Production Pointers

Spring 2004

Calendar of Events
Mark Your Calendars --- Plan To Participate
♦ May 11th - Pasture Twilight, Chaptico, MD
♦ May 20th - Strawberry Twilight, WYEREC
♦ August 19th - Fruit & Veg Twilight

Inside This Issue
- Maryland Weed Reporter
- Pesticide Label Updates for Vegetables
- Vegetable Insect Update
- Soybean Rust Alert
- Vegetable Disease Update
- MD Vegetable Growers Association
- Basic Vegetable Crop Fertility
- Strawberry Row Cover Research
- Forage Update
- Pussy Willows an Alternative Crop?
- SMRFM Horticultural Auctions
- Our Farm Action Plan for Southern MD
- Growing and Marketing Specialty Vegetables
- Nutrient Management Program Update
- Branching Out & Forest Stewardship
- Grain Market Report
- Greenhouse TPM/IPM Weekly Report

It is the policy of the University of Maryland, Agricultural Experiment Station and the 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.
Get Green!  
Make Cents of Your Pasture  
A Walking Twilight Field Day  
May 11, 2004  

Please make arrangements to attend this exciting on farm Pasture “Walking Twilight Field Day.” This event will be held at Hayden’s Fare Farm in Chaptico, Maryland from 5:30 to 8:00 p.m. on Tuesday May 11, 2004. The following topics will be highlighted during the evening stroll:

• Grass variety selection  
• Pasture establishment and renovation guidelines  
• Pest control, including weeds  
• Grazing management and carrying capacity  
• Best management practices  
• Machinery demonstrations  

Registration fee: $5.00, includes publications and refreshments. Please register by May 7, 2004.

For further information and registration, call your local County Extension Office or call:  
(301) 753-8195, or (301) 475-4484

If you need special assistance to participate in the Pasture Management Twilight Field Day, please contact Benjamin Beale, St. Mary’s County Cooperative Extension, at 301-475-4484 by April 28, 2004. Use the Maryland Relay Service at 7-1-1 for text telephone service to our voice number.

Wye Strawberry & Spring Crops  
Twilight Tours  
May 20, 2004

Mark your calendars now! Plan to attend the annual Wye Strawberry & Spring Crops Twilight Tours on May 20, 2004 from 6:00 to 8:30 at the Wye Research and Education Center. Featured guest speakers to include USDA Scientists, University of Maryland faculty, Maryland Cooperative Extension and Experiment Station personnel.

For more information contact Mike Newell (mailto:mmnewlee@umd.edu) or Mark Sultenfuss (mailto:msulten@umd.edu) at 410 827-7388

Orchard, Vineyard & Specialty Vegetable  
Upper Marlboro Farm Twilight  
August 19, 2004

Mark Your Calendars! You are invited to attend a twilight tour of the University of Maryland Upper Marlboro Research Farm, on August 19, 2004 from 4:30 p.m. to 8:30 p.m. Maryland Cooperative Extension will host this Orchard, Vineyard & Specialty Vegetable Twilight Tour, and light refreshments will be served.

A flyer will be mailed in the next newsletter with full meeting

MARYLAND WEED REPORTER  
Agronomy Crops & Pasture  
By Ron Ritter, Extension Weed Specialist, MD

By now, most of you should have received a new copy of Extension Bulletin 237-Pest Management Recommendations for Field Crops. The spiral binding was a hit the past 2 years so we decided to keep on using it. While we are selling hard copies of this bulletin, we are also making it available on the web. At first, it will be somewhat difficult to navigate. You will have to download large sections. Printing may also be a problem. However, we are working on making it more user friendly in the future. The $19.00/copy price is steep. Due to the shutting down of Ag Duplicating, we had to use University Press and their costs are sky high. Steve Rothman is looking into alternative printers for next year.

Most of the following changes have been added to EB 237. With the rapid growth of Roundup®-Ready soybeans, there isn’t much growth in the soybean market as far as herbicides are concerned. Most of the growth is in corn and other agronomic and horticultural crops.

CORN

Last year, Syngenta introduced Lumax, a new package-mix product for use in corn. It contains a mixture of Dual® II Magnum + atrazine + Callisto®. While you get sufficient Dual® II Magnum and Callisto® in the package-mix, there generally isn’t enough atrazine to provide season-long control of large-seeded broadleaf weeds like morningglory and cocklebur. Therefore, it is suggested that you add an additional 1 to 1 ½ pints of atrazine per acre to improve your overall broadleaf weed control.

Due to the fact that there is not enough atrazine in the current Lumax® formulation, Syngenta will be introducing a new Lumax (yet unnamed) formulation in 2005. The following table gives you the breakdown of what’s contained in Bicep® II Magnum, the current Lumax formulation and the proposed Lumax® formulation for 2005:

<table>
<thead>
<tr>
<th>Medium soil rate</th>
<th>Dual® II Magnum</th>
<th>Atrazine</th>
<th>Callisto®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicep® II Magnum</td>
<td>(2.1 qt/acre)</td>
<td>1.32 pt/acre</td>
<td>1.63 qt/acre</td>
</tr>
<tr>
<td>Lumax®</td>
<td>(2.5 qt/acre)</td>
<td>1.75 pt/acre</td>
<td>0.63 qt/acre</td>
</tr>
<tr>
<td>New Lumax® - 2005</td>
<td>(3.0 qt/acre)</td>
<td>1.30 pt/acre</td>
<td>1.3 qt/acre</td>
</tr>
</tbody>
</table>

Not everyone wants to use a preemergence herbicide in their corn production system. Whether you’re growing Roundup®-Ready corn or regular field corn, there are a number of options available. DuPont had the market share for early postemergence weed control in corn with a product called Basis Gold®. However, they are phasing out this product and introducing two new package-mixes, called Steadfast® and Steadfast® ATZ. The following table shows you the breakdown of the products contained in each:
You'll notice that the rate of Accent® is insufficient when treating perennial grasses such as johnsongrass. Thus, additional Accent® will be required under those situations.

For those of you that use Roundup® or Touchdown® in your farming operation, we are also seeing changes in formulations. Last year, Monsanto introduced Roundup® Weather Max, while Syngenta had Touchdown® IQ. This year, Syngenta will be introducing a new glyphosate formulation called Touchdown® Total. The following table summarizes the similarities between the two manufacturers and their glyphosate containing products.

<table>
<thead>
<tr>
<th>Rate</th>
<th>Accent®</th>
<th>Matrix®</th>
<th>Atrazine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steadfast® (3/4 oz/acre)</td>
<td>3/8 oz/acre</td>
<td>3/16 oz/acre</td>
<td>None</td>
</tr>
<tr>
<td>Steadfast® ATZ (14 oz/acre)</td>
<td>3/8 oz/acre</td>
<td>3/16 oz/acre</td>
<td>12 oz/acre</td>
</tr>
</tbody>
</table>

BASF will gradually be phasing out the current formulation of Prowl® and replacing it with Prowl® H20. This formulation will be more water soluble, less volatile and have minimal odor as compared to the EC formulation. Plant corn at least 1.5 inches deep and completely cover with soil. Rates will run from 2.0 to 4.0 pints/acre.

**SOYBEANS**

Monsanto will be reintroducing Lasso® for the soybean market under the trade name INTRRO®. The “RR” in INTRRO® stands for Roundup-Ready soybeans. Their goal is to introduce cheap alachlor for those growers that want a preemergence herbicide up-front where they plant Roundup®-Ready soybeans. Rates will run from 2.0 to 3.0 quarts/acre. This particular formulation is not labeled for corn, but is labeled for sorghum.

**NONCROPLAND, PASTURE, HAY AND RANGELAND**

BASF has finally received a label for the use of Distinct® on noncropland, pasture, hay and rangeland. This “new” product will be trade named Overdrive®. Overdrive® 70WG dicamba and diflufenzopyr (same ingredients as Distinct). Use rates range from 4.0 to 8.0 ounces/acre in pasture, hay and rangeland. On noncropland, a maximum of 10 ounces/acre can be applied. What is unique about this registration as compared to Banvel® or Clarity® is the grazing restriction. The label states, "pasture and rangeland grass treated with Overdrive® can be grazed or harvested for livestock feed immediately after application." For noncropland, the label states, "do not enter treated areas without protective clothing until sprays have dried."

