



2011

Greetings,

What else could happen? If the fullness of life was measured by the sum of your experiences, I would say Southern Marylanders have lived fully in the last 2 months. Southern Maryland has experienced a widespread drought, an earthquake, an isolated tornado, a hurricane and now widespread flooding. There couldn't be a better reminder that farmers are not in it alone, but partners with the earth and sky.

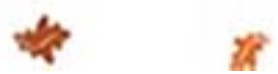
Farmers have faced a real hurdle this fall, with most crops getting pummeled by wind and rain, followed by fruit rot issues from the extended rains and flooding. I am pretty sure this will be a short pumpkin year. Fall brassica and cole crops have also struggled to remain in good stead with such wet feet. The corn crop is highly variable. I know everyone was hoping for a bumper year given the high input and commodity prices, but given the growing conditions the crop has fared fairly well. Grain quality will be a concern. The use of reels and other harvest aids is slow. Be careful and stay safe. Shortcuts can result in real cuts or worse when cleaning stopped up heads. Soybeans seem to be the bright spot with higher anticipated yields. We have found a new soybean viral disease in the state called Soybean Vein Necrotic Virus, but yields do not seem to be affected.

I want to thank everyone who participated in the farm to school events. We had a great time educating children about the role of agriculture and importance of eating healthy. Thanks also go out to everyone who participated, volunteered and/or attended the area County fairs. We have a tradition of great agricultural fairs in Southern Maryland, and this year was no exception. Mother Nature could not stop the festivities, even if it was a bit wet.

I don't know about you, but my life is full enough now. Let's hope for a drier fall and more normal conditions. After all, it's time for farmers to reap and sow.

Fall Calendar of Events

- October 26, 2011**
Pesticide Applicator Recertification
- November 9, 2011**
Optional Review Session for Pesticide Exam
- November 15-17, 2011**
Maryland Mid-Atlantic Crop Management School
- November 16, 2011**
Pesticide Exam
- November 30, 2011**
Southern Maryland Crops Conference
- December 8, 2011**
Pesticide Applicator Recertification
- December 9, 2011**
Loveville Produce Auction 7th Annual Meeting
- 2012 Dates:**
- January 18, 2012**
Southern MD Forage Conference
- February 8, 2012**
Southern MD Vegetable Conference





Pesticide Applicator Recertification

October 26, 2011
St Mary's Agriculture Services Center



Plan to attend recertification training if your license expires December 31, 2011. The next classes will be held on **October 26, 2011, from 6:30-8:30 p.m. at the St. Mary's Agriculture Services Center or December 8, 2011, from 6:30-8:30 p.m. at the Charlotte Hall Library.** Space is limited, if you miss one of these programs--don't worry—further recertification dates will enable you to keep your old license without having to take the exam again. Please call ahead to register at 301-475-4484.



Private Pesticide Applicator's Course and Exam

November 9, 2011- Review Session
November 16, 2011- Exam

Need a Private Applicator Pesticide License?

Anyone who is interested in acquiring their private pesticide applicator's license, plan to attend our next scheduled workshop to be held on November 9, 2011. The optional workshop will help prepare you to take the exam the following week on November 16, 2011. Please call the office at 301-475-4484 to register and obtain the necessary study materials. The training class will be held at the St. Mary's Agriculture Services Center in Leonardtown, MD from 6:30 p.m. to 8:30 p.m. The actual exam will be held the following week on November 16, 2011, same time; same place.



Maryland Mid-Atlantic Crop Management School

November 15-17, 2011
Princess Royale Hotel in Ocean City

The **Mid-Atlantic Crop Management School** will be held at the Princess Royale Hotel in Ocean City on **November 15-17, 2011.** Individuals seeking advanced training in soil and water, soil fertility, crop production and pest management will have an opportunity at hands on, intensive sessions that also provide continuing education units (CEU's) for the Certified Crop Advisor (CCA) Program. You may also register on line at:

<http://www.psla.umd.edu/extension/crops/home.cfm>



Southern Maryland Crops Conference

November 30, 2011
Baden Volunteer Fire Department
Waldorf MD
4:00 – 8:30 p.m.

The Southern Maryland Agents would like to invite everyone to join with our University specialists to have your questions answered about crop production and pest control at the Southern MD Crops Conference on **Wednesday, November 30, from 4:00 to 8:30 p.m.** at the Baden Volunteer Fire Department in Waldorf, MD.

