

Dave's Ramble

Spring 2009

Country life unmentionables seemly back in vogue with the recent movie "Slum Dog Millionaire." Well of course privy's, rubbish dumps, junk piles and livestock casualties occupied a disclosed place on every farm, even in America's not too distant past. These places of refuse were often well disguised and hidden from the public eye; given hushly spoken names like the "Place of Necessity."

On a visit to a Mongolian herdsman's summer pasturage I actually felt kinship and reminisced of the home dairy life brought about by the smell of dung burning to keep the mosquitoes and flies away. As a child I remember developing a rather fondness to the smell of burning garbage, a sweet but pungent smell that lingered on damp foggy mornings in my neighborhood. For my brothers and me the discovery of a cow's skull in the woods was exciting, even if mom was not as enamored when we carried it home. Inexplicably drawn to the honeysuckle covered junk piles, we would poke around with a stout limb to uncover old bottles and treasures. Shouts of discovery prevailed, "Hey! Look at this!" with echoes by all of "Cool!" and "Neat!" Even long before the academic discipline of Garbology was first offered at Arizona University, we were smitten with the hunt.

As a young kid on my Kent racing bike I remember trailing the trash trucks down my street just waiting for the trash man to activate the hydraulic compactor. I always enjoyed going to the dump with my father, part of an annual spring cleaning ritual. Like a dream come true during my Naval Academy Dairy farm days I became an official garbage man making weekly rubbish collections from our fourteen residences, processing and farming facility trash cans; hauling it all to the local county landfill with the municipal stickered and licensed Navy dump truck. How odd to have actually enjoyed the dump with all of its excitement and peculiar odors, but of course I also like to clean manure out of barns and feed silage.

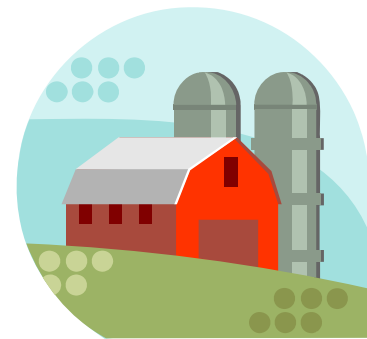
Recently, my wife brought home this new shiny stainless steel kitchen trash can. It has a fancy hydraulic closing lid and foot pedal. "It's called a Simple Human!" she exclaimed. With uncontrollable grins we both came to the same revelation that I at last was a "Slum Dog Millionaire!"



Calendar of Events

Mark Your Calendars --- Plan To Participate

- ◆ April 18 – Citizen Scrap Tire Drop Off Day
- ◆ May 2 – Pasture Walk – Netherfield Estate
- ◆ May 2 – Small Flock Advanced Short Course—College Pk
- ◆ August 6 – Crops Twilight & Barbecue – CMREC



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CITIZEN SCRAP TIRE DROP-OFF DAY

APRIL 18, 2009

Anne Arundel County Residents
Get Rid of Your Old Scrap Tires
FREE OF CHARGE!

*Up to 10 Tires Collected – One Visit Per Resident & Vehicle
Only Passenger, Light Truck & Agricultural Tires will be collected
(no Heavy truck tires) Commercial Vehicles & Business Tires Prohibited*

Drop them off on April 18th
Hours 8:00 am - 5:00 pm (or until containers are full)

Sudley Convenience Center

5400 Nutwell Sudley Road, Deale, MD 20751

For more information contact:
Rich Bowen - 410-222-4351

Citizen Scrap Tire Drop-Off Day is sponsored by the Maryland Department of the Environment and Maryland Environmental Service.

Small Flock Advanced Short Course

May 2, 2009

Are you ready for more in depth poultry information? Join the Maryland Cooperative Extension for detailed discussions on poultry health, management, housing and safety. Several topic sessions are scheduled. There will be several hands on demonstrations, including an Avian Bowl Practice to test your previous poultry knowledge.



Afternoon demonstrations will include constructing a coop as well as home processing. Several prizes will be drawn throughout the day, with the grand prize to be drawn at the end of the workshop. What could it be?

Date: May 2, 2009

**Location: College Park, MD
Avvrum Gudelsky Veterinary Center**

Time: 9:00am to 3:00pm

The workshop is open to all poultry owners and enthusiasts. Lunch will be provided. The advance course is free, but seating is limited, so register now. For further information, driving directions, and registration call (410) 742-1922 ext. 307, or contact Jessica Renshaw, Program Assistant, (410) 742-1178 or jrenshaw@umd.edu

Pasture Walk

Featuring the Netherfield Estate

Saturday May 2, 2009



There will be a pasture walk at the Netherfield Estate on **Saturday, May 2, 2009 from 2:00 to 4:00 p.m.** located at 50185 Hays Beach Road, Scotland, MD 20687. This farm tour will be hosted by Ruth and Peter Pry, highlighting pasture conservation practices.

Come and learn about pasture and hay management, soil testing and nutrient management, cost share incentive programs, manure composting, watering facilities, and more. Speakers include:

Elmer Dengler

Grazing Specialist, USDA Natural Resources Conservation Service (NRCS)

Les Vough

Forage Systems Management Consultant, RCS Southern Maryland RC & D

Bruce Young

District Manager, St. Mary's Soil Conservation District

Terry Heinard

District Conservationist, USDA Natural Resources Conservation Service (NRCS)

Ben Beale

Extension Agent, St. Mary's County Extension

This event is FREE!! Advance registration is required. Please RSVP by April 25 to Sara Lewis at St. Mary's County Soil Conservation District: (301) 475-8402 ext. 3 or Sara.Lewis@md.nacdnet.net

Annual Field Crops Research Twilight

Barbecue & Ice Cream Social

CMREC, Upper Marlboro Farm

August 6, 2009

You are invited to attend a twilight wagon tour of the University of Maryland Upper Marlboro Research Farm, on

Thursday, August 6, 2009 from 4:30 p.m. to 8:30 p.m. Maryland Cooperative Extension will host this **Annual Field Crops Research Twilight Barbecue & Ice Cream Social.**

Served after the barbecue, "Old-fashioned" homemade ice cream! It's "old fashioned" ice cream because we will be using a 1929 Fair-Banks Morse antique gas engine to do the cranking.

This event will highlight all field crops, agronomic and horticultural research projects currently conducted at the CMREC Upper Marlboro Farm, possibly including but not limited to the following:

- ◆ Vegetable IPM
- ◆ Weed Control
- ◆ Vineyard Projects - Table and Wine Grapes
- ◆ Corn Stalk Nitrate Test Study
- ◆ P Phyto-Remediation Grain vs. Forage Systems
- ◆ Apple, Peach & Beach Plum Research
- ◆ Blueberry Project
- ◆ High Tunnel Specialty Vegetable Production
- ◆ Strip-Till/No-Till Vegetable Production Techniques



Maryland Wheat Disease Update – April 14, 2009 – April 14, 2009 WSSMV & SBMV

Now is the time to assess wheat fields for Wheat Spindle Streak Mosaic (WSSMV) and Soil-borne Wheat Mosaic (SBMV) viruses. These two viruses are vectored primarily by the



Figure 2 WSSMV, note patches.

same soil-borne fungal-like organism, *Polymyxa graminis*. The vector is an obligate parasite that likes cool temperatures and has a swimming spore stage. Both viruses also reproduce best at cool temperatures. The combined effect is that infection tends to occur in late fall and early spring when soil is moist and temperatures are cool. Symptoms are now appearing and have been confirmed in several fields around the state. Symptoms are easily confused with fertility and pH imbalances and are most dramatic now that the first or even second N application has been made to wheat fields. From the roadside symptoms are yellowing or light green colored patches of plants that are slightly shorter, and unthrifty than unaffected plants (fig 1). A close-up of symptomatic plants displays a range of symptoms including mild stunting, yellowing or reddening of leaf tips, and the characteristic blotchy light green to chlorotic mosaic in the leaf blades (fig 2). The mosaic symptom in monocots is limited by the parallel leaf veins and tends to develop into streaks; hence the common name of one of the diseases is spindle streak.

You need to look NOW! Wheat is rapidly producing the leaves most critical to grain-fill mid-April to early May. These are the upper canopy leaves. If these leaves form during cool conditions in a virus-infested plant, significant yield loss can occur. If warm weather sneaks in, these leaves can be symptom-free and losses are much lower, but you also will not know that a manageable problem exists. Losses from both of these viruses are best



Figure 1 WSSMV

managed by planting resistant varieties. The vector and the pathogen will survive in the soil long enough to last through our typical rotations to be a problem every time wheat is grown in the field. Resistant varieties are listed in the new

version of EB 237 and are included as an attachment to this e-mail. Note that we have good information on resistance to WSSMV and limited information on SBMV. Also different genes determine resistance to each virus, so resistance to one virus does not mean resistance to the other. The extreme example of this is the variety Tribute. Tribute has high resistance to WSSMV but is highly susceptible to SBMV.

There is only one in-season option for growers to consider if they have a field with one or both of these viruses. It's a gamble that is dependent on weather. A grower can elect to maintain his N fertility program or even increase the N fertility by 5-10 lb/A in the hopes of compensating for the unthrifty growth of infected plants. This option will only work if temperatures consistently get to and above 65 F when the upper canopy leaves are forming. As you all know this is a highly variable time of year so this management option is clearly a gamble that will only pay some of the time. There are no fungicides or other products that can be applied. Only the long-term management option is a guarantee. Knowing which fields have a problem and using a resistant variety is the best management practice for these diseases. It will only work if temperatures consistently get to and above 65 F when the upper canopy leaves are forming. As you all know this is a highly variable time of year so this management option is clearly a gamble that will only pay some of the time. There are no fungicides or other products that can be applied. Only the long-term management option is a guarantee. Knowing which fields have a problem and using a resistant variety is the best management practice for these diseases.



Figure 4. Stem rust. Note distinct blistering of epidermis. Leaf pustules are similar.

Wheat rust risk assessment

There are three different rust diseases that attack wheat in the US, stem rust, leaf rust and stripe rust (fig 3-5). You have probably seen something in the news about a new strain of stem rust called UG99. UG99 is the designation given to a new strain of stem rust that was first identified in Uganda in 1999. This new strain is virulent on all commonly used sources of resistance. It has spread from Uganda to other

parts of Africa and most recently was found in Iran. It is not in the US but like Soybean Rust will eventually get here. I have only seen stem rust in wheat in Maryland once since 1982. There is currently one report from Louisiana of stem rust so the risk of stem rust getting here by early grain-fill is pretty low but not zero.

I am more concerned with leaf rust and stripe rust. Last season leaf rust showed up in early May. That was early enough so that damage could develop on a susceptible variety. Currently the south and southeast are reporting lower levels of leaf rust than last year but conditions are now rainy and favorable for increased development of this disease. Leaf rust has been reported from Louisiana and Georgia. Also stripe rust for which we have only limited resistance in the cultivars we grow has been reported from southern and south central Georgia. The appearance of both these rusts in Georgia, relative to our slightly delayed crop development, is earlier this season than last. These rusts can blow into our region early enough that fungicides may be warranted on susceptible cultivars. We will have to wait and see.



Figure 3 Leaf rust.

Powdery mildew

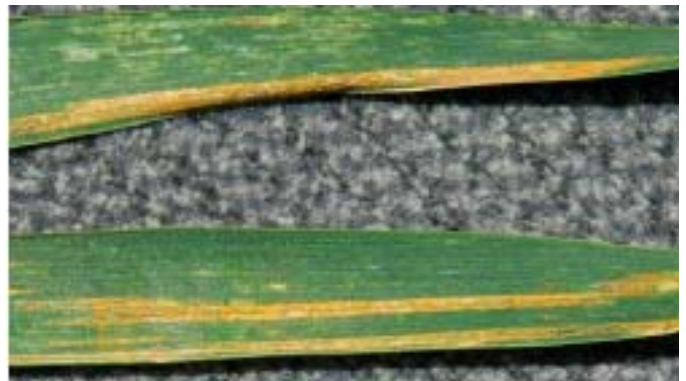


Figure 5 Stripe rust

We have found wheat powdery mildew on volunteer plants and at very low levels on highly susceptible varieties. The late fall and winter were drier than normal this season and thus were not highly conducive for powdery mildew. Without scouting fields in susceptible varieties there are no indications that fungicides should be considered at this time.

