Hello, Harford County!

Stink bugs, stink bugs, stink bugs! After a relatively uneventful summer stink bug-wise, these critters are finally showing up in droves as they seek cozy places to overwinter. At the Extension Office, we’ve been receiving lots of calls from concerned homeowners about how to control the hundreds—or even thousands—of brown marmorated stink bugs on their porches, garage doors, and window screens. Unfortunately there is no easy answer, but we can offer a few suggestions.

At this time of year, stink bugs are being drawn to homes because they are seeking overwintering sites. Bugs on or near your home will come in any crack they can find. Now is the time to check your window screens, weather stripping in doors, attic vents, etc. and make repairs. Caulk cracks, place screens over openings, and do your best to prevent them from coming inside. Stink bugs will not cause damage to your house, but they are a nuisance, especially when present in large numbers. Bugs that get inside will be dormant over the winter but will become active in your house when weather warms next spring.

Stink bugs also produce an aggregation pheromone. When one bug determines your house is a good overwintering site, it releases this pheromone, encouraging other bugs to come to the same site. With this in mind, it’s a good idea to attempt some type of outdoor control as well. No matter how well you caulk, screen, and seal up your house, some stink bugs will still find a way inside!

Commercial insecticides are an option. A professional pest control company may be able to provide service; there are also some insecticides that you can buy and use yourself. If you are considering insecticides, act fast as these must be used when the bugs first appear. For insecticide recommendations, visit the Rutgers website at njaes.rutgers.edu/stinkbug/pesticides.asp.

Manual removal, while tedious, is probably the most effective option we have at this time. Some sources recommend removal with a shop vacuum, although this will likely cause the vacuum to smell like stink bugs. Removing the bugs by hand and placing them in soapy water is another method. Or, as reported in a September 25 article by FoxNews.com, some people are “using manure shovels and 5-gallon buckets to dispose of them.” Hopefully your infestation isn’t this bad!

There is not much scientific evidence showing that light or pheromone traps are effective in this situation. I’ve heard both favorable and unfavorable reports of these products from homeowners who have tried them. Research in attractant traps is ongoing, so hopefully we will have some effective traps in the coming years.

Sincerely,

[Signature]
Grants Available from Maryland Agriculture Council

The Maryland Agriculture Council is offering grants for the promotion of agriculture and education of the general public on the importance of agriculture in their lives. Typical grant amounts awarded are for $300-$800, not to exceed $1,000. Applications must be received no later than October 25, 2013. The grant application and guidelines are available from the Harford County Extension Office; please call or e-mail Sara (410-638-3255 or sbh@umd.edu) to obtain a copy. If you have questions or need additional information, contact grant chairperson Putt Willett at 301-253-2673 or pwwillett@hotmail.com.

Greenhouse Production Conference

November 7, 2013
8:00 a.m.—4:30 p.m.
Chesapeake College
Wye Mills, MD

This conference, sponsored by University of Maryland Extension and Maryland Greenhouse Growers Association, will be a great opportunity for anyone interested in starting a greenhouse as well as experienced greenhouse operators. Topics will include business strategies, calibrating fertilizer injectors, greenhouse diseases, biological and chemical control for aphids and thrips, fertility, combo baskets, vegetables transplants, organic transplants, and other new crops. Maryland pesticide and nutrient management credits will be available. Registration fee is $25 per person and includes workshop materials, continental breakfast, and lunch. Registration is due by November 1; register at www.greenhouseconference.eventbrite.com. For more information or to register off-line, contact the Talbot County Extension Office at 410-822-1244 or sdill@umd.edu.

