Calendar of Events
Mark Your Calendars --- Plan To Participate

November 18-20th – Crop Mgmt. School – Ocean City
December 2nd – Southern MD Crops Conf. - Waldorf
December 15th – Pesticide Recertification - DFRC
January 5th – Pesticide Certification Training - DFRC
January 12th – Pesticide Certification Exam - DFRC
January 15-18th – Horse World Expo - Timonium
February 4th – So. MD Veg & Fruit Meeting - Ruritan
February 16th – Pest Recert. & Nutrient Voucher - DFRC
March 8, 15, & 22nd – Intro to Farming - DFRC

Inside This Issue
- Fall & Winter Meetings
- West Nile Update
- Pest Net
- Grass Control in Small Grains
- SMRFM Hay & Straw Auctions
- Pasture & Haymaking
- Hand Sprayer Calibration
- Nutrient Management Update
Fall & Winter Meetings Slated

Mark your calendars now and plan to be a part of the winter meetings. The Southern Maryland Crops Conference will be held on December 2, 2003, at the Waldorf Holiday Inn. For full conference details, contact Pam King, Extension Agent, Charles County Extension Office at 301 934-5403.

On Wednesday, February 4, 2004, the Southern Maryland Vegetable and Fruit Production Meeting will be held at the Davidsonville Ruritan. Both meetings will provide Private Applicator Recertification credit.

Private Pesticide Applicator & Nutrient Management Voucher Trainings

A Private Pesticide Applicator Recertification Training will be held at the Davidsonville Family Recreation Center (DFRC) from 7:00 p.m. to 9:00 p.m. on December 15, 2003.

A Private Pesticide Applicator Recertification & Nutrient Management Voucher Training will be held at the Davidsonville Family Recreation Center (DFRC) from 5:00 p.m. to 9:00 p.m. February 16, 2003. The Pesticide Applicator Recertification portion of the program will be from 5:00 to 7:00 p.m. and the Nutrient Management Voucher Training will be from 7:00 to 9:00 p.m.

Also Private Pesticide Applicator Recertification will be offered as part of the Southern Maryland crops Conference on December 2, 2003 and the Southern Maryland Vegetable and Fruit Production Meeting on February 4, 2004.

Become a Certified Private Applicator

If you have allowed your pesticide certification to expire or are a new applicant, then you must attend the Private Pesticide Applicator Certification Training and pass the exam.

A Private Applicator Certification Training will be conducted at the Davidsonville Family Recreation Center (DFRC) from 7:00 to 9:00 p.m. on January 5, 2004. A Private Pesticide Applicator Exam will be given at the Davidsonville Family and Recreation Center (DFRC) from 7:00 to 9:00 p.m. on January 12, 2004.

Mid-Atlantic Crop Management School

November 18-20, 2003

The Mid-Atlantic Crop Management School will be held at the Princess Royale Hotel in Ocean City on November 18-20, 2003. This excellent educational event offers 35 program options during 2.5 days of breakout sessions. Individuals seeking advanced training in soil and water, soil fertility, crop production and pest management will have an opportunity at hands on, intensive sessions that also provide continuing education units (CEU’s) for the Certified Crop Advisor (CCA) Program. For more program details and registration information give me a call or contact Dr. Richard Taylor, University of Delaware on campus at 302 831-1383. You may also register on line at: https://crayola.hcs.udel/conf/registration/crop_management/

Horse World Expo

January 15-18, 2004

The Horse World Expo at the Timonium Fair Grounds is scheduled for January 15-18, 2004. If you have never attended this event, I guarantee that you will be amazed at the crowd and excitement generated. Join the fun, and see why the 1.7 billion dollar a year Maryland horse industry is a shining star agricultural industry for the state.

You are also invited to visit with Extension faculty at the MCE Horse Expo Exhibit Booth, and plan to attend one or more of the University of Maryland Seminars.

Introduction to Farming Short-Course

March 8, 15 & 22, 2004

Whether you grew up on a farm or not, you may need to sign up for this Introduction to Farming Course. This three-day course will open your eyes to the world of farming. A course designed for the young and old alike. It just may make a farmer out of a “city kid” or a “hayseed.” Money Back Guarantee! The spring classes will be conducted at the Davidsonville Family Recreation Center (DFRC). Make plans to attend.

Farmer/Grower Grants Available

By Susan Schoenien, Area Agent Sheep and Goats

Northeast SARE conducts a Farmer/Grower Grant Program to support producers who want to try something new on their farm - a technique for adding value, a new crop, or a method of direct sales, for example. The goal of the program is to help farmers explore sustainable and innovative production and marketing practices that are profitable, environmentally sound, and beneficial to the community.

There are three types of farmer/grower grants: 1) farm trial (adopt new practices); 2) grassroots (experimental); and 3) agroforestry (combining trees or shrubs with crop and/or livestock production. All projects must have a technical advisor, such as a country extension agent, university specialist, or NRCS staff. In 2003, the average grant funded was for $5,200. In 2004, the cap will be $10,000.