Arvydas (Arv) Grybauskas, PhD
Associate Professor and Extension Plant
Pathologist
Department of Plant Science and Landscape
Architecture
University of Maryland

Wheat reactions to diseases relative to pathogen strains experienced in Maryland. Ratings range from 0 = highly resistant to 9= highly susceptible. Revised 10 July 2008.

Brand	Wheat Entry	Powdery	Leaf	Stripe	Head	WSSMV ¹	SBWMV ²
		Mildew ¹	Rust ¹	Rust	Scab ¹		
Agripro Coker	Branson	3	2	5	7	4	
Agripro Coker	Cooper	6	5	6	8	5	1
Agripro Coker	Coker 9184	4	3	7	8	4	1
Agripro Coker	Coker 9312	8	5	8	6	4	
Agripro Coker	Coker 9436	4	5	6	6	5	
Agripro Coker	Coker 9511	5	4	8	4	2	
Agripro Coker	Coker 9553	3	4	2	8	9	3
Gromark	FS 300	3	6		7	8	6
Gromark	FS 621	3	2		9	4	4
Gromark	FS 627	5	2		8	3	2
Pioneer	25R37	2	4	3	7	1	3
Pioneer	25R62	2	4		5	1	2
Pioneer	26R15	2	2	6	6	1	3
Pioneer	26R56	5	3		4	8	4
Public	Chesapeake	1	6	8	8	4	2
Public	Jamestown	4	5		8	9	2
Public	McCormick	0	8	6	6	1	
Public	Sisson	4	8	8	8	3	6
Renwood	Renwood 3633	7	3		7	1	
Seedway	SW 55	4	4		8	1	2
Seedway	SW 48	5	3		8	9	
Southern States	SS 520	2	3	8	8	4	9
Southern States	SS 548	7	3		8	1	
Southern States	SS 560	2	6	6	8	1	
Southern States	SS 8302	8	8	2	6	2	
Southern States	SS 8309	4	5	5	5	1	4
Southern States	SS 8404	4	3	8	7	4	2
Southern States	SS 8641	0	1		9	9	
Southern States	SS MPV57	5	3	7	8	2	2
USG	USG 3209	3	9	3	7	5	1
USG	USG 3342	1	3		7	1	2
USG	USG 3555	2	5		7	1	
USG	USG 3592	2	1	6	7	7	3
USG	USG 3665	3	2	4	7	1	
USG	USG 3860	6	5		6	1	
Vigoro	Vigoro V9510	4	6	8	7	9	6
Vigoro	Vigoro V9713	4	4	6	6	1	1
Vigoro	Vigoro Dominion	1	3	4	6	7	5
Vigoro	Tribute	1	7	8	6	1	7

¹Ratings for powdery mildew, leaf rust, wssmv and head scab are based on local data. Data for varieties not in last (2007-8) state trial are supplemented from past local trials or other regional information.

²Stripe rust and sbwmv ratings are compiled from various other sources.

Resistance to powdery mildew and rusts can change within a season. Past performance is not a guarantee of continued resistance.

Compiled by Dr. A. Grybauskas, Extension Plant Pathologist, University of Maryland. Ratings for powdery mildew and head scab based on data from Dr. Jose Costa.



To subscribe to Pest Net: Send an email to listserv@listserv.umd.edu The body of the email should contain the line: subscribe pestnet-information 'your name' Replace 'your name' with the appropriate information and send the message from the email address to which you want the information sent.

To unsubscribe to Pest Net: send an email to listserv@listserv.umd.edu the body of the email should contain only: 'unsubscribe pestnet-information' If you have any difficulty subscribing or unsubscribing to the list, please send email to alwilson@umd.edu.

Vegetable Crop Insect Update

Joanne Whalen, Extension IPM Specialist

jwhalen@udel.edu

Cabbage

Begin scouting fields for imported cabbage worm and diamondback larvae. As a general guideline, a treatment is recommended if you find 5% of the plants infested with larvae. If both insect species are present, Avaunt, Coragen the Bt insecticides, Proclaim, Rimon, Spintor, Synapse or Radiant have provided control.



Peas

Be sure to sample peas for pea aphids as soon as small seedlings emerge. 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. As a general guideline, a treatment is recommended if you find 5-10 aphids per plant or 50 or more aphids per sweep. The recent cooler temperatures will slow the activity of beneficial insects but favors the development of pea aphid populations.

New Vegetable Insecticides

Vetica (Nichino) – This newly registered material is a combination of flubendiamide and buprofezin. It is labeled on a number of crop groups including leafy vegetables (except brassicas), fruiting vegetables, and cucurbits. The label lists control of a number of "worm" species as well as suppression of leafhoppers and whiteflies. Please see the label for use rates and restrictions at:

<http://www.cdms.net/LDat/ld8TA000.pdf>.

Coragen (DuPont) – Potatoes were recently added to the full section 3 (federal) Coragen label. A number of new soil applied uses (in addition to drip chemigation) were also added for brassicas, cucurbits, fruiting and leafy vegetables. These uses include in-furrow sprays, transplant water or hill drench, surface banding and soil shank injection. Refer to the label for use rates, application directions and restrictions. <http://www.cdms.net/LDat/ld8KF013.pdf>.

Mulch Color Comparisons

Gordon Johnson, Extension Ag Agent, Kent Co.

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Over the last 10 years, Penn State vegetable researchers have conducted extensive tests on the effect of mulch color on various vegetable crops. There have found some significant increases in yield for specific crop-mulch color combinations. Growers in Delaware have reported good success with the use of red and dark blue mulches in certain crops. The following is a summary of some the Penn State results and some of our recommendations based on grower experience.

Black Mulch

Black mulch is still the most economical mulch for growers. Most vegetables have been successfully grown on black plastic and it is the recommended mulch for general use. It does not offer as much soil heating as some other colors in the spring and causes excess bed heating in summer plantings.

Red Mulch

Tomatoes and eggplants had an average 12% increase in marketable fruit on red mulch when compared to black plastic in Penn State research. There was also some reduction in early blight in tomatoes on red mulch.

Silver and Reflective Mulch

Silver and reflective mulch tends to repel aphids. Peppers had an average increase of 20% in marketable fruit yield and also had increased average fruit size on silver mulch when compared to black plastic in Penn State research. Silver and reflective mulch has shown advantages for later season crops susceptible to aphids and the virus diseases that they transmit.

Dark Blue Mulch

In Penn State research, cucurbit crops benefited from the use of dark blue mulch. Cantaloupe yielded 35% higher on dark blue mulch compared to black plastic. With cucumbers there was a 30% increase in marketable fruit and summer squash yielded 20% higher on blue mulch when compared to black. One drawback to blue mulch is that it tends to attract thrips. Blue mulch should not be used with crops susceptible to thrips problems such as peppers and tomatoes.

Yellow Mulch

Lowest yields were seen with yellow mulch on many crops. Yellow mulch tended to attract insects and is not recommended.

Green IRT Mulch

Pepper yields were the same on green mulch compared to black plastic. Green IRT mulch warms soils more than black plastic but has the advantage of better weed control than clear plastic. It is best used with very early planted warm season vegetables.

Clear Mulch

Clear mulch is sometime used for sweet corn and other warm season crops where maximum soil heating is needed for very early plantings. The disadvantage with clear mulch is that it allows weed growth and should only be used in fumigated soils or crops where broad spectrum herbicides are labeled for application under plastic.

White Mulch

White mulch is used for summer plantings where black plastic mulch can cause too much bed heating. It is especially useful to reduce heat necrosis of transplants around transplant holes, which can occur with summer plantings on black plastic. This is where stem tissue dies right at the level of the plastic and transplants collapse. White plastic is also beneficial for summer crops of plants with roots that are sensitive to high soil temperatures, such as day-neutral strawberries.

Vegetable Diseases in the Greenhouse

Kate Everts, Vegetable Pathologist

Univ. of Delaware and Univ. of MD, keverts@umd.edu

As vegetable transplant production in greenhouses gets underway, remember that the potential for disease can be minimized by using certified, tested, and treated seed.



Sanitation is the most important management practice. Walls, benches, hand tools, pots and transplant trays should be sanitized with 5% commercial bleach. New potting mix should be used each year. Destroy any volunteer seedlings and keep the area in and around the greenhouse weed free. Once seed is planted, seedlings should be watered early in the day so that the foliage dries quickly and, if possible, watered at the seedling base to reduce moisture on leaves.

Provide good air exchange throughout the greenhouse to minimize periods of high humidity (high humidity favors pathogens). Even after careful sanitation and good practices for managing disease, disease may develop in the greenhouse. Most fungicides are not labeled for greenhouse use. Do not use unlabelled fungicides because the lack of a greenhouse label indicates that there are problems with safety, phytotoxicity, or resistance development risk associated with a fungicide. Please note that Ridomil is not labeled for use in the greenhouse. Please follow label directions carefully.

Sumagic® Plant Growth Regulator Gets a Label for Some Vegetable Transplants

Gordon Johnson, Extension Ag Agent, Kent Co.
gcjohn@udel.edu

Sumagic (active ingredient uniconazole) is a plant growth regulator from Valent Professional Products used in greenhouse production for plant height control. It has received a label for certain fruiting vegetable transplants. This is the first plant growth regulator that has been labeled for vegetable transplants since food crops were pulled from the B-Nine label in 1989. Since then, transplant growers have had to rely solely on temperature, water, or fertility regulation to maintain compact plants and prevent leggy growth.

Sumagic is now registered for use as a foliar spray on tomato, pepper, eggplant, groundcherry, pepino and

tomatillo transplants in the greenhouse (no other crops are registered at this time). The recommended label rate is 0.52 to 2.6 fluid oz per gallon (2 to 10 ppm) and one gallon should be sprayed so it covers 200 sq ft of transplant trays (2 quarts per 100 sq ft). The first application can be made when transplants have 2-4 true leaves. One additional application may be made at the low rate, 0.52 fluid oz per gallon (2 ppm), 7-14 days later, but you cannot exceed 2.6 fluid oz of total product (per 100 sq ft) for a season. Growers are advised to do small-scale trials on a portion of their transplants under their growing conditions before full scale adoption.

Sumagic is registered for use on labeled vegetable transplants in all states except California and New York. However, the supplemental label must be in the possession of the user at the time of application. Go to <http://www.cdms.net/LDat/ld836002.pdf> for this supplemental label.

Controlling

Leather Rot of Strawberry

Andy Wyenandt, Assistant Extension Specialist in Vegetable Pathology, Rutgers University
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Leather rot of strawberry, caused by *Phytophthora cactorum*, can be extremely damaging if left uncontrolled, especially if wet soil conditions and rainy weather persist for extended periods. Weather conditions which favor gray mold development may also favor leather rot. **Fungicides effective against gray mold are not highly effective against leather rot** (i.e. Captan, Topsin-M). Symptoms of leather rot begin to develop as green fruit begins to develop and mature. On green fruit, infected areas often turn a dark brown. As infection spreads, the entire fruit may turn dark brown and become leathery. However, some fruit may remain mostly green with only dark brown margins developing around the point of infection.

Importantly, infection may cause fully mature fruit to turn reddish-brown to dark purple or **cause no distinct symptoms**. These healthy-looking fruit have a very unpleasant taste and may be unintentionally harvested for sale. (*Bob Mulrooney notes: We see this disease occasionally in Delaware but it will often go undiagnosed except for the poor tasting fruit, which is often attributed to other causes.*) The following are some options for control of leather rot in new and established plantings:

New Plantings

- *Aliette* (fosetyl-Al, 33) at 2.5 to 5.0 lb 80WDG/A Begin 14 to 21 days after planting and continue on a 30 to 60 day interval as long as favorable disease conditions occur. *or*
- *Ridomil Gold* (mefenoxam, 4) at 1.0 pt 4E/A Make one application at transplanting plus an additional application at fruit set or 30 days before harvest.

