Dave’s Ramble

Revisit a favorite childhood haunt and note the most probable conclusion. “Why it’s much smaller than I remember! Much less formidable!” The accomplishment of any monumental life task requires this same perspective lesson first.

If you are in need of a perspective lesson then I would recommend the following exercise: Gather a large balloon capable of achieving a three-foot inflated diameter, a pea and a mustard seed. Enlist an accomplice and head to the nearest football field. At one end of the football field inflate the balloon fully to its three-foot diameter and send the helper to the other end of the field with the pea. As you hold the balloon and the pea into the air you have created scale solar system equivalent of the sun and earth orbit. Now as you depart the park area drive two miles and ask the assistant to toss the mustard seed out of the window, thus at a scale representation of Pluto and its orbit.

All of a sudden the solar system becomes tangible and real, maybe for the first time. Every task has a boundary that is measurable; Even the overwhelming tasks.

A proper perspective allows for the correct measurement.

Each of us is capable of so much more than we can actually imagine of ourselves.

I recently traveled to Stavropol, Russia and stepped into some of the largest and most productive wheat fields in the world. The same fields cultivated at the dawn of human civilization by the Babylonian and Persian Empires. Upon my arrival home, just like that small child who has suddenly matured, the fields that once seemed so overwhelming before had diminished.

Strive hard in life to have the faith of the mustard seed, even when you seem the farthest from the light. You will move mountains!

Calendar of Events

Mark Your Calendars --- Plan To Participate

- January 7 - Southern MD Forage Conference - Waldorf
- January 12 - Pesticide Certification Training - DFRC
- January 26 - Pesticide Certification Exam - DFRC
- January 29 - Buyer-Grower Meeting - Annapolis
- January 30 - Central MD Vegetable Meeting - Upperco
- February 7 - Vineyard Pruning Clinic - Upper Marlboro
- February 11 - So. MD Vegetable & Fruit Meeting - Loveville
- February 18 - Bay Area Fruit School - Wye REC
- March 16- Pasture & Field Crop Workshop NM/PAT- DFRC
- March 27 - On-Line Pesticide Applicator Recertification
- March 30 – Advanced Herbicide Workshop - Glen Burnie
- April 3 – On-Line Nutrient Voucher Recertification

Inside This Issue

- Winter & Spring Meetings
- Pest Net
- MARBI DCO Vineyard Planting Loan
- Managing Strawberry & Bramble Diseases
- Agronomic Update
- Grain Marketing Highlights
- Environmental Horticulture
- Latest MD Ag Statistics Now Available
- Farm Program Updates
- “Newtrient” News
- MACS Program Grants
- Extension Site Dealing with Economic Crisis
- Advancements in Agricultural Biotechnology
- AASCD Equine Outreach Program
- New Website Features

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
WINTER & SPRING MEETINGS
Mark your calendars now and plan to be a part of the fall and winter meetings.

Maryland/Delaware Forage Council
Southern MD Hay & Pasture Conference
January 7, 2009
Izaak Walton League, Waldorf, MD

AGENDA

8:00 Registration and morning refreshments
8:45 Welcome – Mr. Ben Beale, Extension Educator, University of Maryland
9:00 Teff—the Rest of the Story.
   Panel discussion with Dr. Richard Taylor, Extension Agronomist, Univ. of Delaware; Ben Beale, Extension Educator—St. Mary’s County and Area Farmers.
9:45 What You Don’t Know About the Growth of Forage Plants Will Hurt You.
   Dr. Marvin Hall—Professor of Forage Management, Penn State University, University Park, PA
10:45 Break
11:00 What Does that Bale of Hay Really Cost?
   Dr. Gordon Groover, Extension Economist, Virginia Tech, Blacksburg, VA
12:00 Lunch and visit exhibitors
1:00 MD-Delaware Forage Council Report.
1:15 Selecting the Best Forage Variety When Seed Prices Are High.
   Dr. Marvin Hall—Professor of Forage Management, Penn State University, University Park, PA
2:00 To Hay or Not to Hay?
   Dr. Gordon Groover—Extension Economist, Virginia Tech, Blacksburg, VA
2:45 Break
3:00 Labor Savers: Overview of Small Bale Handling Equipment
   Steve Darcy, Farmer–Prince Georges County
4:00 Adjourn

More detailed program information available on the Web at: http://www.mdforages.umd.edu or through local county Extension and NRCS/Soil Conservation District offices in Maryland.

Register early to receive a discounted ticket.
Registration before 1/02/09 - $15.00 pp
Registration after 1/02/09 - $20.00 pp

Directions to Izaak Walton League
From Route 301 South in Waldorf, turn left onto Route 5 South towards Lexington Park and go 2.7 miles to Poplar Hill Road. Turn left on Poplar Hill Road and continue 1.3 miles to Gardiner Road. Turn right on Gardiner Road and go 1.3 miles to the Izaak Walton League property.

From the Route 301 North turn right onto the Route 5 Business/Leonardtown Road. Go 2 miles and turn left onto Mattawoman Beantown Road. Go .3 miles and turn right onto Poplar Hill Road. Continue on Poplar Hill for 1.3 miles and turn right onto Gardiner Road. Continue another 1.3 miles to the Izaak Walton League Property.

Become a MD Certified Private Pesticide Applicator

If you have allowed your Private Pesticide Applicator Certification to expire or are a new applicant, then you are invited to attend the Private Pesticide Applicator Certification Training and Examination. It’s a two step process:

Step 1: A Private Applicator Certification Training
will be conducted at the Davidsonville Family Recreation Center (DFRC) from 6:00 to 8:00 p.m. on January 12, 2009.

Step 2: A Private Pesticide Applicator Exam
will be given at the Davidsonville Family and Recreation Center (DFRC) from 6:00 to 8:00 p.m. on January 26, 2009.
University of Maryland Cooperative Extension Offers Farm Management Classes for Women

The University of Maryland Cooperative Extension will conduct Annie's Project during the winter of 2009. Annie's Project focuses on the many aspects of farm management and is designed to empower women in overall farm decision making and to build local networks throughout the state. The target audience is farmwomen with a passion for business, agriculture and involvement in the farm operation.

Topics for the sessions cover the five areas of Risk Management – Production, Marketing, Financial, Legal Risk, Human Resources. This course is open to anyone interested in farm management practices. The course will be 8 evening sessions starting on Wednesday, January 14, 2009 with classroom and computer lab work. This course is open to anyone interested in farm management practices. If you require special assistance to attend the classes please contact 410-822-1244.

For registration information contact Jenny Rhodes jrhodes@umd.edu 410-758-0166 or Shannon Dill sdill@umd.edu 410-822-1244.

2009 Beekeeping 101

University of MD Extension will be offering a beginning beekeeping class at the Wye Research and Education Center in Queenstown, Maryland. The opening session will be held on Saturday, January 17, 2009 from 9:00 AM - 12:00 noon. Registration fee is $100.00, which includes the textbook “The Beekeeper's Handbook, Third Edition” by Diana Sammataro. If you have your own book, the fee will be $70.00.

You will learn......
> About bees, in general
> About beekeeping equipment
> How and where to set up and establish a hive (i.e. location, wind, etc.)
> How to use a smoker
> How to hive a package of bees

The class will be held one Saturday per month through April. A final session will be held approximately the third week of September and will teach how to winterize and protect your hives and bees from diseases and pests. For registration, contact:

Debby Dant, ddant@umd.edu
Wye Research & Education Center
PO Box 169, Queenstown, MD 21658
410-827-8056 X115, Fax: 410-827-9039

Registration deadline is January 7, 2009.

Tool Time for Pre-Harvest Marketers

What pricing tools are available to grain marketers before harvest? This workshop will use the example of a pre-harvest plan for corn in 2007 to illustrate the pros and cons of six different pricing tools: forward contracts, selling futures contracts, hedge-to-arrive contracts, buying put options, forward contracting and buying call options, and selling calls to form a price window. Once they develop a better understanding of the tools, your customers will be invited to “test drive” these tools in a realistic marketing game.

- **January 29, 2009** -- Chesapeake College
  Register Jenny Rhodes, 410-758-0166, jrhodes@umd.edu

- **February 4, 2009** -- Princess Anne
  Register Richard Nottingham, 410-651-1350, jnotting@umd.edu

Sessions are from 9 am - 2 pm

These sessions are open to all. If you need special assistance please register one week ahead of time.

SURVIVING THE RISK: A LOOK AT LEASE AGREEMENTS, BUDGETS, MARKETING AND MORE!

The University of Maryland Extension has created a series of winter workshops for farmers and landowners on the Eastern Shore focusing on surviving the risk. With today’s escalating input costs, and volatile commodity markets it is increasingly important to reduce risk on the farm.

The topics that will be addressed are crop budgets, flexible lease contracts, basic grain marketing, and crop insurance. New for 2009 are crop budgets and custom rate survey. We will also share innovative lease contracts being used in the Mid-west. This topic will address the basic requirements of a lease contract from the owner and the operator’s viewpoint. We will also present some basics about managing and marketing grain. Dates are:

- **January 15, 2009** – Kennedyville
  Register John Hall, 410-778-1661, jehall@umd.edu

- **January 20, 2009** – Salisbury
  Register Richard Nottingham, 410-651-1350, jnotting@umd.edu

- **January 27, 2009** – Chesapeake College
  Register Jenny Rhodes, 410-758-0166, jrhodes@umd.edu

The workshops are from 8:30 am to 3:00 pm.

These sessions are open to all. If you need special assistance please register 1 week before the date. Registration cost $15 and includes breakfast, lunch and materials. Please register one week ahead of time.
7th Annual Buyer-Grower Meeting

Make plans to attend our 7th annual Buyer-Grower Meeting, which will be held on **January 29, 2009 from 10am - 3pm.** This meeting provides an opportunity for Maryland farmers and producers to meet and talk one-on-one with local and regional buyers from grocery chains, restaurants, hospitals, schools and more. It is a chance to make new connections and discuss products, availability, farming practices, delivery specifications, and other important business details. Products from past meetings have ranged from fruits and vegetables to dairy, meats, and seafood.

With the growing demand for local foods in more retail locations and institutions, businesses can attract more customers and also support farmers throughout our community, strengthen our region's economy, and build a more local and sustainable food system.

The meeting is free, but space is limited, so advance registration is required by January 16, 2009. Early registration will also guarantee that your farm or business will be listed in our pre-event promotion; it's important to let your potential partners know you will be there!

For additional details, and to register online go to [www.marylandsbest.net](http://www.marylandsbest.net). If you have any questions, please feel free to contact Kate Mason.

Kate Mason
Agricultural Marketing Specialist
Maryland Department of Agriculture
50 Harry S. Truman Parkway
Annapolis, MD 21401
Phone: 410-841-5779
Fax: 410-841-5987
Central Maryland Vegetable Growers Meeting
January 30, 2009

This well sponsored, large grower meeting always offers a great deal of vegetable industry information. The Central Maryland Vegetable Growers Meeting will be held on January 30, 2009 from 8:00 a.m. to 3:30 p.m. at the Friendly Farm Inn, located on Foreston Rd. in Upperco, MD. Pesticide recertification credits are awarded for attending this meeting. For full meeting details, and to register call the Baltimore County Extension Office at 410-666-1024 today.