Any farmer in the Northeast SARE region can apply. The region is made up of Connecticut, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia, and Washington, D.C. (SARE programs are also conducted in other regions of the U.S.). You do not have to be a full-time farmer to be eligible for a grant, but your operation should have an established crop or animal product that you sell on a regular basis. You can also call 802/656-0471 to request a printed application. The proposal deadline is December 8, 2003. Applications and more information about the requirements of the Farmer/Grower Grant program are available on the Northeast SARE web site at: www.uvm.edu/~nesare/
West Nile Case Update
Maryland’s Arbovirus Surveillance

The Maryland Department of Health and Mental Hygiene is collaborating with the Maryland Department of Agriculture and the Maryland Department of Natural Resources to monitor mosquito, horse, and human populations for evidence of West Nile virus and other arboviruses of public health concern.

Maryland’s Arbovirus Surveillance
As of September 8, 2003, 3:00 a.m. MDT

Avian

To date, no birds have tested positive for arboviruses in Maryland in 2003.

Equine:

Thirty-seven (37) confirmed cases of West Nile Virus (WNV) in horses have been reported in eleven Maryland jurisdictions in 2003.

<table>
<thead>
<tr>
<th>County</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne Arundel County</td>
<td>8</td>
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<tr>
<td>Caroline County</td>
<td>6</td>
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<td>Carroll county</td>
<td>4</td>
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<tr>
<td>Dorchester County</td>
<td>1</td>
</tr>
<tr>
<td>Kent County</td>
<td>3</td>
</tr>
<tr>
<td>Frederick county</td>
<td>1</td>
</tr>
<tr>
<td>Howard county</td>
<td>1</td>
</tr>
<tr>
<td>Prince George's County</td>
<td>2</td>
</tr>
<tr>
<td>Queen Anne's County</td>
<td>6</td>
</tr>
<tr>
<td>St. Mary's County</td>
<td>1</td>
</tr>
<tr>
<td>Talbot County</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>

Seventeen (17) of the horse cases were fatal. In addition, three horses in Worcester County have tested positive for Eastern Equine Encephalitis (EEE). All three were fatal cases.

Human

To date in Maryland there has been seven reported human cases of West Nile (2 confirmed and 5 probable). All cases have been non-fatal.

Mosquitoes

Nearly 8000 mosquito pools have been tested in Maryland to date. Forty-four (44) pools have tested positive for West Nile Virus in 12 jurisdictions.

For more information about West Nile Virus, please contact the Center for Veterinary Public Health at (410) 767-5649 or visit the following website:

www.edcp.org/html/wn_surv.html

CDC National Arbovirus Surveillance Report
As of September 8, 2003, 3:00 a.m. MDT

Human

The following summary reflects both mild and severe human disease cases that have been reported to ArboNet by state and local health departments during 2003. ArboNet is the national, electronic surveillance system established by CDC to assist states in tracking West Nile virus and other mosquito-borne viruses. Current USA surveillance status indicates 2568 confirmed West Nile arbovirus cases with 47 resulting in patient death. As of the above date, detailed information is available for 2450 cases: 1380 cases (56%) were reported as West Nile Fever (milder disease), 789 (32%) were reported as West Nile meningitis or encephalitis (severe disease) and 281 (11%) were clinically unspecified. Please refer to state health department web sites for further details regarding state case totals.

http://www.cdc.gov/ncidod/dvbid/westnile/surv&controlCaseCount03.htm

West Nile Awareness & Prevention

Origins of West Nile Virus

West Nile Virus (WNV) is a virus that is transmitted by mosquitoes. It has been found in humans, birds, and other animals, typically in Africa, Eastern Europe, and the Middle East. In 1999, WNV was detected in the United States for the first time, and since then it has spread across the U.S.

West Nile Transmission

West Nile Virus exists in nature through a transmission cycle involving mosquitoes and birds. Mosquitoes become infected with West Nile virus when they feed on infected birds, which may carry the virus in their blood for a few days. Infected mosquitoes can then transmit West Nile Virus to humans and animals when biting to take a blood meal. In rare instances, West Nile Virus may be transmitted from human to human through organ donation or blood transfusion or from pregnant mother to fetus. These new modes of transmission are still under investigation.

Symptoms

Most individuals infected with West Nile Virus will not have any symptoms or signs of illness. People who do develop illness may experience mild symptoms such as fever, headache, and body aches; occasionally a skin rash and swollen lymph glands may be noticed. These symptoms generally appear 3 - 14 days following the bite of an infected mosquito. Less than 1% of persons infected with the virus will develop more severe disease with symptoms such as high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and, rarely, death. People > 50 years of age have the highest risk of developing severe illness. Horses will display many of the debilitating symptoms expressed in humans with or without developing a fever.

Reducing the Risk of Infection

Reduce their risk of family and horses from becoming infected with West Nile Virus by taking the following steps to avoid mosquito contact:

- Wear long-sleeved shirts and long pants when going outdoors.
- Spray clothing with repellents containing permethrin or DEET (N, N-diethyl-meta-toluamide), since mosquitoes may bite through thin clothing.
- Ensure that all window screens in your home or barns are intact and do not contain holes. Repair any damaged screens.
Reduce Mosquito Populations

Mosquitoes can breed in as little as 1/4 inch of water. In addition to the personal protective measures listed above, Maryland citizens should take the following precautions to reduce mosquito-breeding sites around their homes and businesses.