Greenhouse IPM Pest Alert—European Pepper Moth

Stanton Gill, Greenhouse and Nursery Extension Specialist, Univ of MD Extension

The European pepper moth (EPM), *Duponchelia fovealis* (Zeller), a relatively new invasive species, has been confirmed in two Maryland greenhouse operations, one in central Maryland and one on the eastern shore. Greenhouse managers should be alert and monitor for this new pest. How much economic damage the European pepper moth might cause in the United States is still unknown, but we do know that this pest is being detected in greenhouse operations in many states. This week we found the European pepper moth girdling the stems of poinsettia plants. If you see wilting poinsettia plants, examine the base of the stem right at the soil level. Early instar larvae feed on leaves close to the soil surface, feeding on the undersides and making detection a challenge. The larvae like to pull partially consumed leaves over their bodies, often concealing themselves as they feed on the stems of the plant. The larvae do not like being exposed to light, and when the leaf camouflage is pulled the larvae will often thrash around. The larvae, in this later instar stage, will put silk out of its mouth and lightly cover the stem with silk. This silk is easier to see than the concealed larvae and may readily catch your eye. We have a complete article on monitoring techniques and control options posted online at extension.umd.edu/IPM listed under “featured articles.”
Would you like to be able to reduce your winter hay feeding bill? If so and if you have a pasture that has a large percentage of tall fescue, why not consider stockpiling the tall fescue to winter graze. Depending on fall weather conditions, tall fescue stand density, stocking rate for grazing, and the type of grazing system employed, a grazer can get an extra 6 to 8 or possibly more weeks of grazing starting in early December.

What is involved in the process of stockpiling tall fescue? The first thing to do is to stop any grazing or hay harvesting on the selected pasture and then apply 50 to 70 lbs. of nitrogen (N) per acre as soon as possible between August 15 and September 1. Grazing of the pasture should not begin again until late-November or December whenever the other pastures become depleted of feed.

The applied N fertilizer should be a quick release form such as urea or ammonium sulfate rather than a slow release form such as manure, other organic sources, or polymer coated urea. The use of a nitrification and/or urease inhibitor is useful especially with the history of heavy rainfall so far this growing season (2013). Products designed to reduce N loss from leaching and/or denitrification include nitrapyrin (N-serve®), SuperU®, agrotain®, or agrotainplus®. These products do slow the conversion of N from urea to ammonium or from ammonium to nitrate but the activity is limited to one to two weeks and do not interfere with the uptake of N by the tall fescue crop. They help prevent the environmental loss of N and therefore help increase plant uptake and promote more top growth.

A second application of 30 to 50 lbs. N/acre is suggested from early or mid-October to early November to help increase the protein content of the stockpiled tall fescue, possibly increasing the total yield produced, and to encourage more and deeper rooting of the tall fescue for next year’s production. It is thought that late-fall N may help tall fescue plants lay down tillers that will help thicken the fescue stand next year.

When the available forage in the remaining pastures becomes too little to support the grazing animals, the accumulated tall fescue forage can be grazed. Palatability really increases following some hard frosts or freezes so we generally recommend that grazing not begin until December. The freezing process is thought to release or convert carbohydrates to simple sugars which encourages the grazing animals to select the fescue and consume it readily. If the accumulated fescue pasture can be grazed in strips to limit animal access to the forage, there will be substantially less wasted forage. The use of moveable fences (usually electric) so that just a day or a few days’ supply of forage is provided each time the fence is moved really helps extend the number of grazing days you can have from the stockpiled fescue.

Like any grazing system if the weather is too wet, animals should be kept either inside or in a sacrifice holding lot and fed hay rather than allowed onto a pasture where their hoofs can cause compaction problems or tear up the forage stand. Stockpiling tall fescue is an effective way to extend the grazing season and stretch hay supplies. The rainy and often unpredictable weather this year has made hay production very difficult and good quality hay likely will be in short supply and only found at a high cost. With the expense of a little money for N fertilizer and the time and effort of moving fences, a grazer can significantly reduce their feed cost.
Palmer amaranth (Amaranthus palmeri) is a summer annual broadleaf weed species closely related to other pigweed species (waterhemp, smooth, redroot) common in agronomic cropping systems. Palmer amaranth evolved in deserts of the southwestern United States, including areas of the Sonoran Desert. Genotypic and phenotypic adaptability have allowed Palmer amaranth to expand its distribution beyond desert habitats, and colonize the vastly different agricultural landscapes across much of the eastern half of the United States.

