

# The Grain Store

Winter 2011 Volume 17 Issue 1

A Joint Publication of the Maryland Grain Producers Association and the Maryland Grain Producers Utilization Board

## Farmers Show Significant Achievement in Environmental Practices

The USDA Natural Resource Conservation Service (NRCS) released a draft report in October on the Conservation Effects Assessment Project (CEAP) report for the Chesapeake Bay. The CEAP project is part of a nationwide assessment that is being rolled out in ten regional reports. Key statistics showed:

- 96% of all the Bay cropland acres have some level of conservation
- 88-90% of farmers have adopted conservation tillage
- 87% of the acres in the watershed have achieved "T" (soil loss considered acceptable)

The final report will include a simulation with a cover crop on the available cropland (that without pasture or a winter grain). This simulation will enable Maryland to more accurately assess the results in the report in real terms, given the considerable commitment that Maryland farmers have made in growing cover crops. *The final report will document that Maryland leads the efforts in the six-state Bay watershed to improve nutrient loss from agricultural lands.*

*(continued page 4)*

## Maryland's Watershed Implementation Plan moves to Phase II

The Environmental Protection Agency has given final approval to Maryland's Phase I Watershed Implementation Plan (WIP) and the state now moves into the development of Phase II, which will require allocating the necessary nutrient reductions into measurable actions at the local watershed level. Although not a function of county governments, each watershed plan will be prepared within the county boundaries and the local jurisdictions will be very involved under state leadership.

*(continued page 4)*

## Message from Outgoing MGPA President

A lot has happened in my two years serving as President of MGPA. When I signed up as a willing vice-president in 2007, having a couple of years to learn more about the association seemed like a long time. Those two years rushed by - but not as quickly as my two years serving as the MGPA President. What a great group of farmers you have elected to serve on the Board. They bring a wealth of experience and knowledge to the table and their ability to look outside of our small agriculture circles has enabled us to discuss and address critical business and environmental issues that effect us all.



While the Association is actively representing you, it is the many voices of individual farmers that policy makers listen to the most. We face a challenging future with Maryland once again the pilot in determining environmental policies in relation to those we share the watershed with. This is a critical time for agriculture to voice our needs in keeping our farms viable as the Watershed Implementation Plan is determined at the local level. We have a good story to tell, and with the new data coming available, we will have the numbers to prove it.

We have many friends across the nation who are following the actions of Maryland as they know they will soon be facing the same issues. The National Corn Growers Association (NCGA) has been an active partner in addressing proposed national policy issues and their support is greatly appreciated. I would like to especially recognize and thank Jamie Jamison who has been a very involved member of the NCGA Board of Directors. I appreciate his guidance as I move on to represent Maryland at NCGA.

Finally, thank you to all our growers for giving me this opportunity to serve you. I look forward to working with our incoming president, Jason Scott, in continuing our work together for a successful future.

*Chip Bowling*

## Nutrient Management Reporting

This year, MDA will be offering two online options to submit the annual implementation report (AIR). Farmers may download and complete a "fillable PDF form" from MDA's website or complete the AIR through NuMan Pro software. Either way, the data will be added into a database so farmers can begin to demonstrate a baseline for nutrient usage. As the TMDL process develops, this improved reporting system will show the anticipated decreased in fertilizer use per bushel of crop produced, using county average yield and current fertilizer usage. As genetic improvements continue to provide new traits such as drought tolerance, Maryland farmers will continue to improve their nutrient efficiency. With this reporting, improvements will now be documented.

New to the AIR this year, farmers using organic nutrients or sludge will be asked to calculate and report quantities of nitrogen, phosphorous, and potassium applied rather than just gallons or tons.

## 2010 a Competitive Year for Scholarship Program

In its thirteenth year, the Maryland Grain Producers Utilization Board awarded four students with scholarships of \$4,000 each in its commitment to support the next generation of agricultural professionals. 2010 recipients are all active in their communities, honor roll students, and strong in their desires to advance the agricultural industry in Maryland. Grace Garst, Walkersville High, is pursuing a career in agronomic plant research at the



Grace Garst



Greg Gaver



Wes Miller



Travis Moore

University of Maryland. Greg Gaver, Linganore High, is in his second year at the University of Maryland and Robert Smith School of Business Scholars, majoring in agriculture and resource economics. Wes Miller, Rising Sun High, attends Penn State studying animals science with minors in agronomics and ag business. Travis Moore, C. Milton Wright High, is majoring in agricultural engineering at Virginia Tech.

### MGPA MEMBERSHIP FORM

MGPA represents grain farmers in legislative and policy issues, conducts educational activities, and provides farmers pertinent information from the state checkoff board (MGPUB) and affiliated national associations for corn, wheat, barley and international trade.

