

Ag Notes

Harford County Newsletter

UNIVERSITY OF
MARYLAND
EXTENSION



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University of
Maryland Extension

Harford County
Agricultural Center

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M—F 8:00 a.m.—4:30 p.m.

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Hello, Harford County!

If you recall, myself, along with others in UME, conducted an agriculture needs assessment last year for the northwestern portion of the state—thank you to all who participated from Harford County! I wanted to share with you a brief executive summary of our results, found below.

The University of Maryland Extension (UME) conducted an agricultural needs assessment for the seven counties in western and northern Maryland in 2017. This survey will help UME understand issues concerning regional agriculture, identify agricultural and educational needs, and focus UME agricultural training and resources.

The survey was conducted in 2017 and included four sections: 1) industry priorities, concerns and viability, 2) research and education needs, 3) education and training preferences and 4) demographic and farm information. Results were received from 172 farmers through paper or online survey.

A third of the respondents report tilling 101-500 acres. This was followed by 25% reporting 51-100 acres and 20% reporting 0-10 acres. Fifty-three percent farm full time with 66% farming more than 20 years and 14% farming 11-20 years. The majority of responders report raising livestock (29%) and field crops (28%), followed by fruit and/or vegetables (13%). Many report farming in more than one of the commodity categories. Those responding to the survey were male (75%), non-Hispanic (100%) and white (96%). Over 58% of farmers were over the age of 55 with the majority being in the range of 55-64 (34%) and 65-75 (24%). The results for gender, ethnicity, race and age is consistent with data from the 2012 National Census of Agriculture.

Results from industry priorities and viability were predominately related to regulatory, legislative, and production topics. Those with the highest importance according to average include: Legislators understanding of agriculture production and its importance to the economy, Public understanding of agricultural production and its importance to the economy, Maintenance and protection of adequate agricultural land, and Farmer involvement in the legislative process and regulation development. Major farm concerns include loss of farmland due to urban encroachment and farm transfer to the next generation. Industry concerns include agriculture maintaining its viability and profitability in years to come and the public image of agriculture.

Survey respondents were asked about desired knowledge, education, and training they would like to receive. Soil science and increasing soil health, and current regulations and environmental laws ranked first in the list of critical education topics, followed by animal nutrition and feeding, use of records to improve financial decisions, and integrated pest management.

Educational preferences included half-day seminars or workshops, one on one education or consulting, and extension newsletters. Priority services by UME include sources of educational material, interpretation and assistance with agricultural regulations, research data from field and variety trials, and agricultural promotion and education to consumers and non-farmers. Moving forward, UME will continue to analyze the data and prepare a plan to respond to the requests and to meet the needs of farmers and landowners in the northwestern counties.

Until next time,

-Andy

Samantha Watters

University of Maryland, College of Agriculture & Natural Resources [press release](#)

UMD researchers have pulled together forty years of data to quantify the effects of Bt corn, a highly marketed and successful genetically modified corn variety, in a novel and large-scale study. Other studies have demonstrated the benefits of Bt corn adoption on pest management for pests like the corn borer in corn itself for years, but this is the first study to look at the effects on other offsite crops in North America. By gaining control of the corn borer population, this study shows significant decreases in recommended spraying regimens, pest populations, and overall crop damage not just for corn, but for peppers, green beans, and other important crops to North American agriculture. These benefits have never before been documented and showcase Bt corn as a powerful tool to combat pesticide resistance and advance the agricultural industry.

Bt corn was first introduced and adopted in the United States in 1996 and is a genetically modified organism, or GMO, that makes up over 90% of our current corn population. In this study, Dr. Galen Dively, Professor Emeritus and Integrated Pest Management Consultant in the Department of Entomology, and Dr. Dilip Venugopal, UMD Research Associate, use data from 1976 - 2016 to look at trends twenty years before and twenty years after adoption of Bt corn. "Safety of Bt corn and other GMOs has been tested and proven extensively, but this study is about effectiveness of Bt corn as a pest management strategy, particularly for offsite crops or different crops in different areas than the Bt corn itself," explains Venugopal.