Attendance at this conference will satisfy the requirement for the Private Pesticide Applicator Recertification & Nutrient Management Voucher. Please call the Charles County Extension Office at 301-934-5403 to register. Make plans now to attend.



Loveville Produce Auction 7th Annual Meeting

December 9, 2011

The Loveville Produce Auction invites all interested farmers and buyers to attend the annual meeting on December 9, 2011. The meeting will be held at 25730 Dove Point Road. Take Rt. 247 (Loveville Road) to Parsons Mill Rd. Dove Point Lane is ½ mile on left. More information will be forthcoming.



Southern Maryland Hay & Pasture Conference

January 18, 2012
**Izaak Walton League Conference Facility,
Waldorf, MD**

Make plans to attend the Southern Maryland Hay & Forage Conference, January 18, 2012, at the Izaak Walton League Conference Facility in Waldorf, MD. Topics will be presented covering all aspects of hay and pasture production. The programs will address key issues and concerns facing hay and pasture producers. The conferences also features displays and exhibits by numerous agribusinesses. Attendees will be able to obtain information on seed, fertilizer, equipment, fencing, etc. needed for hay and pasture production and management.



More detailed program information on the Southern Maryland conference will soon be available on the Web at: <http://www.mdforages.umd.edu> or through local county Extension and NRCS/Soil Conservation District offices in Maryland. Pesticide recertification and nutrient voucher credits available. Register by calling the St. Mary's County Extension office at 301-475-4484.



Southern Maryland Vegetable & Fruit Conference

February 8, 2012
Bowie Elks Lodge
8 a.m. to 4 p.m.

Make plans to attend the Southern Maryland Vegetable and Fruit Production Meeting on Wednesday, February 8, 2012. This year the meeting will be held at the Bowie Elks Lodge from 8:00 a.m. to 4:00 p.m.

Speakers will provide IPM updates and present on a broad range of production topics. Also meeting sponsors will showcase their products and services, and state vegetable organization leaders will be present to recruit and answer your questions.



Full conference details will be announced soon. Please call the St. Mary's County Extension Office at 301-475-4484 to register.



Did you know.... that leaves change colors in the fall because of decreasing amounts of a pigment called chlorophyll?

Chlorophyll, which converts air and water into food for plants, gives leaves their bright green color. The colder fall temperatures decrease chlorophyll production.



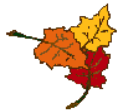
Have Any Unwanted Pesticides? Pesticide Disposal Program Available

After a four year absence, the Maryland Department of Agriculture will once again offer an unwanted, unusable and/or obsolete pesticide disposal program. This program has operated "regionally" in the past. However, due to budget cuts, the Department has not had a program in place since 2007.

The 2011/2012 program will be offered throughout Maryland. This is a **FREE** program for any agricultural operation (farm, forest, nursery, greenhouse, etc.). As we cannot guarantee if and when this program will be offered again, MDA urges anyone with unwanted or unusable pesticides to take advantage of this year's program.

Registration forms are available on-line at www.mda.state.md.us/pdf/regform.pdf or by calling the Pesticide Regulation Section office at 410-841-5710. Registration forms will also be available, in limited quantities, at each University of Maryland County Extension Office.

For more information, please contact Rob Hofstetter at the number above or via email at hofsterj@mda.state.md.us.



"Growing Grapes for Wine Program" - 2012 Grant Announced

The Southern Maryland Agricultural Development Commission (SMADC) is once again offering grants to farms in Anne Arundel, Calvert, Charles, Prince George's and St. Mary's counties to aid in the purchase of wine grape vines. These funds are being made available as a continuation of SMADC's Growing Grapes for Wine Program which was established to encourage and support the development of a competitive wine industry in Southern Maryland.

The grant program offers matching funds for the purchase of grape vines compatible with the region. The Grapes for Wine Program is offered together with the University of Maryland Extension which will provide ongoing training and production expertise.

To be eligible an applicant must own or be co-applicant with the owner of at least 5 acres of land currently in agricultural use. The site must be suitable (determined by a UME educator) and the soils tested for nematodes. Soil samples must be taken this fall and sent to a laboratory for analysis. The grant application and guidelines detail procedures and provide a list of laboratories.



Existing grape growers and new growers may apply, unless the farmer is a prior recipient of a SMADC Farm Viability Grant awarded specifically for vineyard enhancement. Past participants of the Growing Grapes for Wine cost-share program are eligible.