**If you are a grain producer, membership is free! Your checkoff assessment will pay your MGPA dues. Just complete and return this form.**

To transfer these funds, please complete this form and return it to MGPUB. If you have requested a refund during the last year, please include a grain sales receipt for at least \$125 (\$50 for one year membership) on which a refund has not been requested. *Questions?* Contact Lynne Hoot at 410-956-5771 or email [lynnehoot@aol.com](mailto:lynnehoot@aol.com).

### MARYLAND GRAIN PRODUCERS ASSOCIATION MEMBER FORM

Complete the following and return to MGPUB, 53 Slama Road, Edgewater, MD 21037.

Forms without checks can be faxed to 410-956-0161. Please print or type.

Member's Name \_\_\_\_\_ Membership in (check one) Name   
Company

Farm/Co. Name \_\_\_\_\_ Farmer  Yes  No

Spouse's Name \_\_\_\_\_ Email \_\_\_\_\_

Home Phone (\_\_\_\_\_) \_\_\_\_\_ Business Phone (\_\_\_\_\_) \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Total Farm Acres \_\_\_\_\_ In Corn \_\_\_\_\_ Wheat \_\_\_\_\_ Barley \_\_\_\_\_ Oats \_\_\_\_\_ Milo \_\_\_\_\_ Canola \_\_\_\_\_

Referred by MGPA Member \_\_\_\_\_ (optional)

Membership:  3-year membership for \$125  New  
 1-year membership for \$50  Renewal (Member No. \_\_\_\_\_)

GRAIN PRODUCERS: This is a partial refund form for grain checkoff to pay MGPA membership dues. I hereby certify that I am a bona fide grain producer and that I contribute a minimum of \$125 to the checkoff program in a 3-year period (a minimum of \$50 for a 1-year membership).

NON-PRODUCERS: Enclosed is a check for the membership fee noted above.

Signature \_\_\_\_\_ Date \_\_\_\_\_

### MGPA & MGPUB BOARD

#### MGPA & MGPUB Regional Members

(Regional members serve on both boards)

Kevin Anderson (Region 1)	410-651-0022
Vacant (1)	
Robert Garrett (2)	410-924-3147
Paul Spies (2)	410-829-2902
Tom Gannon (3)	410-758-2370
Marion Wilson (3)	410-758-1545
Lawrence Meeks (4)	443-293-2835
Vacant (4)	
Chip Bowling (5)	301-259-4397
Bubby Norris (5)	301-769-3870
Steve Ernst (6)	410-842-3926
Walter Gordon (6)	301-371-7605

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President - Marion Wilson  
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#### MGPUB Voting

Chip Bowling - NCGA Director  
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Robert Hutchison - NBIC Director  
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#### MGPA 2011 Officers

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Patrick McMillan - MDA  
Ronald Mulford - UMD (retired)

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[www.marylandgrain.com](http://www.marylandgrain.com)

Maryland Grain Producers Association &  
Maryland Grain Producers Utilization Board  
53 Slama Road, Edgewater, MD 21037-1423

## Tregoning Recognized with Miller Award

Doug Tregoning was presented with the Dr. James R. Miller Award in recognition of his initiative, creativity, and success throughout his career with the University of Maryland Extension. He created the popular 4th grade field trips, "Close Encounter with Agriculture", educating tens of thousands of students, while his cable program, "Rural Montgomery County", brought agricultural issues to Maryland homes with his interviews of local farmers. Doug was instrumental in developing the Montgomery County Grain Marketing Club. His educational programs have been very successful focusing on grain marketing, farm management, agronomic crops and public outreach education.



*MGPA President Chip Bowling presents Doug Tregoning with Dr. James R. Miller Award*

## New Combined Crop Insurance Policy will Benefit Maryland Farmers in 2011

Combo-policy for 2011 for crops traded on BOT (grain crops) combines three insurance plans into one policy (yield, Revenue (CRC) and Revenue with Harvest Price Exclusion (IIP)). This change results in common protection building blocks such as APH yields projected prices and unit choices for all plans under the Combo policy. The change first applies to fall seeded wheat and barley and will apply to corn, soybeans and grain sorghum. The policy enrollment/policy change deadline is 3/15/11.

Producers with most 2010 policies will automatically be converted to the new policy at similar benefits as the old policy. Contact your agent for details on other policy options to assure you have the right coverage options to manage the risk for your crops. There is no change in the amount of Federal premium subsidy that applies directly to farmers.

**Projected Price:** The price that determines your guarantee and premium cost is determined and published after the close of the discovery periods.

