultural landscapes in Maryland, Nebraska, California, and Washington. They were also selected for variability in overall land use, crops grown, climate, agricultural practices, irrigation, geohydrologic settings, and redox conditions. During the spring of 2004, water samples were collected from a network of 59 shallow single or clustered monitoring wells and analyzed for the occurrence of 45 pesticides and 40 pesticide degradation products, including herbicide, insecticides, and fungicides.

Greg Steele, senior author for this study, stated “Atrazine and its degradation product deethylatrazine both persisted in similar amounts at the Nebraska site, but in water samples from the other three study sites, there was little change with apparent age of water as the fraction as deethylatrazine generally exceeded 80% of the sum of atrazine and deethylatrazine. On the other hand, in three of the four areas studied (Washington excluded because it did not have any detections of metolachlor or its degradation products), the proportion of metolachlor in ground water was far less than that for its degradation products.”

The full article is available for no charge for 30 days following the date of this summary. View the abstract at http://jeq.scijournals.org/cgi/content/abstract/37/3/1116.

The Soil Science Society of America (SSSA) is a progressive, international scientific society that fosters the transfer of knowledge and practices to sustain global soils. Based in Madison, WI, and founded in 1936, SSSA is the professional home for 6,000+ members dedicated to advancing the field of soil science. It provides information about soils in relation to crop production, environmental quality, ecosystem sustainability, bioremediation, waste management, recycling, and wise land use.

SSSA supports its members by providing quality research-based publications, educational programs, certifications, and science policy initiatives via a Washington, DC, office. For more information, visit www.soils.org.

SSSA is the founding sponsor of an approximately 5,000-square foot exhibition, Dig It! The Secrets of Soil, opening July 19, 2008 at the Smithsonian’s National Museum of Natural History in Washington, DC.

Dig It! Opening Events Announced
Events surrounding the July 19 opening of the Dig It! The Secrets of Soil exhibition at the Smithsonian’s National Museum of Natural History, Washington DC, include:

- USDA-NRCS will host a Dig It! Reception on Friday afternoon, July 18. All are invited to join USDA Secretary Ed Schafer, Under Secretary Mark Rey, NRCS Chief Arlen Lancaster, and the dozens of NRCS employees involved in the project. View Invitation (pdf)

Senate Soils Resolution On behalf of constituent and SSSA Past President Rattan Lal, Senators Sherrod Brown (D-OH) and George Voinovich (R-OH) championed passage of a Soils Resolution, “recognizing soil as an essential natural resource, and soils professionals as playing a critical role in managing our Nation’s soil resources.” Supporters include: Conrad (D-ND), Grassley (R-IA), Harkin (D-IA), Salazar (D-CO), Feingold (D-WI). View Resolution (pdf)

President’s Blog: Reaping What We Sow “Given the importance of federal programs and funding to our science, it is critical that as a Society we actively engage in informing and influencing decision makers about the importance of our work,” says ASA President Ken Moore in his latest President’s Blog entry. Read More

Coming Soon: Children’s Soils Book Get kids excited about the living world of soil with a new SSSA book, SOIL! Get the Inside Scoop. Written for children ages 9-12, this 36-page, full-color book explores the different kinds of soil and the scientists who work with soil. It was developed by SSSA K-12 Committee members. Pre-Order your copies today (available after July 14 in the online store).
Farmers' Guide to Disaster Assistance
(Sixth Edition, 2008)

Written by FLAG attorneys, Farmers' Guide to Disaster Assistance describes in plain language the rules for programs such as FEMA assistance, federal crop insurance, USDA's Non-Insured Crop Disaster Assistance Program, and Emergency Loans from USDA's Farm Service Agency. Chapter 1 includes a preview of programs authorized in the 2008 Farm Bill. Chapters of the book may be downloaded below at no charge. A bound copy of the book is available by calling FLAG's office at 651-223-5400, or by using our order form. The charge is $40.00 plus shipping, through an online publisher. There may be slight delays as the book initially goes to press in June, 2008.

FLAG also offers the Farmers' Guide to Disaster Assistance on CD-R. This CD includes the complete publication in searchable PDF format. The cost is $10.00. Price includes shipping. Call the FLAG office to request a copy.

**Chapter 1: Table of Contents, Summary of Disaster Programs Chart, Introduction, and 2008 Farm Bill Program Preview** (18 pages, 310 KB)

**Chapter 2: Federal Emergency Management Agency (FEMA) Programs** (43 pages, 248 KB)

**Chapter 3: Federal Crop Insurance** (147 pages, 501 KB)

**Chapter 4: Non-Insured Crop Disaster Assistance Program (NAP)** (69 pages, 337 KB)

**Chapter 5: Emergency Conservation Program** (34 pages, 248 KB)

**Chapter 6: Disaster Assistance for Livestock Producers** (27 pages, 240 KB)

**Chapter 7: Farm Service Agency (FSA) Emergency (EM) Loans** (92 pages, 412 KB)

**Chapter 8: Farm Service Agency (FSA) Disaster Set-Aside** (27 pages, 198 KB)

**Chapter 9: Small Business Administration (SBA) Disaster Loans** (61 pages, 279 KB)

**Chapter 10: Bankruptcy** (21 pages, 228 KB)

**Chapter 11: Federal Income Taxes** (12 pages, 194 KB)

**Appendix: Disaster Readiness and Recovery: Legal Considerations for Organic Farmers, (49 pages, 315 KB)**

Westfield Annapolis Farmers’ Market Opens

ANNAPOLIS, MD (July 1, 2007)-- Anne Arundel County’s newest farmers’ market opens Sunday, July 6th at Westfield Annapolis Mall. The market will be open every Sunday through September 28th from 12 Noon – 3:00 p.m. in the parking area next to Sears Automotive. A special Grand Opening Ceremony, hosted by Anne Arundel County Executive John R. Leopold, will take place at 12:30, Sunday, July 13th.