Research has demonstrated that Palmer amaranth has a higher growth rate and is more competitive than other pigweed species. Growth rates approaching 3 inches per day and yield losses of 78% (soybean) and 91% (corn) attributed to Palmer amaranth interference have been reported in the scientific literature. Female Palmer amaranth plants typically produce a similar number of seeds as female waterhemp plants.

Early and accurate identification of Palmer amaranth plants, coupled with an integrated management program, are essential to reduce the potential for crop yield loss due to interference of Palmer amaranth.

Identification

**Immature plants.** The cotyledon leaves of Palmer amaranth are relatively long compared with other Amaranthus species. The true leaves (those produced after the cotyledon leaves) of Palmer amaranth have a small notch in the tip. The stems and leaves have no or few hairs and the stems feel smooth to the touch. Leaves are alternate on the stem and are generally ovate or egg-shaped (Figure 1) with prominent white veins on the underside. As plants become older, they often assume a poinsettia-like appearance and sometimes have a white or purple chevron on the leaves (Figure 2). Leaves are attached to the stem by petioles that are usually as long, or longer than, the leaf.

**Mature Plants.** Palmer amaranth plants are either male or female; male plants produce only pollen while female plants produce only seed. The terminal inflorescence of male and female plants is generally unbranched and very long (Figure 3). Female Palmer amaranth plants have a long terminal inflorescence (10 to 24 inches) with flowers containing 5 spatulate-shaped tepals. The tepals are about twice the length of the seed, and the seed capsule (utricle) breaks into 2 regular sections when fractured. Grabbing the inflorescence of a mature female Palmer amaranth plant with your bare hand is not recommended as the bracts are very stiff and sharp. Palmer amaranth is an aggressively growing species which often reaches 6 to 8 feet tall (Figure 4).

Management Guidelines

Field scouting should occur throughout the growing season to identify Palmer amaranth plants.

1. If you discover a plant that you think may be Palmer amaranth, you can verify its identity by sending a leaf tissue sample to the University of Illinois (please find a sampling protocol at: Palmer Amaranth Identified in SE Pennsylvania

The Penn State crop management Extension team has tentatively identified an isolated infestation of Palmer amaranth in southeastern Pennsylvania. With soybean and corn grain harvest happening in the near future, please play attention to pigweeds that have survived herbicide programs in Roundup Ready crops and particularly in soybean. Palmer amaranth is quite distinctive at this stage with long (10 to 20 inch) cylindrical seed heads generally rising above the soybean crop. If Palmer amaranth seed is harvested along with the grain, the seeds can quickly spread into neighboring fields or farms. The team is still investigating this most recent occurrence but strongly suspect that seeds were spread via contaminated manure and/or hay.
Pest Update

Anyone wishing to buy or use restricted-use pesticides must obtain a certification from the Maryland Department of Agriculture (MDA) by passing an exam. Certifications are good for three years; you must attend a re-certification training at least once every three years to keep your certification current. Once your certification expires, you have a 90-day grace period to attend a training before your certification is voided. The Extension Office provides training and re-certification opportunities for private applicators—those who buy and use pesticides on their own properties. If you apply pesticide for others or for hire, you need to obtain a commercial applicator certification.

Do you need to buy restricted-use pesticides but aren’t certified?
We can help! Attend our New Applicator Training class to learn the basics of safe pesticide application and prepare for the certification exam administered by the Maryland Department of Agriculture. The training is free, and participants will be provided with a study manual and the opportunity to complete a practice exam.