Board of Trade Futures Contracts on which FCIC prices are based				Projected Price Discovery Period		Harvest Price Discovery Period	
Crop	Commodity Exchange	Contract Commodity	Contract Month	Beginning Date	Ending Date	Beginning Date	Ending Date
Corn	CBOT	Corn	December	Feb 1	Feb 28	Oct 1	Oct 31
Grain Sorghum	CBOT	Corn	December	Feb 1	Feb 28	Oct 1	Oct 31
Soybeans	CBOT	Soybeans	January	Feb 1	Feb 28	Nov 1	Nov 30
Winter Barley	CBOT	Corn	July	Aug 15	Sep 14	Jun 1	Jun 30
Winter Wheat	CBOT	Wheat	September	Aug 15	Sep 14	Jul 1	Jul 31

View prior year prices at [www.rma.usda.gov/tools/](http://www.rma.usda.gov/tools/) (select "Price Addendums" and the preferred crop year). CBOT prices are utilized to calculate indemnities under the revenue protection plans. Therefore, the actual price you receive from selling your crop is not a factor in indemnity calculations for revenue protection plans. Enterprise units (all acreage of the crop in the county is in one unit) are available for yield and revenue insurance plans, and can reduce your insurance premium cost by about 50%.

## The Sorghum Checkoff - Investing in Sorghum's Future

The National Sorghum Checkoff is a producer-funded organization dedicated to the improvement of the sorghum industry through investment in research, promotion and information.

There is an urgent need for new sorghum hybrids. Cold and drought tolerance traits are being researched so that hybrids with these traits can be developed and commercialized. This research has found a germplasm for cold tolerance that will allow sorghum to germinate and thrive at soil temperatures as low as 50°F.

Post-emergent grass and weed control herbicide technology is being tested in field plots. Best management practices are being developed to help growers get the most out of the new herbicide once it becomes commercially available.

An interactive tool is being developed which provides interactive calculators to help growers make decisions on topics such as the best possible market place, market place range, end-user opportunities, and the return on investment when planting sorghum.

Inclusion models are being produced to allow ethanol plant managers to assess their potential profits by using sorghum. Feeding trials are underway on the performance of beef and dairy cattle fed wet distillers grains with solubles with the goal to prove sorghum is nutritious for cattle, which could increase the value of sorghum distillers grains being sold directly from ethanol plants and result in a higher value of sorghum.



Livestock feeding guides highlighting the benefits of grain and forage sorghum were developed and are being distributed throughout the livestock industry.

Sorghum's gluten-free, high antioxidant characteristics are providing ample opportunity for the crop in the food and baking industries. The Checkoff is working with milling companies to commercialize sorghum as a viable food product.

Expanding both domestic and foreign sorghum market opportunities has been a high priority. Internationally, the checkoff continues to work with the U.S. Grains Council to increase sorghum exports into countries.

For more information, visit the Sorghum Checkoff at [www.sorghumcheckoff.com](http://www.sorghumcheckoff.com).

## Watershed Improvement

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The Phase I WIP has reduction levels allocated to agriculture and a menu of actions to meet the agricultural goals. It is important that farmers get involved in the development of the next phase to ensure that the actions allocated to the farm community are achievable and maintain viable farming operations that are not set at an economic disadvantage to our peers across the nation. For those farmers familiar with the process used to develop the Tributary Strategies, a similar process will be used to develop the agricultural data with the soil conservation districts taking the lead.

As many of the Best Management Practices (BMPs) identified to meet the goal fall into the category of "production BMPs", rather than "structural BMPs", it is important that farmers, Extension and crop consultants bring their production expertise to the table. Some of the BMPs that improve nutrient efficiency include variable rate application, use of PSNT, manure incorporation/injection, nitrogen injection, irrigation, slow release fertilizer, GreenSeeker™, split/side-dress application, and precision agriculture. These BMPs are preferable to the concept of reducing fertilizer application as they provide the potential for increased rather than decreased yields. The agricultural BMPs used to meet the goals are essentially those identified last year by the Maryland Department of Agriculture as the state's two-year milestones. Several "production BMPs" listed above do not have an efficiency rating so they are not as yet included in the Bay model. It is anticipated that once these BMPs are counted, Maryland farmers will be able to demonstrate significant achievement towards the goal.

Of interest in the Addendum of Revisions is new language stating that Maryland will explore new measures and mandatory BMP options versus mandate cover crops on manure acreage should goals not be met, which provides the state with much greater flexibility. For details, visit [http://www.mde.state.md.us/programs/Water/TMDL/TMDLHome/Pages/Final\\_Bay\\_WIP\\_2010.aspx](http://www.mde.state.md.us/programs/Water/TMDL/TMDLHome/Pages/Final_Bay_WIP_2010.aspx).