Upper Marlboro Research Vineyard Pruning Clinic
February 7, 2009

The University of Maryland Vineyard Team and the Maryland Grape Growers Association wish to invite you to attend the MGGA Upper Marlboro Research Vineyard Pruning Clinic to be held on February 7, 2009 from 9:00 a.m. to noon at the Upper Marlboro Research and Education Center located at 2005 Largo Road, in Upper Marlboro, MD. For more details and directions give me a call, or go to the MGGA web site at: http://www.marylandwine.com/

Southern Maryland Vegetable & Fruit Production Meeting
February 11, 2009

Make plans to attend the Southern Maryland Vegetable and Fruit Production Meeting on Wednesday, February 11, 2009. This year the meeting will be held in St. Mary’s County. This meeting will provide Private Applicator Recertification & Nutrient Applicator Voucher Recertification. Speakers will provide IPM updates and present on a broad range of production topics.

Also meeting sponsors will showcase their products and services, and state vegetable organization leaders will be present to recruit and answer your questions. Please attend and make this meeting the best ever. For full conference details, contact Ben Beale, Extension Agent, St. Mary’s County Extension Office at 410-222-6759.

Bay Area Fruit School
February 18, 2009

Attention all fruit growers! Plan to attend the Bay Area Fruit School on February 18, 2009 at the WYE Research and Education Center in Queenstown, MD from 8:30 a.m. to 3:30 p.m. This all day meeting will provide Private Pesticide Applicator Recertification Credit.

For full meeting details and registration call Debbie Dant, WYE REC at 410-827-8056, Ext. 115.

Field Crops & Pasture IPM Workshop
March 16, 2009

Make plans to attend the Field Crops & Pasture IPM Workshop, Monday, March 16, 2009 at the Davidsonville Family Recreation Center (DFRC) from 6:00 p.m. to 9:00 p.m. This workshop will explore advanced concepts of pasture and field crop production in the Southern Maryland region from establishment to harvest, including animal utilization. Topics will include: Crop selection; integrated crop management; soil fertility; weed control; insect control; and disease control for soybeans, corn, wheat, barley and hay crops.

Private Pesticide Applicator Recertification & Nutrient Applicator Voucher Recertification will be awarded for full class participation.

To register for this event contact the Anne Arundel County Extension Office at 410-222-6759.

New Live On-Line Session Private Pesticide Applicator Recertification
March 27, 2009

If you would like the opportunity to learn from home, yet still be engaged, then be sure to enroll in this New On-Line Private Pesticide Recertification Training, scheduled for March 27, 2009 from 4:00 to 6:00 p.m.

The session will focus on pesticide use and related topics for all field crops, fruits and vegetables. This Adobe Connect recertification session will be live via the internet directly from the University of Maryland. Adobe Connect is a student interactive system that will document your attendance. To participate in a live Adobe Connect session a high speed cable or satellite internet connection is required.

Private Pesticide Applicator Recertification credit will be awarded for full 2-hour session participation. Registration by March 25th is required in order to receive Adobe Connect login instructions.

To register for this on-line event contact the Anne Arundel County Extension 410-222-6759.
Every year offers a different challenge to the effectiveness of herbicides for controlling weeds in our field crops, vegetables and fruits. In order to better understand herbicide successes and failures we need to have a working knowledge of herbicide chemistry, environmental interaction and mode of action.

Make plans to attend the first of a series of Advanced Agronomic Workshops: I. Herbicide Technology scheduled for March 30, 2009 from 6:00-9:00 p.m. at the Anne Arundel County Extension office in Glen Burnie, MD.

This workshop is intended for farmers and crop professionals, taught at the college level, therefore, a familiarity with herbicides and their application is a prerequisite. Participants in this workshop will discover the importance of knowing herbicide chemical families; persistence of herbicides and interaction in the soil environment; and herbicide mechanism of weed control. We will use crop, soil and weather scenarios to understand and predict the effectiveness of herbicide applications. During our discussions we will reveal important herbicide soil and plant behaviors such as: mobility; water solubility; translocation; plant metabolism; mechanism of action; symptomology; soil half-life; environmental degradation; and vapor potential.

To register for this workshop or for more information contact Dave Myers at the Anne Arundel County Extension Office, 410 222-6759.

New Live On-Line Session
Nutrient Applicator Voucher Recertification
April 3, 2009

If you would like the opportunity to learn from home, yet still be engaged, then be sure to enroll in the New Live On-Line Nutrient Applicator Voucher Recertification Training, scheduled for April 3, 2009 from 4:00 to 6:00 p.m. This session will focus on fertility and production related topics for all field crops, fruits and vegetables. This Adobe Connect recertification session will be live via the internet directly from the University of Maryland. Adobe Connect is a student interactive system that will document your attendance. To participate in a live Adobe Connect session a high speed cable or satellite internet connection is required.

Nutrient Applicator Voucher Recertification credit will be awarded for full 2-hour session participation. Registration by April 1st is required in order to receive Adobe Connect login instructions.

To register for this on-line event contact the Anne Arundel County Extension Office at 410-222-6759.
“Timely Viticulture” is designed to give those in the Maryland grape industry a timely reminder of things they should be considering in the vineyard or when establishing a planting.

MARBIDCO is pleased to announce a new low-cost loan program to assist the developing grape-growing and wine-making industry in Maryland. The Vineyard Planting Loan Fund has been established by MARBIDCO to help meet the unique financing needs of rural landowners wanting to plant grapes. Grapevines typically take 3-4 years to produce their first commercial crop, with additional years needed to reach full maturity. This program makes available low-interest loans of $10,000 to $100,000 to qualified applicants. A major aim of this program is to increase the acreage of viable commercial vineyards in Maryland. Another objective of this program is to complement the financial services offered by private commercial lenders by helping to make rural enterprise financing both available and affordable. This program is supported by the Maryland Wineries Association and the Maryland Grape Growers Association.

The requested financial assistance must relate to the installation of new vineyards, including, but not limited to, the prepping of land for vineyard installation, purchase of vines, vineyard equipment and supplies. Each loan application will be reviewed for financial viability by a loan review panel from MARBIDCO, and operational, viticultural and/or enological viability by members of the wine/grape industry's viticulture committee. MARBIDCO will make and service all loans, and all loans must be fully collateralized. Borrowers have some flexibility in choosing the loan repayment terms that best fit their needs (including an interest-only payment option for three years). Applications are reviewed as they are received and typically take 3-4 weeks to process. Please see the attached application form for more information, or visit MARBIDCO on the web at: www.marbiddc.org

Please note that the purchase of tractors, pick-up trucks, and wine-making equipment are not eligible for financing under this particular program, but are eligible for financing under other MARBIDCO programs including the "MRBIII" and Rural Business Working Capital Loan Programs. Please contact Kristen Robinson at the MARBIDCO Office if you have a question concerning this or any other MARBIDCO financing program (at 410-267-6807), or consult with your local commercial banker or farm credit officer.

Additional information is always available on my web site http://www.grapesandfruit.umd.edu/ and the listed links.

Joseph A. Fiola, Ph.D.
Specialist in Viticulture and Small Fruit
University of Maryland
Western MD Research & Education Center
18330 Keedysville Road, Keedysville, MD 21756-1104
301-432-2767 ext. 344; Fax 301-432-4089
jfiola@umd.edu
http://www.westernmaryland.umd.edu/viticulturesmallfruit.htm

Managing Strawberry and Bramble Diseases
Anne DeMarsay
Extension Specialist, Univ. of MD

Strawberries and "brambles"—blackberries and raspberries—can be profitable crops for growers who sell their fruit at farm stands and farm markets or operate U-pick farms. Because these berries are soft and highly perishable, many prospective growers are concerned about diseases, especially fruit rots.

Paying careful attention to site selection and preparation, choosing the right varieties, and using good cultural practices will help you to avoid some of the most damaging diseases and manage others to maximize yield and shelf life.

You may be surprised to learn that strawberries, blackberries, and raspberries are relatives. They belong to the same branch of the rose family and are closely related to roses. Because of their kinship, they are susceptible to many of the same diseases. While symptoms may look different on each fruit, similar cultural practices are important in disease prevention and management.

Diseases caused by soilborne pathogens are most destructive to strawberry and bramble plantings. They can cause productivity and fruit quality to decline slowly, or kill plants in days or weeks. Soilborne pathogens can survive in the soil for many years, and few can be managed chemically. To minimize exposure to these pathogens, choose a site with the following features:

- Excellent drainage, full sun, good air circulation, good soil structure (tilth), and no frost pockets
- No history of Phytophthora crown or root rots
- No history of Verticillium wilt (5–10 yrs) or recent planting of susceptible crops (brambles, strawberries, tomatoes, peppers, eggplant, potatoes)
- For raspberries and blackberries, no recent history of crown gall (2–3 yrs)

Blackberries, raspberries, and strawberries hate “wet feet” and are susceptible to crown and root rots caused by various species of the fungal-like pathogen Phytophthora. Excellent surface and internal drainage are a necessity for these crops. Always create raised beds for planting, even where soil structure and drainage appear ideal. While fungicides can control Phytophthora infections that appear in existing plantings, a history of root-rotting diseases suggests that a site is too wet for these crops unless drainage can be improved.

Verticillium wilt, caused by the fungus Verticillium dahliae, is a deadly and persistent soilborne disease that infects brambles, strawberry, and vegetables in the nightshade family. Fields that have been recently planted to any of these crops should either be rotated to crops that are not susceptible to infection (such as grains or
legumes) for at least five years or fumigated. Crop rotation also protects brambles from their only serious bacterial disease, crown and cane gall. Plant disease-resistant varieties where available to further reduce the chance of losses from soilborne diseases. Many commercial strawberry varieties are resistant to Verticillium wilt and red stele, a root rot caused by one species of Phytophthora.

Avoiding bacterial and viral diseases requires both disease-free planting material and good cultural practices. Bacterial diseases such as angular leaf spot on strawberry and crown and cane gall on blackberry and raspberry are brought into a field on infected transplants. They may spread to healthy plants, especially if they are injured by mechanical equipment, freezing, or insect feeding. Application of copper can help slow the spread of angular leaf spot. There is no chemical control for crown and cane gall, however, nor has fumigation been effective in eliminating it from the soil. Raspberries are susceptible to many viruses, which can be transmitted by aphids (raspberry mosaic and raspberry leaf curl), nematodes (tomato ringspot), or pollen (raspberry bushy dwarf) from nearby bramble plantings or wild brambles. The most common and important strawberry viruses, such as strawberry crinkle and strawberry mottle viruses, are transmitted by aphids. There is no chemical control for any viral disease. To prevent bacterial or viral diseases from entering a new planting:

- For raspberries and blackberries, locate new plantings at least 500 to 1000 feet from existing bramble plantings and remove wild brambles within a 500- to 1000-foot buffer zone.
- Test for harmful nematodes before planting. If necessary, reduce nematode populations by planting and incorporating a rapeseed cover crop, or by fumigation.
- Buy clean, virus-indexed plants from a reputable nursery. Tissue-cultured plants, if available, are certified to be virus-free and should also be free of other diseases and nematodes.
- Inspect plants before planting. Destroy those that are injured or appear badly stressed.
- Avoid injuring plants when spraying, mowing, or picking. In the summer, tip blackberry and black raspberry canes during dry weather (at least 3 days before rain). Prune red raspberries only during full dormancy. Injuries allow bacteria and fungi to invade plants.
- Control insects that wound plants or transmit viruses when feeding, such as aphids and thrips.