Also note the following labeled changes for 2004: Cimarron® 60DF (DuPont) - A name change for Ally®. Cimarron® Max (DuPont) - A combination product of Cimarron® (Ally®) plus dicamba and 2,4-D. See label for grazing and haying restrictions.

**SMALL GRAINS**

I just received word that Osprey® 4.5WDG from Bayer CropScience has been registered by the EPA for postemergence control of Italian ryegrass control in wheat. Registration may be pending in Maryland until Bayer solicits a state label. Use rate will be 4.75 ounces/acre. As for rotational restrictions, soybeans may be planted 90-days after application, while corn may be planted 12 months after application. Most other crops can be safely planted after 10 months.

**Caution: Herbicide/Insecticide Interaction Reminder**

By Mark VanGessel, Extension Weed Specialist, DE

The following herbicide labels have been changed or modified over the past year. This is intended to make you aware of changes but be sure to read the labels for complete details.

**Raptor® 1AS (BASF)** -- for use postemergence on snap beans. Label requires a tank-mix with Basagran® at 6 to 16 oz/A. Basagran® is intended to safen the Raptor®.

**Dual® Magnum 7.62E (Syngenta)** -- new 2004 label for use on tomatoes with plastic mulch and bare ground. Dual® Magnum 7.62E (Syngenta) now has labels (24c registration) for preemergence application for peppers, cabbage, and spinach. This registration requires a waiver of liability provided by the MD Vegetables Growers’ Association.

**Stinger® 3L (Dow AgroSciences)** -- garden beets, brassica, sweet corn, spinach, stone fruit, turnip root and top. Use rates range from 2.6 to 8 oz/A depending on the crop. Be aware of rotational restrictions.

**Sandea® 75DF (Gowan)** -- asparagus, cucumbers, cantaloupes, pumpkins, winter squash, summer squash, watermelons, lima beans, green beans, tomatoes, eggplant, and pepper. Has both preemergence and postemergence activity, but the use pattern varies with the crop and whether it is used with plasticulture or bare ground. There are rotational issues with Sandea®. Be sure to read and follow all label restrictions.

**Label Updates for 2004 for Vegetable Crops**

By Mark VanGessel, Extension Weed Specialist, DE

The following herbicide labels have been changed or modified over the past year. This is intended to make you aware of changes but be sure to read the labels for complete details.

**Raptor® 1AS (BASF)** -- for use postemergence on snap beans. Label requires a tank-mix with Basagran® at 6 to 16 oz/A. Basagran® is intended to safen the Raptor®.

**Dual® Magnum 7.62E (Syngenta)** -- new 2004 label for use on tomatoes with plastic mulch and bare ground. Dual® Magnum 7.62E (Syngenta) now has labels (24c registration) for preemergence application for peppers, cabbage, and spinach. This registration requires a waiver of liability provided by the MD Vegetables Growers’ Association.

**Stinger® 3L (Dow AgroSciences)** -- garden beets, brassica, sweet corn, spinach, stone fruit, turnip root and top. Use rates range from 2.6 to 8 oz/A depending on the crop. Be aware of rotational restrictions.

**Sandea® 75DF (Gowan)** -- asparagus, cucumbers, cantaloupes, pumpkins, winter squash, summer squash, watermelons, lima beans, green beans, tomatoes, eggplant, and pepper. Has both preemergence and postemergence activity, but the use pattern varies with the crop and whether it is used with plasticulture or bare ground. There are rotational issues with Sandea®. Be sure to read and follow all label restrictions.
**Vegetable Insect Update**

By Joanne Whalen, Extension IPM Specialist, DE

**Seed Corn Maggot (SCM) in Spring Planted Vegetables:**

Although soil conditions are drier and warmer compared to this same time last year, seed corn maggot can still be a potential problem in all early planted fields. Seed corn maggot flies lay eggs in recently plowed and/or manured fields. Cool wet conditions at planting, the use of manure and/or plowing under of green cover crops close to planting all favor maggot problems.

**Peas and Beans**

In recent years, the use of a hopper box treatment of diazinon® 50W has provided excellent SCM control in peas and early planted beans. At the present time, this is the only diazinon formulation registered for use on peas and snap beans. It should be applied at a rate of ½ oz per bushel of seed and graphite added to prevent bridging in the planter. Unfortunately, we will only have this product available until July 2004 or at the latest November 2005. Lorsban®-SL, only available as a commercial seed applied treatment, has also provided very good control. Cruiser® SF (thiamethoxam), another seed applied material, was labeled in the fall of 2003. It is labeled for succulent shelled and edible-podded beans including lima beans, black-eyed peas, cowpeas, southern peas, snap beans, and wax beans. The label states early season seed corn maggot protection at a rate of 0.765 – 1.28 fl oz/100 lbs. of seed. It is also highly recommended that Cruiser® be used with compatible and registered seed treatment fungicides.

**Spinach**

The only available SCM control option is a broadcast application of 2- 3 qts/A of diazinon® AG500 applied right before planting and immediately incorporated 2-3 inches deep. In order to achieve effective control, diazinon should not be incorporated too deeply and the ground should only be worked once after application.

**Sweet Corn**

In addition to the permethrin (Kernel Guard® Supreme and KickStart® VP) and the diazinon/lindane (Kernel Guard®, Agrox Premiere® and KickStart®) hopper box treatments, we now have two new hopper box treatments available in 2004: Concur® and Latitude®. These hopper box treatments should be applied at a rate of 1.5 oz/42 lbs of seed. The insecticide component in both products is imidacloprid (same active ingredient as Gauch®). In addition to hopper box treatments, a number of seed applied treatments including Lorsban® SL, Gauch®, Poncho® and Cruiser® are available for sweet corn. Soil insecticides including Force®, Lorsban®, Fortress®, Furadan®, and Counter® are also labeled for SCM control in sweet corn.

**Vegetable Crop Insect Update**

By Joanne Whalen, Extension IPM Specialist, DE

**Peas**

You should begin scouting the earliest planted fields for aphids. As soon as temperatures warm up, aphids will become active. As the weather fluctuates between warm and cool temperatures, aphid populations often explode and beneficial insect activity can lag behind. On small plants, you should sample for aphids by counting the number of aphids on 10 plants in 10 locations throughout a field. On larger plants, take 10 sweeps in 10 locations. A treatment is recommended if you find 5-10 aphids per plant or 50 or more aphids per sweep. Dimethoate® or Lannate® will provide aphid control. Be sure to check the labels for application restrictions during bloom.

**New Labels/Changes for 2004**

Zeal® - This new material from Valent is now available for mite control in apples, pears and strawberries. It is also labeled for lygus bug and spittlebug control on strawberries. It is a reduced risk insecticide, which acts as an insect growth regulator against all stages of spider mites and European red mites. The active ingredient is etoxazole, which is a molting inhibitor. It also has translaminar activity. The use rate is 2-3 oz/acre. The days-to-harvest after an application to strawberries is one day.

Lorsban® 75WG - This new formulation of Lorsban® will be marketed by Gowan and will replace the old 50W formulation. Field trials have indicated equal or better control compared to the 4E/50W formulations.

Danitol® 2.4 EC - Please note that the restricted re-entry interval (REI) is listed incorrectly in the Commercial Vegetable Recommendations book for all cucurbits (including cucumbers, muskmelons, pumpkins, squash and watermelons). The correct REI is 24 hours.