## SECRETARY'S MESSAGE

I am extremely proud of Maryland's grain farmers for coming forward and planting close to 400,000 acres of cover crops this fall. You have set the bar. I hope the program worked for you and that you will continue to maximize your cover crop acreage. Cover crops will play an important role in how Maryland meets its WIP requirement. Thank you for your participation.

*Earl F. Hance, Secretary of Agriculture*

## Farmers Show Significant Achievement

*(continued from page 1)*

With the final report USDA is expected to address several key points that MGPA voiced in their comments to NRCS.

1) **The BMP data is outdated.** This is a significant factor for Maryland where farmers have been moving aggressively to install BMPs and improve nutrient efficiency, especially with the increased acreage of cover crops since 2006. The CEAP report was based on farm surveys and cost-shared practices data from 2001 to 2006, with much of the farm data collected early in the process. Being a national project, NRCS has used the same baseline and rules for farms across the country and does not have the funding to bring numbers up to date.

2) **The report summary failed to point out some of the positive findings from the assessment.** Most people will not read the full 153-page report and instead will rely on the summary for key information. As a result, the media failed to report the positive results and instead highlighted a report statement that Baywide, 81 percent of cropland requires additional nutrient management to reduce the loss of nitrogen or phosphorus. Delving deeper into the report however, the report shows that in the Upper Chesapeake, where 75% ( $\pm 10\%$ ) of Maryland's cropland resides, farmers have accomplished a great deal more.

3) **The definition of "adequately treated" is an extremely high standard and that**

**falling short by as little as 0.1% results in being "inadequately treated".** The new nutrient efficiency programs introduced by NRCS to reach this high standard did not become available to farmers until after the report data was collected. These programs have been readily adopted by farmers and include manure injection, variable rate nutrient application, promotion of the pre-side dress nitrogen test (PSNT), etc.

4) **The data varies significantly from the Bay Model.** The most important outcome of the report is that it provides an accounting of actual on-farm BMP data which is significantly different than what is used in the Chesapeake Bay model. The Agricultural Nutrient Policy Council (ANPC), a new agricultural organization with support of MGPA and representation of most national agricultural organizations including NCGA, funded a study by LimnoTech to compare the two sets of data. Should the CEAP data prove more accurate, then farmers in the Bay watershed are much closer to meeting their goals than the Bay model would suggest for phosphorus and sediment. ANPC is seeking to reconcile the differences between models.

Both the USDA Conservation Effects Assessment Project report and the LimnoTech report are available at MGPA's website, [www.marylandgrain.com](http://www.marylandgrain.com).

## Watershed Implementation Plan Workshops

Regional workshops have begun around the state to begin implementing Phase II of the Watershed Implementation Plan (WIP) over the next year. During Phase II, the Total Maximum Daily Load (TMDL) numbers assigned to the state will be broken down to the county level. This process will allow local governments, Chambers, builders, homeowners and farmers to know what must be accomplished in their local communities - and how much that might cost - in order to meet the WIP TMDL goals. As the process moves forward, farmer involvement in these discussions is critical.

## The Future of Nutrient Trading

Farmers have been installing best management practices (BMPs) on their farms to protect natural resources for many decades. In the near future, good stewardship may become an opportunity to increase farm profit margins rather than a cost of doing business. Maryland's newly approved Watershed Implementation Plan (WIP) allows the trading of nutrients between point and non-point sources who need to purchase them from a marketer who can demonstrate their ability to reduce nitrogen, phosphorus or sediment entering the Bay. If a farmer can install a new BMP such as a cover crop, or use new equipment such as a manure injector or GreenSeeker™, and demonstrate the amount of nutrients saved - this becomes a saleable commodity and may become a new business opportunity for farmers.

Before a farmer can sell nutrients or sediment, a baseline must be met which has been established as the level of conservation adequate to meet the Total Maximum Daily Load (TMDL) level for the farm. A farmer can establish credits if he currently meets this baseline level using the Maryland Department of Agriculture's Nutrient Trading Tool. This web-based tool is not for the faint of heart; it involves going field by field and entering the farm operation onto a geo-synchronized mapping system (using Google Earth), showing where buffers and other BMPs are installed, including cropping patterns and the nutrient management regime. Having completed all this work, a farmer will not only know if his operation meets baseline and if he can trade, but if the operation does not meet baseline, he can experiment with options to see what needs to be done to meet it.

Once the data has been installed into the nutrient trading tool, the farmer can also experiment to see what improvements can be made to make trades. The data entered into the tool is totally confidential. The tool can be used by any farmer to provide peace of mind as to the current status of

Does the buzz about Facebook, Twitter, YouTube, and other online communities really matter to your farm? Absolutely!