✓ Remove all discarded tires from your property. If tire removal is not possible, puncture or cut tires to prevent water from collecting in them.
✓ Dispose of tin cans, plastic containers, ceramic pots, or similar water-holding containers.
✓ Make sure roof gutters drain properly. Clean clogged gutters in the spring and fall.
✓ Turn over wheelbarrows when not in use.
✓ Eliminate any standing water that collects on your property.
✓ Check for trapped water in plastic or canvas tarps. Arrange the tarp to allow water to drain.
✓ Flush livestock water troughs and clean feed bunks twice a week.
✓ Use premise spray materials around dwellings and barns lower high populations of mosquitoes down to tolerable levels. Choose a premise and livestock spray that allows direct mist or drench contact with animals.
✓ Regularly vaccinate horses for West Nile and Eastern Equine Encephalitis. After initial vaccination course, treat twice annually with booster shots. Veterinarians are now allowed to release the vaccinations to horse owners for administering to their own horses. Consult with your veterinarian.

Call the nearest Mosquito Control Office if mosquitoes or their larvae are overly abundant or beyond your ability to control. For more information about mosquito control, please contact the Maryland Department of Agriculture at: (410) 841-5870 or visit: http://www.mda.state.md.us/geninfo/genera9.htm

The Maryland Department of Agriculture Mosquito Control Section

Program Description

The Maryland Department of Agriculture (MDA), Mosquito Control Section, is responsible for administering and implementing mosquito control within the State of Maryland. Typical projects undertaken for mosquito control include mosquito surveillance activities, source reduction, biological control initiatives, ground and aerial application of insecticides and public education.

Mosquito Biology

Mosquitoes are members of the family Culicidae in the order Diptera (true flies). Adult mosquitoes are distinguished from other flies by the presence of a long proboscis and scales on the margins and veins of the wing. Males differ from females by having feathery antennae and mouthparts not suited for piercing skin.

Mosquitoes are insects that develop through four distinct life stages - egg, larva, pupa and adult. Only adult females feed on blood, which is a required source of protein for egg development. Males and females feed on plant nectar as a source of carbohydrates.

All mosquito larvae are aquatic. The 62 species known to occur in Maryland have adapted to a wide range of larval habitats, including swamps, marshes, tree holes, septic ditches, rock pools, etc. All of the breeding sites have a common characteristic of stagnant pools not subject to significant wind or wave action or water flow. Additionally, the breeding sites generally have a low or non-existent population of parasites or predators that prey on mosquito larvae. Consequently, flowing streams, tidal creeks, large ponds, lakes and other large water bodies are not typical mosquito breeding sites. Larvae feed on microorganisms and particles of organic matter. Mosquito larvae are not completely aquatic because they must have access to atmospheric oxygen, which is obtained by means of a siphon tube that penetrates the water surface or, in some species, pierces the roots of aquatic plants. The larval stage lasts from 4 to several days and contains four separate developmental periods termed instars.

Adult female mosquitoes mate once during their lifetime. This occurs shortly after emergence from the pupal case. The blood feeding habits of the female vary between species. Some are general feeders while others feed only on specific groups of vertebrates such as birds or reptiles. The flight habits are also variable, with some species rarely flying more than one-half mile from their breeding sites and others flying 20 miles or more.

Mosquito-Borne Disease Surveillance

The Maryland Department of Agriculture (MDA) and the Maryland Department of Health and Mental Hygiene (DHMH) collaborate to conduct a surveillance program to detect mosquito-borne viruses of public health concern. The program monitors the occurrence of Eastern Equine Encephalitis (EEE) virus, West Nile Virus (WNV), and St. Louis Encephalitis (SLE) virus in mosquitoes, wild birds, domestic animals and humans. These viruses are maintained in nature in wild bird-mosquito cycles. Isolation of virus in the bird-mosquito cycle provides an early warning of virus transmission and is cause for increasing public awareness campaigns to reduce risk of disease and to take proactive steps for mosquito control to further reduce the risk to humans, domestic animals and zoo animals.

Merck Veterinary Manual

By Susan Schoenian, Area Agent Sheep and Goats

The 8th edition of the Merck Veterinary Manual is online at http://www.merckvetmanual.com. Calling itself “the single most comprehensive reference for animal care information,” the manual includes over 12,000 indexed topics and 1,200 illustrations. It is searchable by topic, species, specialty, disease, or keyword. The manual is also available as a book or CD-ROM for those lacking internet access or preferring these mediums.

http://www.merckvetmanual.com
Vegetables

Fruit feeding injury risks are generally high this time of season as a result of increasing insect populations. Various fruit worms or plant bugs seem to cause the most injury. *Pest Net* farmers report large populations of squash bugs in southern MD. Blister beetles are also very prevalent in some tomato crops on the Upper and Central Eastern Shore. There are not well-defined economic thresholds for these pests but be sure to take note of the amount and type of injury and control the pests when the amount of injury exceeds what you consider acceptable.