Awards will be made based on satisfactory test results and pending availability of funding. Grant applications are due to SMADC by December 2, 2011.

To download the grant application and guidelines visit <http://www.smadc.com> or contact SMADC staff at: (301) 274-1922 Ex. 1



Maryland Department of Agriculture Offering Free Grain/Forage Testing Program

The Maryland Department of Agriculture (MDA) is offering a free testing program for Maryland farmers for nitrate and prussic acid in forage and for aflatoxin in corn grain. Prussic acid poisoning is mostly associated with sorghum and related species. The program is a cooperative effort between MDA and the University of Maryland Extension. Testing is done by the MDA State Chemist's Section.

Farmers can bring their samples to their nearest UME office so that UME can assist them with paperwork and make sure the samples and paperwork are properly prepared. MDA will pick up the samples daily (Monday through Friday) and fax results to farmers usually within 24 hours.

Instructions for preparing and packing samples for testing are below. Use one Sample Identification and Information Sheet for each sample submitted. Place samples in a plastic bag and refrigerate or freeze as soon as possible, especially if held overnight, and keep on ice during transport. Each separate field should have its own paperwork and sample.



Taking corn samples for aflatoxin analysis:

- Collect 12 ears of corn from different areas of the field to get a representative sample.
 - Keep cold as described above.
- (Note: Shelled corn already harvested can also be tested. Collect a 1 quart representative sample and bring to the Extension office)

Taking silage samples for nitrate and prussic acid analysis:

- Collect at least 10 stalks from different areas of the field to get a representative sample.
- Chop silage up into 6" pieces and thoroughly mix samples together.
- Prussic acid samples must be kept frozen at all times to prevent volatilization of prussic acid (hydrocyanic acid).



Nutrient Management Update – Fall 2011

Francis Warring, Nutrient Management Advisor

Now is the perfect time to update your Nutrient Management Plan for the next cropping season! It is important to note that fall seeded crops must be covered by your plan. These include fields that are enrolled in the Maryland Cover Crop Program. Below is a list of items that will need to be addressed in order to update your plan:

1. **Soil tests** must be less than three years old.
 - Fields with differing crop or nutrient application histories, as well as differing soil types should be sampled separately.
 - Please keep in mind that Pastures should be sampled as well, even if no nutrients are currently being applied.
 - We have plenty of soil sampling supplies here in the office that you may use.
2. **Manure samples**, if applicable, must be taken every year, and analyzed before manure is spread.
 - If manure is collected from animals and spread onto crop or pastureland, samples of that manure must be analyzed before spreading.
3. **Animal units**, if applicable, should be documented.
 - Type of animal, average weight, confinement time, and bedding material.
4. **Field histories** should be updated, showing crops from previous years.
 - Multiple cropping scenarios can be planned for. A plan can be developed that covers many different crops that you may want to plant in each field!
 - Manure/Sludge, as well as Legume histories should be documented.
5. **Yield Goals** for every crop should be developed based on prior yield records.
 - If you are unsure, or have no realistic yield goals developed, we can help!

Plans should be updated **every year**, depending on the type of operation. So if you are ready to have your plan updated, or if you are unsure, please give me a call at (301)-934-5403, or email me at fwarring@umd.edu and I will do my best to meet your needs. I look forward to hearing from you and wish everyone a wonderful fall season.

New Soybean Disease Confirmed in Maryland Growers may want to scout fields now

A new viral disease of soybeans has been confirmed in Maryland. The disease, called Soybean Vein Necrotic Virus was diagnosed in mid- September from soybean samples from St. Mary's County. Samples have also been submitted from Washington and Caroline Counties. Observations throughout Southern Maryland indicate that the virus is fairly widespread. Key points to understand- the effect on yield is not yet fully understood, however you should not expect drastic yield reductions this late in the season, 2. Spraying foliar fungicides will not help- this is a viral disease most likely vectored (spread) by the thrip insect. There are apparent differences in variety susceptibility- so the best thing to do now is to take a few hours and scout fields of varying varieties to determine which varieties are susceptible. Keep in mind that just because you don't see it in a particular variety doesn't mean it's not susceptible- there may not have been any thrips in that field.