Today's community isn't happening across the fence, at the end of the driveway, or even in Main Street coffee shops. Time

constraints and generational transitions have led to the rapid growth of online communities where millions of people go to get "expert" advice on issues and the marketplace.

Nationally-known "advocate" Michele Payn-Knoper conducted this training for MGPA last July. Back by popular demand, Michele returns to conduct

## Social Media Training

**March 1, 8:00 am -12:30 pm**  
Frederick Co. Office of Economic Development, *Frederick*

**March 1, 4:00 - 8:30 pm**  
Higher Education and Conference Center, *Aberdeen*

**March 2, 9:00 am - 1:30 pm**  
Wye Research and Education Center, *Queenstown*

these workshops with the assistance of Mike Haley, farmer and Vice-President of AgChat Foundation.

Participants will become familiar with the major online tools to use in business, identify ways to counteract misinformation, and develop an action plan to get

started on social networks in a matter of minutes in this hands-on training.

Workshop, materials, and lunch or dinner are provided by MGPA. A \$25 reservation fee is required which will be refunded at the workshop. For details or to register, visit [www.marylandgrain.com](http://www.marylandgrain.com) or contact Laurie Adelhardt at 410-705-3700 or [PR@marylandgrain.com](mailto:PR@marylandgrain.com).

the farm related to meeting the TMDL standards regardless of any interest in trading.

To get started, open a confidential account at website <http://md-stage.nutrientnet.org>. To input the data, documentation needed is the farm's nutrient management plan (showing the actual nutrients applied which may be lower than the nutrient management plan allows) and the soil conservation and water quality plan. Maryland's soil conservation districts have been trained on using the tool and can provide assistance through the process.

If the farmer decides he wants to trade, the tool walks him through the process and credits can be posted on the trading site. Trades will take place between the buyer and the seller. The Department of Agriculture will verify credits before they can be marketed, but the Department will not be involved in the sale or the contract. Once a farmer enters into a trade, a third party verifier will review the installed practice to ensure that it indeed functions as marketed. Contracts can be anywhere

from one to 15 years - and could be longer.

How much is a nutrient worth? As much as a farmer can get for it! In setting a price for a pound of nitrogen, phosphorus or sediment, a farmer should consider his alternatives using other cost share programs such as EQIP, MACS or the cover crop program. If it isn't a better deal to use private money, think seriously about it.

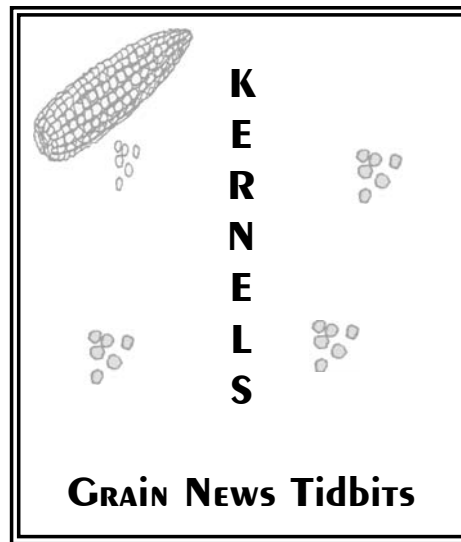
A lot of farmers don't like the idea of increasing their level of conservation so another sector within the Bay does not have to do their part. The cost of managing nutrients is far less expensive through farm operations than the typical urban program. Farmers can capitalize on this - or not. Over the next ten years, as the pressure increases to meet TMDLs, Maryland's farmers may actually be in a position to benefit financially for all their hard work to date - that decision rests with each farmer. The better educated a farmer can become on this issue the easier it will be to decide if this voluntary program fits into his operation or not.

## U.S. Agriculture Export Record Expected for 2011

The U.S. Department of Agriculture estimates record-setting ag exports for fiscal year 2011 at \$126.5 billion, up \$17.8 billion from 2010 numbers. The totals include a jump in the value of exported corn, based on higher grain costs, from just over \$9 billion to \$12.3 billion. On the rise are both grain and feed exports. USDA projects a total of \$35.4 billion, which include corn exports, accounting for \$12.3 billion of that figure. Forecasted corn is at 1.96 billion bushels. Asia accounted for more than half of the increase in demand. China is expected to be the second largest importer of U.S. farm goods, importing only \$500 million less than the largest market, Canada. Other major export markets include Mexico, Japan, the E.U. and South Korea.

## USDA Issues Deregulation for Roundup Ready Alfalfa

The U.S. Department of Agriculture issued a full deregulation for glyphosate tolerant alfalfa events J101 and J163 as published in the Final Environmental Impact Statement in December. This allows farmers access to technology that can improve farm efficiency and decrease the amount of chemicals needed for that crop, if they find that it is the best option for their farm.