"This is the first paper published in North America showing offsite benefits to other host plants for a pest like the corn borer, which is a significant pest for many other crops like green beans and peppers," says Dively. "We are seeing really more than 90% suppression of the corn borer population in our area for any crop, which is incredible."

Using numbers from pest traps to estimate the population and examine the recommended spraying regimens for pests like the corn borer, Dively and Venugopal observed significant reductions in the population, with much less spraying occurring over time. "There would be no recommendation to spray for the corn borer given the current population, and this paper can trace that back to Bt corn adoption," explains Dively. "What's more, by looking at the actual pest infestations and damage on actual crops over forty years of data, we took it a step farther to see the benefits on all sorts of crops and the declines in the actual pest population. We are able to see the results in theory and in practice on actual crops and in the real pest population over a long stretch of time."

"The next steps would be to quantify the millions and millions of dollars in economic benefits we see here in a very concrete way to show money and time saved on spraying and pest management, crop damage reduction, as well as consideration of the environmental benefits. The important thing here, however, is to think of Bt corn as one of many tools in an integrated pest management tool box. The benefits are undeniable, but must always be weighed against many other options to use a broad range of tools and maximize benefit while minimizing any potential risks," explains Venugopal.

Dively concludes, "This study ultimately shows the importance of evaluating GMO crops beyond the field that is being planted. These products and the new advances coming down the pike have the potential to suppress major pest populations just like Bt corn has. This is just the beginning, and we need to be quantifying these effects. I am excited by these results and encouraged for future work."

Their paper is published in the Proceedings of National Academy of Sciences and can be found [here](#).



Early Season Scouting For Wheat Diseases

Andrew Kness, Agriculture Extension Agent
University of Maryland Extension, Harford County

Spring is a busy time on the farm that demands a lot of different tasks; one of the tasks that can be overlooked is scouting your small grains now for the presence of diseases. For a few select diseases, scouting now could pay off later in the season.

Most of the wheat in Northern Maryland is between Feekes 4-5 (green up) and much has received its first shot of nitrogen. This is the perfect time to scout your fields for foliar diseases like powdery mildew and the leaf blotch complex diseases.

Powdery mildew (Figure 1) is one of the more common diseases of wheat in our region and it's important to keep tabs on it early in the growing season. The fungus that causes powdery typically colonizes wheat in the fall when the plants are small, then goes dormant inside the plant over the winter. Green up is the perfect time to scout for powdery mildew because you will be able to see the powdery white tufts of fungus growing on your wheat plants (Figure 1). These signs are typically observed close to the crown deeper in the canopy and/or on plants that are in double-planted pinch rows or headlands. The disease is often more severe on over-fertilized fields, too. It's good to scout for the presence of powdery mildew now, but **do not treat** until the wheat begins to joint. Powdery mildew will not begin actively growing until the wheat plant comes out of its winter slumber and begins rapid growth (jointing, Feekes 6), and fungicides have little to no activity on dormant fungi, especially the DMIs. Instead, hold off on a fungicide application until your second nitrogen application at jointing. If you only notice a few sporadic instances of powdery mildew now, you may not even need to treat at jointing, especially if weather conditions are dry and hot (powdery mildew requires moist, humid, and mild temperature conditions to grow). If you decide to hold off on a Feekes 6 application, you'll still want to keep an eye on it, especially as the flag leaf emerges. The top three leaves, especially the flag leaf, contributes to nearly all of your yield.

Also, know your wheat variety because there are significant differences in resistance and tolerance. Data from [University of Maryland](#), [University of Delaware](#), and [Virginia Tech](#) can help you determine your wheat's susceptibility. In addition, varieties containing the pm6 resistance gene have broken down and are no longer providing adequate resistance here in the mid-Atlantic region, so consider those varieties susceptible.