Finally, both bacterial spot and speck were found in tomatoes in Central Maryland this season. Although there is not much that can be done at this time of season, be sure not to replant solanaceous crops for two years in these infected fields since the bacteria can remain in the soil for that long.

Looking for more IPM news? Check out the university of Maryland Integrated Pest Management web site at: www.mdipm.umd.edu

Grass Control in Small Grains

By Ron Ritter, Extension Weed control Specialist

With the wide spread use of Harmony® Extra for broadleaf weed control in small grains, we are seeing more grassy-type weeds invade small grain fields. The following lists the more common ones:

Grasses Invading Small Grain Fields

- Annual bluegrass
- Bromegrass species
- Bulbous oatgrass
- Italian ryegrass
- Roughstalk bluegrass

Maverick® is labeled for control of a variety of bromegrass species including downy brome, cheat and hairy chess, which are common in our region. We have studied its use on annual bluegrass, roughstalk bluegrass and bulbous oatgrass, and have found excellent control of annual and roughstalk bluegrass.

Bulbous oatgrass control has varied, but Maverick® is the only product that we have found that has any activity on this particular grass.

Use rate is 2/3 ounce/acre plus surfactant. Maverick® is labeled preemergence, Fall postemergence and Spring postemergence. Consult the label for the proper application timing for your specific needs.

Maverick® is a sulfonylurea and safety to double-crop soybeans is a concern. The current Maverick® label says, “Do not plant to any crops other than winter or spring wheat for a period of one year following Maverick® herbicide application.” We have two year’s data, which shows that a planting of STS soybeans, even where Maverick was spring applied, will not show any signs of injury or yield reduction. Recently, the label was amended to allow for a planting of STS soybeans where Maverick® has been used.

Another sulfonylurea labeled for grass control in wheat and barley is the Dupont product Finesse®. It will also control the ryegrass, bluegrass and brome species. Finesse® may be used preplant, preemergence, or postemergence.

Pest Net

By Bill Marose, Marose Ag Consulting

Tree Fruit

If you are relying on mating disruption pheromones for insect control, it is about time that they may be running out. Be sure to set pheromone traps or replace the lures in traps and check them on a regular basis. The economic thresholds for oriental fruit moth are five moths per trap per week. Codling moth threshold is the same, five moths per trap per week. Although, flights for these pests are generally winding down, we are still behind on degree-day accumulations and activity may be one to two weeks behind traditional norms. It would be prudent to replace pheromone lures in traps in late maturing blocks of fruit and continue monitoring them well into September in these blocks.

This time of year, most growers are looking forward to putting away the sprayer, but don’t forget borer sprays for lesser and greater peach tree borers and fungicides for peach leaf curl. Leaf curl sprays can also be applied next season, but it is prudent to make this application now if possible.

Pumpkins

By now the pumpkin crop size has been determined and maturing fruit should be evident by walking the field. Primary problems to be concerned with are diseases. Powdery mildew has been evident in Central Maryland for almost a month, and with the continuing wet weather and heavy dews, additional fungal and bacterial disease threats remain high. Powdery mildew is one of the few plant diseases that can be eradicated after infection, while most other diseases can only be controlled before infecting the plant. With the above average wet weather this season, disease threats are high. Time fungicide sprays about 10-14 days apart. A detailed fungicide program, developed at The University of Maryland is available in the University EB 236 Commercial Vegetable Productions Recommendations. Although most growers are concerned about cucumber beetle early in the season as a carrier of bacterial wilt, large numbers this time of season can have different but just as detrimental effects on pumpkin crops. Adults can be found feeding on the pollen of male flowers and are easily spotted. Do not confuse them with western corn rootworm beetles, which are similar in appearance but slightly larger and more robust. The western corn rootworm beetles do not appear to cause economic harm to pumpkins, laying eggs that will over-winter and hatch next season. Cucumber beetle eggs will hatch shortly after being laid and the larva can emerge from the soil boring into the rind of the pumpkins. This rind worm can cause sufficient damage to the pumpkin making it unmarketable. Controlling the adult cucumber beetles is difficult since they hide in the flowers, which close late in the morning or early afternoon. Normally cucumber beetle directed insecticides are applied late in the day to reduce the risk of killing bees, but during flowering this is ineffective in controlling the beetles as they often are closed in the pumpkin flowers. Consult the vegetable recommends for appropriate pesticides to control cucumber beetles if numbers are high.

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from the first leaf to boot stage. The recommended rate for grass control is 1/3 ounce/acre. Again STS soybeans are required when double-cropping.

Farms Build Communities
Farms all across this country build communities in a recent Wisconsin dairy industry publication entitled, *Our Dairy State*, the real dollar and cents impact of a dairy farm was revealed. For each dollar a dairy producer generates in milk sales, six dollars of sales are generated in the local community. Based on information from an actual 250-cow Wisconsin dairy farm this year, the typical farm will spend:

- $100.00 at the local feed mill
- $62,000 at local retailers, and other businesses
- $15,000 for veterinarian services
- $56,000 at farm coops
- $225,000 for bank interest payments
- $40,000 at equipment dealers
- $20,000 at local labs
- $65,000 in state and local taxes
- $10,000 for local utilities
- $225,000 for farm workers, who will pay
- $45,000 in income taxes

Total: $815,500 spent by just one farm

SMRFM Hay & Straw Auctions
The Southern Maryland Regional Farmers Market wishes to remind you of the upcoming Hay and Straw Auctions, which are scheduled for the first and third Saturday morning at 10:00 a.m. beginning in November. The auctions will run through March. If you have hay or straw to consign, or are an interested buyer, then please contact Margie Wilkinson at the market office, at 800 533-FARM or call Bob Chase at 410 798-1580.