## Discover the Trends Affecting Agriculture at Commodity Classic

The Commodity Classic provides corn, soybean, wheat and sorghum growers the opportunity to discover the trends and issues that will have the greatest impact on their industries this year in Tampa, Florida, March 3-5, 2011. Attendees will learn about the latest advancements in production agriculture, discover what government policies will significantly impact the U.S. farm industry and mingle with growers and industry representatives from across the country. Visit <http://www.commodityclassic.com> to register online or to find out more about this premier event for growers.

## NCGA Presents Online Social Media Tutorials

Today's growers have a whole new set of tools to use on the farm when it comes to communicating the importance of what we're doing, and it's vitally important that we know how to use these tools well and that we have them at hand when we need them. The National Corn Growers Association will hold a series of hourly webinars - online tutorials - to help members learn how to use some of these tools, such as Facebook and Twitter. This series of monthly webinars is provided free, courtesy of Pioneer Hi-Bred. The one-hour webinars will be held monthly, and then archived at the NCGA Online Learning Center. Register at [www.ncga.com/socialmedia](http://www.ncga.com/socialmedia).

## Growth Seen in Job Market

In 2010, AgCareers.com has hosted 31,025 jobs compared to 22,915 jobs in 2009, showing a growing trend in available agriculture jobs. Applicants can post resumes on the AgCareers.com database which offers searchable key terms such as job titles, locations, education, and more. As employers search, each candidate will have listed recent or current job title and employer; preferred industry and career types; along with the standard education, location, and date the resume was updated.

## Maryland State Corn Yield Contest Results

Sponsored by the National Corn Growers Association, the National Corn Yield Contest is in its 46th year. With 7,119 entries, the 2010 Yield Contest set a new participation record.

Nationally, the winners in eight production categories had yields averaging more than 301.721 bushels per acre, compared to the projected national average of 154.3 bushels per acre in 2010. Yields from first, second and third place farmers overall production categories ranged from 263.6 to 368.4 bushels per acre.

The national and state contest winners will be honored at the 2011 Commodity Classic in Tampa, Florida March 3-5. Contest winners will also be featured in a special edition of *Farm Journal* magazine.

CLASS	PRODUCER	HYBRID	YIELD
Irrigated	Michael Bostic, Church Hill	Pioneer 33N58	279.9541
	Keith Leaverton, Trappe	Channel 213-32VT3	266.2403
	Clearview Farms, Hurlock	Channel 210-57STXR2	258.5034
Non-Irrigated	Marion Wilson, Centreville	DEKALB DKC52-59	262.7266
	Sage Baker, Vienna	Pioneer 33N58	244.6794
	Grimmel Farms, Jarrettsville	Pioneer 33T57	234.5443
Ridge Till Irrigated	Michael Bostic, Church Hill	Pioneer 33D49	278.5455
	Tuckahoe Farms, Denton	DEKALB DKC63-14	252.3865
Ridge Till Non-Irrigated	Harrison Rigdon, Jarrettsville	Pioneer 34F97	256.8203
	Cathy Bostic, Church Hill	Pioneer 33N58	158.5114
No Till / Strip Till Irrigated	Mica Farms, Church Hill	Pioneer 33D49	275.5301
	John Windsor, New Market	Pioneer 33N58	258.0840
	Ed Appenzeller, Millington	DEKALB DKC61-69	256.6589
No Till / Strip Till Non-Irrigated	John Rigdon, Jarrettsville	Pioneer P1395HR	276.3186
	Lippy Brothers, Hampstead	Pioneer 33D49	260.0653
	Gary King, Princess Anne	Pioneer P1173HR	227.9886



# 2010 Annual Funding Report

## of the

# Maryland Grain Producers Utilization Board



What a great milestone to celebrate the Maryland Grain Checkoff's 20th Anniversary! For the past 20 years, the Checkoff has been, and continues to be, the place to get the latest and most applicable information to advance our industry. Maryland's Checkoff has given us the vehicle to obtain the right knowledge and tools for our local growing conditions from a trusted community with a common goal.... Improving Maryland agriculture.

We hope that our commitment to listening to growers, as well as our dedication to partnering with researchers and organizations, is on full display through this year's annual report. I invite you to take a few moments to browse through this report to learn about our grant projects, our focus areas and our financial picture. We strive each year in our annual report to be open and transparent about our operations and the stewardship of your checkoff dollars.