Established Plantings

- *Aliette* (fosetyl-Al, 33) at 2.5 to 5.0 lb 80WDG/A
Apply in spring before first bloom and repeat once in the fall. *or*
- *Ridomil Gold* (mefenoxam, 4) at 1.0 pt 4E/A
Apply in spring before first bloom and repeat once in the fall.

Changes to the Format of the Insect Section of the Commercial Vegetable Production Recommendations

Joanne Whalen, Extension IPM Specialist,
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In the 2009 edition of the **Maryland Commercial Vegetable Production Recommendations**, you will notice a number of changes agreed upon by the entomologists from the five-state region that work collaboratively on this publication. These changes include:

1. Common names for insecticides now listed in book

– As I am sure you are aware, chemicals (including pesticides) have scientific names based upon their chemical structure (i.e. the chemical name). In many instances, these chemical names are long, complicated and understandable only by those with a technical background in chemistry. Therefore, EPA encouraged the development and use of “common names.” The common name of an insecticide is the name given to an active ingredient and it is used in lieu of the chemical name on a day-to-day basis. In many cases, insecticides with the same common name are sold under numerous trade/brand names. A number of years ago we started to list Ambush and Pounce as permethrin (the common name for both products) because there were a number of other “generic permethrins” in the market place. A more recent example is the availability of numerous trade/brand names with the same common name -- bifenthrin (examples include Bifenthrin, Brigade, Capture LFR, Sniper, and Fanfare). With the increase in the number of generic insecticides and mixtures of compounds containing older chemistry as well as new chemistry, it became extremely difficult to include all of the trade names and rates for any one insecticide. Therefore, we decided that it would be more useful to list the common names with a few examples of the more available trade/brand names in parenthesis as well as “OLF” to denote that “other labeled formulations” are available.

2. Rates Removed – It also became apparent that, in a number of cases, different generics with the same common name are labeled on different crops. In other cases, different generics with the same active ingredient have different formulations so the rates are different. In addition, a number of the new combinations of generics are using different rates compared to the

original rates of stand alone chemistry. The only way a producer or applicator can choose the correct product and rate is to read the label. A combination of all of these factors resulted in a decision to leave rates out of the 2009 edition. Labels are always changing so it is important to read all labels on the pesticide container before applying any pesticide. In some cases, the labels you find online or even in label books may not be the most recent label or may have changed after printing.

3. Restrictions - A number of years ago, we removed the restriction box from the recommendations because of the increasing number of new or different restrictions on labels relating to use patterns, resistance management, rotations etc. Since the label is the law, it is critical that the user read the label to be aware of all restrictions as well as the correct use rate. If you have questions about these changes, please feel to contact Joanne Whalen at 302-831-1303 or send an e-mail to jwhalen@udel.edu.

New Vegetable Insecticides for 2009

Joanne Whalen, Extension IPM Specialist

jwhalen@udel.edu



We have received a number of new insecticide registrations for the 2009 season. **Be sure to check the label for labeled crops, labeled crops within a crop grouping, use rates and restrictions.** In addition, you should also check the Delaware Department of Agriculture’s website

to be sure these materials are labeled in Delaware (to use a material it must have both a state and federal label)

<http://www.kellysolutions.com/de/pesticideindex.htm>

Single Ingredient Products:

buprofenzin (Courier) – leafhoppers, whiteflies on cucurbits, lettuce, snap beans and tomatoes

(<http://www.cdms.net/LDat/ld6LP007.pdf>)

extract of Chenopodium ambrosioides (Requiem) – aphids, thrips, whiteflies, mites, leafminers on numerous vegetables

(<http://www.cdms.net/LDat/ld8R9000.pdf>)

chlorantraniliprole (Coragen) – worm pests on cole crops, cucurbits, fruiting vegetables and leafy vegetables

(<http://www.cdms.net/LDat/ld8KF012.pdf>)

NOTE: The following general resistance management statement appears on the label: make no more than 2 applications of Coragen per generation to the same insect species on a crop; make no more than 2 successive applications within a 30-day period to the same insect species on a crop.

flubendiamide (Synapse) - worm pests on cucurbits, fruiting vegetables, leafy vegetables and cole crops

(<http://www.cdms.net/LDat/ld8LK003.pdf>)

spirotetramat (Movento) – aphids, whiteflies on fruiting vegetables, leafy vegetables, cole crops and potatoes

(<http://www.cdms.net/LDat/ld8L5008.pdf>)

Combination Products

NOTE: Be sure to read the general resistance management statement on all of the following labels.

chlorantraniliprole + lambda-cyhalothrin (Voliam Xpress) - worms, beetles on cucurbits, cole crops and fruiting vegetables
(<http://www.cdms.net/LDat/ld8N5000.pdf>)

chlorantraniliprole + thiamethoxam (Durivo) (drip only; one application per crop season) - worms, thrips, beetles, leafminers, leafhopper and whiteflies on cole crops, cucurbits and fruiting vegetables and leafy vegetables
(<http://www.cdms.net/LDat/ld8NA000.pdf>)

chlorantraniliprole + thiamethoxam (Voliam Flexi) – aphids, CPB, flea beetles, ECB and potato leafhopper on potato only
(<http://www.cdms.net/LDat/ld8NH004.pdf>)

Key Steps to Avoiding Bacterial Leaf Spot in Peppers

[Thomas G. Ford](#), Penn State Cooperative Extension

As an Extension Educator in South Central Pennsylvania, I make between 75-90 farm visits each season to work with growers in identifying production problems that may have arisen from insects, plant diseases, and/or nutritional disorders. Over the last five years, I have seen an increase in the number of pepper fields in my area that are infected with *Xanthomas campestris* pv. *versicatoria* causing bacterial leaf spot. This rapid increase in disease incidence is not tied to the development of some “super resistant” bacteria, but to some internal breakdowns or mistakes in these growers’ production practices.



Bacterial leaf spot (BLS) is best controlled by growing cultivars which have proven resistance against the three major races that commonly occur in the Northeast. Many growers in my area have tried to cut costs and have switched to BLS susceptible varieties because they felt that they could control this disease with weekly applications of fixed copper sprays. In many cases, after a season of frustration in which a grower may witness severe defoliation, sunscald, and low pepper yields, many have proclaimed that they had seen the “light” only to backslide and to repeat their mistakes from the year before.

The bacterium that causes BLS can be found on the seed coat or be contained internally in the pepper seed. While the commercial seed houses make every effort to prevent BLS infection of their seed, it does occur and unfortunately, all it takes is one bad seed (and the resulting transplant) to serve as a source of infection for the entire field.

Seed disinfection and /or the purchase of certified disease free seed are two options that growers can enlist to

prevent BLS from showing up in their fields. Clorox bleach treatment of pepper seeds kills bacteria that reside on the surface of the seed, but this treatment does not kill any bacteria that may lie within the seed itself. Hot-water treatments are extremely effective in killing bacteria on the outside and the inside of the pepper seed. While hot-water treatments are quite effective in killing bacteria, they may also reduce the germination rate of pepper seed. In most cases, do-it-yourself disinfection treatments of pepper seed for BLS will void any guarantees or warranties that your seed supplier may offer.

Bacterial leaf spot can live almost indefinitely on solanaceous weeds (nightshade) and for a year on plant debris. BLS can be spread in the field from plant to plant by water (raindrop splash and overhead irrigation), by employees (contaminated hands and/or equipment), and by high pressure air blast sprayers.

One often overlooked source of infection in my area lies in the many greenhouses that are used to grow pepper and tomato transplants. Most local greenhouses utilize wood benches and in some rare cases wooden flats to germinate and grow-on pepper and tomato plants for transplant purposes in their fields. If these wooded benches have not been completely sanitized and/or cleared of all organic debris they can serve as a source of new BLS infections each year. Quaternary ammonium products tend to be one of the best sanitizing agents for greenhouse benches, flats, and equipment. Sanitize the benches and/or equipment thoroughly before sowing that first flat of peppers and/or tomatoes.

In summary growers can avoid BLS in their fields if they adhere to the following guidelines or steps:

1. Select and grow only resistant pepper varieties.
2. Purchase certified disease-free seed or consider seed disinfection techniques.
3. Sanitize the greenhouse prior to growing pepper transplants.
4. Practice crop rotations of at least 2 years and don't rotate between solanaceous crops.
5. Control solanaceous weeds in any field where peppers may be grown.
6. Increase row spacing or adopt other cultural practices which may minimize the time that pepper foliage remains wet.
7. Limit/avoid worker contact with wet plants in the field.
8. Practice IPM and scout plants weekly for the presence of BLS symptoms.
9. Remove infected plants when possible and apply fixed copper sprays to susceptible varieties after the disease has been detected in the field.
10. At the end of the harvest season disk the field thoroughly to expedite the breakdown or decomposition of crop residues that may be infected with BLS.

Chateau for Highbush Blueberries

Kathy Demchak, Penn State Horticulture

Chateau SW (flumioxazin, Valent U.S.A.) is labeled for use in highbush blueberries. Chateau is a preemergent herbicide with burndown activity (it must not come in contact with canes that only have green bark). It is effective against a wide variety of broadleaf and grass weed species common in PA, including pigweeds, purslane, nightshade, shepherds-purse, barnyardgrass, and foxtails. At least ¼" of rainfall or irrigation is recommended to activate the herbicide, as Chateau has low water solubility, and fall is the preferred application time.



The labeled rate is 12 oz/acre for preemergence application. For postemergence use, see the label for details concerning rates, adjuvant use, timing, and possible need for another burndown herbicide. No PHI is listed, but use is not allowed between bud break and the end of harvest. The re-entry interval is 12 hours.

Day-Neutral Strawberry Varieties Research Results

Kathy Demchak, Penn State Horticulture,

Willie Lantz, MD Cooperative Extension

Harry Swartz, University of MD Horticulture

During 2008, two variety trials on day-neutral strawberries were conducted. One took place at Penn State's Horticulture Research Farm at Rock Springs, PA and the other at Harry Swartz's farm in Garrett Co., MD. Here's a synopsis of the trials and plant performance.

Plants were grown on plastic-mulched raised beds, and were planted on June 6 in PA (late due to wet soils) and on May 7 in MD. The main plant source was plug plants which were grown in Maryland, originating as dormant plants that were trimmed and grown in plug plant trays. With the cultivar Evie 2 in the PA trial, dormant plants were also planted for comparison to plug plants. Yields were low relative to normal yields for the PA site, perhaps due to a combination of late planting date and using black plastic instead of reflective plastic this year.

'Seascape' was included as the current industry standard for day-neutrals. It was a consistent performer in the trials, and was the highest yielder in the MD trial. This variety has notable sweetness, a nice red color, and average size. It can be susceptible to powdery mildew, and tends to split when it rains.

'Tristar' was also included as an industry standard in MD. Compared to 'Seascape', it produced 1/3 less fruit, and had smaller berries (8.9 g for 'Tristar', 12.5 g for 'Seascape').

'Albion' had similar yields to 'Seascape' in PA, but yields were low in the MD trial. In PA, this berry could have passed for a 'Camarosa' that decided to be a day-neutral. It was large (mostly long), firm, had a perfect berry color, and good (but not great) flavor. It had the highest

percentage of marketable fruit of all, being the only one that didn't split in the rain. Even though it was a bit too firm, the size alone makes it worth trying.

'Everest', 'Evie 2', and 'Evie 3' had very similar berry quality. All were fairly soft, medium-red colored, and flavor was average, reminiscent of the June-bearing 'Latestar'. In PA, 'Everest' and 'Evie 3' were the two highest producers in the trial at 1.16 and 1.01 pounds of marketable fruit per plant. 'Evie 2' had greatly improved berry size over 'Everest' and 'Evie 3' at both sites, but yields were low. Plug plants and dormant plants of 'Evie 2' had nearly identical yields, but yields were shifted to later in the season when dormant plants were used.