“Westfield Annapolis is a wonderful location for our farmers to offer fresh produce to Anne Arundel County residents,” said Anne Arundel County Executive John R. Leopold. “As consumer demand for local products continues to increase, farmers’ markets are becoming popular sites for purchasing locally grown produce. I thank Westfield Annapolis for their continued commitment to the Anne Arundel County community.”

Each week, the Westfield Annapolis Farmers’ Market will feature vendors selling a variety of products grown or produced in Maryland including produce, seafood, poultry, eggs, pork, beef, baked goods, herbal and body care products, ice cream, coffee, canned goods and much more. During the Grand Opening event on July 13, special activities will include live music, exhibits from local agricultural agencies, and a Williams-Sonoma cooking demonstration using ingredients from the market.

Scott DeGraffenreid, Marketing Director at Westfield Annapolis said “Westfield Annapolis is pleased to provide the venue for such a popular, well-loved resource. Commitment to community/local producers and broadening the range of goods and services available for our shoppers completely fits with our philosophy of being in the business of building businesses,” he continued. “The Farmers’ Market further enhances Westfield Annapolis’ dedication to creating destinations that combine the best mix of local, national, and international retail that responds to our community.”

Note: WIC and Senior FMNP Checks Accepted at all AA County Farmers’ Markets.

The Anne Arundel Economic Development Corporation manages and promotes agricultural and environmental programs on behalf of Anne Arundel County. These programs are part of our mission to serve business needs and to increase the County’s economic base through job growth and investment. For additional information on agriculture programs or Farmers Markets’ in Anne Arundel County please contact Lisa Barge at the Anne Arundel Economic Development Corporation, (410) 222-7410 or visit our website at www.aaedc.org/initiatives.

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Gypsy Moth Spray Program Completed
The Maryland Department of Agriculture (MDA) completed its aerial spray program treating trees on more than 99,000 acres of land in 13 counties and Baltimore City to prevent forest defoliation caused by the gypsy moth. Spraying began in late April on the Eastern Shore and moved west ending in Garrett County a week ahead of the projected June 7 completion date. "Our crew worked tirelessly over the past month to protect our State's hardwood forests and neighborhood trees against damage from the gypsy moth," said MDA Dep. Secretary Buddy Hance. "We thank Governor O'Malley for the $4.1 million in funding he provided in the budget to meet the statewide need for these services. We also greatly appreciate the contributions of our local and federal partners to this effort."

MDA entomologists and field inspectors will now begin looking for egg masses to determine if and where infestations may occur next year. Property owners and residents are encouraged to report the presence of any gypsy moth caterpillars, egg masses, or defoliation. For more information and to learn what homeowners can do pro-actively to prevent gypsy moth damage, click here.

MACS Manual Now Online
The Maryland Agricultural Water Quality Cost-Share (MACS) Program provides farmers with grants for up to 87.5 percent of the cost to install conservation measures known as best management practices (BMPs) on their farms to prevent soil erosion, manage nutrients and safeguard water quality in streams, rivers and the Chesapeake Bay. There are more than 30 BMPs currently eligible for funding under this program, including cover crops, waste storage structures, and streamside buffers.

Throughout its history, MACS has been a leader in helping farmers protect soil and water resources by providing conservation grants to install tried and true conservation measures as well as innovative, state-of-the-art practices. Click here to learn more.

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.

Anne Arundel County Extension website: http://anearundel.umd.edu/
The current and past agricultural newsletter additions are available for viewing or copy at: http://anearundel.umd.edu/AGNR/agnews.cfm

An agricultural bulletin page is also available for viewing or copy under our hot topics section at http://anearundel.umd.edu/AGNR/agnews.cfm

New on the website 2008: Anne Arundel County Agricultural Program Teaching Modules - Streaming Video: http://anearundel.umd.edu/Agriculture.cfm

Also relive the history of Extension and University of Maryland College of Agriculture Land Grant Mission by viewing the 150 Years Anniversary PowerPoint: http://anearundel.umd.edu/files/University%20of%20Maryland%2020150%20Year%2020Anniversary.pps

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.

Happy Planting!

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

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Individual Newsletter
2002 National Winner

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REMINDER TO ALL PRODUCERS
Tissue and soil samples need to be taken in conjunction during the following dates in order for a nutrient management plan to be written.

Timing for sampling tree and small fruits:
Fruit trees: July 15th - September 1st
Brambles: August 1st - 20th

Krista Mitchell, Nutrient Management Advisor, is in the Anne Arundel office on Thursdays, Fridays, and every other Wednesday (this is new).