**National Pest Alert: Soybean Rust**

Soybean rust is a serious disease causing crop losses in other parts of the world. It has not yet been detected in the continental United States, but the fact that it is principally spread by wind-borne spores indicates it may eventually reach major soybean growing areas in this country. Soybean rust is caused by two fungal species, Phakopsora pachyrhizi, an aggressive pathogen, and Phakopsora meibomiae, a weak pathogen. P. pachyrhizi has spread in the past ten years to Zimbabwe, South Africa, Paraguay, and Brazil causing severe damage. Yield losses have been reported from 10-80%. APHIS listed P. pachyrhizi in the Federal Register on August 12, 2002, as one of nine agents or toxins potentially posing a severe threat to plant health or plant products in the U.S. The appearance of a new pathogen on a key U.S. commodity raises a whole series of questions. Farmers want to know if it poses a direct threat, not only for the crop in the year it appears, but also for the future. The arrival of P. pachyrhizi to the United States soybean production areas is anticipated and could cause large crop and economic losses to growers. Resistant varieties are still in development, but there are effective fungicides being used in other countries. It is not currently known which of the fungicides, current registrations and future registration, may be effective on soybean rust in the U.S. Growers, Extension personnel, researchers, etc., also need to know how to identify soybean rust so rapid detection can occur. All growers should also learn how to identify this pathogen. If you suspect that a field of soybeans you are growing may be...
infected with this new disease, then please contact me so a
rapid diagnosis can be made. Visit the USDA APHIS
soybean rust page for more details at:
  http://www.ncpmc.org/soybeanrust

Vegetable Disease Update
By Kate Everts, Extension Plant Pathologist MD/DE

Fungicide Update
Recently several new fungicides have been registered for
use on vegetables. In addition, some formulation changes
have occurred since the 2003 field season. The following is
a short, non-comprehensive list of some of the changes:

Endura® 70 WG is labeled on beans, bulb vegetables,
carrots, peppers, eggplant, potatoes, tomatoes, and onions.
It has activity against white mold, Botrytis diseases, rust,
Purple blotch on onion, and Alternaria diseases such as
early blight. In our 2003 trial on lima bean in Delaware,
Endura® provided excellent control of white mold and
significant yield improvement.

Pristine® 38 WG is labeled for use on bulb vegetables,
carrots and cucurbits. It has activity against Alternaria,
anthracnose, Cercospora, gummy stem blight (GSB), downy
powdery mildew. In our trial in 2003, Pristine® used in
alternation with Bravo® did not provide superior control to
Bravo® used alone. Trials in Georgia indicate that Bravo®
alternated with Pristine®, in that location, gave superior
GSB control in comparison to Bravo®.

Amistar® 80 WP has the same active ingredient, and is
a formulation change of, Quadris®. It is labeled on the
same crops. Expect it to be effective on the same diseases
that Quadris® managed.

Tanos® 50 WDG is labeled on lettuce, peppers,
tomatoes, potatoes and cucurbits. Tanos® has activity
against Alternaria diseases, anthracnose, and downy
mildew. Tanos® is not registered for gummy stem blight (GSB)
management, although in our trial it had some
efficacy on GSB. In other words, don’t use it for GSB,
however if you are using it for anthracnose or Alternaria,
there should be some suppression of GSB. Tanos® also has
activity against Phytophthora diseases: late blight,
Phytophthora blight of peppers (foliar and fruit phase,
only), and buckeye rot (suppression only).

For more specific information on rates and efficacy, see
The Commercial Vegetable Production Recommendations
and the individual fungicide labels.

Resistance management guidelines have also changed.
We now recommend that QoI class fungicides (Quadris®,
Amistar®, Cabrio®, Flint®, etc.) always be tank-mixed with a
different class of fungicide to delay onset of resistance. In
addition, QoI class fungicides should always be applied
alternately with a fungicide in a different class. Powdery
mildew has become highly resistant to the QoI class
fungicides. Gummy stem blight is also resistant
(insensitive) to the QoI class.

Maryland Vegetable Growers
Membership Drive
On behalf of the Maryland Vegetable
Growers Association, I wish to announce that
the MVGA Membership Renewal for 2004 is currently underway
until July 1, 2004. All members in good standing are eligible to
participate in the Section 18 and 24c Special Use Labels Waiver
and Indemnification Program. A letter will go out shortly to the
membership explaining the full program details for this year’s
production season. A MVGA membership application form may be
downloaded from the Anne Arundel County Extension website at:
  http://www.agnr.umd.edu/AnneArundel/agbulletin.htm

For more information concerning MVGA organizational matters,
or to make comment, please contact Guy Moore, MVGA President
at 410 442-1427, or Dave Myers, MVGA Secretary/Treasurer at
410 222-6759.

Back to Basics: Vegetable Crop Fertility I
By Ed Kee, Extension Vegetable Crops Specialist, DE

Vegetable crop fertilization questions seem to be springing
up more frequently than in recent years. I think this is a
result of higher fertilizer prices, new fertilizer products, and
a new generation of farm decision-makers who are facing
these choices for the first time. Therefore, I will be
addressing these questions weekly, as well as other timely
topics related to general vegetable production.

Understanding the acidity of the soil and how liming soils
works is the foundation of any soil fertility program. Many
farmers and others remember Leo Cotnoir, long-time soil
fertility specialist with the University of Delaware. Many of
you were students and vividly remember his 8:00 a.m.
class, simply titled, “Soils.” Leo would say, “Probably more
research has been done on soil reaction and liming than
any other aspect of soil fertility. Yet, it is a subject that still
generates more questions than any other aspect of soil
fertility.”

The two main reasons for liming soils are to make soil
plant nutrients available and to prevent aluminum toxicity
due to soil acidity. There you have it. A pH test measures
the relative acidity or alkalinity of the soil. On the scale,
seven is neutral; less than seven is acid, greater then seven
is basic. In the humid regions with abundant rainfall, our
soils have a natural tendency to be acid. Maintaining the
soil pH at a level between 6.0 and 6.5 on most of our soils
does allow soil plant nutrients to be more abundant in
forms that are absorbed by plants and does reduce
aluminum levels to non-toxic amounts available to plants.
The major implication here is that if the soil reaction as measured by soil pH is between 6 and 6.5, more efficient use of fertilizers, manures, and green manures is obtained. This is expressed as better crop yield potential and real savings in fertilizer dollars. The lime requirement of a soil depends on total acidity that must be neutralized to raise pH to the desired level. Most vegetable crops have a target pH of 6.2 or 6.5; only sweet potatoes or scab-susceptible white potato varieties have a target pH of 5.2. In those cases, the plant pathogens that cause diseases do not thrive in a low pH environment.

In addition, lime is the cheapest and most readily available supply of calcium, a plant nutrient critical for yield and quality for many vegetable crops. Calcium is a major component in the structure of cells, including cells in the harvested fruit of many vegetable crops, such as cantaloupes, watermelons, cole crops, cucumbers, and many more. Calcium is considered to be largely immobile within the plant. That is, it does not move from one part of a plant to another, but rather is taken up by the roots and distributed to the developing tissues. Having adequate amounts of soil calcium readily available is critical for not only good yields, but good quality as well.

Soil pH and soil calcium, as determined by soil test are only roughly related. In all cases, calcium increases as soil pH increases. The amount of soil calcium at a particular soil pH level is a function of soil properties, especially soil texture and cation exchange capacity. Sandy soils with a low cation exchange capacity will have a lower calcium content at a given pH value than a finer textured soil with a higher exchange capacity at the same pH level. Hence at a pH of 6.0, a sandy loam may have 400 pounds per acre soil test (exchangeable) calcium, while a fine textured silt loam may have as much as 2000 pounds per acre soil test (exchangeable) calcium. In most cases, if the pH is at the recommended level for a particular crop on a given soil, the amount of available calcium will be adequate. When lime is applied, calcium levels increase and are readily available for the plants to use. Magnesium levels are also increased with lime applications, because lime is essentially calcium oxide and magnesium oxide.

**Nitrogen**

To understand why nitrogen is used so widely, it is important to understand where, how, and why it is utilized by plants. Those of us old enough to remember the drenching rains of Hurricane Agnes in June 1972, remember the acres and acres of pale, yellow knee-high corn in the weeks after the storm. This image brings to focus two characteristics of nitrogen.