Is your certification expiring at the end of 2013?
We can help with that, too! There are Harford County sessions scheduled this fall and winter that will satisfy the recertification requirement (see right). Mark your calendar now and plan to attend one of these. If you cannot make any of these dates, you can attend a session in another county. For more information, call the Extension Office at 410-638-3255.

Pesticide Certification Reminders and Training

New Applicator Training
October 24, 2013 from 9:00 — 11:30 a.m.
March 4, 2014 from 9:00 — 11:30 a.m.
At the Harford County Extension Office
To register, call 410-638-3255.

Re-Certification Training
October 24, 2013 from 1:00 — 3:30 p.m.
March 4, 2014 from 1:00 — 3:30 p.m.
At the Harford County Extension Office
To register, call 410-638-3255.

Re-certification credit will also be awarded for attendance at the Harford Midwinter Meeting, February 4, 2014 at Deer Creek Overlook. Look for more details coming this winter.

Figure 4. Mature Palmer amaranth in soybean (photo courtesy of Robert Bellm).

Figure 3. Inflorescences of male (left) and female (right) Palmer amaranth plants.

Figure 3. Inflorescences of male (left) and female (right) Palmer amaranth plants.

http://bulletin.ipm.illinois.edu/?p=923) for identification using molecular biology techniques.

1) Plants confirmed or suspected of being Palmer amaranth should be physically removed from the field prior to flowering. Do not rely on herbicides for control. Physical removal can include hoeing or hand-pulling plants from the soil. If hoeing is used, be sure to sever the plant stem at or below the soil surface to reduce the potential for regrowth, and remove plants from the field as they will re-root from stem fragments.

2) If Palmer amaranth plants are not identified until after brown-to-black colored seeds are present on female plants, we suggest leaving the plants undisturbed in order to avoid inadvertently spreading seed.

3) Mark or flag areas where Palmer amaranth plants produced seed. These areas should be intensively scouted the following season and an aggressive Palmer amaranth management plan implemented to prevent future seed production.

4) Do not mechanically harvest mature Palmer amaranth plants. Physically remove the plants prior to harvest and either leave the plants in the field or place in a sturdy garden bag and remove the plants from the field. Bury or burn the bags in a burn barrel as soon as possible.

5) Fields in which Palmer amaranth seeds were produced should NOT be tilled during the fall or following spring. Leaving the seeds near the soil surface increases the opportunities for seed predation by various graviroses.

6) Herbicides that control waterhemp also control Palmer amaranth. An integrated herbicide program should include soil-residual herbicides applied at full recommended use rates within two weeks of planting and followed by post-emergence herbicides applied before Palmer amaranth plants exceed 3 inches tall.
Manure is defined as the combination of feces and urine (EPA, 2003). An average 500 kg horse produces about 14 kg of feces and 8 kg of urine daily (Lawrence et al, 2003). The nutrients in manure are generated primarily from the nutrients in the diet because animals are not 100% efficient at digesting and extracting nutrients from the feeds they consume. Thus, undigested nutrients pass through the digestive system and are excreted in the feces. Dietary intake of nitrogen (i.e. nitrogen from protein and amino acids) is positively correlated with the excretion of nitrogen (N) in manure (Lawrence et al., 2003).

Ammonia (NH₃) is a colorless gas with a strong, odorous smell, produced as a by-product of the microbial decomposition of the organic nitrogen compounds in manure. It comes from urea, a nitrogen containing molecule, which is present in urine and feces. Horses excrete urea in urine to eliminate excess nitrogen, and while urea is odorless and nontoxic, it is rapidly converted to NH₃ by a naturally occurring enzyme, urease. NH₃ is extremely irritating to the mucous membranes that line the mouth, eyes and respiratory tract. Breathing in NH₃ could cause chronic and acute respiratory disease which is one of the leading causes of wastage in horses used in high performance athletic endeavors and commonly recognized in pleasure horses as well. In humans, exposure to high NH₃ causes narrowing of the throat and bronchi, fluid in the lungs, eye irritation, nausea, vomiting and dizziness.