A few **numbered selections** were tried. One in particular from Five Aces Breeding has *Fragaria moschata* (musk strawberry) in its background. It produced yields that would be marketably high, but berries tended to have a flattened shape. There was a range of preferences for the flavor. A numbered selection from the USDA-Beltsville breeding program appeared to have some real potential, but there were only enough plants for the MD site, so another look would be in order before reaching conclusions.

For those wanting more information on the trial, results will be discussed at the Mid-Atlantic Fruit and Vegetable Convention. Also, additional results and details on plant establishment will be posted shortly on the NE SARE Web site in an annual report for this trial, along with other annual reports that are already posted. Info is at http://www.sare.org/reporting/report_viewer.asp?pn=LNE06-241.

Missed the Bay Area Fruit School? View the Presentations On-Line

We are pleased to have most of the presentations from the recent Bay Area Fruit School, held February 18, 2009 at the WREC, available for viewing and downloading on our webpage: www.wrec.umd.edu. Select "Recent Programs/Activities Materials & Presentations" and then "2009 Fruit School".

Fact Sheet 848 2009 Guidelines for Developing an Effective Fungicide Spray Program for Wine Grapes in Maryland

We are pleased to announce that Extension **Fact Sheet 848, Guidelines for Developing an Effective Fungicide Spray Program for Wine Grapes in Maryland, 2009**, is now available! Thanks to Anne DeMarsay for her effort!



The 12-page guide offers options and recommendations for managing major fungal diseases of wine grapes in bearing and non-bearing vineyards, ratings of the effectiveness of

various fungicides, and practical advice on managing the threat of fungicide resistance, updated for 2009.

The electronic version may be downloaded free of charge from the MCE "Crops, Farm Animals & Nursery Publications" Web page at:

<http://extension.umd.edu/publications/PDFs/FS848-A.pdf>

If you did not pick one up at the annual MGGGA meeting, a limited number of printed copies are available from MMS. Contact Peter Lee at splee@umd.edu To request a printed copy by phone or mail contact:

ATTN: Peter Lee, MMS

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Agronomic Crop Insects

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Alfalfa

Be sure to watch for economic levels of alfalfa weevil and pea aphids. When sampling for aphids and weevils, collect a minimum of 30 random stems throughout a field and place **them top first in a white bucket. For aphids, you want to count the number** present per plant as well as any that have dislodged from the stem into the bucket. In seedling stage alfalfa, a treatment should be considered if you find 5 aphids per stem. As a general guideline, you should consider a treatment in alfalfa less than 10 inches tall if you find 40-50 aphids per stem. The treatment threshold for alfalfa 10 inches or taller in height is 75-100 per stem. Although beneficial insects can help to crash aphid populations, the cooler temperatures have slowed their activity. As a general rule, you need one beneficial insect per every 50-100 aphids to help crash populations. For alfalfa weevil, you will also want to record the number of weevil larvae per stem. The following thresholds, based on the height of the alfalfa, should be used as a guideline when making a treatment decision: up to 11 inches tall - 0.7 per stem; 12 inches tall - 1.0 per stem; 13 - 15 inches tall - 1.5 per stem; 16 inches tall - 2.0 per stem; 17 - 18 inches tall - 2.5 per stem.

Wheat

Low levels of aphids and cereal leaf beetle adults can be found in fields throughout the state. Since we are past the prime time of barley yellow dwarf transmission (fall transmission is the most important), the next important time to consider aphid management in small grains is at grain head emergence. Since cereal leaf beetle populations are often unevenly distributed within the field, it is important to carefully sample fields so that you do not over or under estimate a potential problem. Eggs and small larvae should be sampled by examining 10 tillers from 10 evenly spaced locations in the field while avoiding field

edges. This will result in 100 tillers (stems) per field being examined. Eggs and larvae may be found on leaves near the ground so careful examination is critical. You should also check stems at random while walking through a major portion of the field and sampling 100 stems. The treatment threshold is 25 or more eggs and/or small larvae per 100 tillers. If you are using this threshold, it is important that you wait until at least 50% are in the larval stage (i.e. after 50% egg hatch).

We are also finding relatively low levels of winter grain mites again, especially in no-till wheat fields. We have also heard of a few fields that have been sprayed. This is a cool weather mite so be sure to watch fields for this pest.

The following is an overview of this pest including pest identification, biology/life history and management options written by Dr. Ames Herbert from Virginia Tech.

"Winter grain mites attack small grains, including wheat, barley, and oats. Other hosts include grasses, especially bluegrass, bentgrass, ryegrass, and fescue. The mite also infests and damages legumes, vegetables, ornamental flowers, cotton, peanuts, and various weeds. Adult mites are about 1 mm long, black, with red legs and are fast moving. They quickly run to ground cover when you approach plants. "As the name implies, they are winter pests.

There are two generations per year. The first develops from over summering eggs. Development begins after the onset of favorable temperature and moisture conditions in late September and October with populations peaking in December and January. The second generation develops from eggs laid by the first generation reaching maximum infestation density in March and April. Populations then decrease as temperatures exceed the range of tolerance. The females of this generation lay aestivating or over summering eggs.

"Temperature and moisture are the most important factors influencing mite development and abundance. Cool rather than warm temperatures favor their development. Egg laying is heaviest between 50° and 60°F; the optimum conditions for hatching are between 44° and 55°F. When temperatures drop below or rise above these ranges, the mites stop feeding and descend to the ground or burrow into the soil. Mite activity in the spring drops rapidly and the eggs fail to hatch when the daily temperature exceeds 75°F. Aestivating (over summering resting stage) eggs do not hatch in the fall until rains provide adequate moisture.

On hot, dry days it may be necessary to dig into the soil to a depth of four or five inches to find mites. The mites are not harmed by short periods of sleet or ice cover or by ground frozen to a depth of several inches.

"The larvae become very active soon after hatching and begin to feed on the sheath leaves or tender shoots near the ground. The larvae as well as the adults feed higher up on the plants at night or on cloudy days. As the sun rises, the mites descend the plants and seek protection during the hot part of the day on the moist soil surface under foliage. If the soil is dry and there is little foliage cover, they dig into the soil in search of moisture and cooler temperatures. At sunset and thereafter the plants become covered with feeding mites

where, with the aid of a searchlight, they can be observed feeding at all hours of the night.

"Dispersion from field to field may occur by transportation of aestivating eggs or mites on grain stubble or leaves, on soil adhering to implements that are moved about, or on forage or straw carried from infested fields in livestock feeding operations. Aestivating eggs may also be transported on debris by wind, and local distribution may occur by adult migration. Such migrations to grain fields may take place from fencerows or other uncultivated areas. "Heavily infested fields appear grayish or silvery, a result of the removal of plant chlorophyll by mite feeding. When high infestations feed on the plants for several days, the tips of the leaves exhibit a scorched appearance and then turn brown, and the entire plant may die. These mites do not cause the yellowing characteristic of spider mite feeding. Many of the infested plants do not die, but become stunted and produce little forage or grain; damage on young plants, however, is more severe than on large, healthy ones. Damage may also be greater in plants stressed by nutrient deficiencies or drought conditions. There are two types of damage to the small grains, namely, reduced amount of forage throughout the winter and reduced yields of grain in the spring and summer. Cropping practices have a marked effect upon the occurrence and damage caused by the winter grain mite. Injury by this mite may be prevented by crop rotation, that is, by not planting small grains more than two years in succession."

Although we have no research data in Delaware and limited experience with winter grain mite control in commercial fields, materials labeled for other insects on **wheat only** that appeared to provide control in 2008 on the Delmarva are the pyrethroids (Warrior II, Mustang MAX) and certain organophosphates (dimethoate).

NOTE: Only Warrior II is also labeled on barley.



Small Grain Disease Update

Bob Mulrooney, Extension Plant Pathologist
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Wheat virus diseases can be hard to diagnose especially when wheat is not growing quickly due to the cool weather. Both soilborne viruses, **soilborne wheat mosaic** and **wheat spindle streak mosaic virus** can cause stunting of plants at this time of the year. Varying degrees of mottling and yellow streaks or dashes may be present. It is hard to generalize what the patterns in the field might look like, but wheat spindle streak can be uniform across the field or in scattered spots that generally coincide with low spots in the field. Soilborne wheat mosaic virus is seen typically in large irregular spots in low or poorly drained areas of the field. A wheat sample sent to the lab last week was positively identified with wheat soil born mosaic virus by ELISA testing at Agdia, Inc. For a list of wheat varieties and their ratings for susceptibility to both virus diseases go to

<http://www.rec.udel.edu/Update09/wheatdisease-resistance08.pdf>.

There is no control for these diseases other than planting resistant varieties. When warm weather returns the plants will generally grow out of the symptoms but the effect on yield can be very variable depending how early the plants were infected. If the symptoms persist until the flag leaf emerges, more yield loss can be expected. For additional information on soilborn wheat mosaic virus and wheat spindle streak mosaic virus see this factsheet from University of MD <http://www.rec.udel.edu/Update09/wheatsoilbornvirusesMD.pdf>.

Another disease that has been seen in the lab is **Ascochyta leaf spot**. This disease is caused by a very weak pathogenic fungus that infects winter damaged leaf tissue primarily. Most fieldmen and growers get excited when they see this because it looks like Septoria leafspot which does not occur until much later in the season in this region. Ascochyta occurs primarily on lower leaves and begins as small chlorotic flecks that then develop into elongated gray-brown spots that can resemble *Septoria nodorum* spots. This disease does not warrant fungicide applications and usually disappears once wheat growth resumes wholeheartedly.

Reminders on Acetochlor Use Restrictions

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Acetochlor is a preemergence herbicide for corn that controls annual grasses and some broadleaf weeds. It is in the following products: Harness, Harness Extra, Degree, Degree Extra, Topnotch, Fultime, and Keystone. There are use restrictions that are important in our area. The restrictions pertain to groundwater quality. The restrictions are based on depth of groundwater within one month of planting and the combination of soil type and organic matter. Do not apply acetochlor if the groundwater depth is within 30 feet **and** you have sands with less than 3% organic matter, loamy sands with less than 2% organic matter, or sandy loam with less than 1% organic matter.

Weed Control for No-Till Soybeans

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It's time to consider your options for no-till soybean burndown programs, and it is particularly important if you have glyphosateresistant horseweed (marestail). Weed control for no-till soybeans has become more complicated as glyphosate-resistant horseweed has spread and species-shifts have occurred because of over-reliance on glyphosate for soybean weed control. A new fact sheet, "Approaches to Pre-Plant Weed Control in No-till Soybeans" is available at www.rec.udel.edu/weedscience/Fact%20Sheets_web/NT_soybeans_08_WF19.pdf. This fact sheet discusses the need for a combination of nonselective herbicide plus a plant growth regulator (2, 4-D or dicamba) plus a residual herbicide for consistent weed control. In addition, the disadvantages of waiting until late spring to spray no-till herbicides are discussed.

Options for Triazine-Resistant Lambsquarters and Pigweed Control in Corn

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Triazine resistant weeds are a wide spread problem in Delaware. Atrazine at 1.25 to 1.5 lbs/A is an effective rate if the weeds are not triazine-resistant, but will have no effect on triazine-resistant weeds. If lambsquarters and pigweed are not effectively controlled with the atrazine applied preemergence but other species are controlled, you should be concerned about triazine-resistant biotypes and control them postemergence. Atrazine is in many pre-mixtures with residual grass herbicides including: Bicep, Guardsman Max, Keystone, Harness Xtra, and Fultime. Furthermore, triazine-resistant weeds will not be controlled with Princep and probably not with Sencor either.

If you know you have problems with triazine-resistant pigweed or lambsquarters, Lumax, Lexar, Prowl, or Hornet are options. Hornet can cause some stunting if corn is planted less than 1.5 inches deep or soil organic matter is less than 1.5%. Beware of planting depth and adequate soil covering the seed if using Prowl. Other herbicide options are available, but they have not performed as consistently in our trials.