Other common fungal diseases of strawberries, blackberry, and raspberry include cane and foliar diseases and fruit rots. These diseases can be managed with a combination of disease resistance, sanitation, cultural practices, and the judicious use of fungicides. The following practices are helpful in managing most fungal diseases:

- For brambles, manage the canopy density (plant spacing, row width, and cane length) to speed drying.
- Avoid applying more nitrogen than necessary. Excess nitrogen promotes thicker vegetative growth that takes longer to dry and softens fruit, making it more susceptible to Botrytis fruit rot.
- Control weeds to remove pest and disease reservoirs and reduce drying time for plants.

One foliar disease common to both crops is powdery mildew, caused by the rose powdery mildew fungus, *Sphaerotheca macularis*. Unlike many powdery mildew fungi, it produces the characteristic powdery white spores on the undersides of leaves, which tend to curl upward at the edges. On strawberry leaves, sporulation may be accompanied by dry, dead patches on leaf undersides. Many commercial strawberry varieties are resistant to powdery mildew, and there are several fungicides registered for its control on susceptible varieties. Powdery mildew is seldom a problem on raspberry or blackberry except on young plants, which should be protected from defoliation by fungicidal sprays if necessary. Remove any wild (multiflora) roses on your farm to reduce inoculum and the need for fungicide applications.

Strawberries are susceptible to three other common leaf diseases: common or bird's-eye leaf spot, leaf scorch, and Phomopsis leaf blight. Resistance to these diseases is available in many commercial varieties. Sanitation is important in reducing overwintering populations of leaf-spotting fungi. After harvest, remove diseased plants, leftover fruit, and dead leaves. Mow the leaves off healthy plants without injuring the crowns, and remove all loose foliage from the field. Bury or burn all plant debris.

The most common cane and foliar disease of blackberry and raspberry is spur blight, which infects first-year, vegetative canes (primocanes) through buds or leaves and forms dark brown cankers at the node. Infected primocanes may bear less fruit in the following year. For summer-bearing raspberries and blackberries, remove spent floricanes that have lost their leaves and infected primocanes after harvest (healthy floricanes with leaves should be left until dormant pruning), and make one delayed-dormant spray of lime sulfur at ¼-inch green tip the following spring to eradicate inoculum from overwintering infections. For the newer, primocane-bearing raspberries (varieties that fruit in the early fall on first-year canes), mow all canes to the ground in late February and destroy them to prevent overwintering spur blight infections.

Blackberries and black and purple raspberries are susceptible to orange rust, an incurable, systemic fungal disease that overwinters in the roots and crown of a plant. Red and yellow raspberries are immune. In the spring, an infected plant produces weak, spindly new canes with small, pale, deformed leaves. Within a few weeks, waxy, blister-like, pustules appear on the undersides of these leaves. These pustules turn bright orange and powdery as they release spores that spread infection. The plant may not die but will be stunted and produce little or no fruit.
Remove symptomatic plants in the spring, before rust pustules appear on the leaves. Fungicides may be applied to protect healthy plants but will not cure infected plants. Removing wild brambles may reduce the chances of the disease’s entering a healthy planting.

Last, those troublesome fruit rots. Botrytis fruit rot, or gray mold, covers ripening fruit with its powdery grayish-brown spores and is responsible for most fruit rot losses on brambles and strawberry. Sanitation is the key to reducing overwintering Botrytis inoculum. Remove dead leaves or plants, leftover fruit, diseased plants, and spent or diseased canes; and burn or bury them. Avoid injuring plants, which may allow this opportunistic pathogen to enter. Apply fungicides at critical periods: during bloom, and as fruit ripen, especially if the weather is wet.

Two less common fruit rots of strawberry are anthracnose fruit rot and leather rot. Anthracnose fruit rot is caused by the same fungus that causes blueberry anthracnose and bitter rot of apples. It is more common in varieties used in plasticulture than in matted-row production. Strawberry fruit develop black, sunken spots that become covered with sticky orange spores. The anthracnose pathogen usually enters the field on symptomless, infected transplants. If you spot this fruit rot, remove the infected plants and all their fruit, and apply a protectant fungicide to the rest of the planting. Leather rot is caused by a Phytophthora species that can also cause crown rot, so its appearance is a warning that your field may be too wet. Fruit are infected when they touch the soil, so make sure there is a thick layer of straw mulch under plants. Apply a fungicide only if the disease is present.

On red raspberry, late leaf rust can infect fruit as well as leaves, covering them with powdery, rusty orange spores in late summer. This rust does not infect blackberry or black/purple raspberry. Resistance is available in some varieties, and removal of wild brambles may reduce rust inoculum. If symptoms appear on leaves or fruit, this rust can be controlled with fungicides. Late leaf rust is not a systemic infection, and red raspberry plants will recover. Note: This article is adapted from a presentation at the 2008 West Virginia fruit schools. There are photos of most of the diseases mentioned at: http://www.caf.wvu.edu/kearneysville/FruitSchool2008/DeMars ay.pdf.

For more information on strawberry and bramble culture and disease management, consult The Mid-Atlantic Berry Guide for Commercial Growers, available from the UMD AGNR Publications office for $18 plus $7 S&H (contact your county Extension office for order forms). You may download a free PDF version of the guide at: http://pubs.cas.psu.edu/freepubs/MAberryGuide.htm.

were compared to UAN injected and UAN dribbled. Three N rates were included: a standard total N application of 160 lb N/acre; two rates that were 10 and 20 percent less than the standard; and a check treatment of no N. Nitrogen treatments (with the exception of the 0 level) were supplied as side-dressed applications less 20 percent as a starter at planting.

The three locations provided different growing conditions and different results. Average yield at Clarksville was 182 bu/a with no yield differences observed among the four N rates. The lack of N response at Clarksville was the result of the high soil nitrate concentration present at side-dressed. This outcome at Clarksville supported the value of using the PSNT (pre side-dressed nitrate test).

The N-rate response at the other two locations was different than observed at Clarksville but similar for those two locations. There was significantly less yield (83 bu/acre averaged over the two sites) for the 0 N treatment and a significant yield response for the standard N rate (152 bu/acre) compared to the 10 percent (146 bu/acre) and 20 percent (145 bu/acre) rate reductions.

Averaged over the three N rates and across the three locations, there were no differences in yield observed among the four stabilizer products and the UAN injected and UAN dribbled treatments. However, the true benefit from the use of a stabilizer product occurs if a reduction in N-rate compared to the standard rate (160 lb N/acre for UAN injected) results in either similar or more grain yield. This would indicate that the cost of the stabilizer product (~$25/acre for each of the products) would be covered by either the additional grain or by the cost savings from using less N. In our study, the use of stabilizer products (none stood out as superior) at the 20% reduced N rate produced similar yield to the injected UAN at 160 lb N/acre indicating that at least a break even situation would have occurred.

It is too early to endorse any or all of the stabilizer products as a method to either improve yield or reduce input costs. Future research needs to be done with these products including greater reductions in N-rate (i.e. 20-40 percent reductions) in order to determine if N input savings with their use will occur. This research will be continued during 2009.

**Establishing Cereal Cover Crops – What is the Best Method?**

Kristin Fisher, Graduate Student - Hood College  
Email: kfisher515@hotmail.com  
&  
Dr. Bob Kratochvil  
Extension Specialist – Grain and Oil Crops, Univ. of Maryland  
Email: rkratoch@umd.edu

Maryland pays participating farmers who plant cover crops with a tier-based system that encourages early planting dates. A variety of planting techniques [no-till drill into either previous crop residue or tilled soil; broadcast seed and lightly incorporate; broadcast seed and chop residue (generally corn stalks); and aerial seed into growing crop] are recognized for establishing cover crops. Opinions vary about the agronomic, economic, and nutrient management benefits for each of these planting techniques. Farmers are primarily concerned about the input costs and time associated with planting while nutrient regulatory agencies are concerned about adequate stand establishment to absorb excess nutrients.

In 2007, Maryland Grain Producer's Utilization Board funded a project to evaluate cover crop planting techniques. Wheat and rye cover crops were planted using many of the aforementioned planting techniques plus treatments that broadcast seed with no other operation at two Maryland locations on two planting dates (prior to October 1 [early planting] and late October/early November [late planting]). Weekly seedling emergence counts tracked stand establishment for each treatment. The 2007 cover crop planting season was highlighted by extremely dry soil conditions with no substantial rain until late October. Even though dry soil conditions prevailed for the first planting date, no-till drilled wheat and rye had 20 seedlings/ft² emerged within 1-2 weeks post-planting. Broadcast wheat followed by light disking had a mixed response with no emergence until late October at one location while the other location had 30 seedlings/ft² two weeks post-planting. Seedling emergence rates were slower for the second planting date reflecting the cooler temperatures that accompany early November. Again, the no-till drilled wheat and rye had the best response, 25 seedlings/ft² emerged by three weeks post-planting. Broadcast wheat with a light disking did better during the second planting (approximately 20 seedlings/ft² three-weeks post-planting) reflecting the better soil moisture conditions following the late October rains. And, as observed with the early planting date, the other broadcast planting treatments had seedling emergence rates at 3-4 weeks post-planting that ranged between 7-15 seedlings/ft².

Biomass samples to estimate nitrogen (N) uptake were collected in April of 2008. At both sites and for both planting dates, the drilled treatments consumed the most N. For the first planting date, no-till drilled wheat consumed an average of 40 lb N/acre by April while the drilled rye consumed 42 lbs N/acre by the same date. For the second planting date, drilled rye and wheat both consumed only 18 lb/acre or approximately 44% of the N consumption that occurred with the early planting date. Wheat no-till drilled on October 9, a date that simulated an average planting date for commodity grain production, consumed 31 lb/acre of N by April.

As expected, the broadcast treatments had lower N consumption for both planting dates. The broadcast treatment that showed the most promise was wheat followed by a light disking, an operation that provided seed to soil contact. This treatment consumed 30 lb/acre N by April. The poorest performing broadcast treatments were broadcast wheat with either a rolling operation after broadcast or no other operation. Both those treatments for the early planting date only consumed 17 lb/acre N by April. Similar to the outcome for no-till drilled wheat and...
rye, all the late planting date broadcast treatments consumed 50% or less N compared to the early planting date.

The first year results for this research indicate that early planting of cover crops using a tillage operation (drilling or light disking) that provides seed to soil contact will establish acceptable stands and consume more N than broadcast operations with no method of incorporating the seed into the soil. This research is continuing during 2008-2009 with funding support from the Maryland Grain Producer’s Utilization Board.