Investigating the Effects of Bedding Type

At the University of Delaware, researchers are measuring ground floor NH₃ concentrations in horse stalls as affected by type of housing and bedding material used. In a preliminary study, four horses were housed in two different barns (an old style and a new style type horse barn; Figure 1) on shavings or straw for three days. The old style barn is constructed of concrete floors, smaller, more closed in stalls with wood walls, and with little engineering to allow for adequate ventilation (e.g. low ceiling and small windows). The new style barn has higher ceilings with a ridge vent on the roof and side vents to increase ventilation, rubber mats as the flooring in stalls, and more open stalls constructed of metal panels with mesh design. The concentration of NH₃ was measured in each stall over three different spots every twelve hours.

When housed on shavings, the concentrations were found to be lower on average than when horses were housed on straw. When horses were kept on straw, the NH₃ concentrations measured near urine spots in the stall exceeded 800 ppm. In contrast, the NH₃ concentration on shavings was found to be less than 500 ppm. While the exact levels of NH₃ that are detrimental to horses are unknown, for humans, the U.S. Occupational Safety and Health Administration (OSHA) has set a 15-minute exposure limit for gaseous NH₃ levels of only 35 ppm (ATSDR, 2004). The data from this preliminary study demonstrates that both horses and their owners could be exposed to very high and unhealthy levels of NH₃ in barns. Thus far, levels of NH₃ on the floor of stalls bedded with straw and shavings appear to be similar across the two barn types. Additional studies are needed to better understand how barn design and ventilation systems affect NH₃ concentrations in horse facilities.

Stall Amendments

Horse owners potentially have a multitude of options to help reduce the concentration of NH₃ in the
Is your horse’s feed providing just the right combination of nutrients? Do you know how to make sure it is? This class will teach you how to select feeds that are best suited to your horse and develop a ration to meet your horse’s individual needs. Topics will include: an overview of the horse’s digestive anatomy; determining your horse’s nutrient requirements based on its current body condition and workload; selecting hay, concentrates, and supplements that are right for your horse; and calculating how much of each feedstuff to feed your horse each day. This is a two-part class so participants should attend both sessions. Registration is $10 per person and includes printed materials and refreshments. Registration is required by October 14. The class is geared toward older youth and adults, but younger horse lovers may attend with a parent or guardian.

Formulating a Ration for Your Horse

October 16 and 23, 2013
6:00 p.m.—8:30 p.m.
Harford County Extension Office
Forest Hill, MD

Harford SCD Banquet Updates

Submitted by Bill Tharpe, Harford Soil Conservation District Manager

Harford Soil Conservation District Board of Supervisors have decided to postpone the Annual Conservation Banquet in October. The District will be joining the Harford County Agriculture Advisory Board and Agricultural Preservation Board to promote one event in early spring. Additional information will be made available after the first of the year. If you have any comments, please contact either Bill or Peggy at 410-838-6181 x3.
The Fall/Spring Nutrient Management Timeline

By Patricia Hoopes, Nutrient Management Advisor

After the dust has settled from the business of harvest season, after the Fall Soil Nitrate Tests are completed, and after the fall crops have been planted it is time once again to plan for spring!

(JFrame)
- It’s time to replace old or questionable soil sample analyses with new ones.
- It’s time to replace the old manure analysis with a fresh analysis.
- It’s time to plan what will be grown in the spring.

As a general rule of thumb, all spring planning information should be together before Thanksgiving. A meeting should be planned with your advisor this fall or early winter for you to present your information. This allows time for development of a plan and time to take care of any issues that may need to be addressed before a final plan can be developed.