Regardless of products used at planting, do not assume they will provide full-season weed control. Scout the fields and determine if a postemergence treatment is needed. Control of triazine-resistant lambsquarters is often dependent upon postemergence applications. Postemergence control of lambsquarters and pigweed (triazine-resistant and susceptible) can be achieved with a number of options including Ignite (Liberty Link corn), glyphosate (Roundup Ready corn), Distinct, Banvel, Exceed, Callisto (can not use if Lumax was used at planting), Impact, Laudis, Harmony GT, NorthStar, Equip, Resolve (pigweed only).



Pre-Packaged Mixtures for Corn

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There have been changes in formulation and ratios of products for many pre-packaged herbicides over the past few years. As a result, check the label for your product of choice since often the new formulations recommend lower use rates than what was previously labeled. Below is a chart on rates of the most common pre-packaged mixtures used in the area, general use rate, and the amount of products they are providing:

Bicep II Magnum or Cinch ATZ 1.6 qts 1.24 qt 1.0 pt Dual II Magnum
Fultime 3.0 qts 1.2 qt 2.25 qt Topnotch
Guardsman Max 1.5 qts 1.3 qt 13.5 oz Outlook
Keystone 2.6 qts 1.5 qt 2.4 qt Topnotch2
Harness Xtra 5.6L 1.7 qts 1.1 qt 0.76 qt Harness

Lumax 2.5 qts 0.625 qt 1.76 pt Dual II Magnum
AND 5.4 oz Callisto3
Lexar 3.0 qts 1.3 qt 1.3 pt Dual II Magnum
AND 5.4 oz Callisto3
SureStart 3 pt/A none 0.88 pt Surpass
2 fl oz Stinger
0.45 oz wt Python

1. The atrazine formulation in Keystone is not available in other products.
2. Not a true comparison since Topnotch is a capsule suspension formulation and the acetachlor in Keystone is a suspo-emulsion formulation.
3. Callisto is not a chloroacetamide.

Milestone Does Not Have a Fit in Most Pasture Situations

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Milestone (aminopyralid) is a relatively new herbicide for pastures and CRP that provides good to excellent control of many broadleaf weeds (including thistles). It has other positives as well that makes it a very tempting choice for grass pastures. However, the herbicide does not break down in the plants, or in the digestive tract of the animals, nor during the composting process. Therefore, manure from animals fed with treated hay or grazed in the treated pastures, can contain some of the active herbicide. In addition, if this manure is applied to fields or gardens with sensitive plants, they can be severely injured or killed. Broadleaf plants (especially legumes) are most prone to injury. The following is from the Milestone label:

- Do not use Milestone-treated plant residues, including hay or straw from treated areas, or manure from animals that have grazed forage or eaten hay harvested from treated areas within the previous 3 days, in compost or mulch that will be applied to areas where **commercially grown mushrooms** or susceptible broadleaf plants may be grown.
- Do not spread manure from animals that have grazed or consumed forage or eaten hay from treated areas within the previous 3 days on land used for growing susceptible broadleaf crops.
- Manure from animals that have grazed forage or eaten hay harvested from Milestone-treated areas within the previous 3 days may only be used on pasture grasses, grass grown for seed, and wheat.
- Do not plant a broadleaf crop in fields treated in the previous year with manure from animals that have grazed forage or eaten hay harvested from Milestone-treated areas until an adequately sensitive field bioassay is conducted to determine that the Milestone concentration in the soil is at a level that is not injurious to the crop to be planted.

Milestone is better suited in our region for use with CRP where the grasses are not harvested or grazed. Since manure management is essential to protect sensitive plants, it has no fit in pastures or hay crops in our area.

Weed Control in Forages

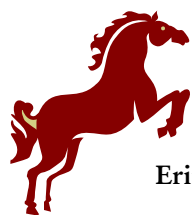
Mark VanGessel, Extension Weed Specialist

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If you have not done so yet, be sure to examine your hay, pasture, and alfalfa fields for weed infestations. Earlier applications are much more effective than later as weeds get larger and start to produce seeds. For grass hayfields or pastures, weed control options include dicamba (Banvel or Clarity), 2,4-D, Overdrive, Crossbow, or Cimarron. Cimarron and Crossbow provide residual control, while the other products do not. Be sure to read the label and follow all precautions concerning grazing and haying restrictions as well as overseeding and reseeding restrictions.

For pure alfalfa fields, Buctril, 2,4-DB, Pursuit or Raptor are labeled for broadleaf weeds. Pursuit and Raptor will provide both postemergence control as well as residual control. Select and Poast are labeled for grass control in a pure alfalfa stand. Recently Prowl H2O and Chateau have received labels for use in alfalfa. Both will provide residual control; be sure to read the labels and observe all precautions on application timing.



Cost-saving Ideas for Horse Owners in a Poor Economy

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Looking to be able to keep your passion for horses alive but worried about how to pay for it? Here are some ideas of things you might do around your farm in order to reduce the costs associated with your horses.

Simplify-simplify-simplify! Do a thorough nutritional evaluation of each horse. Many horses these days are being supplemented with many more nutrients than they actually need. This isn't to say that the joint supplement you're giving needs to be tossed away, but maybe your horse could do without that coat supplement or the added vitamin/mineral supplement. If your horse is fat, odds are s/he's getting too many calories and you may be able to cut out that commercial grain or supplement altogether - or find one that better suits your horses' needs such as a forage balancer. Forage balancers are designed for the horse that is on an all-forage (hay or pasture) diet. They tend to be very high in vitamins, minerals and sometimes protein, but are fed in small amounts - usually not more than 2 pounds per day. The cost per bag may bring sticker shock, but when you look at it as a cost per meal, you may find you'll save money! Not sure where to start? Contact your feed company - they may be able to help you determine if the feeding program you're using is adequate for your horses. If you aren't using a commercial feed, try your local extension educator or your state's extension horse specialist.

Increase your management inputs into your pastures. Horses are designed to eat small meals on a frequent basis

and your pasture could meet almost all of your horse's dietary needs. The initial outlay in money to renovate a poor pasture may be expensive, but once you get the management in full swing and can keep up with mowing, fertilizing, and rotating the animals, you'll find that you need to buy very little hay. Expect that in this region, you may need as much as 2 acres per horse in order to feed them throughout the year, but you can get by on less if you put more management into it such as pasture rotation and strict use of sacrifice lots during poor pasture growth periods. For help on pasture management, contact your local Extension Office.

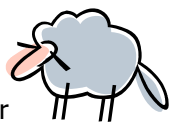
Along the lines of pasture management, you may also qualify for Federal or State grants to implement best management practices (BMPs)! With some new grant programs available through the Maryland Department of Agriculture's Tributary Strategies office, there is even some potential help for small acreage owners in Central and Southern Maryland who wouldn't otherwise qualify for funds from EQIP and other federal programs. For more information on cost-share programs, contact your local Soil Conservation District. A listing of offices for the Maryland Soil Conservation Districts can be found here: [Resource Conservation Technical Assistance](#). The contact list for the Small Acreage grant program can be found here: [Small Acreage Horse Farm Grant Assistance](#).

Talk with your vet about doing some of your own vaccinations. Your vet should be able to show you how to do vaccinations and can provide the vaccines (for a fee!) to you, saving you a vet trip. That doesn't mean you shouldn't have your horse evaluated on a regular basis by a vet, but you could save yourself some money in the long run by giving the shots yourself. You can also purchase vaccinations yourself and give them. Just make sure to consult with your veterinarian before doing so.

Switch to an as-needed deworming program. Frequent deworming with expensive pastes may not be needed on your farm and in fact, parasitologists are starting to make recommendations about using a targeted deworming strategy in place of the usual rotational programs. The main reason for this switch is the growing evidence that parasites are developing resistance to the major deworming products available now. There are no new deworming products on the horizon, so horse-owners and veterinarians are being cautioned to utilize what still works effectively with more care. In order to effectively use a targeted deworming strategy, you will have to do fecal egg counts on all of the horses on your farm on a routine basis. Horses who have higher fecal egg counts will be dewormed more frequently than those that do not. For more information on targeted deworming and the growing threat of anthelmintic-resistance, see the following collection of articles available from The Horse:

<http://www.thehorse.com/ViewArticle.aspx?ID=7317#parasites>

Wild & Woolly



The Spring 2009 issue of Wild & Woolly, the quarterly Maryland Sheep & Goat Producer newsletter has been published to the web at:

<http://www.sheepandgoat.com/news/index.html>.

The newsletter may be viewed online or downloaded and printed in its original graphics format.

In between issues of the newsletter, be sure to visit the Shepherd's Notebook blog at:

<http://mdsheepgoat.blogspot.com>.

Read the [magazine story](#) to find out more.



Grass filter strips in riparian zones have been found to not only curb soil erosion, they also reduce problems from the herbicide atrazine. *Photo courtesy of Natural Resources Conservation Service.*

For further reading

- [Markers for rice blast resistance discovered](#)
- [Rice collection identifies valuable traits](#)
- [ARS scientists collaborate to increase irrigation accuracy](#)

[Bob Lerch](#), a soil scientist in the ARS [Cropping Systems and Water Quality Research Unit](#) in Columbia, Mo., is working with colleagues in the unit and with [University of Missouri](#) research assistant professor for forestry [Chung-Ho Lin](#) to study the effect of different grass species on herbicide transport and degradation in field and growth chamber studies.

Grass Strips Help Curb Erosion, Herbicide Transport

By [Alfredo Flores](#)
January 28, 2009

Grass filter strips placed in riparian zones not only curb soil erosion, but can help block and degrade the widely used herbicide atrazine, [Agricultural Research Service](#) (ARS) scientists report.

Atrazine has been used extensively to suppress weeds in corn production for decades, but because it's applied directly to soil it's especially prone to losses in surface runoff. The contamination of surface water by atrazine and its less-toxic breakdown components has raised ecological concerns.

Riparian zones are transitional areas between upland areas, such as crop fields, and water bodies. The grasses and other vegetation in these zones help reduce pollution in streams and lakes.

In the growth chamber, the grasses studied were orchardgrass, smooth brome grass, tall fescue, Illinois bundle flower, ryegrass, switchgrass, and eastern gamagrass. Plants were allowed to grow for 3 months, to maturity. The rhizosphere soil--the soil zone that surrounds and is influenced by the roots of plants--was then separated from the plants and roots. Atrazine was then added to the rhizosphere soils and incubated in the dark for 100 days at 77° F. The researchers then measured atrazine degradation and mineralization--the conversion of atrazine to carbon dioxide.

Among the plant species, eastern gamagrass showed the highest capacity for promoting atrazine degradation. More than 90 percent of applied atrazine was degraded to less-toxic forms, compared to 24 percent in the control. Rhizosphere soil of orchardgrass, smooth brome grass, and switchgrass also enhanced atrazine degradation.

The studies have shown that grass buffers reduced the transport of herbicides to shallow groundwater and in runoff. These buffers can reduce herbicide transport through trapping of sediment and by increased infiltration of water into the soil.

[Read more](#) about the research in the January 2009 issue of Agricultural Research magazine.

ARS is the principal intramural scientific research agency of the [U.S. Department of Agriculture](#).



The Spring 2009 issue of the "Mastering Marketing" quarterly newsletter has been posted to the web at: http://www.agmarketing.umd.edu/Newsletters/AgMktgNewsSpring2009_1.pdf

Topics in this issue include:

- * ***New Web Site Makes University of Maryland the Place to Go for Info on Rural and Community Development.***
- * ***Marketing in an Upside Down Economy***
- * ***2007 Census of Agriculture Released***
- * ***The Inside Quote***
- * ***Web Resources***

If you have questions or comments about this publication or have clients or colleagues that would value receiving it as well, please contact Ginger Myers at gsmyers@umd.edu or sbarnes6@umd.edu.



WANTED- Maryland farmers interested in carving out a marketing niche for their specialty meat and poultry products. The University of Maryland Extension Ag Marketing Program is organizing a Maryland niche meats and poultry marketing initiative.