Northeast Grazing Guide Web Site
By Les Vough, Forage Crops Extension Specialist
The Northeast Grazing Guide web site was developed as part of the activities of the Northeast Pasture Research and Extension Consortium. The site provides access to research summaries, extension resources, and farmer projects, as well as links to other grazing web sites. You can check it out at:
http://www.umaine.edu/grazingguide

Market Tip-Line
Weekly SMRFM market price quotes are available by calling the MCE Market Tip-Line at 410 761-8911. The quoted prices are compiled and updated each week during the produce auction season. The hay and straw auction price quotes will also be available by the second auction in November. Give me a call if you have any questions or suggestions for the improvement of this marketing tool.

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SMRFM Produce Auction Results for 9-4-2003

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<thead>
<tr>
<th>Product Name</th>
<th>Low</th>
<th>High</th>
<th>Avg</th>
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</thead>
<tbody>
<tr>
<td>Green Beans - 1 bu.</td>
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<td>$5.00</td>
<td>$5.00</td>
</tr>
<tr>
<td>Lima Beans - 1 bu.</td>
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<td>Tomatoes - Cherry - pack in 12 pint flats</td>
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<td>Tomatoes, Other</td>
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<td>$0.85</td>
<td>$0.85</td>
</tr>
<tr>
<td>Cantaloupes - Eastern type</td>
<td>$0.25</td>
<td>$10.00</td>
<td>$2.32</td>
</tr>
<tr>
<td>Cantaloupe, other</td>
<td>$0.50</td>
<td>$0.90</td>
<td>$0.70</td>
</tr>
<tr>
<td>Watermelons - Crimson Sweet</td>
<td>$1.50</td>
<td>$1.50</td>
<td>$1.50</td>
</tr>
<tr>
<td>Watermelons - Sugar Babies</td>
<td>$0.50</td>
<td>$1.50</td>
<td>$0.88</td>
</tr>
<tr>
<td>Watermelons - Seedless, Red</td>
<td>$0.25</td>
<td>$5.00</td>
<td>$1.43</td>
</tr>
<tr>
<td>Watermelons - Other Varieties</td>
<td>$0.50</td>
<td>$3.00</td>
<td>$1.02</td>
</tr>
<tr>
<td>Apples - 1/2 bu.</td>
<td>$8.50</td>
<td>$9.00</td>
<td>$8.75</td>
</tr>
<tr>
<td>Nectarines, 1/2 bu.</td>
<td>$9.00</td>
<td>$10.50</td>
<td>$9.83</td>
</tr>
<tr>
<td>Peaches - 1/2 bu</td>
<td>$7.50</td>
<td>$14.50</td>
<td>$10.88</td>
</tr>
<tr>
<td>Pears - 1/2 bu.</td>
<td>$8.50</td>
<td>$8.50</td>
<td>$8.50</td>
</tr>
<tr>
<td>Fresh Cut Flowers - Cut fresh (20 stems)</td>
<td>$1.25</td>
<td>$2.25</td>
<td>$1.75</td>
</tr>
<tr>
<td>Mums - 6 in. pot</td>
<td>$1.50</td>
<td>$2.25</td>
<td>$1.71</td>
</tr>
<tr>
<td>Mums - 8 in. pot</td>
<td>$1.25</td>
<td>$1.50</td>
<td>$1.38</td>
</tr>
<tr>
<td>Miscellaneous - Straw - small square bales</td>
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<td>$1.90</td>
<td>$1.90</td>
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<tr>
<td>Used Boxes</td>
<td>$1.00</td>
<td>$1.00</td>
<td>$1.00</td>
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Fall Cutting of Alfalfa
Adapted by Les Vough from ‘Consider Cutting Alfalfa in October’ by Paul Petersen and Craig Sheaffer, Minnesota Forage Update, Sept. 2002

Traditionally, many people have been cautious about cutting alfalfa in the fall due to concerns that it will increase the risk of winter injury to the stand. This was a good general recommendation 25 years ago, but our increased understanding of genetic and management factors affecting
Pasture & Hayfield Establishment
Encounters with Your Wallet

Planting has always been a magical experience. The very idea that life exists in that dead looking seed, and the faith that after burying it awakens. So you set forth to do everything right in preparation of seeding a new 20-acre pasture or hayfield. You followed the land preparation process to the letter, liming, fertilizing and cultivating the soil into that perfect seedbed. The field was prepared in a timely manner, had every possible advantage, ample moisture, no weeds, with faultless soil uniformity. With a cultipacker seeder the orchard grass and clover was perfectly seeded. Ten days later after a few gentle showers, you take the time to behold the majesty of your labors. The tan soil had taken on a marvelous lime green hue, appearing as if every seed that you had planted was growing. Two weeks pass and you return to the field, expecting to see a field of jade, you immediately sense loss. Walking through the field only pockets of the wonderful jade appear intermixed with expanses of tan lifeless soil, except of course the numerous weeds beginning to unfold. You exclaim, “Where did all of my orchard grass and clover go? Such treachery!” Your first thought is the $150 per acre establishment cost translating for 20-acres to $3,000! Now realizing that the field was a worthless as your empty wallet true despair overwhelms the moment.