Figure 1. Powdery mildew growth on lower leaves/stems of a wheat plant (red arrow). Image: Mary Burrows, Montana State University, Bugwood.org

Similar management should be taken against the leaf blotch complex diseases. If you find them now, hold off on a fungicide application (if at all) until at least Feekes 6. And again, protecting the flag leaf is your main priority, so if the disease is slow to progress due to inadequate weather conditions or host tolerance and the disease is present at low levels, then a fungicide application at Feekes 6 may not be warranted at all. Also, the fungicides we commonly use to manage Fusarium head blight/head scab (DMI, group 3) will also work on powdery mildew and the leaf blotch complex; so our fungicide applications at early flowering typically do a good job at keeping these diseases from progressing to the flag leaf. However, if you see these foliar diseases creeping up closer to the flag leaf prior to head emergence and flowering, then you may want to consider an additional early fungicide application other than your flowering application to manage head scab.

Another factor to consider when using additional fungicide applications is cost. Recent [research in Delaware](#) found that a two pass program at Feekes 6 and 10.5.1 did **not** yield a return on investment until wheat prices exceeded \$5.00/bu.

For help with identifying diseases on wheat, you can send samples to the [University of Maryland Plant Diagnostic Lab](#), or call your local Extension Agent.

Equine Nutrition Seminar



Mark your calendar for the 2018 Equine Seminar at the Baltimore County Extension Office on 1114 Shawan Rd., Cockesville, MD. This year's seminar will focus on equine nutrition. Dinner will be served starting at 5:30, with the program beginning at 6pm. Topics include: maximizing your horse's nutrition for optimal health; gastric ulcers; and hay and forages. The \$10 per person registration includes dinner; if you have any dietary restrictions, please let us know by April 17. Call the Baltimore County Extension Office at (410) 887-8090 to register. For more information, contact Erika Crawl (etaylor3@umd.edu, (410) 887-8090) or Andy Kness (akness@umd.edu, (410) 638-3255).

May 1

5:30-8:30 PM
Baltimore County
Extension Office

Pasture Walk

May 15

6:00-7:30 PM
Baltimore County
Agricultural Center

Join us for a hands-on walking educational program through University of Maryland's Rotational Grazing Site at the Baltimore County Agricultural Center and Farm Park located at 1114 Shawan Rd., Cockesville, MD. Participants will get a chance to speak with and ask questions with University of Maryland Extension agriculture agents and Baltimore Soil Conservation District experts in pasture management, nutrient management, and best management practices. This spring's pasture walk will focus on: weed and pasture plant identification; fertility; and pasture management. There is no charge for this program, but please register ahead of time by calling the Baltimore County Extension Office at (410) 887-8090. For questions, contact Erika or Andy listed above.



Worker Protection Standards: Are You Covered?

*Sarah Everhart, Legal Specialist, Agriculture Law Education Initiative
University of Maryland Frances King Carey School of Law
Posted to [Maryland Risk Management Education Blog](#)*

This article is not a substitute for legal advice.

The Worker Protection Standard ("WPS") is a federal regulation issued by the Environmental Protection Agency ("EPA") in 1992 under the Federal Insecticide, Fungicide and Rodenticide Act to protect farmworkers from the effects of exposure to pesticides. The WPS requires agricultural employers to take certain protective measures to reduce the risk of illness or injury to workers and handlers resulting from exposures to pesticides used to produce agricultural plants on agricultural establishments (i.e., farms, forests, nurseries and enclosed space production facilities such as greenhouses).

For the purposes of the WPS, workers are generally

those performing hand-labor tasks in pesticide-treated crops, such as harvesting, thinning, and pruning. Handlers are usually those in direct contact with pesticides such as mixing, loading, or applying pesticides.

EPA revised the WPS on November 2, 2015 to implement stronger protections for those in contact with pesticides. While most of the revised WPS requirements became effective on January 2, 2017, the following three requirements went into effect on January 2, 2018:

1. Pesticide safety training for workers and handlers must cover the revised and expanded content (40 C.F.R. §§170.401 (c) and 170.501 (c)).

2. Posted pesticide safety information must meet the revised standards, and
3. Handlers must suspend applications if workers or other people are in the application exclusion zone.

The WPS requires agricultural employers and commercial pesticide handler employers to take steps, outlined in more detail below, which can be broken down to duties to inform and protect workers and handlers about pesticide safety, and to **mitigate** exposures which occur.