The goals of this initiative include:

Developing a searchable, geographic product database to facilitate product searches by consumers, restaurants, and institutional buyers- this effort will supplement, not replace the "Maryland's Best" directory and other on-line listings.

Providing information and resources for product development, regulatory issues, and collaborative marketing efforts.

Offering training and economic analysis to determine "best fit" business structures and the profit potential of niche meat markets in the mid-Atlantic region.

Niche meats are growing in popularity as consumers hunger for exotic flavors, such as grassfed beef, goat, sheep and other livestock; while others seek to support small-scale farming and conservation; and health-conscious consumers pursue more nutritious meat produced and processed using non-conventional methods. But moving into niche meat production can be complicated.

Some Maryland meat and poultry producers have already mastered many of the components of marketing their products directly to the public. Their advice and expertise will be extremely valuable in this new collaborative effort. Don't go it alone. Complete the form if you like to be included in the directory and to receive more information about this new marketing initiative.

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Grain Marketing Highlights

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



Tighter Ending Stocks Projected

Ending stocks of U.S. corn, soybeans, and wheat were reduced in USDA's April Supply and Demand report for the '08/'09 marketing year. World ending stocks were also reduced for corn and soybeans, with an increase projected for wheat. The report, which is viewed as bullish for corn and soybeans, is likely to help the seasonal rally resume for the row crops. The seasonal rally for corn generally runs through June into pollination while the seasonal rally for soybeans runs through August.

Corn Analysis

Changes made to USDA's '08/'09 marketing year balance sheet from last month include an increase of 50 million bushels in feed and residual use; and a decrease of 10 million bushels in food, seed and industrial use. The estimate for ethanol demand was left unchanged at 1.7 billion bushels bringing the projection for total domestic use of U.S. corn to 10.340 billion bushels. Exports were left unchanged at 1.7 billion bushels. With total supply now estimated at 13.740 billion bushels and total use projected at 12.040 billion bushels, ending stocks for U.S. corn are now projected at 1.7 billion bushels, a decrease of 40 million bushels from last month's estimate. The season average farm price for U.S. corn was increased 10 cents per bushel on both ends of the price range, now estimated at \$3.90 to \$4.00 per bushel. Brazilian corn production was increased one million metric ton from last month and is now projected at 50.5 MMT. Argentine corn production was left unchanged at 13.5 MMT. Combined production for Brazil and Argentina is projected to be 17.6 MMT less than last year. World ending stocks of corn are now projected at 143.33 MMT as compared to 144.62 MMT a month ago.

Soybean Analysis

The projection for imports was increased 3 million bushels bringing total supply to 3.176 billion bushels. Total soybean use was increased 23 million bushels from last month. Crushings were reduced 5 million bushels; exports increased 25 million bushels; seed use increased 4 million bushels; residual use was left unchanged at 73 million bushels for a total use of 3.011 billion bushels. Ending stocks for U.S. soybeans are now projected at 165 million bushels, a 20 million bushel decrease from a month ago. The season average farm price projection was increased 40 cents per bushel on the low end and 20 cents per bushel on the high end of the price range, now projected at \$9.25 to \$10.05 per bushel.

Brazilian soybean production was left unchanged from last month at 57 MMT, 2 MMT less than a year ago. Argentine soybean production, now projected at 39 MMT, is 4 MMT less than last month's estimate and 7.2 MMT less than last year's production. World ending stocks of soybeans are now projected at 45.84 MMT, 4.11 MMT less than last month and 8.25 MMT less than last year.

Wheat Analysis

The projection for all wheat imports was increased 5 million bushels bringing total supply to 2.930 billion bushels. Food use was left unchanged at 925 million bushels; seed use was increased 1 million bushel, now projected at 79 million bushels; and feed and residual use was increased 50 million bushels, now estimated at 250 million bushels. Total domestic use is now projected at 1.254 billion bushels. Exports were left unchanged at 980 million bushels bringing the total use projection to 2.234 billion bushels. Ending stocks for all wheat, now projected at 696 million bushels, are 16 million bushels less than last month. The season average farm price for all wheat was increased 10 cents per bushel on the low end and left unchanged on the high end of the price range, now projected at \$6.80 to \$6.90 per bushel.

Australian wheat production is now estimated at 21.5 MMT, an increase of 7.7 MMT from last year. Canadian wheat production, projected at 28.6 MMT, is 8.5 MMT larger than last year.

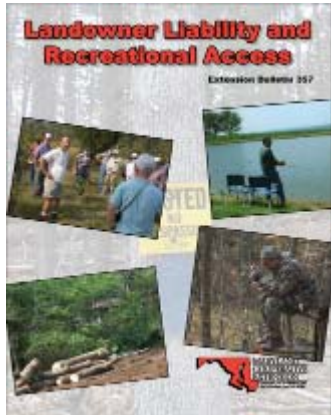
World ending stocks for all wheat are now projected at 158.1 MMT, 35.72 MMT larger than last year.

Marketing Strategy

The April report can be expected to resume the seasonal rally for corn and soybeans. Ending stock estimates for domestic corn, soybeans, and wheat came in below the average for pre-report estimates. Ending stock size is likely to limit the extent of the rally for corn and could accelerate the rally for soybeans, in the short term. Any rally occurring in the row crops will help to stem pressure on wheat futures. Trader attention will now turn to planting progress, watching to see whether any acreage shifts occur. Earlier it was thought that late planting could shift some acres from corn to soybean planting. At this point in time, it is still too early to make any determination on whether any acreage shift will occur. Currently, Dec '09 corn futures are trading at \$4.29; Nov '09 soybean futures at \$9.20; and July '09 SRW wheat futures are \$5.40 per bushel.

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www.agriculturehealth.com.

EB 237 *Newly Updated* Landowner Liability and Recreational Access



- What are my rights, and how do I exercise them to control recreational use of my property?
- What is the extent of my liability to recreationalists, and how can I protect myself against liability suits?
- What are my options for posting my land and controlling trespass by recreationalists? How do these options affect my liability?

- How do I charge for recreational access and still provide liability protection?
- What do I do if someone takes timber from my property without permission?

The recently revised EB357 provided a laymen's guide that answers these questions and more. It provides sample hunting leases, sources of insurance and more.

<http://extension.umd.edu/publications/PDFs/EB357.pdf>

EB357 is also available electronically at the following:

<http://www.naturalresources.umd.edu/ResourcesPublications.html>

Go to the tab for management and you will find it.
Jonathan Kays, jkays@umd.edu, 301-432-2767 x323

Maryland Department of Agriculture News

2009 Gypsy Moth Program

The gypsy moth is by far the most destructive pest of forest and shade trees in Maryland. The caterpillars eat the leaves of oaks and other hardwoods in May and June. Heavy populations of caterpillars will eat most or all leaves in a tree. Large outbreaks have affected hundreds of thousands of acres statewide.



The 2009 Gypsy Moth Suppression Program has proposed treating the trees on 38,454 acres in 14 counties, beginning in late April or early May. Maps of the entire state and all counties with proposed spray blocks are available [online](#).

There is one remaining public meeting remaining. It will be held from 6:00-7:00 p.m. on March 19, 2009 at the Maryland Department of Agriculture's field office at 317 Carter Avenue, Suite #100, Denton, MD 21639.

Emerald Ash Borer Update

Over the past six years, the State of Maryland has had a tumultuous relationship with the emerald ash borer beetle. This destructive pest was transported to Maryland on an illegal shipment of ash trees from Michigan in 2003, and has since become a problem in Maryland. The only way to eliminate the emerald ash borer is to remove its food source - ash trees. Since 2003, the MDA, the



Maryland Department of Natural Resources, and other partners, with federal funding support have cut more than 35,000 ash trees. This spring alone they will remove and chip about 5,000 trees on 3,600 acres in Prince George's County and on the north side of Waldorf in Charles County, the only areas in Maryland where it has been found, to stop the spread of the beetle. Most of the trees are in forested areas, although some are street and neighborhood trees. The work will be completed no later than April 1 which is the beetles' earliest anticipated emergence date. In 2009, the eradication battle will continue with limited tree removal and a promising new chemical treatment of ash trees in the arsenal.

This spring during Emerald Ash Borer Week, May 17-23, look for the launch of a campaign to raise public awareness about this insect and the damage it is inflicting on our state. The emerald ash borer can be transported by moving firewood from one location to another. In the coming months, you might see "Don't move firewood! It Bugs Me!" bumper magnets, post cards in statewide hunting and fishing licensing outlets, and billboards along Southern Maryland

Highways, yard signs in neighborhoods, and activities at both the Bowie Baysox and Maryland Blue Crab Baseball stadiums.

Surveys, which are continuous and ongoing, are crucial to understanding the emerald ash borer's impact in Maryland and determining the best course of action. The MDA will continue looking for the emerald ash borer in 2009 by deploying approximately 4,000 purple prism traps across the state. MDA will conduct training programs and outreach activities to educate tree professionals, citizen scientists, and others about how to recognize the signs and symptoms of the emerald ash borer. Anyone can report suspect emerald ash borer through the Maryland Home and Garden Information Center's [reporting form](#).

Please spread the word about this destructive beetle, and remind your family and friends not to move firewood when they travel or camp. For more information, go to www.StopTheBeetle.com or call 410-841-5920.



University of Maryland Cooperative Extension Kicks Off "Grow It, Eat It" Campaign

President Obama and the first family aren't the only Americans installing vegetable gardens this year. Faced everywhere are rediscovering the tradition of growing their own herbs, vegetables, and fruit at home. While some senior citizens helped their parents plant Victory Gardens during World War II and the Great Depression, most urban baby boomers and their children have not experienced such a direct connection with the food they eat...and are in need of information and guidance.

And that's where the University of MD Cooperative Extension (MCE) comes in. The outreach arm of the university's College of Agriculture and Natural Resources, MCE kicked off a new campaign on March 27 designed to help Marylanders improve their health and save money by growing fresh produce using sustainable practices.

Called "Grow It Eat It," this initiative was developed—and will be implemented—by MCE's Home and Garden Information Center (HGIC) and the Maryland Master Gardener program. Trained Master Gardeners will teach basic food gardening classes to the public, and HGIC horticulture consultants will answer food gardening questions via a toll-free hotline (1-800-342-2507) and e-mail Q&A service (hgic.umd.edu). A dynamic, interactive Grow It, Eat It website (growit.umd.edu) and blog (groweat.blogspot.com) will provide a wealth of information and resources for residents across the state and around the globe.

At the March 27 Grow It, Eat It kick-off, Master Gardeners gave demonstrations to guests. And following remarks by Traunfeld and Dr. Cheng-i Wei, dean of the University of Maryland College of Agriculture and Natural Resources, Maryland's Deputy Secretary of Agriculture Earl F. "Buddy" Hance presented a [proclamation](#) from Governor Martin O'Malley naming April as "Grow It, Eat It Month."

"Our vision is 1 million Maryland food gardeners producing their own affordable, healthy food in the next 2 years," says HGIC director Jon Traunfeld, who adds that even apartment and condo-dwellers can join the ranks of home gardeners. "If you have a patio, balcony, or small deck, you can grow food plants in a salad table or salad box," he says.

Designed by Traunfeld, the salad table is an improvement of a tried and true vegetable growing tool, featuring a wood box, wire mesh, and non-soil growing medium. MCE faculty and volunteers have successfully grown lettuce, arugula, herbs, Asian greens and even green beans in salad tables across the state, and Traunfeld introduced the table to viewers nationwide on the Martha Stewart Show on March 26.

So join the fun and celebrate spring and summer this year by getting back to your culinary roots and getting your hands in the dirt... or non-soil growing mixture. For more information, contact: [Ria Malloy](#)



MDA Specialty Crop USDA Development Grant

Jane Storrs, Director, National Marketing



Maryland Department of Agriculture is developing a plan to use about \$500,000 in FY 2009 grant funding (October 2009 - Sept 2010) we expect from USDA to enhance the competitiveness of specialty crops defined as fruits, vegetables, tree nuts, dried fruits and nursery crops - including floriculture. (These funds cannot support commodity crops, livestock, etc.)