First, it is easily leached from most soil profiles on Delmarva. After Agnes, nitrogen fertilizer moved out of the young crops root zone, creating the pale, yellow appearance rather than the rich, dark green color that bodes well for a good, healthy, productive plant. This phenomenon of color relates to chlorophyll, that amazing molecule that captures the sun’s energy and converts it to sugars, or a stored energy utilized by the plant for its maintenance and growth. Chlorophyll is a complex molecule, with nitrogen as a key component. At the risk of bringing back painful memories from high school chemistry; its molecular formula is C_{55}H_{72}O_{6}N_{6}Mg. Whereas, carbon, hydrogen, and oxygen are obtained by the plant in the gaseous form from the atmosphere to form chlorophyll, nitrogen and magnesium are the two mineral constituents of the molecule that must be obtained from the soil. In the case of legumes, the nitrogen is fixed from the atmosphere by Rhizobium bacteria on the roots.

In short, nitrogen and magnesium are at the core of the chlorophyll molecule, and in non-legume plants, must be supplied from the mineral environment of the soil. The nitrogen component is four-times greater than the magnesium component. A nitrogen deficiency is quickly manifested in lost production through impaired efficiency of the chlorophyll in the plant. Of course, nitrogen has other roles in amino acid and protein synthesis and much more, so any deficiency results in negative impacts.

While I’ve concentrated on the need for nitrogen, vegetable growers are very much aware that too much nitrogen, besides being a waste of money and generating potential negative environmental impacts, can also hurt crop yield and quality. Hollow heart on watermelons and potatoes, can be related to excess nitrogen. Too much nitrogen can cause tomatoes to be “viney” and delay maturity. Many vegetable crops will experience delayed maturity if nitrogen applications are too high.

Nitrogen recommendations from the University’s and most commercial labs are based on research and field experience. They are just that, a recommendation, not a prescription. Each grower does have, and must have, some flexibility to tailor those recommendations for conditions in his field and farm. Quite often I encountered a grower who used ten percent more, or ten percent less than the recommendation. They have a logic and rationale for those decisions that are farm-based and cost-driven.

**Research Update**

**Strawberry Row Cover Work**

By Kathy Demchak, Department of Horticulture, Penn State

In the fall of 2003, a study at Rock Springs was initiated in which different types of row cover treatments were applied to ‘Chandler’ plants to examine their use both to increase fall growth, and to provide winter protection. Fall treatments applied on September 26 were 1) no row cover (control), 2) a 0.55 ounce/square yard row cover (Agribon® AG-19), and 3) a 1.25 ounce/square yard (Typar® T-518) row cover applied. The changeover to winter treatments was made on October 24. The winter treatments were 1) a 1.25 ounce/square yard (Typar® T-518) row cover, plus straw (applied on December 13), 2) a 1.25 ounce/square yard (Typar® T-518) row cover alone 3) a 2.0 ounce/square yard row cover (Agribon® AG-70), and 4) a double thickness of a 0.55 ounce/square yard row cover (Agribon® AG-19). A data-logger was used to measure air and soil temperatures in 3 replications of each fall and winter treatment. PAR (photosynthetically-active radiation) was measured using a handheld PAR sensor. Though this study was only recently established, some unexpected findings have resulted. One assumption made was that...
the 1.25 oz./sq. yd. fabric used in this study would have more insulation ability than the 0.55 oz/sq. yd fabric used. While heavier weights of row cover made by the same manufacturer may have this effect (or may not as types of weaves differ), it was not the case when comparing light to heavyweight row covers of different manufacturers.

Generally, both air and soil temperatures were slightly higher in the fall under the 1.25 oz/ sq. yd. fabric (a maximum of 1-2 degrees, but usually less than 1 degree) as compared to the 0.55 oz/sq. yd. material. However, it must be stressed that in this case, the 1.25 ounce per square yard fabric has been more durable to date, and so is likely to be worth the extra cost for that factor alone. In addition, light reduction from these two types of row covers was similar, but varied from October to December, so sunlight angle might also play a role. Winter data is still being analyzed, and will be reported later. Yield effects of all treatments will be determined next spring.

This research was supported in part by agricultural research funds administered by The Pennsylvania Department of Agriculture. Thanks to Ken-Bar, and Polymer Group, Inc., for row cover material used in this research.

Forage Update
By Les Vough, Forage Crops Extension Specialist, MD

2003 Pennsylvania Forage Trials Report
The 2003 Forage Trials Report from Penn State University is now available and can be accessed on the web at: http://pubs.cas.psu.edu/FreePubs/pdfs/uc068.pdf. This report contains results for alfalfa, cool-season grasses and a forage grazing trial.

Fertilize Forage Grasses for Grazing and Hay Demands
As temperatures warm and spring nears, cool-season forage grasses will “green-up” and begin rapid growth. To take advantage of good growing conditions, soil fertility and plant nutrition needs must be met. Tall fescue, smooth brome grass and orchardgrass (perennial cool-season forage grasses) require about 38 pounds of nitrogen, 18 pounds of P2O5, 52 pounds of K2O, about 4 pounds of sulfur, and 4 pounds of magnesium per ton of forage produced. The need for phosphorus, potassium, sulfur, and magnesium, and the appropriate rates, should be determined from recent soil test results, based on site-specific soil samples. Most forage producers know to avoid soil sampling in livestock feeding areas and areas near water and shade where animals congregate and soil nutrient levels may be elevated because of animal wastes. Experienced forage producers recognize that appropriate nutrient rates depend on grazing needs and hay yield goals.

Perennial cool-season forage grasses will yield between 3 and 6 tons per acre, with nitrogen rates from 90 to 150 pounds per acre and balanced inputs of phosphorus, potassium, and other nutrients. Producers sometimes rely on a “nitrogen-only” forage program and fail to consider the harvest removal of phosphorus and potassium. As a consequence, soil test levels may decline over time, leading to disappointing yields and inefficient nitrogen use.

Perennial warm-season forage grasses like bermudagrass also respond to fertilization and often yield from 4 to 8 tons per acre per year. Bermudagrass will take up about 46 pounds of nitrogen, 12 pounds of P2O5, and 35 to 50 pounds of K2O per ton of forage. As with cool-season forage grasses, warm-season forage grasses should be grazed or hayed about every four weeks to capture both yield and good forage quality.

Required phosphorus and potassium may be applied with the first nitrogen application (if not applied last fall) as the grass breaks dormancy and begins to grow. Nitrogen, and any other needed nutrients, should be applied at or before green-up, before rapid growth begins. The initial nitrogen rate at green-up often ranges from 50 to 100 pounds per acre. Additional nitrogen should be applied at 50 to 100 pounds per acre about every four to six weeks afterward, depending on grazing needs and haying objectives. Forage producers should recognize that less nitrogen, phosphorus, and potassium may be needed in grazed forage systems, compared to hay, haylage, and silage systems, because a portion of the nutrients are returned to the soil by grazing animals as urine and manure.

If forage producers have not collected and analyzed soil samples in the last two to three years, they should do so now, then be ready to fertilize at, or just before, forage green-up. Good livestock performance and weight gains depend on good forage management, starting with optimum soil fertility and plant nutrition.

Contact your county Extension agents, certified crop advisor, or fertilizer dealer for more information on research-based fertilizer recommendations for forage grasses and optimum forage management.