Below is a summation of thoughts from Arv Grybauskas, UMD Extension Field Crops Plant Pathologist

Nancy Gregory of the University of Delaware Plant Clinic sent out an alert through the NPDN (National Plant Diagnostic Network) that there might be a new virus on soybeans showing up in our region. It has not yet been confirmed, however, the pictures of the symptoms are consistent with samples or pictures I have seen from around Maryland. I have to admit I initially considered the symptoms to be either signs of feeding injury from insects, or early symptoms of Cercospora leaf blight. So far the presumptive diagnosis based on symptoms alone is of soybean vein necrosis virus (SVNV). This is a relatively new problem first identified in 2008 by Dr. Ioannis Tzanetakis of the University of Arkansas. Since then it has been detected and confirmed in Arkansas, Illinois, Kansas, Kentucky, Missouri and Tennessee. We have samples or pictures of samples from Caroline, St. Mary's and Washington counties. Since the alert, New York has also indicated that they have samples with similar symptoms. If these all turn out to be SVNV then this new disease has spread rather rapidly, under the radar.

What is known about SVNV is that it is related to what are known as tospoviruses. These are thrips-transmitted viruses. The best-known example belonging to this group is tomato spotted wilt virus, which is a very serious problem. One characteristic of this group is that the virus is persistently transmitted, meaning the virus can be transmitted by the thrips for a long time. Many plant viruses are only picked up by their vectors and are able to be transmitted for a short period, but this group of viruses replicates in the vector as well as the plant and thus the vectors can transmit the virus for long periods. This facilitates moving the virus over long distances and could explain the rapid spread. It is not yet known how serious this disease can be with regard to affecting yield. However, the pictures and descriptions from Arkansas and Illinois indicate that significant leaf necrosis and possible early defoliation can occur. The advanced stages of this disease look a lot like a leaf spot caused by *Phyllosticta*, a fungal disease that is generally considered a minor problem in our area. It is even possible that as the necrotic leaf spots develop as a result of SVNV that organisms like *Phyllosticta* are secondary invaders that colonize the dead or dying tissue. This could mean we had SVNV for a few years and missed it because we found *Phyllosticta* associated with the lesions.

It would be very useful to establish whether or not we actually have SVNV, how extensive it is, and whether or not we are getting the advance stages of the disease that would indicate possible losses due to the disease. We have verbal agreement with Dr. Tzanetakis that he would be willing to run some samples to confirm the presence of the virus. There is no commercially available test for this virus that we know of. Please examine some soybean fields for symptoms. Send a sample to the Plant Clinic or contact me. See if you can estimate the percentage of plants that display symptoms and typically how extensive it is in the canopy, for example, is it on the upper leaves only, or just the middle or lower canopy leaves, or is it throughout the canopy. Lastly if you can determine the cultivar this would be useful. There is some indication that there are varietal differences. A couple of good websites with information are:

<http://arkansasagnews.uark.edu/5423.htm>
<http://agronomyday.cropsci.illinois.edu/tour-soybeannecrosis.html>

Photos from Arkansa (Courtesy of: Dr. Tzanetakis):



Notice the necrotic tissue associated with the vein, especially in the terminal leaflet, Reportedly as the disease progresses it becomes like the second photo. Photos from Delaware (Courtesy of: Nancy Gregory):

Photos from Caroline County (J. Lewis) and St. Mary's (Ben Beale):



If the MD and DE samples turn out to be SVN, they appear to be earlier stages of

2011 Lambing & Kidding School

**Saturday, November 19
9 a.m. to 4 p.m.
Chesapeake College
Wye Mills, Maryland**



The 2011 Lambing & Kidding School will be held Saturday, November 19 at Chesapeake College in Wye Mills, MD. University of Maryland Extension holds a Lambing & Kidding School every other year in a different part of the state.

Each Lambing & Kidding School has featured a small ruminant veterinarian as the main speaker. This year's main speaker is Dr. Susan Kerr from Washington State University. Her participation is being sponsored by Northeast SARE.

In addition to being an Extension Educator, Dr. Kerr holds a Doctor of Veterinary Medicine degree from Cornell University. She will give presentations on obstetrics and neonatal care. She will also demonstrate how to perform a basic necropsy on a neonatal lamb or kid.

While the school is appropriate for any sheep and goat producer, it is ideally suited to persons who have been raising sheep and/or goats for less than five years.

This year's Lambing & Kidding School will feature a separate educational tract for youth. Youth sessions will be mostly hands-on. They will include a parasitology lab, skills lab, wet lab, and a skillathon practical.