To best serve Maryland specialty crop producers, we will be asking a number of growers to answer the questions listed below. We welcome your input as well, and invite you to reply to the same questions. Once the information is compiled, we'll let you know the results and determine what next steps (e.g., conference call, meeting) may be most appropriate:

1. What are the biggest challenges facing all Maryland specialty crop producers today? (Not just a particular niche)

2. What actions could we take to address those challenges? (Not national/global things like improve the economy or change national immigration policy, but things that could be accomplished at the state level)
3. How should priorities be established for deciding which actions to implement? (Current volume, future opportunities or threats, etc.)

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2007 Census of Agriculture Released



The U.S. Department of Agriculture released its every-five-year [Census of Agriculture](#) showing that in Maryland since the last Census conducted in 2002 there are 636 or 5 percent more farms, 25,874 or 1 percent fewer acres of farmland, and 16 percent more female principal farm operators. The [latest figures](#) indicate that farmers enrolled 57 percent more farms and

48 percent more acreage in conservation programs between 2002 and 2007. From an economic standpoint, the value of agricultural products sold increased 42 percent to \$1.84 billion while production expenses increased by 137 percent to \$1.55 billion. Average net farm income increased 59 percent from 2002 to 32,161 per farm.

"These data show a true and increasing commitment by farmers to use conservation practices as part of their farm management and to protect the environment for future generations and I thank them for that commitment," said Governor Martin O'Malley. "Agriculture is resilient and a critical part of our state's economy, quality of life, environment and food supply and one that we are committed to strengthening."

RIVA ROAD FARMERS' MARKET TO OPEN



The Riva Road Farmers' Market, Anne Arundel County's largest market carrying locally grown produce, will open on Saturday, April 4 from 7 AM to Noon. The market is located at the corner of Riva Road and Harry S. Truman Parkway in Annapolis.

"The six farmers' markets in Anne Arundel County are a wonderful resource for our citizens," said County Executive John R. Leopold. "It is easy to understand their growing popularity when you see the fresh and colorful array of produce that these markets have to offer throughout the season."

The Riva Road market will remain open on Saturdays from 7 AM to Noon through December 19. Beginning June 9, the Riva Road market will also be open on Tuesdays from

7 AM to Noon through October 27. Special events will include an Annual Farm Day in June, a Harvest Festival in October and a Holiday/Christmas Festival in early December.

The Riva Road Farmers' Market is the first of 6 spring markets to open in Anne Arundel County this year (The Westfield Annapolis Winter Market is currently open every Sunday from 12:30pm – 2:30pm). On opening day, the market expects to see over 500 visitors and will offer early season bedding plants, potted plants, hanging baskets, herbs, spring vegetables, baked goods, jams, jellies, cut flowers, flavored vinegars, fresh eggs, soaps and specialty items. The Anne Arundel County Farmers' Markets carry only locally grown, seasonal produce. As the weather becomes warmer, a wider variety of fruits, vegetables, herbs and plants will be available. Anne Arundel County Farmers' Market for 2009 are listed below:

Anne Arundel County Farmers' Market
Annapolis: Riva Rd & Harry S. Truman Parkway
Saturday: 7 a.m. to Noon April 4 – Dec 19
Tuesday: 7 a.m. to Noon June 9 – Oct 27
Contact: Brenda Conti 410-349-0317

Deale Farmers' Market
Deale: Cedar Grove United Methodist Church Parking Lot
5965 Deale-Churchton Rd.
Thursday: 3 p.m. to 6 p.m. July 2 – Oct 29
Contact: Gail Wilkerson 410-867-4993

The Centre at Glen Burnie Farmers' Market
Glen Burnie: in the mall parking lot in front of Best Buy
Wednesday: 9 a.m. to 12 Noon June 24-August 26
Contact: Lisa Barge 410-222-7410

Piney Orchard Farmers' Market
Odenton: Stream Valley Drive off Rt. 170
Piney Orchard Community & Visitors Center Parking Lot
Wednesday: 2 p.m. to 6:30 p.m. May 13-November 25
Contact: Bill Morris 410-867-9162

Severna Park Farmers' Market
Severna Park: Ritchie Hwy (Rt. 2) & Jones Station Rd
Saturday: 8 a.m. to Noon April 25 - October 24
Contact: Anita Robertson 410-827-9192

Westfield Annapolis Farmers' Market
Sunday: 12:30 p.m. to 2:30 p.m. January 11 – April 26 – closed
April 12, Easter Sunday
Annapolis: on the 1st level of the Nordstrom Parking Garage at the mall

Sunday: 11:00 a.m. to 3:00 p.m. May 3 – October 25
Annapolis: In the mall parking lot
Contact: Brenda Conti 410-349-0317

Note: WIC and Senior FMNP Checks Accepted at all Anne Arundel County Farmers' Markets

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

Borlaug Calls for Second "Green Revolution"

Dr. Norman Borlaug, father of the original "Green Revolution," is inviting this generation to begin a second, more extensive, rebellion against world hunger. "The Green Revolution hasn't been won yet," said Borlaug, who will turn 95 later this month. "Developing nations need the help of agricultural scientists, researchers, administrators and others in finding ways to feed ever-growing populations."

A Nobel Peace Prize laureate and Congressional Gold Medal recipient, Borlaug has been credited with saving more lives than anyone in history. His work has led to breakthrough high-yield, disease-resistant wheat harvests in Mexico, India, Pakistan and countries throughout Latin America, Africa and the Near and Middle East. As a result, hundreds of millions of people have been provided with an otherwise unavailable food supply.

"The Food Security Act of 2009 can lead the way in starting a second Green Revolution by helping improve agriculture and food security in developing countries," Borlaug said.

The Lugar-Casey Global Food Security Act was recently introduced by Sen. Richard Lugar, R-Ind., and was developed with bipartisan support from Sen. Robert Casey, D-Penn. Lugar described the bill as a "more focused effort on our part to join with other nations to increase yields, create economic opportunities for the rural poor and broaden agricultural knowledge ..." and said it could begin a new era in U.S. diplomacy.

Borlaug added that in a second Green Revolution, U.S. land-grant institutions would play an important role in contributing to worldwide food security.

He noted that land-grant institutions, such as Texas A&M University, where he has been a distinguished professor since 1984, provide developing countries with technical assistance, educational outreach, improved technology and agricultural practices, scientific training and research, and hands-on instruction.

"The forgotten world is made up primarily of the developing nations, where most of the people, comprising more than 50 percent of the total world population, live in poverty, with hunger as a constant companion," Borlaug said. "Land-grant institute efforts are essential in helping people around the world achieve a more lasting food security."

He added that, as global interdependence and the world food crisis continue to grow, so does the importance of these institutions in helping poor and developing countries gain better economic and social stability through agriculture and agribusiness.

"Even though my grandfather will be 95 years old later this month, his desire and effort toward resolving world food security issues and inspiring others to join him in that effort hasn't diminished one bit over the years," said Julie Borlaug, manager of external relations for the Norman

Borlaug Institute for International Agriculture at Texas A&M University.

The Borlaug Institute currently leads or plays a significant role in international agriculture projects in Iraq, Afghanistan, Rwanda, Ethiopia, Indonesia, Guatemala, El Salvador and other foreign countries. Many of these efforts are funded by the U.S. Agency for International Development, U.S. Department of Defense or the USDA.

"Dr. Borlaug's agricultural achievements to combat hunger have saved countless lives and inspired others to follow in his footsteps," said U.S. Rep. Chet Edwards, D-Waco, who supported a bill to award Borlaug the Congressional Gold Medal, the highest civilian honor bestowed by the U.S. government.

When Borlaug was awarded the medal in 2007, he said he hoped it would "help inspire young professionals to get involved in helping solve the world food crisis."

Borlaug remains active as an advocate for world food security. He continues to lecture at Texas A&M and serves as a mentor for participants in the Borlaug Fellows Program, established in his honor in 2004 by the USDA.

The Borlaug Fellows Program brings foreign students, scholars, scientists and policymakers to the U.S. to train and collaborate with American agricultural experts.

"The world owes a debt of gratitude to Dr. Borlaug, and we at the institute that carries his name are glad to be involved in his efforts to help initiate a second Green Revolution to bring greater worldwide food security," said Dr. Edwin Price, director of the Borlaug Institute.

Source: Texas A&M Agricultural Communications

Custom Work Charges in Maryland FS 683

Introduction

Financial and economic considerations such as limited capital, untimely cash flow, insufficient labor, small acreage or other reasons require farmers to hire custom service for field operations. Custom work charges are determined by demand and supply and are negotiated between farmers and custom operators. The purpose of this publication is to provide information on custom work charges in Maryland and to provide data to assist in decision making regarding purchasing equipment.

Custom Work Charges for 2009

A mail survey was conducted in the fall of 2008 to determine custom work charges in Maryland. Data were collected from 47 custom operators and farmers and summarized for the state. Participants indicated the rates they charge for various field operations. The charges reported in this publication may serve as a guide in determining an acceptable rate for a particular job where little other information is available. The charges can also be compared with costs and returns and may be used as a basis for working out more equitable charges for both the custom operator and customer.

Table 1 summarizes the custom work charges for the various operations for the State of Maryland. It shows the range (low and high), as well as the average charge. There are wide ranges with some charges. Variations may be due to the lack of knowledge about charges and difference in location, topography, field size and shape, crop yields, soil conditions, weather conditions, work quality, equipment type and size, timeliness or the ratio of available jobs to custom operators.

Attached is a draft of the new MD Custom Rate Survey for 2009. This survey and resources for crop budgeting and grain marketing can be found at www.mdgrainmarketing.umd.edu.

Table 1. Custom Work Rates in Dollars for the State of Maryland, 2009.

	UNIT	AVERAGE	RANGE		UNIT	AVERAGE	RANGE
Stalk Cutting	Acre	12.89	6.00-22.00	Bailing- Large Round Bales	Bale	7.25	2.00-12.00
Plowing-Chisel	Acre	16.17	12.00-22.00	Mow,Rake,Bale hay-no haul	Bale	3.65	1.05-10.00
Plowing-moldboard	Acre	22.67	20.00-26.00	Complete hay harvest	Bale	3.24	1.45-5.00
Disking-Heavy	Acre	17.48	9.75-40.00	Bushhogging	Hour	74.00	18.00-110.00
Disking-Light	Acre	17.72	8.75-35.00	Grinding Feed	Cwt	0.47	0.09-1.45
Cultivating	Acre	11.25	8.50-14.00	Mixing Feed	Cwt	0.85	0.85-0.85
Disking with cultipacker or Harrow	Acre	15.33	10.75-19.25	Posthole Digging	Hole	5.33	2.00-10.00
Cultipacking	Acre	3.75	2.00-7.25	Post Driving	Hole	1.50	1.50-1.50
Subsoiling	Acre	19.75	13.25-35.00	Snow Removal	Hour	87.91	65.00-140.00
Soil Finishing	Acre	15.68	9.50-25.00	Bobcat	Hour	70.83	30.00-100.00
Corn Planting- conventional w/fertilizer	Acre	17.31	13.00-23.25	General Farm Labor	Hour	17.96	7.50-35.00
Corn Planting- conventional w/o fertilizer	Acre	16.65	12.00-20.00	Machinery Operation	Hour	31.25	12.00-70.00
Corn Planting - no-till w/fertilizer	Acre	21.50	21.50-21.50	Manure Loading and Spreading	Ton	23.92	7.00-100.00
Corn Planting - no-till w/o fertilizer	Acre	21.75	20.00-23.50	Spreading Liquid Manure	Hour	100.00	100.00-100.00
Soybean Planting-conventional w/ fertilizer	Acre	18.00	15.00-23.50	Combining- Corn	Acre	30.58	25.00-40.00
Soybean Planting-conventional w/o fertilizer	Acre	16.36	14.00-20.00	Combining- Soybeans	Acre	30.73	25.00-40.00
Soybean Planting- no-till w/o fertilizer	Acre	20.73	15.00-45.00	Combining-Small Grains	Acre	30.43	25.00-45.00
Soybean Planting- no-till and spraying	Acre	23.22	15.00-31.25	Soil Testing	Sample	3.50	2.00-5.00
Drilling-small grain with fertilizer	Acre	22.67	14.00-40.00	Clearing Land	Hour	93.43	9.00-140.00
Drilling-small grain w/o fertilizer	Acre	18.08	12.00-25.00	Trenching	Foot	42.25	4.50-80.00
Seeding- grass drilling	Acre	21.91	12.50-40.00		Loaded		
Seeding- grass broadcasting	Acre	10.60	5.00-16.50	Livestock hauling with a trailer	Mile	2.38	1.25-4.00
Spreading- Dry fertilizer	Acre	7.93	5.00-14.00	Mowing CRP Acres	Acres	27.80	11.00-65.00
Spreading- Lime (includes lime and application)	Ton	30.03	6.00-60.00	Mowing	Acres	23.25	10.00-65.00
Fertilizer Application-dry bulk	Acre	8.07	5.00-12.00				
Fertilizer Application- sidedress	Acre	8.77	7.00-15.00	Shannon Dill			
Fertilizer Application-injecting	Acre	10.43	7.00-15.50	Extension Educator			
Spraying pesticides	Acre	7.80	6.00-10.00	University of Maryland Extension			
Hauling grain-local	Bushel	0.18	0.07-0.30	Talbot County			
Hauling grain- long distance	Bushel	0.31	0.12-0.52	sdill@umd.edu or 410-822-1244			
Storing Grains	Bushel	0.06	0.02-0.14				
Drying Grains	Point	0.10	0.03-0.15	Acknowledgements			
Mowing and Conditioning Hay	Acre	15.79	10.00-25.00	Revised fact sheet by Dale Johnson 2002			
Raking Hay	Acre	10.05	5.00-15.75				
Bailing Hay- Small squares	Bale	0.98	0.35-2.00				
Bailing Straw- Small Squares	Bale	0.99	0.35-2.00				
Bailing Straw - Small Round	Bale	7.42	6.00-10.00				