Timothy Management
Reports from around the region indicate that cereal rust mites can now be found in timothy. As soon as fields green up, you should begin checking for mites and the early signs of infested leaves, especially in fields with problems in past years. These mites are microscopic, so the use of a 20x-magnifying lens is necessary. If rust mites become a problem, Sevin® XLR Plus still has a 24C registration on timothy for rust mite management. The following are the use directions for this label: Apply 3 pts per acre (1.5 pounds ai per acre) using ground equipment only with adequate water for complete coverage (20 or more gallons by ground). One application should provide enough suppression to prevent economic yield and quality losses. Apply at approximately 3-4 weeks after green-up in fields with a previous history of rust mites and/or when 25% of the plant tillers exhibit curled tips of the new leaf blades. It has a 30-day wait until harvest.
There is hardly a farm in southern Maryland that does not have some land that is poorly drained. This land is useless for growing most agricultural crops but may be ideal for growing pussy willow. We in southern Maryland are very fortunate in that we are in a climate that allows us to grow a great variety of willows that have ornamental value and have a high demand. Pussy willows are used extensively by florist for inclusion in floral arrangements or are used by home decorators as centerpieces. They are best marketed in bundles of 10 to retail florists, home decorators, variety stores, garden centers, wholesale florists and farmers markets.

Pussy willow require minimum care, they are only harvested in late winter when there is ample time available, easy to process, don’t require any special storage and can be marketed throughout the year. Pussy willows whose branches are cut and dried for market come in a variety of shapes and colors. The giant pussy willow (Salix chaenomeloides), which produces the longest white fuzzy catkins (flowers) of all species, grows well here in southern Maryland. Furthermore it is easy to propagate, and can produce a marketable crop the first year that it is planted, providing there is ample moisture available. This is a highly competitive species and mowing to control weeds is generally provides adequate week control. It is propagated by simply sticking 10" to 12" long stem cuttings, taken from the base of stems, in the soil in early to mid March. It is such a vigorous growing plant that it will produce 3 to 4 harvestable stems 3’ to 4’ long the first year.

The black pussy willow (Salix melanostachys) is a much slower growing species and requires 2 to 3 years before it will produce branches that will be sufficiently long to be marketable. This species will not tolerate competition from weeds thus requiring mulching or clean cultivation. This species is best propagated from semi-hardwood tip cutting stuck in sand under mist or a polyethylene tent in early to mid February depending on winter conditions. They are best harvested when at least 2/3 of the catkins (extended flower buds) are uniformly opened and approximately 1’ long and all of the bud scales are falling from the remaining flower buds. The branches are cut and graded immediately according to stem length and branching. Single stem without branching command the highest price. The grades are 4’-5’, 3’-4’, 2’-3’, 1’-2’ and keeping the branch stems separate from the single stems. Uniform distribution of the catkins is also important to consider when grading. The branches are grouped according to grade in bundles of 10, tied tightly at the base and hung upside-down in a cool dry dark shed or barn to dry slowly. The catkins will continue to expand during the early stages of drying. Pussy willows should not be harvested for marketing purposes if the catkins are fully extended and have either started to produce pollen or have extended styles (female flower part).

Pussy willow plants must be pruned severely early every spring if they are to continually produce quality stems. Cut each stem to within one to two nodes from the base and remove all stems that are smaller than a pencil in diameter. Allowing small diameter twigs to remain will only result in inviting the willow gall midge to infest your plantation. The only other insect that damages pussy will is the Japanese beetle. Using a Japanese beetle trap placed 100’ or more away from the planting will help most years but when the beetle population is high, it will be necessary to spray the foliage with Sevin or comparable insecticide. Japanese beetle control is important in to minimize branching. Heavy feeding by Japanese beetles will cause extensive branching, which lowers the quality of the stems. Branched stems do not command as high a price as single stems.

Greetings From the SMRFM Board to
All Buyers/Sellers
By Francis Roland, SMRFM President

Maybe we should call you members, because that is what we all are, members of this market trying to promote and keep agriculture alive and strong in Southern Maryland. Whether you buy, sell or do both, continued support of this market is paramount to its survival and growth, so if you have a concern or issue the SMRFM Board of Directors would like to hear from you. Their names and phone numbers are listed below.

We all hope that this will be a better growing year than last. Total gross sales for the year ending December 31, 2003 were $430,000. We had a goal of $500,000, but it didn’t matter if it was flowers, produce or hay; all these auctions suffered because of the amount of rain.

Our Plant and Flower auctions will begin Wednesday April 28th at 2:00 p.m. and then every Wednesday thereafter, with doors opening at noon. Produce is also welcome at these auctions as it becomes available. Our regular Produce auctions will begin in mid June.

The Market has a good supply of quart boxes in stock for the strawberry season along with a variety of other baskets and boxes. The Board of Directors were able to keep the cost of these the same as last year. Keep in mind the more boxes SMRFM sells, the better the box company’s price will be to us, which means the better the price is to YOU. So call us about your box needs.
Thank you for your support.

Your current volunteer Board of Directors and Ex-Officio Board Members:

- President - Francis Roland 301-248-8572
- Secretary - David Myers, MCE 410-222-6759
- Vice President - Eddie Wilson 410-257-6640
- Member - J.M. Duffy, MDA 410-841-5770
- Treasurer - Russell Burch 301-932-9495
- Member - Christine Bergmark, TCC 301-274-1922
- Member - Frank King 301-855-7881
- Member - Stephan Tubene, MCE 410-222-6759
- Member - Tom Clements 301-932-6467

SUMMARY REPORT of ACTION PLANS from Our Farms, Our Future Meeting Held on March 20, 2004

By Christine Bergmark & Cia Morey, Tri County Council and Southern Maryland Agricultural Development Commission

Agritourism

1. PLAN: Marketing/Outreach -- Education
   - Find ways to bring older kids into agriculture.
   - Look at Ag. In Classroom tools -
   - Actually help prepare lesson plans.
   - Interpretation - Display boards
   - Teachers - market directly to them
   - Tie with other events
   - Advertising too expensive, need other ways (blue book – Southern Maryland Harvest)
   - Get counties to continue to promote agri-tourism (education on what So. Md. has to offer)

Comment: The Commission has formed an Education sub-committee. We had our first meeting on April 5 and many of these ideas were discussed. The subcommittee will prepare a cohesive plan to tackle some of these items. Building on the suggestions, we are looking into developing some curriculum. We are developing an agritourism brochure for the five counties of SMD, which will be out this spring. More to follow!

2. PLAN: Re-educate legislators on Agritourism needs, opportunities and obstacles
   - Get legislators and commissioners out on farms to listen
   - Help cut the red tape: Permits, Zoning, etc., Counties waive fees and taxes on new business enterprises, same rules for all counties
   - Form small groups to work on specific issues (eg: Wineries and vineyards)

Comment: We should be able to organize a field tour for the legislators and commissioners this summer. Please let me know specifically what issues you would like to have raised, and which farms you would like to have visited. We can organize this event with any of you that would like to be involved.

Direct Marketing

1. PLAN: Marketing/Branding
   - Buyer = Consumer, retail and wholesale, commercial
   - Educate and Identify where Southern Maryland is for buyers and retail consumers

   - Map of markets where Southern Maryland farmers sell goods
   - Let consumers know where they can buy Southern Maryland products:
     - Call line that is advertised in newspapers - Hot Line with phone messaging via TCC
     - TCC Web site with seasonal, updated farm information
     - Promotional plan -- Includes DC Metro area, including inside the Beltway
       - Radio, email, signs, Press releases, newspaper and word of mouth, media buzz

Comment: Building on these ideas, we are putting into action a promotional plan for Southern Maryland, “So Good” starting this spring targeting the above media. We will also hold several media events. We are developing a brochure on Southern Maryland, “So Good” that will include reasons why buyers should “buy local”. We’ll actively pursue new accounts, such as restaurants and stores for Southern Maryland products throughout the season. We’ll combine the two websites (www.southernmarylandharvest.com and www.somarylandsogood.com into one site that is user friendlier, and can showcase upcoming events. We’ll explore the hotline with the Commission. Love the farmer volunteers’ idea! More to follow and how you can stay involved!

   - Develop a clearing house for older farmers who want to retire and/or sell, and would like to find new or young farmers who want to stay in agriculture

Comment: MDA has a FARMLINK program that is designed to do just this. We’ll check on the status of that program and let you know.