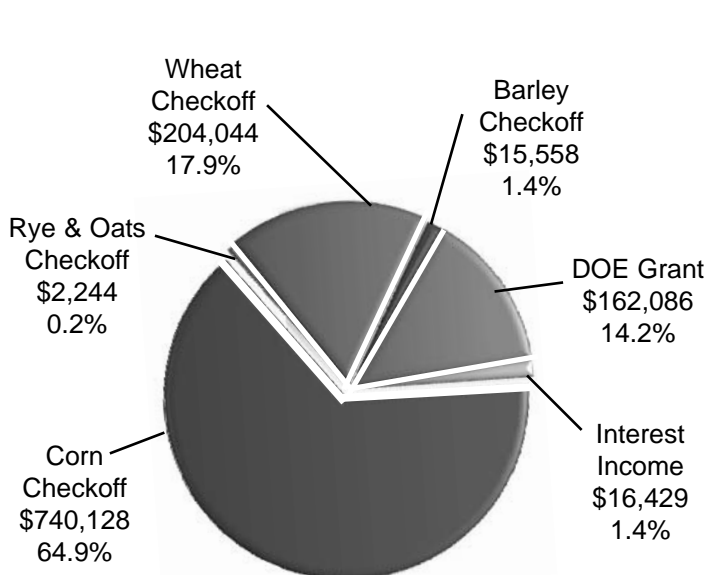
Under state law, a referendum is required every five years to reaffirm support for the Maryland Grain Checkoff Program. The referendum conducted in 2006 passed with a record-breaking margin of 95% and we hope to match that result again when we vote on July 29 of this year. It is rewarding to know that farmers recognize the importance of this program and how it ultimately improves the profitability on their farm with increased markets, improved farm practices, and promotion of not only our products, but how we are successful in protecting the environment, while providing the high quality food, fiber and fuel that our citizens demand.

Maryland growers deserve to have resources and science-based recommendations to meet the challenges we face today. The projects presented in this report reflect the feedback we received in prioritizing funding. We welcome your thoughts and recommendations as we work together to improve our industry in the years to come.

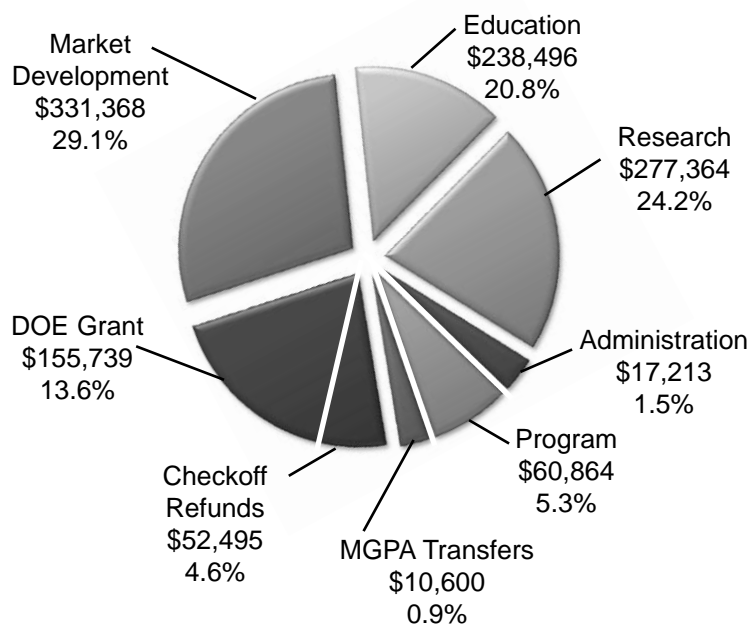
I would like to thank our directors for their input and guidance throughout the year. My thanks to you for your investment in the Checkoff Program and its bright future.

*Walter Gordon, Outgoing MGPUB President*

## MGPUB INCOME



## MGPUB EXPENSES



**President's Message**

## UTILIZATION OF AERIAL IMAGERY, YIELD MONITORS, AND ACTIVE OPTICAL SENSORS FOR VARIABLE RATE NITROGEN APPLICATION

JOSHUA MCGRATH, UNIVERSITY OF MARYLAND

In field trial research, the GreenSeeker™ performed as expected and appears to have reduced application rates below the standard farmer practice. As with previous years, it appears that the Virginia Tech algorithm that determines the nitrogen rate functions properly, reducing nitrogen inputs while maintaining yield. Based on 2009 results the nitrogen reference strips were expanded to a minimum of 100' which provided much better results from the algorithm. The research leads to the belief that yield could be increased even with the decreased nitrogen rate if it were not for applicator equipment limitations. Research will continue to evaluate this hypothesis and try to improve the delivery system.