Check Out Our Updated County Website



Christie Germuth is our website designer. Christie has recently updated our website, and we hope that you find the additions helpful.

Ag Web Modules

New website features in Anne Arundel County - Agricultural Program Teaching Modules:

<http://annearundel.umd.edu/AGNR/agmedia.cfm>

1. Pasture Management

<https://connect.moo.umd.edu/p12049696/>

2. Pasture Herbicides

<https://connect.moo.umd.edu/p13059797/>

3. Handling Tall Fescue Toxicity Events

<https://connect.moo.umd.edu/p59425434/>

4. Modern Vegetable Production Technology for Early Market

<https://connect.moo.umd.edu/p75657057/>

5. Vegetable Herbicides for Controlling the Top 10 Weeds of Southern Maryland

<https://connect.moo.umd.edu/p25962088/>

6. Sustainable Low Input Strip-Till & No-Till Vegetable Planting Tactics

<https://connect.moo.umd.edu/p55665058/>

7. Fruit Establishment Tactics to Maximize Our Coastal Plain Advantage

<https://connect.moo.umd.edu/p61165608/>

8. Vineyard & Orchard Weed Control

<https://connect.moo.umd.edu/p44883980/>

9. Vineyard Establishment Supplies & Equipment

<https://connect.moo.umd.edu/p48194311/>

Attention! Attention!

Other Updated County Website Features

Anne Arundel County Extension website:

<http://annearundel.umd.edu/>

Ag Newsletter *Production Pointers*

The current and past agricultural newsletter additions are available for viewing or copy at:

<http://annearundel.umd.edu/AGNR/agnews.cfm>

Ag Bulletins

An agricultural bulletin page is also available for viewing or copy under our hot topics section at:

<http://annearundel.umd.edu/AGNR/agbulletins.cfm>

Ag Web Modules

New website features in Anne Arundel County Agricultural Program Teaching Modules:

<http://annearundel.umd.edu/AGNR/agmedia.cfm>

College AGNR 150 Anniversary

Also relive the history of Extension and University of Maryland College of Agriculture Land Grant Mission by viewing the 150 Years Anniversary PowerPoint:

<http://annearundel.umd.edu/files/University%20of%20Maryland%20150%20Year%20Anniversary.pps>

4-H News

Patrick Thompson, 4-H FEA,
University of Maryland



Are you between 8 and 18 or know someone who is? If so have you considered joining 4-H? The Anne Arundel County 4-H program is growing and is always looking for new members and volunteers. The program has community

clubs located throughout Anne Arundel County but is also looking for volunteers and members to lead new groups. There are a variety of projects members can participate in including animal science, environmental sciences and human sciences. We are also looking for adults to do seminars or presentations to help 4-Hers learn how they can further their projects. To receive more information, please contact Patrick Thompson in the Anne Arundel Extension Office at 410-222-6759 or at: pet@umd.edu.

If you are not currently receiving my newsletter electronically, you missed out on six additional announcements last year in addition to the quarterly newsletters!

I encourage you to get on our email list so you can stay informed of program updates and new information. You can subscribe to receive emails by going to our website:

<http://annearundel.umd.edu/AGNR/agnews.cfm>

Thanks for Partnering

Thanks for partnering with the Maryland Cooperative Extension, and supporting our programs. I also hope you enjoy this newsletter.

If you are no longer interested in receiving this newsletter, please call or write the office for the removal of your name from the mailer.



Prosper & Give!

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

**NACAA Communication Award
Individual Newsletter
2002 National Winner**

NACAA
National Association of
County Agricultural Agents



**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.



Orchard Multi-Fruit Cover Spray Program

Many local orchards are composed of multi-fruit combinations producing for fresh market apples, peaches, pears, plums, nectarines, and cherries. Aggressive fruit tree spray programs are required to achieve high quality fruit. These multi-fruit orchards create many spray management challenges for the achievement of good pest control in accordance to label guidelines. Therefore, the following multi-fruit orchard spray program for the control of major tree fruit pests and diseases may offer some assistance: (Labeled as noted in 2009 for All Tree Fruit – Pomes: Apples & Pears Stones: Peaches, Plums, Nectarines, and Cherries.)

FUNGICIDES: [FRAC]	*RATE	NOTES
Captan® 50W [M4] (Not labeled for pears)	2.0 lbs	General Protectant
Dormant Oil [NC]	4.0 gal	Apply Temp 35-85° F
Kocide® DF [M1] (Stones: Dormant Spray Only)	2.0 lbs	Other Fixed Coppers
Rally® 40W [3]	4.0 ozs	Powdery Mildew
Sulfur 95W [M2]	3.0 lbs	General Protectant
Gem® 500 SC [11] (Stones only) or	3.0 ozs	Brown Rot & Peach Scab
Adamant® 50WG [3/11] (Stones except plums)	6.0 ozs	Brown Rot, Peach Scab & Powdery Mildew
Pristine® [7/11] or	14.5 ozs	Brown Rot, Powdery Mildew, Scab, Rusts & Fruit Spots
Indar® 2F [3]	6.0 ozs	Fruit Spots
Topsin-M® 70W [1]	12.0 ozs	General Protectant
Ziram 76DF [M3] (Captan substitute for Pears)	5.0 lbs	Dormant Peach Leaf Curl
Agrimycin® 17 W (Apples & Pears Only)	24.0 ozs	Fireblight Control

INSECTICIDES: [IRAC]	*RATE	NOTES
Imidan® 70W [1A]	2.0 lbs	Curculio, Scale & Fruit Moths
Warrior® [3] or	4.0 ozs	Borers, Curculio & Fruit Moths
Tombstone® [3]	2.0 ozs	
Actara® [4A]	4.5 ozs	Aphids & Curculio
Lorsban® 4E [1B]	1.5 qts	Dormant & Trunk Borer
Acramite® 50WS [25]	1.0 lbs	Mites Only
Sevin® 50W [1A] (Apple Thinning Agent)	4.0 lbs	Japanese Beetles, Hornets & Sap Beetles

***Rate for 50-100gal Acre Concentrate Spray**
****Be sure to follow all labels closely for PHI and REI!**

Multi-Fruit Spray Calendar*

March 15 --	Dormant Spray Dormant Oil 4.0 gal (Scales & Mites) Ziram 76DF 5.0 lbs Kocide® DF 2.0 lbs Lorsban® 4E 1.5 qts (Mites)
April 5 --	Peach Bloom Apple Tight Cluster Captan® 50W 2.0 lbs Indar® 2F 6.0 ozs Agrimycin® 17 W 24.0 ozs (Fireblight Control Add for Apples & Pears Only)
April 15 --	Peach Petal Fall Apple Bloom Captan® 50W 2.0 lbs Topsin-M® 70W 12.0 ozs Agrimycin® 17 W 24.0 ozs (Fireblight Control Add for Apples & Pears Only)
April 25 --	Peach Shuck Split Apple Petal Fall Captan® 50W 2.0 lbs Pristine® 14.5 ozs Warrior® 4.0 ozs (Curculio) Agrimycin® 17 W 24.0 ozs (Fireblight)

May 5 --	1st Cover Spray Captan® 50W 2.0 lbs Topsin-M® 70W 12.0 ozs Actara® 4.5 ozs (Curculio & Aphids; PHI: 35-Days Pomes, 14-Days Stones)
May 15 --	2nd Cover Spray Captan® 50W 2.0 lbs Rally® 40W 4.0 ozs Warrior® 4.0 ozs (Curculio; PHI 21-Days Pomes, 14-days Stones)
June 1 --	3rd Cover Spray Captan® 50W 2.0 lbs Topsin-M® 70W 12.0 ozs Imidan® 70W 2.0 lbs (Curculio, Scale & Fruit Moths; PHI: 7-Days Pomes, 14-Days Stones) Acramite® 50WS 1.0 lbs (For Mites if Required PHI: 7-Days Pomes, 3-Days Stones)
June 15 --	4th Cover Spray Captan® 50W 2.0 lbs Pristine® 14.5 ozs (0-day PHI) Tombstone® 2.0 ozs (Borers, Curculio & Fruit Moths -7-day PHI)
July 1 --	5th Cover Spray Early Peach Harvest Captan® 50W 2.0 lbs Sulfur 95W 3.0 lbs (0-day PHI) Tombstone® 2.0 ozs (Borers, Curculio & Fruit Moths - (7-Day PHI)
July 15 --	6th Cover Spray Peach Harvests Captan® 50W 2.0 lbs (0-Day PHI but a 4-Day REI) Sevin® 50W 4.0 lbs (Japanese Beetle & Moths - 3-Day PHI for All Fruit)
August 1--	7th Cover Spray Peach Harvests Sulfur 95W 3.0 lbs (0-day PHI) Sevin® 50W 4.0 lbs (Japanese Beetle & Hornets - 3-Day PHI for All Fruit)
August 15 --	8th Cover Spray Early Apple Harvests Late Peach Harvest Captan® 50W 2.0 lbs (0-Day PHI but a 4-Day REI)
September 1 --	9th Cover Spray Apples and Pears Only Captan® 50W 2.0 lbs (0-Day PHI but a 4-Day REI) Sulfur 95W 3.0 lbs (0-day PHI)
September 15 --	Trunk Bore Spray Lorsban® 4E 1.5 qts (Post Harvest for Borers)

Organic Approach Substitutions:

Conventional Product	Organic Certified Product
Captan® & Topsin-M®	Surround® & Sulfur
Rally®	Kaligreen (Powdery Mildew Eradicant)
Listed Insecticides	Pyganic® or Entrust® (Stone Fruits Only)
Agrimycin®	Fixed Copper (Apples & Pears Only)

*** Important Note: The calendar spray dates given are an average estimate for Anne Arundel and Prince George's County Orchards, and may vary by location in Southern Maryland. Be sure to adjust your spray schedule application dates accordingly. The above recommendations very closely reflect the current spray program utilized at the University of Maryland Research and Education Center, Upper Marlboro Facility for its research orchards.**

R. David Myers
Extension Agent, Agriculture
2009