Livestock

1. PLAN: Livestock Processing Facility
   - Check on the options to open a plant. See what needs to be done to cut through the red tape.
   - Marketing, research and feasibility
   - Capital – secure grants, sell shares, contract to individuals, local restaurants and grocery store, lobby the county governments and state government
   - Find land, building and management
   - Include slaughter to retail
   - Flexible and multi-use - outfit for different uses (beef, pork, goat and sheep, exotic domestics)
   - First priority to Southern Maryland locally grown
   - Form cooperative

Comment: We can investigate this exciting possibility. NRCS and the Grazing Livestock Research Institute had a meeting on April 1st specifically on this topic, and the overwhelming need identified by that group was also a livestock processing facility. They also discussed a cooperative or farmer association and the need for criteria and standards for raising and handling livestock. That group identified several similar facilities that we can visit and/or learn from. I’d like to form a small group to continue to work on this idea. Tricky points will be in finding an...
acceptable location, deciding who owns and operates it, and the formation of a farmers association.

**Wholesale Produce and Nursery Growers**

1. **PLAN: Cheltenham Market**
   - Hire a marketing specialist for Cheltenham to market and advertise.

2. **PLAN: Bell Nursery Network**
   - Provide non-profit central distribution center for locally grown bedding plants such as contracted by Bell, work together with Cheltenham to sell overage.
   - Would open up to smaller growers.
   - Non-profit could facilitate trucking.

Comment: On March 30, we held a meeting with approximately 30 Cheltenham market buyers and sellers. Overwhelmingly, the group also felt the market would benefit from a marketing specialist. We are looking into this. The group agreed to meet again in November. The Commission has been talking with the Bell Nursery franchise over the last several months, and is also looking at this idea. Tricky points will be involving a greater number of growers than the current five in the Bell Network.

**GROWING AND MARKETING WEST AFRICAN AND CARIBBEAN VEGETABLES**

Since 2000 a team of researchers at the University of Maryland Cooperative Extension has conducted an ethnic and specialty vegetable research project. The three major aspects of this research project were: 1) The evaluation of ethnic vegetable markets and their economic development, led by researcher Stephan Tubene, Coordinator, University of Maryland Small Farm Institute; 2) The development of community awareness of ethnic vegetable produce through dietetic workshops and cooking demonstrations, led by researcher Constance Pergerson, Extension Educator, University of Maryland; and 3) The examination of commercial ethnic vegetable production techniques, led by researcher R. David Myers, Extension Educator, University of Maryland. An ethnic and specialty vegetable research and demonstration plot was planted annually from 2001 to 2003 at the Central Maryland Research and Education Center, Upper Marlboro Facility. The study focused on the African, Caribbean, Oriental, India, and South American vegetables and herbs. An examination of yields and the development of production practices was the focus of the study on a plasticulture intensive management system.

This research and demonstration study was designed as a randomized complete block, with four replications for each of the ethnic vegetables or herbs grown. The plot dimension were 15 feet wide by 20 foot long with three 6 inches high by 30 inches wide raised plasticulture beds on 5-foot centers. The transplants or directly seeded crop was spaced either 36 inches or 12 inch by 12 inch in the rows, with either 2,904 ppa or 17,424 ppa, respectively. The transplants were contract grown with seeds from Johnny’s Selected Seeds, or from sources within the local ethnic communities. The research trial was on a Monmouth fine sandy loam soil. Soil tests revealed optimum levels of phosphorus and potassium for both of the sites. A complete starter fertilizer was applied during bed making, and additional nitrogen was supplemented through the trickle irrigation system as required. Insecticide and fungicide treatments were made as required, based upon IPM scouting evaluation, if labels existed for the individual crops.

The plots were harvested, utilizing random destructive plant sampling, or whole plot for yield determinations. Some crops were harvested multiple times, whereas others were harvested once over. Estimated mean pounds per acre of the marketable plant portion for the African and Caribbean vegetables in the study were determined for each crop species and/or variety, and reported as follows: **Smooth leaf spinach** var. Denali 10,454 lbs/acre; **Solanum gilo** var. African indigenous Bitter Balls and Leaf 12,168 lbs/acre; **Amaranth** var. green vegetative Jamaica Calaloo 23,493 lbs/acre, red vegetative Jamaican Calaloo 18,905 lbs/acre; **Hibiscus** var. African indigenous vegetative leaf Busa 25,294 lbs/acre; **Sweet potato** var. Red Hayman vegetative leaf 32,670 lbs/acre; **Hot pepper** vars. African type indigenous 8,596 lbs/acre, Habanera types: Green 2,904 lbs/acre, Red 8,231 lbs/acre, and Orange 6,186 lbs/acre, **Cayenne type** Mesilla 15,246 lbs/acre, and **Hot ornamental type** Numex 9,670 lbs/acre; **Sweet pepper** var. Pimento Elite 13,097 lbs/acre; **Cilantro** var. Jantor 5,460 lbs/acre; **Tomatillo** vars. Toma Verde 17,772 lbs/acre, and Purple 22,158 lbs/acre; **Leeks** var. Upton 6,970 lbs/acre; **Eggplant** vars: **African indigenous** Garden Eggs 8,654 lbs/acre, Nadia 23,762 lbs/acre, Zebra 12,574 lbs/acre, and Kermit 17,221 lbs/acre; **Cucurbit melon** var. African indigenous Mudibu undetermined lbs/acre; **Okra** var. African indigenous Dongougo Ya Konga undetermined lbs/acre;

The ethnic vegetables in this four-year study yielded consistently with sufficient quality and quantity to convince growers of their production potential in a plasticulture system. There are potentially hundreds of specialty vegetable and herb species and/or varieties that have market development potential in our ethnically diverse population centers, which require further research and educational programs. The “Buyers and Sellers’ Responses to Ethnic and Specialty Produce, available online at: [http://www.agnr.umd.edu/annearundel/agbulletin.htm](http://www.agnr.umd.edu/annearundel/agbulletin.htm)

The Baltimore-Washington Area (BWA)” was the direct result of the marketing component of this team project which in preliminary findings: 1) Identified potential growers, sellers and buyers of ethnic and specialty vegetables in BWA; 2) Identified ethnic and specialty
covered in the region

Nutrient Management Update
By Krista Wilson, Nutrient Management Advisor, MD
With Maryland Department of Agriculture Nutrient
Management Plan Inspections beginning this year, it is
more important than ever to update your Nutrient
Management Plan (NMP). If your operation has never had
a NMP developed, you should begin by contacting your
County's Nutrient Management Advisor. Maryland
Cooperative Extension does NMP's for free (minus the cost
of soil, tissue and manure analyses). In Prince George's
County, Diana Cantor is your contact, and in Anne Arundel
County, your Nutrient Management Advisor is Krista Wilson.
Your advisor will have you fill out a "Justification for Plan
Submission Delay" form, which will get you in compliance
once it is submitted to MDA. Your advisor will then work
with you to get a NMP developed for your operation.
If your operation needs to have an updated NMP, then
you should first look to see if your soil test results are still
current. Soil samples are good for 3-years, and if you need
re-sample, soil probes are available on loan from the
Extension offices. Ideally, a NMP should be written prior to
spring planting and fertilization. There is still time to have a
new or updated NMP written for the 2004 crop year.
If you are a producer who spreads manure, at least two
manure samples should be taken per year until a good
average nutrient content of your operation's manure has
been established. After an average has been established,
manure samples are only required once every 2-years.
Since the University of Maryland Soil Testing Lab closed,
manure analyses are no longer free to producers. Following
this article is a list of all participating soil and manure
testing labs that can be used for Nutrient Management
Planning purposes. Also available online at the Anne
Arundel County website you will find under the Ag Bulletins
page Section G. Nutrient Management Bulletins, which
includes a comparison of Soil Testing Lab services and fees.
http://www.agrnr.umd.edu/annearundel/agbulletin.htm

Cost-Share Assistance is available for all producers
having their Nutrient Management Plans developed by
Extension, who have more than $100 in expenses for the
cost of manure analyses. A good way to avoid having to
take a sample manure every year is to utilize this money by taking
several samples over the course of a year. Then, you can
begin the first step in establishing a good average nutrient
content in your manure. Contact your local Soil
Conservation District for information on Cost-Share
Assistance.