Wheat Nitrogen Management in 2009
Dr. Wade Thomason, Extension Specialist – Grain Crops, Virginia Tech, Email: wthomaso@vt.edu
&
Dr. Mark Alley, W. G. Wysor Professor of Agriculture, Virginia Tech, Email: malley@vt.edu

The high price of nitrogen (N) fertilizer at the time of wheat planting resulted in many farmers choosing to forego preplant N. However, insufficient N availability to wheat plants results in low yields and significantly reduced profits compared to a properly fertilized crop.

A harvest objective with current wheat varieties grown in the mid-Atlantic should be 60-70 heads/sq. ft. with at least 30 kernels/head. This means that the wheat plant must develop near 100 tillers by the end of vegetative growth to reach optimum yields (see Figure 1). Nitrogen fertilizer rate and timing are the major tools available after planting to manipulate wheat to produce higher yields per acre. Nitrogen affects heads/sq. ft., seeds/head, and kernel size.

Figure 1. Zadoks scale for wheat development.

Typically, the first in-season N application occurs at Zadoks growth stage (GS) 25 and is based on wheat tiller density (Figure 1). The purpose of the first N application in a split is to stimulate formation of additional tillers when such stimulation is necessary to achieve optimum tiller density. The main nutritional needs of the crop will be supplied by the second application in the split.

To measure tiller density,
1. cut a dowel rod to a 3-foot length
2. lay the dowel down next to an average-looking row and count all tillers with three or more leaves that are found in the 3-foot length; record this number
3. repeat this count in at least five other locations that are well-spaced around the field
4. average all tiller counts from the field
5. calculate tiller density (in tillers per square foot) with the following equation: tiller density = average tiller count x 4 / row width (in inches)

Figure 2 shows the recommended N rate in response to tiller density at GS 25. If tiller numbers are low, 50/sq. ft. or less, N fertilization at this time is critical for the crop to develop any reasonable yield potential. Fields with low tiller counts should be fertilized before fields with more tillers, if possible. If tiller numbers are high, 100/sq. ft. or more, no N application is needed at this time. When winter rainfall/precipitation is above average and may have lowered the level of residual soil N, you should consider adjusting the recommendation upward.

Figure 2. Recommended GS 25 N rate based on tiller density.

The appropriate rate for the second application (GS 30) is best determined by tissue N content. See http://www.ext.vt.edu/pubs/grains/424-026/424-026.html for more information.

Total spring N applications (growth stage 25 plus growth stage 30) should not exceed a total of 120 lbs. N/acre in order to avoid problems with lodging and yield loss. For example, if 40 lbs. N/acre was applied at growth stage 25, and tissue test results give a recommendation of 100 lbs. N/acre at growth stage 30, only 80 lbs. N/acre should be applied at growth stage 30.
Rotational versus Continuous Grazing: Who wins?
Dr. Ben Tracy, Grassland Ecosystem Management Specialist, Virginia Tech, Email: bfttrace@vt.edu

A main theme for the 2009 VFGC meetings is optimizing the efficiency of forage resources. Rotational grazing, or stocking, has long been promoted as one way to increase forage use efficiency. Rotational grazing is a system constructed to spread out grazing pressure in time and space. Livestock are grazed at high stocking densities but moved frequently to new pastures. Moving livestock among pastures allows a producer to track pasture growth. It also allows grasses to rest and recover following grazing. Continuous grazing implies no, or perhaps minimal, movement of livestock among pastures. Many advocate that more producers should use rotational systems because they generate greater animal and plant productivity compared with continuous systems.

This issue of rotational grazing, and its purported benefit to productivity, was at the heart of a review paper published in the journal Rangeland Ecology and Management last January. The paper generated some attention, and I think it merits some discussion here given the upcoming winter meetings that will be held around Virginia.

The authors collected data from research studies comparing continuous and rotational systems. These studies were done on rangeland - mostly in the United States and South Africa. A key word in that sentence is "rangeland." Rangeland differs from grassland we have in Virginia. It consists of mostly native species (our species are introduced from other countries) and is generally confined to arid and semi-arid regions. Out of 23 rangeland studies, 83 percent found no difference in forage production between rotational and continuous systems. Only 13 percent of the studies reported greater forage production in rotational systems. For animal weight gain, 50 percent of studies (of 38 total studies reviewed) also reported no difference between systems. Surprisingly, 42 percent of studies reported greater animal performance in continuously grazed systems.

During the growing season, rangeland climates tend to be hot and much drier than ours. As a result, grasses spend most of the time dormant. Most growth occurs over 60 days or so. In contrast, our pastures usually grow for more than 150 days during the growing season. In a hot, dry climate with sporadic rainfall, rotating cattle among pastures does little to help productivity most of the time. For rotational grazing to work effectively, grasses need to be actively growing most of the time. This situation rarely occurs on rangeland. I think these climatic effects mostly explain why rangeland studies find rotational and continuous systems to be similar.

Does this hold true in Virginia? Well, there are not many studies. The most relevant were done by Dr. Roy Blaser at the Middleburg Research Station some years ago. Unlike rangeland studies, he found that animal performance was about 34% greater using rotational grazing compared with continuous. Studies were done using several orchardgrass-legume mixtures. Interestingly, when orchardgrass was grown alone, with no nitrogen (N) fertilization, animal production was very similar between systems. This result suggests that optimal responses from rotational grazing also may be dependent on N fertility.

To sum it up, I think we should expect rotational grazing to work better in regions of high, consistent rainfall - like much of the eastern US. With adequate rainfall, rest periods, and redistribution of grazing pressure has greater potential to improve forage growth and animal performance. Remember though, a successful grazing system is fundamentally dependent on good stocking rate management. A poorly managed rotational system is no better, and maybe even worse, than a well-managed continuous system. Matching stocking rate with seasonal forage availability is the key.

Ben Tracy is a grassland and ecosystem management specialist in the Crop and Soil Environmental Sciences Department at Virginia Tech and currently serves as an education advisor to the Virginia Forage and Grassland Council.

Schillinger Seed Launches eM Merge Genetics
Dec. 22, 2008

Schillinger Seed, a specialty soybean seed company based in West Des Moines, Iowa, has introduced eM Merge Genetics, a new division of the company focused exclusively on non-GMO soybean seed. EMerge fills a growing market demand for food-grade, non-GMO soybeans from both overseas food companies that require non-GMO products and domestic food companies who are increasingly looking for healthier food ingredients.

The new entity will tap into the growing demand from farmers looking to profit from some of the highest grain premiums offered in the industry as well as those who are becoming increasingly concerned with the rising costs of conventional seed.

"We've found that there is an untapped opportunity in the marketplace," said John Schillinger, president and founder of the company. "Food companies are coming to us with aggressive grain premiums in order to get the types of soybean products they want. Growers are looking for more profitable alternatives to higher-priced conventional seed. Our job is to make sure they find each other by providing the products that fill both sides of the seed/food equation."

By focusing on "output" traits like higher protein and low-linoleic characteristics, eMerge has taken a different approach to product research and development than other seed companies.

"Most seed companies start by looking for "input" traits like disease and chemical resistance that focus on the production side of the industry," Schillinger said. "We've taken our efforts a step further by focusing on characteristics that the end users demand. By taking this approach, we know the demand for our products will be greater than that of conventional seed. For farmers, that
USDA Increases U.S. and World Corn Ending Stocks

U.S. corn ending stocks are now expected to total 1.474 billion bushels, an increase of more than 30 percent (350 million bushels) from the 1.124 billion bushel carryover projected last month. The projected increase in corn stocks is due to a slow down in both exports and ethanol. Ethanol usage is for corn projected to drop 300 million bushels to 3.7 billion bushels. The projection for U.S. corn exports was once again lowered, now estimated at 1.8 billion bushels from 1.9 bb a month ago. Feed usage for corn was projected to increase 50 million bushels from last month’s projection, now estimated at 5.350 billion bushels, largely due to reduced availability of distiller grains and the price of corn vs. wheat, implying more corn is likely to be fed. The average farm price for U.S. corn in the ’08/’09 marketing year was lowered 35 cents per bushel on the low end and 45 cents per bushel on the high end of the price range, now estimated at $3.65 to $4.35 per bushel.

World ending stocks for corn were increased from last month from 110.12 million metric tons to 123.83 mmt. The increase is attributed to larger production in China, EU-27, Canada, and the Ukraine. It is also attributed to an expected decrease in global coarse grain consumption.

U.S. Soybean Ending Stocks Remain Unchanged - World Stocks Higher

Although U.S. soybean stocks remain unchanged at 205 million bushels from a month ago, there were some adjustments made to the supply/demand balance sheet. Exports were raised 30 million bushels to 1.05 billion bushels while the estimate for domestic crush was lowered 30 million bushels to 1.715 billion bushels, due to reduced soybean meal consumption and reduced soybean meal export prospects. The average farm price for U.S. soybeans was lowered 85 cents per bushel on the low and high end of the price range, now estimated at $8.25 to $9.75 per bushel.

World ending stocks for soybeans were increased from a month ago from 54.06 to 54.19 mmt. Global oilseed production is projected at a record 418.3 million tons, up .4 mmt from last year. Foreign crops account for the change.

U.S. & World Ending Wheat Stocks Increased

In the U.S. wheat food use is said to have slipped and cheaper ocean freight rates are making imports of wheat for livestock feed encouraging. U.S. ending wheat stocks were increased 20 million bushels from last month, now projected at 623 million bushels. The average farm price for U.S. all wheat was lowered 15 cents per bushel on both ends of the price range, now estimated at $6.40 to $7.00 per bushel.

World ending stocks for wheat were increased from 145.25 mmt to 147.35 mmt.

Another Record-Setting Year for Soy Exports

This year over 1.5 billion bushels of soy were exported from the United States, and these exports are valued at more than $12 billion. Soybean-checkoff funded international marketing efforts helped achieve these record-setting export numbers.

U.S. soybean farmers shipped out over 1.1 billion bushels of whole beans. Also, increasing 11 percent from last year were exports of soybean meal totaling 346 million bushels. Soybean oil weighed in at nearly 1.1 million metric tons with a whopping increase of 68 percent from last year's numbers.

“Checkoff-funded global demand-building programs have demonstrated their success with another record-setting year," says Terry Ecker, soybean farmer from Elmo, Mo., USB International Marketing chair. “The programs work diligently to make sure that overseas

Source: Schillinger Seed
Customers prefer U.S. soy. The numbers prove our checkoff farmer leaders understand the importance of marketing U.S. soybeans.

China is again the top importer of U.S. soybeans with 490 million bushels, which go toward human and animal consumption. China also imported 171,000 metric tons of soy oil from the United States, which is used as a cooking oil and other food uses. With 131 million bushels of U.S. soybeans, Mexico comes in as the second-largest importer, followed closely by Japan with nearly 100 million bushels. U.S. soybeans also maintained a strong foothold in the European Union with Germany importing 45 million bushels, the Netherlands shipping in 43 million bushels and Spain accepting 19 million bushels.

To maintain and increase international demand for U.S. soy, the checkoff is highly involved in informing overseas markets about U.S. soybean production. The checkoff supports programs that increase U.S. soy exports such as foreign buying teams to the U.S. and livestock feeding demonstrations that prove the advantages of using U.S. soybeans. Also, USB farmer leaders travel abroad to meet with farmers, agricultural associations and government officials to inform them about the quantity, quality and nutritional benefits of U.S. soy.