In the parasitology lab, youth will learn how to set up fecal samples and determine fecal egg counts. In the skills lab, they will learn how to dock, castrate, disbud, eartag, deworm, inject, and tube feed lambs and kids. In the wet lab, youth will dissect neonatal lambs and/or kids.

A limited number of adults may participate in the youth sessions.

Other speakers will include Susan Schoenian, Sheep & Goat Specialist at the University of Maryland's Western Maryland Research & Education Center; Jeff Semler, Agriculture Extension Educator in Washington County; Chris Johnston, 4-H & Youth Educator in Queen Anne's County Maryland; Dr. Nelson Escobar, Small Ruminant Specialist at the University of Maryland Eastern Shore; and Dr. Dahlia O'Brien, Small Ruminant Specialist at Delaware State University.

The registration fee is \$45 per person. Additional family (or farm) members are \$35. Youth registration is \$25. Full registration includes the program, morning refreshments, a hot lunch, and a resource notebook or jump drive. The resource notebook and/or jump drive may be purchased separately for \$10 (\$15 for people who cannot attend the school).

The registration form and payment (checks made payable to University of Maryland) should be mailed to 2011 Lambing & Kidding School, Western Maryland Research & Education Center, 18330 Keedysville Road, Keedysville, MD 21756.

Questions pertaining to registration should be directed to Pam Thomas at (301) 432-2767 x315 or pthomas@umd.edu. Questions pertaining to the program should be directed to Susan Schoenian at (301) 432-2767 x343 or sschoen@umd.edu.

The registration deadline for the school is November 9.

For the registration form and more information, please visit

<http://www.sheepandgoat.com/programs/11LKSchoolFlyer.pdf>



Soil Compaction Management at Harvest Time

Authors: Sjoerd Duiker, Penn State Soil Management Specialist

From the C.O.R.N. Newsletter 2011-33; The Ohio State University



Farmers are eager to harvest soybeans and corn but the fields are very soggy in much of Ohio. The danger of causing soil compaction is therefore high. Let's look at ways to increase the resilience of the soil to compaction, to avoid compaction, and ways to alleviate compaction.

1) Make soil more resilient to compaction.

Resilience is a term used by ecologists to describe the ability of an ecosystem to resist perturbation or disturbance by resisting damage and recovering rapidly. Soil can be made to resist compaction by eliminating tillage, increasing organic matter content, and maintaining a living root system in the soil for as much time as possible. Any long-term no-till farmer will testify to the fact that tires do not sink as deep as in tilled soil. Soil that was tilled this spring or even in last year's spring, will be more susceptible to compaction than a soil that has been in no-till continuously. Increasing organic matter content will also increase the resistance of the soil to compaction, because the spongy humus maintains porosity and also increases aggregate stability. Finally, a living root system at time of traffic would increase the resistance of the soil to compaction. While it is uncommon to see living root systems at harvest time, some exciting work is being done at Penn State University with establishment of cover crops into standing corn or soybean, combined in one pass with herbicide application and side-dressing. Resilience also includes the concept of kicking back after disturbance. To make soil kick back from the effects of compaction, it is important to try to establish a cover crop after harvest. The roots of the cover crop will help alleviate compaction that has been caused.

It is also a practice that helps increase biological activity in the soil – the mycorrhizae and bacteria growing in the rhizosphere of cover crops produce glomalin and other organic substances that improve aggregation of the soil. If manure is available to give the cover crop a boost and supply additional food for soil microbes that will also be helpful. It should also be noted that without soil disturbance and leaving soil covered with mulch smaller and larger organisms such as nightcrawlers will be much more prevalent and active than if soil is tilled and left bare. Therefore, fall moldboard plowing should be avoided especially, and even chisel plowing in the fall will reduce the activity of these organisms that can help soil kick back from the effects of compaction while also improving drainage of the soil.