Producers will need to make arrangements with the lab
of their choice to obtain soil and/or manure bags, forms,
and to make arrangements for mailing the samples to the
lab. In order to assure accurate index conversion values
between soil testing laboratories, all soil samples should be
taken to an 8" depth. The soil analyses needed for Nutrient
Management Planning purposes are: Phosphorus (P),
Potassium (K), Calcium (Ca), Magnesium (Mg), pH, and
percent Organic Matter (% OM), although more extensive
packages are available.

The manure analyses needed for Nutrient Management
Planning are: Nitrogen (N), Ammonium-N (NH4-N), P, K,
and % moisture. See enclosure for more detail on what soil
and manure testing packages are offered. "Growers Lab"
cannot be used for Nutrient Management Planning
purposes.

Participating Soil & Manure Test Labs

- A & L Eastern Agricultural Laboratories
  7621 Whitepine Rd.
  Richmond, VA 23237-2296
  (804) 743-9401 / Fax: (804) 271-6446
  http://www.ai-labs-eastern.com
  email: paulchu@ai-labs-eastern.com

- Agri Analysis, Inc.
  280 Newport Rd.
  P.O. Box 483
  Leola, PA 17540
  (717) 656-9326 / Fax: (717) 656-0910
  http://www.agrianalysis.com
  email: info@agrianalysis.com

- Pennsylvania State University
  Agricultural Analytical Services Laboratory
  Tower Road
  University Park, PA 16802
  (814) 863-0841 / Fax: (814) 863-4540
  http://www.aasl.psu.edu
  email: aasl@psu.edu

- Brookside Laboratories, Inc.
  308 South Main St.
  New Knoxville, OH 45761
  (419) 753-2448 / Fax: (419) 753-2949
  http://www.blinc.com

- Spectrum Analytic, Inc.
  1087 Jamison Rd.
  P.O. Box 639
  Washington Court House, OH 43160
  (800) 321-1562
  http://www.spectrumanalytic.com

- University of Delaware (No manure analyses)
  Soil Testing Program
  352 Townsend Hall
  531 S. College Ave.
  University of Delaware
  Newark, DE 19717-1303
  (302) 831-1392
  www.udel.edu/DSTP

- Waters Agricultural Laboratories, Inc.
  P.O. Box 382
  257 Newton Hwy.
  Camilla, Georgia 31730
  (229) 336-7216 / Fax: (229) 336-7967
  www.watersag.com
  email: info@watersag.com

Branching Out: Maryland's Forest Stewardship Educator
Vol. 12, No. 1 Winter 2004
Editors: Jonathan Kays, Lori Bittenbender, and Denni Johnson
Published four times a year and distributed to more than
5,000 forest landowners, resource professionals, and others
interested in forest stewardship. Available online at:
http://www.naturalresources.umd.edu/Branching_Out.cfm
Is Natural Regeneration of Forests a Natural Process?

According to the USDA Forest Service forest inventory, 67 percent of Maryland forests are of mature size and yield benefits for wildlife, recreation, quality of life, and forest products. About 20 percent are of intermediate maturity, and only 12 percent are just starting out as seedlings and saplings. Forests go through a natural process of regrowth after they are disturbed either by natural causes (ice, wind, fire) or by human intervention (harvest of forest products, land clearing, etc.).

Establishing or regenerating a new forest can be achieved by either artificial or natural means. Most hardwood forests are established by natural regrowth or regeneration. Natural regeneration relies on available seed from nearby trees or seeds stored in the soil, stump sprouts and existing seedlings to produce the new stand. Artificial regeneration occurs when seedlings are planted by hand or machine. Artificial regeneration is commonly used to reestablish pine forests, but hardwood planting has become common in the last few years. Either type of regeneration will benefit from active forest management by the landowner.

To the untrained eye, the majority of Maryland forests seem mature and full of vegetation, so it is assumed by many landowners that they are regenerating well. Unfortunately, this is not the case. Many of the existing mature forests are being seriously impacted by deer, invasive species, and high-grading (cutting your best trees and leaving the poorer ones), which threatens their ability to regenerate and their sustainable use for future generations. Practicing sound forest stewardship requires that you understand these threats and ways to minimize the impacts.

The Deer Impact

For the most part, forests have a very natural, orderly and predictable order of succession. If left alone, shrubs and saplings will seed in an open field. A young forest may have 10,000 or more stems per acre composed of many species, depending on the area. Over time, natural competition for sunlight and space will reduce the forest to about 150 trees per acre at maturity.

Many Maryland forests have an overabundance of deer that is altering the habitat for other species and the forest ecosystem. How? Deer selectively browse on certain tree and shrub species, which directly affects the presence of the species in the future forest. Most deer can only browse on seedlings within six feet of the ground. They also prefer tree species that are useful for wildlife, recreation, and forest products. These include white ash, yellow poplar, hemlock, sugar maple, oak and pine. The result of this activity over time is that forests are reduced to a mature canopy of trees lacking a diverse understory. Prized wildflowers, such as trilliums and others, are disappearing or may be gone already. The wildlife species (songbirds, amphibians, and others) that depend on that vegetation near the forest floor for their habitat also disappear.

Managing the deer herd while maintaining the health and diversity of your forestland is a challenge, and a responsibility of all forest landowners. Deer densities have escalated to 50, 100, or 150 deer per square mile due to parcelization of the landscape that results in more owners, less opportunities for hunting, the ability of deer to adapt to the changes, and diverse attitudes toward hunting in general. Repellents, fencing and other options are not practical to keep deer out of most forests. Besides, it does nothing to deal with the core problem: too many deer.

Regulated hunting is the most effective deer population management tool. Forest landowners need to support efforts to lower deer abundance so the forest has a chance to regenerate naturally. While you may not hunt, work with neighbors and responsible hunters to allow them the opportunity to harvest doe deer. More information on setting up a hunting program can be obtained from Bulletin 354, Managing Deer Damage in Maryland. It is available for purchase for $3.50 from your local Cooperative Extension office.

Invasive and Exotic Species (I&E)

When native vegetation is disturbed by deer browsing or other disturbances, what many times takes its place are I&E species that are present in the soil or in nearby areas, just waiting for an opportunity. The breakup of the landscape into smaller ownerships has allowed I&E species to establish themselves in many forests and compete directly with native vegetation, to the point where a large percentage of all the vegetation in many woodlands is not native. I&E species have the power to grow faster and reproduce more quickly than many young native seedlings; so that if trees are being planted in an effort to reforest an area, or trees are being harvested, the area may be overtaken unless I&E species are controlled. The survival and growth of planted tree seedlings can be increased significantly by controlling competing vegetation, many of which are I&E species. In the case of an existing forest, control of I&E species should usually be done before the area is harvested and the increased sunlight gives the advantage to I&E species.

The best and easiest way to control I&E species is through early identification and removal. Therefore, it is advised that forest landowners educate themselves about these species and learn how to identify them. The following is a list of the top 12 common I&E species of concern in Maryland according to the Maryland Invasive Species Council (MISC): Multiflora Rose; Tree of Heaven; Norway Maple; Autumn Olive; Vietnamese or Japanese stilt grass; Mile-a-Minute Vine/Devil's Tear Thumb; Oriental Bittersweet; Porcelain Berry; Purple Loosestrife; Canada Thistle or Bull Thistle; Garlic Mustard; and Japanese Knotweed or Mexican Bamboo. Photos and/or illustrations of all these species can be found at the MISC website at http://www.mdinvasivesp.org/.

After you learn to identify invasive species, it’s best to remove them before they become a problem. While mechanical means such as pulling or cutting is one option, anyone with experience dealing with controlling I&E species in the forest or elsewhere will tell you that the sound use of herbicides must be considered. Cutting and applying herbicide to the cut surface at the right time of year is an example of one technique that uses herbicide and restricts...
it to the immediate plant. Contact your local Cooperative Extension office or state forester for more information on controlling invasive species and using herbicides correctly and safely.