Closer examination reveals thin shriveled brown seedlings; the few that are still partially alive are darkly colored and constricted at the soil line. This nearly 100% loss was due to damping-off, all seedlings are susceptible given the proper conditions to one or all of the three major soil damping-off fungi: *Rhizoctonia sp.*, *Phytophara sp.*, or *Pythium sp.*. Could this loss have been prevented? Recognizing when conditions favor damping-off will now be a new priority for you in the future. The damping-off fungi thrive in wet flooded soil conditions, in fact they have motile, swimming spores. During extended wet spells one should anticipate high and active spore counts. The damping-off fungi are also active in both cool and warm wet soils. Many vegetable crops are also susceptible to crown and fruit damage from the splashing and swimming of the motile spores. Periods of extended hot and dry conditions will typically reduce these organisms, but with these organisms one week of rain can undo a lengthy dry summer.

Prevention is the answer for these soil born diseases, and seed treatment is the economical answer. It is the best crop insurance. What are your seed treatment options for forages? Unfortunately, most forage grasses and clovers are not available with fungicide treatment. Alfalfa is the exception; it generally comes treated with Apron®, a metalaxyl compound. A complete web search provided two planter or drill-box chemicals available with a comprehensive label, which included all forages, vegetables, and field crops. Gustafson LLC, is North America’s largest researcher, manufacturer and marketer of seed treatment products and related equipment. TCI – Trace Chemicals LLC is a subsidiary of Gustafson. The two labeled products are Thiram® 50WP by Gustafson and Allegiance Dry®, by TCI.
Applying Manure to Alfalfa
By Les Vough, Forage Crops Extension Specialist, and Doo-Hong Min, former Research Assistant

Applying manure to alfalfa or alfalfa-grass mixtures may not seem to be efficient from a nitrogen use perspective, but may actually be the best management alternative from an environment perspective. Manure applications to alfalfa or alfalfa-grass mixtures may actually result in less potential environmental harm than application to corn and small grains. Alfalfa and alfalfa-grass mixtures can consume large quantities of manure nutrients since legumes take up soil N in preference to fixing N from air when free N is available in the soil.

A 5-year research project was conducted at the Central Maryland Research and Education Center-Clarksville Facility to: 1) evaluate effects of dairy slurry application rates and times on yield, quality and stand persistence of alfalfa (AL), orchardgrass (OR), tall fescue (TF), reed canarygrass, (RC), AL-OR and AL-RC and 2) evaluate the effectiveness of these species for utilizing N and P from various application rates. AL, OR, TF and AL-OR were managed in a 5-cut and OR, RC, AL-OR and AL-RC in a 4-cut system. Nine fertility treatments were initiated after 1st cutting of a 2-year old stand in 1995 – 7 slurry rate/timing treatments, an inorganic fertilizer treatment and unfertilized control.

Generally, yields from dairy slurry application were comparable to the inorganic fertilizer treatment for all species in both 4- and 5-cutting management systems. Applying dairy slurry at the highest rate (1800 lb N/acre equivalent to about 500 lb N/acre plant available N) in split applications was not detrimental to herbage yields under either cutting management system. Herbage yields of AL and AL-OR were similar regardless of N rates in the 5-cutting management system. Crude protein content of grasses was similar to AL and AL-OR across all slurry rates and comparable to the inorganic fertilizer treatment. N rates did not affect ADF and NDF contents in either cutting management system. Alfalfa-grass mixtures had significantly lower NDF content than grasses in the 4-cutting management system. In the 5-cutting management system, alfalfa and alfalfa-orchardgrass had significantly lower NDF content than orchardgrass and tall fescue alone.

Soil NO₃-N levels at 0-12 and 12-24 inches in the 4-cut system were significantly higher for RC than OR, AL-OR and AL-RC in December 1996 from application of 1413 lb total slurry N/acre in 1996. At the 1800 lb N rate, NO₃-N was again significantly higher for RC at 0-12 inches and for RC and OR at 12-24 inches than for AL-OR and AL-RC. For AL-OR and AL-RC, there were no significant differences in NO₃-N at either depth between the control, 500 lb N from NH₄ NO₃ and 706 lb N from slurry. There were no significant differences in soil NO₃-N levels among species in the 5-cut system. At 0-12 inches, soil N was significantly higher than the control for all species at all slurry treatments except TF at 747 lb N. Soil N for the 747 lb N from slurry was generally not significantly different between the control, 500 lb N and 747 lb total N from slurry. Stand ratings in April indicated no detrimental effects on stands after two years of slurry applications. Thus alfalfa and alfalfa-grass mixtures appear to be as effective as orchardgrass and tall fescue in utilizing N from manure and more effective than reed canarygrass.