2) Avoid compaction

It is advised to stay off the field until conditions are fit for traffic, but sometimes we never reach those conditions! At least, try to avoid creating ruts. If you have different soil types on the farm, start harvest on the better-drained soil types first. Although this is a bit early yet, a little frost in the soil will also help to make the soil much less sensitive to compaction. I assume all of you Ohio farmers are aware of the great importance of increasing tire foot print by using flotation tires, duals and reducing tire pressure because key research in this area was done by Bob Holmes and Randall Reeder at OSU. Their research also showed that tracks can do a very good job as long as the weight of the vehicle is equally distributed along the whole length of the track. The effectiveness of flotation tires is all determined by inflation pressure – inflated at high pressures they will cause much more compaction than at low pressures. Check inflation tables to determine what the minimum allowable pressure is for your tires. If you need to get new tires, ask your equipment representative about tires that cause less compaction. Radial tires have a bigger footprint than bias-ply tires and are therefore recommended to avoid compaction. As far as harvest traffic: Keep those trucks with road tires out of the field. Axle load also plays a role, with axle loads above 10 tons being able to cause subsoil compaction that will be virtually permanent and very difficult to alleviate. Also, try to limit repeated traffic to certain areas of the field. Although these will be more compacted, it will be possible to correct compaction here without having to do remedial action on the whole field.

3) Correct compaction

When compaction has been caused, remedial action may be needed. This is especially the case if ruts have been created. If no ruts are seen it is probably not needed to do tillage – instead plant a cover crop to use the living root system to alleviate compaction. Ruts need to be smoothed out to be able to plant the next crop successfully, however. If ruts are uniformly distributed across the whole field, some type of tillage may need to be done on the whole field. In many cases, however, ruts are localized and only need localized repair. Remember the negative consequences of tillage! It will be necessary to till deeper than the depth of compaction. Shallow ‘vertical tillage’ tools that only do tillage in the top 4 inches will not be sufficient to manage soil compaction. Very tough shanks are needed that will penetrate instead of bounce on top of the compacted layer. New subsoilers can do maximum fracturing without doing much surface disturbance with straight or bent-leg shanks. Parabolic shanks do much more surface disturbance and will need more secondary tillage for seedbed preparation and are therefore not preferred. Deep tillage may be what you could use in the fall, and then come back in the spring to smoothen the field up with a field cultivator or disk harrow. However, it may be tough to find the right soil moisture conditions this fall for deep tillage. Deep tillage should fracture the soil and it therefore needs to be performed in relatively dry soil. With the temperatures coming down now the soil is not likely to dry out sufficiently, and it may be necessary to wait until spring to do deep tillage. Deep tillage can be performed in a living cover crop in the spring – if you use the modern, low disturbance subsoilers. So let subsoiling not deter you from planting a cover crop. The more tillage you do, however, the more you set yourself up for increased compaction problems in the future.



Be on the Lookout for Palmer Amaranth

Editors note:

The below article from Bill Curran with Penn State does a good job of summarizing the potential problems associated with Palmer Amaranth. It is very difficult to differentiate between Palmer Amaranth and Redroot pigweed in the vegetative stage. The seed head and flower are different, so this is a good time to scout fields and check for this weed. There are suspected patches of palmer Amaranth with resistance to the ALS herbicides such as Pursuit in St. Mary's County. There have been reports of "pigweed" that is resistant to Glyphosate, which I suspect may be glyphosate resistant palmer amaranth. So keep your eyes out for this weed. It is very hard to control once established. Some characteristics to look for include rapid growth rates of up to 2 ½ inches a day, good drought tolerance, very high seed production, and separate male and female plants. Palmer Amaranth has very long terminal panicles (flowering structures) that are up to 1-2 feet in length.

*The Virginia Tech Weed Identification Guide (http://www.ppws.vt.edu/scott/weed_id/amapa.htm) provides the following summary of differences between other pigweed species. Identifying Characteristics: Dense, compact terminal panicles and relatively tall plants with alternately arranged leaves with petioles that are longer than the leaves. Palmer amaranth is often confused with other similar pigweed species. However, no other pigweed species have terminal panicles that reach 1 1/2 feet in length. Additionally, the terminal spike of palmer amaranth is much smoother and narrower and less spike-like than either Redroot Pigweed (*Amaranthus retroflexus*) or smooth pigweed (*Amaranthus hybridus*). The leaves of palmer amaranth are also without hairs and have prominent white veins on the undersurface unlike those of redroot pigweed. These species may also resemble Common Lambsquarters (*Chenopodium album*) in the cotyledon stage, however common lambsquarter's cotyledons often have a mealy gray cast and the first true leaves are alternate, unlike any of the pigweed species.*