**High-Grading**

High-grading is the practice of cutting the largest and highest value trees and leaving the smaller, less valuable trees. Most forests contain trees that are about the same age, so the smaller trees are usually less suited for the site, malformed or diseased and not at all ideal to remain as the next forest or seed source for future forests. The immediate financial gain of high-grading is tempting, but do not be fooled, it is mining the resource, not managing it. Big dollars are often offered for “just the larger trees.” However, the gain is brief and the consequences affect ownership objectives for decades. An analogy would be a farmer getting rid of the blue ribbon bull and using the runts of the litter for breeding stock. What is the future in that?

If you are approached by someone wishing to buy trees from your property, do not rush into a contract. First, contact your state forester, private consultant forester, or go to [http://www.naturalresources.umd.edu/](http://www.naturalresources.umd.edu/) for information on how to carry out a timber sale.

**Conclusions**

Deer, invasive species, and high-grading are serious problems to the future of the forest. There are 130,000 private forest landowners that own 78 percent of Maryland’s forests. It is the actions of these forest stewards on the issues above that will determine the future regeneration of Maryland’s forests. Remember! Seek professional forestry assistance and rely on sound science.

**Farmers and Hunters Feeding the Hungry**

Farmers and Hunters Feeding the Hungry began in 1997 and has been responsible for processing 1,400 tons of venison and other big game for soup kitchens and food pantries.

Participating farmers and hunters follow normal check-in or crop damage permit procedures defined under their state's regulations. They then deliver the harvested surplus deer and other big game to participating meat processors in each county. Donations from churches, clubs, businesses and individuals cover the costs of processing, packaging and freezing the meat. The frozen meat is then available free of cost for pickup by a nearby food bank or feeding program. The meat is then distributed and/or cooked by hundreds of community agencies such as: church pantries, church feeding ministries, Salvation Army, community food banks, emergency assistance programs, rescue missions and children’s homes.

The program is funded with corporate and individual donations - and in Maryland, $1 from hunting license fees. To learn more or to make a donation, log onto their website at: [http://www.fhfh.org/](http://www.fhfh.org/).

---

**Grain Market Report**

*Week-Ending 4/10/2004*

*By Michael S. Haigh, Extension Specialist, Agricultural Marketing University of Maryland*

Corn futures are up around 45 cents on the December contract since the March monthly supply and demand numbers and soybean futures are sitting just over $1 higher on July contract and 50 cents on the November contract. Wheat has enjoyed a 55-cent increase on the nearby. March was without a doubt a wild month for grains and oilseeds and the market volatility shows very little sign of abating in April. Tight world supplies of corn and feed were combined with an ample oilseed supply. Brazilian production was reduced because of Asian rust, with dry weather during 'pod fill' in the south and rains in the harvest period in the north. Argentine production was reduced due to drought. This week beans took a bit of a price hit when the CBOT announced higher margin requirements on the contract (which makes sense as the level of margin is usually proportional to the price level–although the relationship is not exact), but the bean prices rose slightly in anticipation of Thursday’s USDA supply and demand and world production reports. The expectation for beans was that the domestic stocks would be unchanged to slightly lower. When the report came out expectations were shown to be on the money as soybean stocks were shaved 10 million bushels, to 115 million bushels, and the average annual price was increased by a quarter to $7.60. The other key element traders were watching for was Brazilian production. The USDA cut that estimate to 56 million tons, near pre-report guesses. Bean prices turned lower but moved back to unchanged. The bullish sentiment of the report was basically muted upon the realization that the market had factored most of that news into the current rally. Corn ending stocks for the year ending 2003/04 were cut to 856 million bushels, down from 901 million a month ago. The average price estimate was raised a dime to $2.55 a bushel. Corn futures reacted in a similar way to the bean futures. Wheat futures fell and stayed lower following an equally bullish report in that market. Wheat ending stocks were cut 13 million bushels, to 531 million bushels, and the average price was increased by 3 cents to $3.38. To further dent any chance of a short run rally rain is forecast for much of the western plains and additional pressure could come from the higher U.S. dollar index (which could slow exports). Pressure could increase in front of the three-day weekend if sell stops are triggered. Expect planting weather to be the major corn mover this month and if demand numbers in the corn arena stay strong we might see a rising market. Many traders believe we have not even begun to see the full extent of volatility yet – so if you are going to hedge - buy puts – the volatility will just increase their value. In the soybean pit traders will fight over the record tight balance sheet and increased soybean plantings but South American production could be the decider. It is frightening to think how bullish we could get if we get summer weather problems here in the States! Might be a good bet. Expect northern hemisphere weather to drive wheat prices. In other news – last week I
mentioned that Ethanol futures would begin trading in New York. Not to be outdone this week the CBOT announced its plans for an Ethanol (cash settled) futures contract. Competition remains strong amongst the exchanges and that means end users benefit in terms of lower trading costs.

TPM/IPM Report Weekly Report
April 09, 2004
Provided By: Stanton Gill and Ethel Dutky, University of Maryland Cooperative Extension;
Ginny Rosenkranz, Extension Educator, Chuck Schuster,
Extension Educator;
Suzanne Klick and Rondalyn Reeser, Technicians,
University of Maryland Cooperative Extension;
Amanda Laudwein, Joanne Lutz, John Speaker, and Marie Rojas, Independent IPM Scouts

Over-fertilization
A grower noticed his plants had strange spots on the foliage. He thought he had a foliar pathogen damaging his leaves. We ran a soluble salt test (pour through method) and the soluble salts came out 4.6 microseimens and a pH of 4.9. This is too high on the soluble salts and way too low on the pH. The spotting on the foliage was a result. Make sure that you monitor your soluble salts on a regular basis and check the pH levels.

More Oedema showing up - this time on Geranium
We had several days of cloud cover this spring in Maryland and then a sudden burst of sunshine. The oedema showed up shortly afterwards. Oedema expresses itself as masses of tissue expanding and breaking. Frequently the exposed surfaces become rusty in color. In the Geraniums book, edited by John White, it is mentioned that oedema occurs during cool, cloudy weather when soil is moist and warm. During these periods plants can take in large amounts of water with transpiring it. Pimple-like blisters develop, and they after a period of time burst and leave corky scars. Solution - don't over water during overcast, cool periods.

Disease alert - Downy mildew on impatiens
Rick Yates of Griffin Supply put out an alert about downy mildew on impatiens this week. Be on the look out for this disease. For more information and photos, view Rick Yates' article at http://www.agnr.umd.edu/ipmnet/04Yates.pdf

Botrytis
Growers are reporting increasing problems with Botrytis this week. John speaker mentioned that in all of the years he has been scouting he has not seen so much Botrytis as this April.

Rhizoctonia
John speaker called in reports of heavy damage from Rhizoctonia on garden impatiens. Last weekend the weather was cold and customers did not buy many plants in most garden centers. The greenhouse operations had to hold plants in overcrowding conditions. Large plant size made perfect conditions for Rhizoctonia to become a problem this week. We need a warm, sunny weekend for plant sales to increase and take some of the pressure out of the greenhouses for space.

If you would like to receive this weekly IPM report, then visit the following URL to view and subscribe: http://www.agnr.umd.edu/ipmnet/ipmupdate.htm

Check Out Our County Website
Visit us in Cyberspace!!!
Christie Kneipp is our website designer. Christie has recently updated our website, and we hope that you find the additions helpful. The current and past newsletter additions are available for viewing or copy at: http://www.agnr.umd.edu/AnneArundel/newsletter.htm
An agricultural bulletin page is also available for viewing or copy under our hot topics section at: http://www.agnr.umd.edu/AnneArundel/agbulletin.htm

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

NACAA
National Association of County Agricultural Agents

NACAA Communication Award
Individual Newsletter
2002 National Winner

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

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

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