Why Use Salt For Fertilizer?
Adapted by Les Vough from Dr. Tom Bruulsema’s article in Agri-Briefs, Summer 2003, No. 1

One of the myths that surround commercial fertilizers is that the salts they contain are “harsh” on the biology of the soil. The reality is that salt is essential to all of life. Either too much or too little can harm. Are fertilizers indeed too salty?

Fertilizer salts form soluble ions in soil water. Increased concentration of ions increases osmotic pressure and decreases water potential, making it harder for plants to take up water. This is why plants affected by “fertilizer burn” look about the same as if they had been stricken by drought. They can’t get the water, because there’s too much salt in it.

Fertilizer doesn’t have to burn, though. It’s all a matter of dosage. Plants can’t grow without salt, either. The nutrients they need are salts. The dissolved ions are exactly the form they take up. As long as the dosage is controlled, there is no harm applying a salt to the soil.

The kind of salt is important. Specific salt ions have greater effects than others. The ammonium ion in particular can release free ammonia, especially at higher soil pH.
Ammonia moves directly into plant cells. High concentrations can prevent root growth and even kill seedlings. On the other hand, phosphate ions hardly pose a salt hazard at all, since they never get to high concentrations in soil water.

Salt is often associated with sodium, because common table salt is sodium chloride. Sodium ions can destroy soil structure and clog the flow of soil water. But there’s hardly any sodium in most commercial fertilizers.

The chloride ion is one of the most soluble. Grapes, woody trees, and many legumes are sensitive to it. Research in the southern states showed some soybean varieties to be sensitive to chloride. But research in many other places has found muriate of potash (potassium chloride) to be an effective source of potassium for soybeans grown in deficient soils. And crops like wheat and corn show great benefits from fertilizing with chloride.

Several fertilizers aren’t truly salts. Urea, for example, is a soluble substance that isn’t a salt. Nevertheless, its solubility means it can have an osmotic effect, just like any other fertilizer. It also quickly decomposes to form a salt—the ammonium ion. Elemental sulfur is neither salt nor soluble—but it oxidizes into sulfate, a salt.

Manures and composts contain inorganic salts, organic salts, and insoluble organic forms of nutrients. But their salt content per unit of nutrient may not differ much from fertilizer, since their nutrient content is a lot lower, and they contain salts not necessarily needed for the crop. Also, as they decompose, the nutrients turn into salts.

How to avoid salt injury? Guidelines for safe rates are specific for each crop and are based on distance from the seedling, soil texture, soil moisture content, and the specific ions in the nutrient source. For ammonium, soil pH is an additional consideration.

A high salt content is a consequence of a unique advantage commercial fertilizers possess. Using sources with concentrated soluble nutrients cuts transportation costs—less fuel is wasted in transporting non-nutritive material. In order to utilize that advantage, commercial fertilizers need to be applied at judicious rates.

Why use salt for fertilizer? Because plants use salt for food.

See Some of Latest Developments in Haymaking

By Les Vough, Forage Crops Extension Specialist

Some of the latest developments in haymaking will be displayed and demonstrated at an Open House on October 18 at Heidel Hollow Farms in east central Pennsylvania. Owner David Fink, along with his wife and two sons, manages 1200 crop acres of which 900 are devoted to quality hay production. Heidel Hollow Farms is one of the most innovative hay operations in the country. A quick overview of the operation can be seen at:

http://www.baleinabag.net David is also a dealer for Steffen Systems hay equipment
http://www.SteffenSystems.com Harvest Tech preservative and drying agent equipment
http://www.HarvestTee.com and Circle C Equipment super conditioner rolls

http://www.superhaytoday.com Hay growers will be able to see a diversity of haymaking and handling equipment during the Open House.

Steffen Systems has recently introduced a new bale processing machine that will split 3x 3x8 feet large square bales into 15x18x22 inches, double-compressed, 70 to 80 lb small square bales. This processor was installed at Heidel Hollow Farms this summer and will be demonstrated at the Open House on October 18. Circle C Equipment’s Super Conditioner rolls have been installed on the farm’s mower-conditioners. This event should be of interest to all commercial hay growers. More details will be provided later.

Hand Sprayer Calibration

Almost everyday in the summer we are grabbing for the two-gallon hand sprayer to control or prevent pest damage around the home and garden. ’t it important to properly use these sprayers to apply products according to labels. This implies proper calibration. Hand pumped sprayers have greatly improved, capable of utilizing a high quality spray nozzle. Applications can now be made very accurately. With proper calibration and application technique hand sprayers can be as accurate as large and expensive broadcast spray rigs. The following steps will assure calibration and even applications of pesticides and fertilizers with a typical hand pumped sprayer:

1. A typical chemical application requires 20 gallons of water per acre. Therefore, two-gallon sprayer should be calibrated to cover one-tenth of an acre. One-tenth of an acre is 4,356 ft² or a 66’ X 66’ area.