Certain issues may require more time invested in plan development, such as excessive phosphorus issues, manure calibration, questions on expected yields, determination of HEL lands, and map development. If you are aware that you have a need for a Phosphorus Site Index (PSI) or Phosphorus Management Tool (PMT) comparison study, contact your advisor right after the field of concern has been harvested. The best time for the advisor to do a field visit to gather information is when the fields are clear.

To ensure your advisor has adequate time for plan development, the completion of fall harvest signals the time for spring nutrient management planning.

MDA Revitalizes Manure Matching Service Program

Source: Maryland Department of Agriculture (MDA) - abridged

MDA has revitalized its Manure Matching Service, a mutually beneficial program that connects livestock producers who have excess animal manure with other farmers or alternative use projects. Livestock farmers with high soil phosphorus levels or too little land to use all the manure produced on their farms are encouraged to call the Matching Service’s new toll free number at 1-855-6MANURE (626873) to begin the process. Maryland’s Manure Matching Service is voluntary, free and available to both sending and receiving farms. For more information, contact the Harford Soil Conservation District at 410-838-6181 x 3 or MDA at 1-855-6MANURE (626873). Information also is available online at www.mda.maryland.gov.

MDA Raises Cost-Share Caps for Manure Transport

Source: Maryland Department of Agriculture (MDA) - abridged

MDA has raised its cost-share funding caps for qualifying dairy and other non-poultry producers who transport manure within their own operations or to other farms. Effective immediately, qualifying farmers may receive up to $15,000 per season or $30,000 per year in cost-share assistance to transport manure. The current limit for individual farms is $7,500 per year. Animal producers with high soil phosphorus levels or inadequate land to properly utilize their manure can receive cost-share assistance of up to $18 per ton to transport excess manure to other farms in accordance with an approved nutrient management plan, or alternative use facilities that can use the product safely. Harford County farmers interested in applying for grants through the Manure Transport Program should contact the Harford Soil Conservation District at 410-838-6181 x 3 or call the Maryland Department of Agriculture at 410-841-5864.
Crop Management School offers a 2½-day format with a variety of breakout sessions. Individuals needing training in soil and water, nutrient management, crop management, and pest management can create their own schedule by choosing from 5 program options offered each hour. Re-certification credits will be available for MD and PA pesticide applicators and for nutrient management consultants; CCA continuing education units will also be offered. Breakout sessions are limited to the first 50 participants in each session, and enrollment in the school is limited to 450 participants. Early-bird registration (before October 31) is $275; after that date, registration will be open until November 11 for $325. Registration must be completed online with a credit card. Group hotel rates are only guaranteed through October 19, so be sure to reserve early; call 410-524-7777 and identify yourself as a Crop Management School participant. For more details, hotel information, full program agenda, and online registration, visit tinyurl.com/crop13registration.

Save the date—mark your calendar now and plan to attend our 2014 Midwinter Meeting! The day’s program will feature talks from University of Maryland specialists regarding the latest issues and research on insects, pesticides, soil fertility, agricultural law, and more. As in the past, pesticide private applicator and nutrient applicator voucher re-certification credit will be available. Look for registration details coming this winter.

This year’s conference, sponsored by the Maryland Wood Energy Coalition, will build on the momentum of last year’s successes, including further discussion of new regulations that makes using wood as fuel in boilers to heat commercial and institutional buildings legal. Examples of real-life projects, applications, and opportunities will be provided. Speakers will address new advances in residential wood heat, improvements in the wood stove grant program, and how to get projects initiated that will grow the wood energy industry. This is a unique opportunity—don’t miss out! Registration cost is $45 per participant and includes continental breakfast, lunch, and meeting materials. The event is approved for 4.5 CFE Category 1 Continuing Education Credits from the Society of American Foresters. The meeting agenda and registration form are available online at www.agroecol.umd.edu. For questions or additional information, contact Nancy Nunn (410-827-6202, ext. 128 or nnunn@umd.edu) or Pam Thomas (301-432-2767, ext. 315 or pthomas@umd.edu.)