Inform

- ♦ Provide annual pesticide safety training for workers and handlers.
- ♦ Provide access to specific information for workers and handlers, including: pesticide applications on the establishment; safety data sheets for pesticides applied on the establishment; and pesticide safety information (poster) which includes emergency information.
- ♦ Provide access to labeling information for pesticide handlers and early-entry workers.
- ♦ Notify workers about pesticide-treated areas so they can avoid inadvertent exposures.
- ♦ Allow for exchange of information between agricultural employers and commercial pesticide handler employers.

Protect

- ♦ Keep workers and other people out of areas being treated with pesticides.
- ♦ Keep workers and other people away from pesticide application equipment (out of the application exclusion zones) during applications.
- ♦ Require handlers to suspend applications if workers or people are near pesticide application equipment (in the application exclusion zone).
- ♦ Keep workers out of areas under a restricted-entry interval (REI), with a few narrow exceptions.

- ♦ Protect early-entry workers who are doing permitted tasks in pesticide-treated areas during an REI, including special instructions and duties related to correct use of personal protective equipment.
- ♦ Monitor handlers using highly toxic pesticides.
- ♦ Provide and maintain required personal protective equipment to handlers.
- ♦ If a respirator is required by a pesticide label, provide the handler with a medical evaluation, fit test and respirator training.

Mitigate

- ♦ Provide decontamination supplies including a sufficient supply of water, soap, and towels for routine washing and emergency decontamination and eyewash systems for certain handlers.
- ♦ Provide emergency assistance by making transportation available to a medical care facility in case of a pesticide injury or poisoning, and providing information about the applicable pesticide(s).

Trainers who provide WPS training must either be a certified pesticide applicator or complete an EPA-approved Train-The-Trainer Course. A table which provides examples of types of WPS training required for workers or handlers can be found [here](#).

Organic farmers and other farmers who choose not to use Restricted Use Pesticides may not realize WPS requirements apply to them. **Any** farmer who uses WPS-labelled products, which **includes** many organic pesticides, is responsible for following label instructions and adhering to the WPS.

In Maryland, the Maryland Department of Agriculture's [Pesticide Regulation Section](#) offers technical assistance in implementing the WPS.

For more information on the WPS, check out the EPA's Pesticide Worker Protection Standard "[How to Comply](#)" [Manual](#) and the [Quick Reference Guide](#).



Is Diversification Your Ultimate Goal?

Ginger S. Meyers, Agriculture Marketing Specialist
University of Maryland Extension

Farmers are repeatedly advised to diversify into new enterprises in order to generate additional income. It's not unusual for me to visit a farm that grows vegetables, fruit, has some livestock for direct marketing meats, chickens for eggs, offers agritourism events and farm tours, and is considering how to enter the craft beverage market. If diversification is really the business model for success, what does that mean for farmers?

In many ways, farmers have long been diversifying their product base; making cheese from their own milk, fiber crafting their fleeces, offering various sausage flavors from their farm raised pork, and making value-added products from their produce and fruits. But it seems that in order to generate new income streams, the pace and type of product diversification has become more varied, costly, and time consuming.

Diversification can provide significant income patching, but as with any new business venture, they require additional financial and human resources, management time, and in most cases, new skill sets. These are not bad attributes in themselves unless collectively, they detract from the sound management of the core production enterprise. Diversification may require hiring additional help. You and/or family members may not be able to take on more tasks. The cost of hiring and training new staff needs to be factored into the costs-benefit analysis of starting a new enterprise. The other limiting factor is time. You've only got so much time and competence in certain areas.

The USDA, NASS 2012 Census of Maryland Agriculture reports Maryland has 12,300 farming operations. Only 1,753 of these operations report

sales of more \$2590K annually. The average net cash income per farm reported that year was \$38,920. These figures indicate that there are probably a lot of Maryland farms that are struggling to be agriculturally viable, so they have to look for alternatives. Large farms can specialize their production and maximize their economies of scale, but smaller operations may have to look for ways to change their business and look to diversification that compliments their core business. Adding some layers to your production may be a good choice so you can offer eggs shares in your veggie CSA. But, adding substantial numbers of larger livestock to that same operation so you can offer meat shares, would require a major management change and investment. While extensive diversification won't fit every farm, there are still income opportunities from strategic enterprise diversification that should include a multi-layer marketing strategy.