2. When spraying act as if you are a tractor 24 inches wide. For the above 66-foot wide square 33 passes are required. Two gallons is equivalent to 256 ounces divided by 33 passes equals 7.757 ounces per pass.

3. Fill your sprayer with two gallons of water and pump until the pressure relief valve releases. Then determine the length of time in seconds required to catch 7.76 ounces of water sprayed in to a measuring cup. This time in seconds is the required speed of walking necessary for each of the 33 passes. Assuming that an average sprayer would deliver 7.76 ounces in 11.2 seconds. Next practice walking each of the 66’ passes in 11.2 seconds. This would be the equivalent of walking 4 mph, a brisk pace.

4. The final step critical to accuracy would be to maintain constant pressure, by stopping and pumping the sprayer to the point of pressure valve relief for each pass, especially at the start when the sprayer is fullest. Always leave an inch or two of headspace below the relief valve. Hold the nozzle 18” above the target and perpendicular to the direction of travel and target. At 18” above the target most fan nozzles will spray a 30” wide pattern allowing for 6” overlap for each 24” pass.
Nutrient Management Update
Nutrient Management Applicator Voucher
Remember that the state Nutrient Management Laws also require that the operator of a farming operation that applies nutrients in accordance to the farm’s Nutrient Management Plan posses a Nutrient Management Voucher. A Nutrient Management Voucher is obtained by attending a two-hour training every three years. Please take the opportunity to attend a nutrient Management Voucher Training offered this winter.

Cost-Share Funding for Nutrient Management Plan Updates Now Available to Farmers
Annapolis, MD (September 10, 2003) - Maryland Secretary of Agriculture Lewis R. Riley today announced that the Maryland Agricultural Water Quality Cost-Share (MACS) Program is now offering cost-share assistance to farmers who hire a private, non-government consultant to update their nutrient management plans.

"Until today, we have only offered cost-share assistance to farmers for the initial development of their nutrient management plans," said Secretary Riley. "At the recent nutrient management summit sponsored by Governor Ehrlich, many farmers expressed the need for additional financial support to help cover the costs of keeping their nutrient management plans up to date. We are pleased to expand this cost-share program so that farmers can continue to do their part to protect water quality in the Chesapeake Bay and its tributaries."

Maryland law requires farmers to update their nutrient management plan at least once every three years, or more frequently if there are major changes to a farmer’s operation. Rates for traditional animal and cropland operations range from $2 - $5 per acre. The rate for vegetable and in-ground nursery operations ranges from $12 to $18 per acre. The MACS program also has established per farm funding caps ranging from $200 to $3000, depending on the size, type and complexity of the operation. Additional rates have been calculated for out of ground container and greenhouse operations. Certain restrictions apply.

Applications for cost-share funds should be submitted to the Maryland Department of Agriculture (MDA) through local soil conservation districts and approved prior to plan completion. Applications will be approved on a first come, first served basis. To meet eligibility criteria, nutrient management plans must include all eligible farm acreage and be prepared by a non-government consultant who is certified and licensed by MDA. Applicants must also be in good standing with the Maryland Agricultural Water Quality Cost-Share Program. The cost-share covers one nutrient management plan update per operator, per year. Farmers have one year after cost-share approval to update their plan and submit invoices to MDA. Nutrient management plans developed to meet permit requirements for land application of sewage sludge are not eligible for cost-share assistance.

For more information, farmers should contact their local soil conservation district or the Maryland Agricultural Water Quality Cost-Share Program at 410-841-5864.

Ye Patriots Keep Your Nutrient Management Plan Up to Date
There certainly is no reason to procrastinate another day, when considering the value and responsible duty of maintaining a current, up to date nutrient management plan. The law has been relaxed so no fines are being issued, and cost share is now available for updating your plans. This should not signal an inactive period; on the contrary, it provides the opportunity to voluntarily commit to public trust, by proactively incorporating nutrient management into your farming business. I currently oversee two nutrient management advisors that of late have been required to call and persuade you to update your plans. I encourage you to work with them doing this idle period of program ambivalence. I attended Governor Erlich’s Nutrient Management Summit on August 5th, and I am convinced that a positive and respected program will evolve from that effort. I remember in the mid-eighties, as a young farmer sitting in an Extension meeting with a bunch of grumbling farmers about to take their first pesticide applicator exam the animosity towards that process. However, many of those once obstinate farmers now embrace this pesticide management program, and rightly so, for in so doing have added professionalism and pride to their careers as caretakers of our resources. I am writing this on the first nationally observed Patriots Day, possibly a day long overdue for this country. I am concerned about the Southern Maryland region, as I see the unbridled development of farmland, but I will not lose heart because under all of the asphalt and concrete lies soil that some day will be farmed again. Until that time we must remain committed to the land we keep, and to the bay that it is connected always striving to improve them for the next generation. I don’t want to be known as the generation of greedy spoilers and plunderers. Nutrient management is part of the process – I know that you already are aware of that, but to implement it is to be a patriot, and to document it is to become a professional.

They that can give up essential liberty to obtain a little temporary safety deserve neither liberty nor safety.”
Benjamin Franklin,
Historical Review of Pennsylvanina, 1759
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.

Enjoy the Harvest!

R. David Myers

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

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