"These numbers show the success of the checkoff and farmers working together," says Vicki Coughlin, a soybean farmer from Watertown, Wis., and United Soybean Board (USB) director.

U.S. soybean farmers support the export of their products through their soybean checkoff. The checkoff is involved in programs to keep trade channels open and develop new relationships. The communication and education efforts of the soybean checkoff have proven most fruitful in keeping U.S. soy in over 80 countries worldwide. Checkoff funding used to support international marketing is matched with funds from the United States Department of Agriculture's Foreign Agricultural Service (FAS).

Source: United Soybean Board

Environmental Horticulture

Environmental Horticulture refers to the use of greenhouse and nursery plants to improve aesthetics in the human environment.

Over the past several years, we have performed a series of research trials studying fertilizer requirements for a wide variety of herbs and ornamental plants. In addition, we provide a large amount of information in the form of fact sheets designed to be useful for both industry professionals and the general public. Included below is a summary of our research results as well as an index of the fact sheets we have available, including a series covering general production information and a series highlighting production and consumer care factors for a variety of selected plant species:

http://environmentalhorticulture.umd.edu/

Scientists Serve up Mustard Meal to Tame Weeds

By Jan Suszkiw
December 2, 2008

Sinalbin, the same compound that gives white mustard its pungent flavor, could also prove useful in fighting weeds.

Agricultural Research Service (ARS) studies suggest sinalbin and other compounds released into soil by applications of white mustard seed meals can kill or suppress certain weedy grasses and annual broadleaf weeds.

Agronomist Rick Boydston, with the ARS Vegetable and Forage Crops Research Unit in Prosser, Wash., is conducting the studies with plant physiologist Steven Vaughn, at the ARS National Center for Agricultural Utilization Research in Peoria, Ill. They evaluated the effects
of three mustard seed application rates: half a ton, one ton and two tons per acre. Of the three, the one-ton and two-ton rates worked best in peppermint, reducing barnyard grass, green foxtail, common lambquarters, henbit and redroot pigweed populations by 90 percent several weeks after application.

Although young peppermint plants sustained minor damage from the treatment early on, they recovered and resumed their normal growth. Onions weren't so lucky. Regardless of the application rate used, the treatment severely damaged the bulb crop when applied before emergence, or before the onions produced two true leaves. Applications at the two-leaf stage or later were more promising.

In trials with potted rose, phlox, coreopsis and pasque flower, the treatment killed or reduced the growth of annual bluegrass, common chickweed, creeping wood sorrel and liverwort. In treated plots, 86 to 98 percent of common chickweed seedlings died; those that survived were shorter and weighed less than treatment-free chickweed seedlings.

Besides white mustard, the researchers also evaluated the weed-control effects of field pennycress seed meal and dried distiller grains (DDGs), derived from corn ethanol production. Like white mustard, field pennycress also has potential as a biodiesel crop. It and the DDGs were less effective than white mustard at controlling weeds.

The research aim is three-fold: provide organic farmers with an alternative to hand-pulling, burning and other laborious methods of weed control in specialty crops including peppermint and potted ornamentals; develop value-added uses for seed meal, should mustards prove useful in making biodiesel; and diminish environmental risks possibly resulting from conventional herbicide use. ARS is a scientific research agency of the U.S. Department of Agriculture.

AFBF: Wholesale U.S. Fertilizer Prices Begin to Fall

WASHINGTON, D.C. -- After increasing for six consecutive years, U.S. fertilizer prices are finally beginning to fall at the wholesale level, according to a report by the American Farm Bureau Federation.

"Up until very recently, fertilizer prices were astronomical at both the wholesale and retail level," said AFBF senior economist Terry Francl. "Fertilizer producers were clearly reacting to record commodity prices, and companies priced their products accordingly."

Now that prices for corn, soybeans and other commodities have declined 50 percent or more from summer peaks, wholesale prices for fertilizer are dropping as well, but retail prices have yet to fall. Francl said the wholesale fertilizer price drop began about two months ago, generally after the time farmers applied fall fertilizer to their crops.

Wholesale prices for anhydrous ammonia in the Corn Belt have declined from the $1,000 per -ton- plus range to the $500 range. Urea has dropped from the mid-$800 range to the mid-$300 range. Diammonium Phosphate (DAP) has declined from $1,100 to $600 per ton. The decline in potash prices has been less notable, dropping from a little over $900 per ton to slightly over $800.

"The reasons for the decline involve much more than just crop prices. Natural gas prices have declined from more than $11 per million BTUs (1,000 cubic feet) to around $6 per million BTUs. Natural gas is the primary input utilized to manufacture anhydrous ammonia and typically accounts for 80 percent to 90 percent of all input costs," Francl explained in AFBF's December Market Update report.

"Anhydrous ammonia in turn is the basic feedstock for nearly all the other nitrogen fertilizers. So the cost of production of the entire nitrogen complex has waned considerably. There are similar declines in phosphate production and lower sulfur and phosphate rock prices."

Potash prices appear to be retreating much slower, if at all, because more than 90 percent of the potash used in this country is imported, mostly from Canada but also from some European and former Soviet Union countries. Potash prices are therefore more affected by changes in the value of the dollar, which has declined recently, meaning that it makes imports more expensive.

Francl said fertilizer dealers with large, high-priced inventories could be in a difficult position this spring due to indications by farmers that they plan to plant less fertilizer-intensive crops, such as corn and cotton and plant more soybeans which don't use nitrogen at all, and as legumes actually add nitrogen to the ground. To compete, fertilizer dealers will have to "cost average their prices down" by averaging their current high priced inventories with lower-priced future inventories, Francl said.

"Farmers would be well-advised to hold off their spring purchases for as long as possible. The inherent danger in such a strategy is that a spring rush may cause supply bottlenecks. However, nitrogen products can be applied to row crops in the form of side dressing later in the spring," Francl said. SOURCE: AFBF.

Advanced Biological Systems Launches New Soybean Inoculant Formulation

Dec. 29, 2008

Now producers who want to eliminate one extra application before planting soybeans can, with Graph-Ex Soybean Inoculant plus Seed Lubricant. Advanced Biological Systems developed this prepackaged combination made up of two components: a talc-graphite carrier to add lubrication to planters, plus the award-winning Excalibre soybean inoculant.

SOURCE: Advanced Biological Systems.
Graph-Ex is the first soybean inoculant designed to make planting better with two-in-once convenience, according to Advanced Biological Systems. Graph-Ex offers producers a high bacteria count, ease on equipment, increased plantability and convenient packaging, along with Excailbre encapsulation technology with proven field performance.

The high performance of Graph-Ex assists with low volume rates and the flowability polymer assures easy handling, no bridging, and more accurate planting. Graph-Ex brings the same benefits to on-farm application that Excailbre brought for convenient dealer application.

"ABM products are designed with the farmer in mind, for top yield response, time-saving convenience and accurate planting," said Marty Robinson, ABM marketing director. "With the release of Graph-Ex, producers will gain a low-use rate for improved planting, plus better yielding soybeans, all in the same fast and convenient bulk or planter box application."

Graph-Ex contains a triple-stack rhizobia package to maximize nitrogen fixation, inoculant performance and yield response. One rhizobia strain is for hot, dry soils; a second strain is for cool, wet planting environments; and a third strain enables seeds to nodulate faster in nitrate carry-over conditions.

In the past, pre-treated seed, coated with a fungicide/insecticide package, often left a rough seed surface that interfered with seed flowability. Traditional peat products can be abrasive to planting equipment, causing increased wear on planter parts and leading to frequent part replacements. Graph-Ex eliminates this abrasive and expensive wear and tear on machinery, while increasing seed flowability.

**Source: Advanced Biological Systems**

Phoenix Services AGSlag: A Local Byproduct of Severstal Steel in Sparrows Point, Maryland

Matt Kerins
Aggregate Sales Phoenix Services
mattk@phxs slag.com

Steel slag, a by-product of steel making, is produced during the separation of the molten steel from impurities in steel-making furnaces. The slag occurs as a molten liquid melt and is a complex solution of silicates and oxides that solidifies upon cooling.

In the basic oxygen process, hot liquid blast furnace metal, scrap, and fluxes, which consist of lime (CaO) and dolomitic lime (CaO MgO or “dolime”), are charged to a converter (furnace). A lance is lowered into the converter and high-pressure oxygen is injected. The oxygen combines with and removes the impurities in the charge. These impurities consist of carbon as gaseous carbon monoxide, and silicon, manganese, phosphorus and some iron as liquid oxides, which combine with lime and dolime to form the steel slag. At the end of the refining operation, the liquid steel is tapped (poured) into a ladle while the steel slag is retained in the vessel and subsequently tapped into a separate slag pot.

There are many grades of steel that can be produced, and the properties of the steel slag can change significantly with each grade. Grades of steel can be classified as high, medium, and low, depending on the carbon content of the steel. High-grade steels have high carbon content. To reduce the amount of carbon in the steel, greater oxygen levels are required in the steel-making process. This also requires the addition of increased levels of lime and dolime (flux) for the removal of impurities from the steel and increased slag formation.

**Chemical Properties**

The chemical composition of slag is usually expressed in terms of simple oxides calculated from elemental analysis determined by x-ray fluorescence. Table 18-2 lists the range of compounds present in steel slag from a typical base oxygen furnace. Virtually all steel slags fall within these chemical ranges but not all steel slags are suitable as aggregates. Of more importance is the mineralogical form of the slag, which is highly dependent on the rate of slag cooling in the steel-making process.

**Typical Steel Slag Chemical Composition.**

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Composition (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CaO</td>
<td>40 - 52</td>
</tr>
<tr>
<td>SiO₂</td>
<td>10 - 19</td>
</tr>
<tr>
<td>FeO</td>
<td>10 - 40</td>
</tr>
<tr>
<td>MnO</td>
<td>5 - 8</td>
</tr>
<tr>
<td>MgO</td>
<td>5 - 10</td>
</tr>
<tr>
<td>Al₂O₃</td>
<td>1 - 3</td>
</tr>
<tr>
<td>P₂O₅</td>
<td>0.5 - 1</td>
</tr>
<tr>
<td>S</td>
<td>&lt; 0.1</td>
</tr>
<tr>
<td>Metallic Fe</td>
<td>0.5 - 10</td>
</tr>
</tbody>
</table>

The cooling rate of steel slag is sufficiently low so that crystalline compounds are generally formed. The predominant compounds are dicalcium silicate, tricalcium silicate, dicalcium ferrite, merwinite, calcium aluminate, calcium-magnesium iron oxide, and some free lime and free magnesia (periclase). The relative proportions of these compounds depend on the steel-making practice and the steel slag cooling rate.

Photo: Steel Slag prior to Pulverizing
The fertilizer analysis of the AgSlag product from Phoenix Services in the following tables offers about 60% of the liming value (CCE) as a typical Genstar Ag lime product; however, it also provides manganese an often required micronutrient in soybean and alfalfa production in Southern Maryland. The aluminum in surface applied AgSlag may also help to bind available phosphorus reducing phosphorus runoff in high phosphorus soils.