- ♦ What additional products or services can you market to your existing customer base or which ones will attract additional customers for your core products?
- ♦ Do you have an entrepreneurial spirit that is willing to take on additional business risks?

There are many different opportunities out there, but your choices will come down to your willingness to look at diversification as a benefit to your wider business. If your new enterprise doesn't knit to your core business, then you need to consider how long it will take for the new diversification to be self-sustaining. That will become the real goal.

More information on value-added products and diversification can be found on the University of Maryland's [Ag Marketing](#) page.



Federal Government Takes Action to Define Milk

*Peter Coffey, Small Farm & Alternative Agriculture Extension Agent
University of Maryland Extension, Carroll County*

The omnibus spending bill signed in March to fund the government for the remainder of Fiscal Year 2018 includes language instructing the FDA to enforce labeling standards affecting dairy terminology. The language in the bill comes from the Dairy Pride Act (DPA), a bill introduced last year in both chambers of Congress to compel FDA to act against plant-based products marketed with words that are associated with animal dairy products. In other words, the Federal Government has now defined "milk" as the product of a dairy animal.

This is similar to a bill recently passed in the European Union, which prevented companies from using terms like "soymilk." This legislation will also affect products using other dairy food names such as "cheese" and "yogurt" that are defined in the Code of Federal Regulations and cited in the congressional bill. The language in the omnibus bill gives FDA 180 days from the date of enactment of the measure to issue guidance for how the dairy standards will be implemented and enforced. At this time no announcement has been made about what the exact guidelines will be, or a timeline for enforcement.



Dairy

Harford County Ag Center Open House

May 5

12-3:00 PM

Harford County

Agricultural Center

3525 Conowingo Rd.

Street, MD 21154

Everyone is invited to the Harford County Agricultural Center open house on Saturday, May 5 from noon 'til 3 PM. The buildings and grounds will be open for you and your family to tour. Meet faculty and staff from University of Maryland Extension—Harford County, as well as staff from the Harford Soil Conservation District, Maryland Department of Agriculture Forest Pest Management, Harford County Farm Bureau, and Harford County Government. There will be free food while it lasts and a ribbon cutting ceremony with Harford County Executive, Barry Glassman at 1:00 PM. We hope to see you there!

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General Interest

Great resources are just a click away!

Andrew Kness

Andrew Kness
Extension Agent,
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Dates to remember

6 April. Online Nutrient Applicator Voucher Recertification Training. 4-6 PM. To register for this online event, contact the Anne Arundel County Extension Office at (410) 222-3906 or [register online](#).

11 April. Women in Agriculture Webinar: Legal Implications of Pesticide Drift. 12PM. extension.umd.edu/womeninag.

13 April. Online Private Pesticide Applicator Recertification Training. 4-6 PM. To register for this online event, contact the Anne Arundel County Extension Office at (410) 222-3906 or [register online](#).

16 April. Update Your Nutrient Management Plan Workshop. 1-4 PM. Frederick County Extension Office. Register by contacting Paul Shipley at (301) 405-2563 or prs@umd.edu.

20-21 April. Sheep Sheering School. 1942 Uniontown Rd.,

Westminster. 9:30-3:30 PM. \$100. Register [online](#) or contact mdsheepshearingschool@gmail.com.

25 April. Women in Agriculture Webinar: Small Flock Management. 12 PM. extension.umd.edu/womeninag.

28 April. 10 AM - 4 PM. Maryland Day. UMD Campus.

1 May. Equine Nutrition Seminar. Baltimore County Extension Office. 5:30-8:30 PM. \$10/person. Contact Erika Crowl at etaylor@umd.edu or (410) 887-8090 to register.

5 May. 12-3 PM. Harford County Ag Center Open House. 3525 Conowingo Rd. Street, MD 21154.

5-6 May. Maryland Sheep & Wool Festival. 8:30-6 PM. Howard County Fairgrounds, West Friendship, MD. Admission \$5.

15 May. Pasture Walk. Baltimore County Ag Center. 6-7:30 PM. Call (410) 887-8090 to register.

April 2018