Keep an Eye Out for Palmer Amaranth

W.S. Curran, Penn State Weed Specialist

<http://extension.psu.edu/field-crop-news/archives/2011/september-20>

Most of you have been hearing about a weed problem to our south and to the west called Palmer amaranth or pigweed. Palmer amaranth (*Amaranthus palmeri*) is an annual pigweed that infests much of the cotton belt and some areas to the west. Of course its recent claim to fame is the wide spread glyphosate resistance that is associated with this species. The reason that I'm writing about this weed today is that it is getting closer to Pennsylvania and only a matter of time before we see this species in our "neck of the woods". This past summer, Mark VanGessel at the University of Delaware reported some infestations in Delaware and Maryland and Christy Sprague at Michigan State University reported that a grower in Southwest Michigan had Palmer pigweed back in 2010. I had always hoped that this more "southern" pigweed would not survive in our more northern climate, but I suspect that this is just wishful thinking.



Images of Palmer amaranth. Flowering plants in the field and in a pot and a close up of leaves and petioles. Note the long length of the petiole.

To bring you up to speed, Palmer amaranth is a member of the pigweed family that looks somewhat similar to its cousins smooth and redroot pigweed which are both present in our area.

Palmer amaranth is native to the southwest region of the US, so it does fairly well under dry-hot conditions. Palmer pigweed grows rapidly particularly during hot weather where it can grow several inches per day. Palmer amaranth is highly competitive in most summer annual field crops and the glyphosate resistant biotype has spread rather quickly over the last several years. Unlike redroot and smooth pigweeds, Palmer amaranth is dioecious meaning that male and female flowers do not occur on the same plant, so cross pollination is necessary for successful seed production: for seed to develop, pollen from a male needs to be carried by the wind to a female plant. Wind dispersed pollen is believed to be a primary avenue for the spread of the resistant populations. University of Georgia research has shown that pollen from glyphosate resistant males can travel at least 1000 feet in the field to fertilize susceptible females. Seeds can also move resistance around, which is probably how it would be introduced to our region. Seeds are known to be spread on equipment, in flowing water, by animals, and I suspect contaminated crop seed or hay. Palmer pigweed females can produce almost half a million seeds per plant and under optimal conditions; a single plant can produce up to a million seeds.

In the U.S., Palmer amaranth has become the poster child for weed resistance; biotypes have been found that are resistant to the dinitroanilines such as Treflan and Prowl in South Carolina, the ALS inhibitors (Pursuit, Raptor, Harmony, etc.) in numerous states, the photosynthesis inhibitors including atrazine in Texas, and most recently glyphosate in Alabama, Arkansas, Georgia, Illinois, Louisiana, Michigan, Mississippi, Missouri, North Carolina, Tennessee, and Virginia <http://www.weedscience.org>. Mississippi and Georgia are reporting biotypes that have multiple resistance to both ALS inhibitors and glyphosate. Some useful links to learn more about

Palmer amaranth as well as some of the other pigweeds includes:

<http://mulch.cropsoil.uga.edu/weedsci/HomepageFiles/PalmerBiologyEcology.pdf>
<http://www.extension.iastate.edu/Publications/PM1786.pdf> <http://www.ksre.ksu.edu/library/crps12/s80.pdf>



On the Lighter Side...

A reliable weather forecast:

If a cow pie has frozen by Labor Day, it will be a cold fall. If there's snow on the roof, there will be some on the ground, too.

Questions to make you think:

What is black when you buy it, red when you use it, and gray when you throw it away?

Answer: Charcoal

A farmer has two plastic pails filled with clear water. How could you take the water from the pails, put it into one watering trough and still tell which water came from which pail?

Answer: Freeze the water

Buttercup and Daisy were chatting as they chewed the cud.

Daisy: "Moo... have you heard about this mad-cow disease?"

Buttercup: "Yes, sounds nasty."

Daisy: "I'm glad I'm a chicken."

Later that Day....

"Daisy, have you heard?"

"Moo. Heard what Buttercup?"

"There's going to be a Farmers Market at the town hall next week."

"That's good, let's sell our farmer and see if we can get a better one."



A woodland in full color is as awesome as a forest fire, in magnitude at least, but a single tree is like a dancing tongue of flame to warm the heart.

~Hal Borland

All the best for a wonderful Fall Season!

Benjamin E. Beale, CED Extension Educator
UME – St. Mary's County
Agriculture & Natural Resources

Francis Warring, Nutrient Mgmt. Consultant
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Remember to bookmark the University of Maryland Extension-Charles County website at www.charles.umd.edu for updates and cancellations.



Important Note...

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