**Phoenix Services AgSlag**  
**Severstal Steel, Sparrows Point, Maryland**  
**Fertilizer Analysis**

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Composition %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available Phosphate</td>
<td>0.08%</td>
</tr>
<tr>
<td>Calcium</td>
<td>19.15</td>
</tr>
<tr>
<td>Calcium Oxide</td>
<td>26.81</td>
</tr>
<tr>
<td>Magnesium</td>
<td>4.28</td>
</tr>
<tr>
<td>Magnesium Oxide (Calculated)</td>
<td>7.10</td>
</tr>
<tr>
<td>Aluminum</td>
<td>5.51</td>
</tr>
<tr>
<td>Copper</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Manganese</td>
<td>0.20</td>
</tr>
<tr>
<td>Calcium Carbonate Equiv. (CCE)</td>
<td>55.32</td>
</tr>
<tr>
<td>Passing #20 Sieve</td>
<td>66.58</td>
</tr>
<tr>
<td>Passing #60 Sieve</td>
<td>29.80</td>
</tr>
<tr>
<td>Passing #100 Sieve</td>
<td>22.77</td>
</tr>
<tr>
<td>Effective Neutralizing Value</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Genstar Aglime</th>
<th>AgSlag</th>
</tr>
</thead>
<tbody>
<tr>
<td>CaO (calcium oxide)</td>
<td>51.0%</td>
</tr>
<tr>
<td>MgO (magnesium oxide)</td>
<td>1.0%</td>
</tr>
<tr>
<td>CaCO₃ Equivalent (CCE)</td>
<td>93.0%</td>
</tr>
<tr>
<td>Pass 20 Mesh</td>
<td>98.0%</td>
</tr>
<tr>
<td>Pass 60 Mesh</td>
<td>80.0%</td>
</tr>
<tr>
<td>Pass 100 Mesh</td>
<td>56.0%</td>
</tr>
</tbody>
</table>

For more information about purchasing AgSlag (approximately $7.00/ton) and using this local agricultural lime/fertilizer product contact Matt Kerins, Aggregate sales for Phoenix Services at mattk@phxslag.com or 610-334-8929.

**Emerging Trends and Opportunities in the World Pesticides Market** reports on three major pesticides segments: agricultural, commercial/industry/governmental, and home and garden; identifies emerging trends and includes in-depth analysis of the challenges and opportunities inherent to them; provides historical data for 1999 through 2008 and forecasts data for 2009 through 2013; pits pesticides reality against organic foods favor; reveals how the economy will drive pesticide pricing; examines the growing exterminating and pest control service industry; discusses the market in relation to nanotechnology, biotechnology, and biodiversity; and analyzes imports and exports.

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**Record Increase in Global Pesticides Market to Accelerate**  
**Dec. 1, 2008**

The worldwide pesticides market is forecasted to boom over the next several years to the tune of a multi-billion dollar crescendo despite global economic instability and pressure from the media and the eco-friendly Green Revolution. According to market research publisher Specialists in Business Information's (SIB) new report,
A Look Ahead: Ag in Annapolis
The 2009 General Assembly session will present challenges and opportunities as the economy impacts all Marylanders. The Maryland Department of Agriculture (MDA) is preparing legislation that will improve existing programs and regulatory processes. The O'Malley-Brown Administration and Agriculture Secretary Roger L. Richardson are committed to carrying out the regulatory obligations of the department, while protecting and enhancing the sustainability of the agricultural industry in Maryland.

The following highlights departmental bills to follow this session:

- Several Maryland Agricultural Land Preservation Foundation (MALPF) bills to improve and enhance the effectiveness of the foundation.
- Legislation to bring the Maryland Seed Law into uniformity with requirements at the federal level.
- Legislation to give veterinary students more hands-on experience under the supervision of a veterinarian.
- Legislation to repeal the Tobacco Authority - a program that has not been operational since 2006.
- A proposal to help the Organic Certification Program meet increasing demands for farmer certification caused by rising consumer demand for more organic products.

MDA also expects to see legislation addressing smart growth, preservation and other issues impacting sustainability. The department looks forward to working with Governor O'Malley and the General Assembly for another successful year for agriculture.

Maryland Launches New Interactive Mapping Tool
GreenPrint - a new interactive mapping tool - was launched earlier this month as part of Governor O'Malley's "Smart, Green & Growing" initiative. GreenPrint is designed to guide the state of Maryland, local governments, conservation organizations and individual citizens in making land conservation and growth decisions. The site will host a series of maps to showcase the progress of state programs in conserving and protecting the most valuable lands. The first map focuses on ecologically valuable lands. The next map will examine important agricultural lands in Maryland. Towson University's Center for Geographic Information Sciences played a pivotal role in developing GreenPrint.

MDA Animal Health Lab Put to the Test
With the importance of Maryland's poultry, equine and livestock industries to the economy, Delmarva are on the forefront in the nation of diagnostics and emergency response to protect them. Last month the Maryland Department of Agriculture (MDA) College Park Animal Health Diagnostic Laboratory showcased its new testing capability for equine herpesvirus-1 (EHV-1), a devastating form of a fairly common equine virus known as "rhino." An incident last month involving a neurologic horse at Laurel Park was the first time MDA used its new EHV-1 diagnostic capability in a real-time incident. The tests proved to be accurate, effective and fast, saving critical response time and providing a valuable service to the equine community in Maryland.

The ability to detect the neurologic form of equine herpesvirus with the new testing capability enables the industry and MDA to more quickly detect and more effectively respond to suspected and actual cases. This reduces the adverse economic impact associated with the disease. Previously, samples collected in the field would be sent across the country for analysis using this same technique. The delay in receiving results meant that animals implicated in the disease investigation, but not infected would be restricted longer awaiting results. Reducing the turnaround time of the samples, significantly reduces the time between suspicion of disease and a determination that the virus is or is not present, allowing the response activities to more properly focus on the infected animals.
Latest Md. Ag Statistics Now Available

The USDA National Agricultural Statistics Service (NASS) Maryland Field Office recently released its most current data, which covers a wide range of statistics relating to crop production, livestock and poultry numbers and general economic information.

In 2007, Maryland experienced record-setting high commodity prices and one of the most severe droughts in recent history. Click here to access the most current agricultural statistics for Maryland. This year, NASS also conducted its largest and most important every-five-year survey, the 2007 Census of Agriculture, which will be released in February.

FARMER TRAINING & CERTIFICATION

Write Your Own Nutrient Management Plan

The Farmer Training and Certification course provides an opportunity for farmers to learn how to write nutrient management plans for their own operations. As a producer, you have first hand knowledge of your own crops, animals, and equipment. Who better to write your nutrient management plan than you? This course will teach you how to do it!

You will receive:

- **A comprehensive training binder** - that will be used during the class, serve as a reference during the exam, and as a valuable resource when you write future plans for your operation.
- **Certification** - producers who pass the exam will be certified by MDA to write their own nutrient management plans.
- **Voucher training credits** - this class will fulfill the nutrient applicator voucher training requirements.
- **A discount** - on the purchase price NuManPro, Maryland’s nutrient management planning software.

You will have the opportunity to:

- **Complete a nutrient management plan** for your operation that meets MDA regulations.
- **In order to work on your own plan, you need to** begin gathering information now. You will need a map or sketch of your operation, soil tests that are less than two years old and a recent manure analysis (if manure is applied to your land). Contact your county Extension office if you need assistance with this.

Registration Information

- **Space is limited and applications are accepted on a first-come basis; therefore, register early.** Registrations must be received 10 days before the first class. For more information, please call (410) 841-5959. Classes will be cancelled if there is lack of interest.

**Day Classes 9:00 am - 4:30 pm ($35 total, $15 for lunch on first day & $20 for certification exam)**

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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.

New Preemptive Fertilizer Law in the City of Annapolis for Fertilizer Applications to Lawns or to Operate a Garden Center in Annapolis.

(Effective January 1, 2009)

City of Annapolis Fertilizer Legislation

10.34.010 Purpose and intent.
The purpose of this chapter is to regulate the use and sale of lawn fertilizer containing nutrients and contaminants,
including phosphorous, to all land located within the boundaries of the City of Annapolis and to land owned by the City of Annapolis, whether such land is located within or outside of the City's boundaries, so as to prevent such from entering the Chesapeake Bay and its tributaries in order to reduce non-point source pollution and to improve water quality as envisioned under the federal Clean Water Act and the Chesapeake 2000 Agreement. (Ord. O-10-08 Amended § 1 (part), 2008)

10.34.020 Applicability.
A. This chapter applies to all land located within the boundaries of the City of Annapolis and to land owned by the City of Annapolis, whether such land is located within or outside of the City's boundaries.
B. The ordinance codified in this chapter shall take effect on January 1, 2009. (Ord. O-10-08 Amended § 1 (part), 2008)

10.34.030 Definitions.
“Fertilizer” means any substance containing a recognized plant nutrient used for its plant nutrient content and designed for use or claimed to have value in promoting plant growth.
“Lawn fertilizer” means any fertilizer whether distributed by a property owner, renter, commercial entity or the City of Annapolis, distributed for nonagricultural use such as lawns, golf courses, parks and cemeteries. Lawn fertilizer does not include fertilizer products intended primarily for gardening, tree, shrub and indoor plant application. (Ord. O-10-08 Amended § 1 (part), 2008)

10.34.040 Use and application of lawn fertilizer.
A. Except as provided in Section 10.34.050 below, no person shall apply on any lawn fertilizer that is labeled as containing more than zero percent phosphorous or other compound containing phosphorous, such as phosphate. Lawn fertilizer that contains more than zero percent phosphorus may be stored off the sales floor and may be sold upon request. The business shall advise customers by signs that fertilizer containing phosphorous is available by request.
B. No person shall apply lawn fertilizer when the ground is frozen.
C. No person shall cause fertilizer to be applied to or run onto any impervious surface including parking lots, roadways, and sidewalks. If such application, occurs the fertilizer must be immediately contained and collected and either legally applied to turf or placed in an appropriate container. (Ord. O-10-08 Amended § 1 (part), 2008)

10.34.050 Exemptions to use and application of lawn fertilizer.
A. The prohibition against the use of fertilizer under Section 10.34.040 shall not apply to the following:
1. Newly established turf or lawn areas during their first growing season.
2. Turf or lawn areas where soil tests performed within the past three years confirm that the phosphorous levels are deficient based upon the standards established in the Maryland Department of Agriculture’s Maryland Nutrient Management Manual. The fertilizer application shall not contain an amount of phosphorous exceeding the amount and rate of application recommended based on the soil test.
3. Gardens, including vegetable and flower, trees, and shrubs, and indoor applications, including green houses.
4. Yard waste compost or other similar materials that are primarily organic in nature and are applied to improve the physical condition of the soil.
B. The application of fertilizer under subsection A above must meet the standards established by the Maryland Department of Agriculture as set forth in the most current version of the Department of Agriculture’s Maryland Nutrient Management Manual. (Ord. O-10-08 Amended § 1 (part), 2008)

10.34.060 Display for sale of fertilizer containing phosphorous.
A. Effective January 1, 2009, no person shall display for sale any lawn fertilizer that is labeled as containing more than zero percent phosphorous, or other compound containing phosphorous, such as phosphate. Lawn fertilizer that contains more than zero percent phosphorus may be stored off the sales floor and may be sold upon request. A business shall be deemed to have complied with this requirement by displaying a sign consistent with a sample sign available from the Department of Neighborhoods and Environmental Programs. (Ord. O-10-08 Amended § 1 (part), 2008)

10.34.070 Enforcement and penalties for improperly applying lawn fertilizer or displaying for sale.
A. Violations of this chapter will be enforced by the Department of Neighborhood and Environmental Programs, or any successor organization.
B. Any person violating this chapter is guilty of an infraction and is subject to a fine as established by resolution of the City Council. (Ord. O-10-08 Amended § 1 (part), 2008)

10.34.080 Severability clause.
If any section, provision or portion of this chapter is ruled invalid by a court, the remainder of the chapter shall not for that reason be rendered ineffective or invalid. (Ord. O-10-08 Amended § 1 (part), 2008)
Agritourism Preconference Session Features Growing Farm Revenues

Agritourism entrepreneurs and farmers considering agritourism enterprises are encouraged to attend this special pre-conference session to gain new ideas and marketing resources from agency professionals and other experienced operators. Agritourism—one of the fastest growing segments of agricultural direct marketing—allows farmers to diversify their core operations and keep farmland in production, while preserving scenic vistas and maintaining farming traditions. Agritourism is growing rapidly in the Northeast region, however the industry remains underdeveloped in many states, lacking technical assistance support, infrastructure, and networking opportunities to ensure best practices.

A special pre-conference session at this year’s Future Harvest - CASA Annual Conference will feature an in-depth, three hour session designed to help fill the experience gap. This session addresses:

- Challenges and opportunities for growing agritourism enterprise for new and not so new agritourism operators.
- Resources and networking to build your business locally and throughout the Northeast region.
- Information on how to use cluster development as a tool for expanding your marketing outreach.
- Examples of enterprise design, regulations, and ways to tap into tourism industry resources.
- A look beyond today’s corn mazes and pumpkin patches to a preview of new and expanding ideas for attracting more visitors to the farm.

**Session presenters include:**

**Martha Ann Clark** is the owner of Clark’s Elioak Farm. This 540-acre farm offers a family-friendly atmosphere and a wide variety of animals. Visitors can expect to see everything from goats, sheep, donkeys, and alpacas to horses, turkeys, ducks, bunnies, and turtles. Clark's family has farmed in Howard County for more than 200 years, and she and her children are proud to be carrying on that tradition.

**John Fieseler,** Executive Director, Tourism Council of Frederick County. John’s expertise will provide on-the-ground insights into connecting rural heritage and agricultural enterprises to your local, regional, and state tourism networks.

**Ginger S. Myers,** Marketing Specialist, Ag and Natural Resources, University of Maryland Extension. Myers is also serving as the state coordinator for the Northeast SARE project, “Increasing Farm Profitability through Agritourism Product Development and Marketing.” This project provided financial support for this session.

To register for this session and for complete conference details visit [www.futureharvestcasa.org](http://www.futureharvestcasa.org).

**Mastering Marketing** is published quarterly by the University of Maryland Cooperative Extension. It is written and edited by Ginger S. Myers, Regional Marketing Specialist, at the Western Maryland Research and Education Center (WMREC), 18330 Keedysville Road, Keedysville, MD 21756, tel. 301.432.2767 x338; e-mail gsmyers@umd.edu or sbarnes6@umd.edu. Visit [http://AgMarketing.umd.edu](http://AgMarketing.umd.edu) for more information on the agricultural marketing program. For more information on WMREC, visit [http://wmrec.umd.edu](http://wmrec.umd.edu).

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**New Extension Site for Dealing with Economic Crisis**

The nation’s land-grant universities, including the University of Nebraska-Lincoln, have gathered myriad resources online to help Americans deal with the financial crisis.

Elbert Dickey, dean and director of UNL Extension, said the new [Web site](http://www.futureharvestcasa.org) is an excellent example of “what eXtension does best.”

“UNL Extension and our counterparts across the country created eXtension for just this purpose - to get the ‘best of the best’ research-based, unbiased information from all over the U.S. into the hands of Americans who need it,” Dickey said. “All Americans are struggling with the economic downturn, and this new site provides expertise in a variety of areas.”

Dickey said UNL Extension plans early next year to roll out more information to help Nebraskans deal with the economy.

Not only do eXtension’s experts provide consumers with tools to help them cope with stress, practice positive spending habits, manage their debt and stretch their dollar, but they also are available to answer specific consumer questions. With an easy-to-follow form, Web site viewers can identify a specific category within any of these five categories, ask their question and expect to quickly receive an answer from an industry expert. Likewise, viewers can post comments about articles and resources on the Web site, as well as rate the posting they read.

In addition to answering questions, eXtension experts provide a number of different articles on everything from “Surviving Economic Downturns” to “Becoming Financially Secure in Tough Times” to “Cost Saving Tips for Equine Operations.” Today’s financial situation has added great emotional burdens to many individuals and families.

At eXtension’s Financial Crisis content area, Web site viewers can find other resources regarding nutrition, consumer credit, lifestyle transitions, retirement planning, saving and investing, communicating about money, children and money, home ownership, and health finance.
The newest resource area within the Personal Finance category is "Money Management in Times of Disaster.”

Source: UNL Extension
(Note the information looks like it is from the Kansas State Univ.)

The December 2008 issue of Wild & Woolly, the Maryland Sheep & Goat Producer quarterly newsletter, has been posted to the web at: http://www.sheepandgoat.com/news/index.html.

The newsletter can be viewed online or downloaded and printed from a PDF file. Past issues may be viewed or downloaded from: http://www.sheepandgoat.com/news/main.html.

Susan Schoenian, Sheep & Goat Specialist
W. MD Research & Education Center
Univ. of Maryland Coop. Extension
sschoen@umd.edu

Out Wintering
by Karen Hoffman*

Out Wintering is the practice of allowing animals to continue their occupation of pasture during the winter. There are several advantages and disadvantages to this method of “non-housing”, as well as strategies for making it successful.

It is important to remember that out wintered animals have considerably higher energy requirements (up to 30% more depending on the weather), so they need to be provided with both a higher quantity and higher quality feed. In some cases, feeding a little bit of grain or corn silage may be the only way to keep them growing, or even maintaining, their body weight.

Don't be fooled by a long hair coat or thick wool. Body condition score the animals periodically to make sure they are keeping enough flesh on. Tough them over the spine, short ribs, and tail head to assess. Also, depending on topography and prevailing winter winds, they should be provided with a windbreak or shelter area where they can escape the wind. Although most animals will stay out in very cold temperatures by choice, it is still wise to have another option available to them.

Out Wintered Pastures will take a beating, so it's also important to think through where you will out winter. If you have a pasture that you'd like to renovate or improve the fertility of, that is your best choice. Your best pastures should be your last choice. You may also want to consider doing some "rotational out wintering" to minimize mud and muck if the winter stays fairly warm, and that may require some planning now to make sure feed can be easily placed and then accessed in a variety of locations.

*Karen Hoffman is an NRCS Animal Scientist from Norwich, NY.
Source Wild & Woolly, December 2008

Advancements in Agricultural Biotechnology in 2008

In the United States, despite heavy spring rains and flooding that delayed the growing season, the Department of Agriculture estimates increased production of corn and soybeans. This is due in part to the contribution of agricultural biotechnology, which has helped improve farm yields since it was introduced in the U.S. in 1995. This year's corn crop is on target to be the second largest ever, behind only last year's record haul. The U.S. soybean crop is expected to be the fourth largest ever.

Reacting to concerns regarding crop shortages that sparked unrest in some countries and high prices for food in markets around the globe, many nations this year began to acknowledge the benefits that biotechnology offers agriculture. In July, the United Kingdom's former chief scientific adviser, Sir David King, stated, "There is only one technology likely to deliver [the yield increases needed] and that is [agricultural biotechnology]." And in October, Italy's Welfare and Health Minister, Maurizio Sacconi, called on that country to lift a ban on growing genetically modified crops.

Many sub-Saharan countries in Africa, where 30% of the population is under-nourished, are considering embracing agricultural biotechnology in an effort to address the need for increased yields and limited access to a reliable supply of water. South African scientists have approved trials of sorghum genetically enhanced to improve the digestibility and nutritional content of the coarse grain, which thrives in arid soils.

Several studies this year demonstrated increased support by consumers for food grown using biotechnology. An Asian Food Information Centre (AFIC) survey found that in light of the region's growing demand for high volumes of quality food, consumers in China, India, Japan, the Philippines and South Korea are ready to accept foods produced using agricultural biotechnology. Biotech crops are also gaining acceptance in Europe, according to a study issued by EuropaBio.

The year was also one of advances in the development of new crop varieties using biotechnology. In June, researchers stated that biotechnology in agriculture will play a key role in increasing corn and soybean yields by 40 percent over the next decade and overcoming climate challenges like crop-killing droughts.

In Asia, researchers announced that genetically modified Golden Rice, which is meant to improve nutrition...
in the developing world, may be available to farmers by 2011.

Biotechnology remains one of the greatest income-neutral technologies available to wealthy and poor farmers alike, requiring no significant additional investment in new tools or technology, yet increasing yields and reducing crops lost to pests and disease. According to a report released this year, among the 23 countries growing agricultural biotechnology crops, half are less developed countries. 11 of the 12 million farmers growing biotech crops are small-holder, resource poor farmers.

Agricultural biotechnology is also being recognized for its environmental benefits. Herbicide-tolerant crops contribute significantly to soil conservation because more farmers employ no-till, thus reducing erosion. In China, farmers growing biotech rice reduced their pesticide use by nearly 80 percent and more than half of them used no pesticide at all. More than 10% of farmers growing conventional rice showed symptoms of pesticide poisoning, while none of the farmers growing pest resistant rice did.

Agricultural biotechnology holds even more promise for a sustainable future in 2009.

Source: Council for Biotechnology Information

**AAEDC 2008 Agriculture Recap**

By Lisa Barge

In 2008 the Anne Arundel Economic Development Corporation (AAEDC) expanded the Anne Arundel County Agricultural Program beyond Farmers markets. New initiatives include education and a concentrated marketing effort to promote agriculture in the County. Marketing efforts include expanded publicity reaching all regional media, hosting a farmers’ market segment for Anne Arundel County’s Week-in-Review Program, increased advertising, and radio and television interviews. Restaurants and grocery stores were also encouraged to promote “buying local” farm fresh ingredients.

Educational initiatives included participation in the statewide “Buy Local Campaign” and educational opportunities with select schools and youth groups. The newest initiative is an effort to place an agricultural education program at Southern High School, and provide additional outreach to elementary and middle schools.

Numerous on-farm visits were arranged to keep abreast of agricultural issues in Anne Arundel County, to learn of agricultural practices being followed, and be better able to answer questions that may arise from the public.

For a list of 2008 program highlights, visit the website at: [www.aaedc.org](http://www.aaedc.org) or contact Lisa Barge at 410/222-7410 or lbarge@aaedc.org.

**Anne Arundel County Land Preservation - 61,673 Acres Preserved**

By Barbara Polito

The 1997 General Development Plan’s agricultural and forest preservation goals were to preserve agricultural, forested and rural areas of the County. The implementation program comprises numerous programs and mechanisms currently operating in Anne Arundel County to achieve local and state goals. Program policies focus on maintaining agriculture as a viable and sustainable sector within the County’s economy and on preserving agriculture as a key element of the rural character of South County.

A total of 61,673 acres are currently preserved in Anne Arundel County: 8,847 acres in State, County and Municipal recreation land; 11,475 acres in agricultural easements and managed forest land; and 41,352 acres in natural resources land. This total is equivalent to approximately 23 percent of the County’s land area; a substantial share. Easement Acquisition Mechanisms include:

- Maryland Agricultural Land Preservation Foundation (MALPF) [www.malpf.info](http://www.malpf.info)
- Anne Arundel County Agricultural and Woodland Preservation Program [www.aacounty.org/RecParks](http://www.aacounty.org/RecParks)
- Rural Legacy Program [www.dnr.state.md.us](http://www.dnr.state.md.us)

For additional information on the county’s Agricultural and Woodland Preservation Programs contact Barbara Polito at 410/222- or [bpolito@aacounty.org](mailto:bpolito@aacounty.org).

**Anne Arundel Soil Conservation District Equine Outreach Program**

By Suzie Whilden

Anne Arundel Soil Conservation District (AASCD) has established an Equine Outreach Program for the citizens of Anne Arundel County. Through this program, the District would like to deliver resources to horse owners around the county that may not be readily available. One way to better facilitate our program, is to conduct a survey to gather information for contact and Horse owner interest purposes. AASCD has begun the survey process with rewarding response. If you would like to be a part of our survey and outreach program, please contact Suzi Whilden, Equine Outreach Specialist at 410-571-6757 or [swhilden@aascd.com](mailto:swhilden@aascd.com).

The advent of the horse operation has enabled land that may otherwise have been developed to remain in open space, thereby providing a significant environmental benefit to the County. However, as the horse community has historically been somewhat outside of federal and District agricultural assistance programs, opportunities have been missed to facilitate the institutionalization of best management practices. The District would like to reach out to horse farm owners in an effort to improve the delivery of services to this important segment of the agricultural community.

The partners at NRCS (Natural Resources Conservation Service), MDA (Maryland of Agriculture) and staff at the District have many beneficial programs to help horse farm owners maintain their properties to preserve the land and help our waterways.
Anne Arundel County Farmers Market

Anne Arundel County is home to 6 Farmers' Markets. Based on interviews and first hand observation, the County markets have done exceedingly well once again this year. Another significant increase is anticipated in 2008 revenues. The 2008 gross sales figures will be released in early February. Be sure to check out the new Westfield Annapolis Winter Farmers' Market beginning January 11th. For additional information visit the website: www.aaedc.org.

USDA Risk Management Agency launched this new Web site last week.

NEW FARM AND RANCH ONLINE PLANNING TOOL: FARM-RISK-PLANS.USDA.GOV

The USDA Risk Management Agency launched an online resource to aid farmers and ranchers in focusing on how to protect against down-side risks, as well as how best to take advantage of up-side opportunities in the market.

The new resource, a sub-site of the RMA Web site called Farm-Risk-Plans.USDA.gov, allows producers to complete a risk management checklist, identify their enterprise's strengths, weaknesses, opportunities, and threats, and explore a wealth of risk management information.


Producers are able to complete two exercises online which give them a novel look at their risk management situation. First is the Risk Management Checklist, a three-page list of questions to stimulate conversation among the family or leadership team of any farm or ranch operation.

The second is a Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis, a commonly used planning exercise in the business world, recognizing that small- to medium-sized farms are serious businesses which must use the same tools as any other modern business.

Anne Arundel Community College Offers Agribusiness Course

Spring at AACC will be greener than usual this year. The School of Continuing and Professional Studies has announced several new noncredit courses to meet the needs of those who want to be eco-friendly and advance careers in agribusiness, landscaping, nurseries and horticulture. Spring courses will include:

ENV508 - Smart Landscape Design for the Environment - 4/4/08, from 9 am - 4 pm.
ENV509 - Perennials and Grasses for Landscaping - 4/11/08, from 9 am - 4 pm.
ENV510 - Start a Career in Sustainable Agribusiness - 4/22 and 4/29 from 6 to 9:30 pm.

Courses 508 and 510 will be offered at the college's Arundel Mills location. ENV 509 will take place at the Glen Burnie Town Center location. To register for any of these courses, please contact Dr. M. Linda Martinak at 410-777-2912 or e-mail mmartinak@aacc.edu.

GIS Food System Map

By Amanda Behrens

The Johns Hopkins Center for a Livable Future (CLF) is developing a GIS food system map of Maryland, to illustrate how the local food system currently works and highlight opportunities for strengthening it. Geographic Information Systems (GIS) technology makes it possible to view, understand and interpret visual data in ways that reveal patterns and trends not typically apparent from lists or reports. The CLF food system map will include information on agriculture in the form of aggregated Census of Agriculture data as well as specific information on farms that currently produce, market and distribute food locally. In addition to this production information, the map will include data on processing facilities, distributors, farmers markets, grocery stores, restaurants, schools, hospitals, zoning and easements, economic census data and nutritional health data.

This new tool can be used to help guide the design of research and program activities of local non-governmental organizations; local, regional and state policy makers; and economic development agencies that are working to improve the local food system. For example, the map could identify ideal locations for new processing facilities along existing distribution routes and within a reasonable distance from area farmers raising similar products.

Ultimately, we hope that the map will be used to identify new resources and markets for farmers while at the same time highlight gaps in the system that must be addressed in order to support a strong local food system. The specific information on the select farms mentioned above was collected using public online resources. CLF would like to include information on any farm that wishes to participate, which includes farm name, address, crops and animals raised, and marketing methods. CLF will protect sensitive information. To learn more and participate, check out http://www.jhsp.edu/clf/programs/eating/proj_foodsystem.html or contact Amanda Behrens at 410-502-5069, abehrens@jhsp.edu.
The team that developed this project together over the past year includes farmers, Extension educators, and risk management education consultants, as well as the head of the National Agricultural Law Center at the University of Arkansas and RMA professionals.

The Web site may be accessed at the address http://farm-risk-plans.USDA.gov, or from the main RMA site at http://www.rma.usda.gov.

By Mike Ensor
Anne Arundel Master Gardener Coordinator

Master Gardeners are always there when a job needs to be done. County Master Gardeners are committed to a number of projects that are vital in keeping the program’s mission of “Educating Maryland residents about safe, effective and sustainable horticultural practices that build healthy gardens, landscapes and communities” for a better quality of life. Anne Arundel Master Gardeners are proud to announce two new projects for 2009: 1) “A Nation of Farmers”; and 2) “Grow It! - Eat IT!”

“A NATION OF FARMERS”
Helen Loughrey MSW
Executive Consultant
Annapolis Community Food Gardens

Maryland Master Gardeners has announced a new food gardening project as a result of public inquiries about growing food at home. Our own Anne Arundel County Master Gardener, Helen Loughrey, will be delivering a ‘pep talk’ to rally our county Master Gardeners and interested residents in support of this food re-localization effort. Before joining Master Gardeners, Helen founded Annapolis Community Food Gardens to address environmental and food security issues resulting from energy price volatility. Helen holds a Bachelors Degree in Economics from the University of Maryland College Park and a Masters Degree in Social Work from the University of Maryland Baltimore. For ten years, she was an Employee Assistance counselor specializing in addictions and mental health. Combining her research interests in food gardening methods and economic re-localization, Helen established Annapolis Community Food Gardens for the purpose of teaching children and adults how to grow organic food in a community setting. ACFG’s mission is: to help to re-localize community food supplies; to promote food abundance, affordability, and nutritional quality; to use organic bay friendly methods; to empower individuals to build food production, food marketing, and culinary skills; to support existing school curricula and organizational programs; to network community organizations in support of food re-localization.

In addition to Maryland Master Gardeners, she is a member of the American Community Gardening Association and the Chesapeake Bay Foundation.

GROW IT! - EAT IT!

“Grow It! - Eat IT!” is a new statewide gardening initiative program which will offer advanced gardening classes for the citizens of the state of Maryland scheduled for Jan-Mar 2009 in 14 locations around the state. For locations and registration form, check the web at www.mastergardener.umd.edu (click on “Advanced Training” on the left).

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.

Ag Web Modules
New website features in Anne Arundel County - Agricultural Program Teaching Modules:
http://annearundel.umd.edu/AGNR/agmedia.cfm

1. Pasture Management
   https://connect.moo.umd.edu/p12049696/

2. Pasture Herbicides
   https://connect.moo.umd.edu/p13059797/

3. Handling Tall Fescue Toxicity Events
   https://connect.moo.umd.edu/p59425434/

4. Modern Vegetable Production Technology for Early Market
   https://connect.moo.umd.edu/p75657057/

5. Vegetable Herbicides for Controlling the Top 10 Weeds of Southern Maryland
   https://connect.moo.umd.edu/p25962088/

6. Sustainable Low Input Strip-Till & No-Till Vegetable Planting Tactics
   https://connect.moo.umd.edu/p55665058/

7. Fruit Establishment Tactics to Maximize Our Coastal Plain Advantage
   https://connect.moo.umd.edu/p61165608/
8. Vineyard & Orchard Weed Control
https://connect.moo.umd.edu/p44883980/

9. Vineyard Establishment Supplies & Equipment
https://connect.moo.umd.edu/p48194311/

Other Updated County Website Features
Anne Arundel County Extension website:
http://annearundel.umd.edu/

Ag Newsletter Production Pointers
The current and past agricultural newsletter
additions are available for viewing or copy at:
http://annearundel.umd.edu/AGNR/agnews.cfm

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

Ag Web Modules
New website features in Anne Arundel County
Agricultural Program Teaching Modules:
http://annearundel.umd.edu/AGNR/agmedia.cfm

College AGNR 150 Anniversary
Also relive the history of Extension and University of
Maryland College of Agriculture Land Grant Mission by
viewing the 150 Years Anniversary PowerPoint:
http://annearundel.umd.edu/files/University%20of%20
Maryland%20150%20Year%20Anniversary.pps

4-H News
Patrick Thompson, 4-H FEA,
University of Maryland

Are you between 8 and 18 or know someone
who is? If so have you considered joining 4-H?
The Anne Arundel County 4-H program is
growing and is always looking for new members
and volunteers. The program has community
clubs located throughout Anne Arundel County but is also
looking for volunteers and members to lead new groups.
There are a variety of projects members can participate in
including animal science, environmental sciences and
human sciences. We are also looking for adults to do
seminars or presentations to help 4-Hers learn how they
can further their projects. To receive more information,
please contact Patrick Thompson in the Anne Arundel
Extension Office at 410-222-6759 or at: pet@umd.edu.

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.

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

NACAA Communication Award
Individual Newsletter
2002 National Winner

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

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

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