The next step is to work with farmers to determine how to best integrate this practice into real production systems. Current trials show that obstacles to implementation appear to be:

- 1) Confidence in recommended nitrogen rates, which at times seem much lower than what the producer would generally apply. However, as researchers continue to evaluate the algorithm under varying conditions, results show that it is typically correct and "gut feelings" are actually wrong.
- 2) Some producers contend the nitrogen-rich and nitrogen-deficient reference strips are impractical and would be difficult to install - especially the nitrogen-deficient strips. However, research is showing that they are necessary to generate the most accurate nitrogen prescription.
- 3) Cost. However, if estimates of nitrogen savings are accurate it appears that equipment costs can be covered within only a few years depending on input costs, grain prices, and acres farmed.

## FARM STEWARDSHIP CERTIFICATION AND ASSESSMENT PROGRAM

MARYLAND ASSOCIATION OF SOIL CONSERVATION DISTRICTS

The Farm Stewardship Certification and Assessment Program (FSCAP) provides recognition to farmers who have met an agricultural conservation certification standard. Now in its second year of the project, the following activities have been accomplished:

- FSCAP farm sign created to be provided to each certified steward, FSCAP fact sheet, FSCAP web page and finalized content of Stewardship Notebook with information on new conservation programs and advanced conservation topics.
- Presentations to and approval from boards of supervisors of Washington, Carroll, Frederick and Baltimore County Soil Conservation Districts to contact FSCAP candidates and participate in FSCAP evaluations.
- RFP issued and commissioned two certified comprehensive nutrient management consultants to prepare 20 comprehensive nutrient management plans (CNMPs) for poultry farms in Somerset County.
- FSCAP evaluation team of Project Leader, MDA Nutrient Management Specialist and Soil Conservation District Planner have visited 17 farms since May and certified 12 conservation stewards. The remaining candidates have minor issues with their nutrient management or conservation plans and will soon be available for certification.

The response from soil conservation districts, FSCAP candidates and core partners has been positive in regards to progress made and recognition provided. Conservation farmers are willing to be evaluated; those who fall short of the certification standard are willing to make necessary improvements, and consequently, positive recognition and additional conservation efforts have been achieved in a voluntary program. The Chesapeake Bay Foundation has recognized the value and success of the program and has provided additional funding to expand the program. Plans for 2011 are to conduct 50 FSCAP evaluations and 40 CNMPs for poultry operations.

## NITROGEN AND PHOSPHOROUS FERTILIZATION ON A LONG-TERM NO-TILLAGE CORN, SOYBEAN, WHEAT ROTATION

MARK REITER, VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

No-till wheat, corn, and soybean rotations are commonplace in the Mid-Atlantic region and have evolved into continuous conservation tillage systems. Continuous no-tillage is a best management practice (BMP) for soil and nutrient conservation but comes with its own problems, such as nutrient stratification. Similarly, poultry litter amended with alum is a BMP strategy to mitigate phosphorus (P) issues in runoff, but crop P availability is unknown over long periods of time. A study on a Delmarva Bojac sandy loam was initiated to test long-term soil nutrient reactions. Results over time verify that poultry litter significantly increases soil test concentrations and is a valuable fertilizer source. However, it is not clear how long it will take to reduce high soil P in Delmarva soils or when alum bound P will be available for crop uptake. Research is continuing using Delmarva cropping rotations and soils to fully understand nutrient management in long-term conservation tillage systems.

## OYSTER RESTORATION PROJECT

CHESAPEAKE BAY FOUNDATION

The Oyster Restoration Program in Maryland works to rebuild populations of a keystone species in the Chesapeake Bay's ecosystem. Oysters filter the Bay's waters and in the process remove huge quantities of planktonic algae, microscopic plants that are overabundant in the Bay due to excess nitrogen. Currently, it takes the Bay's oysters over a year to filter the amount of water it once filtered in a few days. It is believed that increasing the oyster population will make significant strides in cleaning the Bay.

The Oyster Restoration Center utilizes four 3000-gallon setting tanks to produce a goal of ten million seed oysters annually, which will be planted on reef sites.

In 2010, 240 concrete reef ball reef modules were produced and placed on sanctuary reef sites in Maryland tidal waters. Planted sanctuary reefs are monitored on a rotating basis in the fall of the year to assess oyster status and maintenance/replanting needs.

**EFFECT OF NITROGEN RATE ON CORN HYBRID PERFORMANCE**

ROBERT KRATOCHVIL, UNIVERSITY OF MARYLAND

Corn is highly dependent upon nitrogen (N) with the response influenced by soil type, previous crop, manure history, weather, pest management, and tillage system. The availability of genetically modified (GM) hybrids with specific insect resistance (Lepidoptera species) and herbicide tolerance (Roundup and Liberty) have farmers asking if these hybrids also improve nitrogen use efficiency.

During 2008 through 2010, eight corn hybrids representing conventional (non-GMO) to Smart Stax genetic technologies were tested at five fertilizer nitrogen rates (0 to 225 pound/acre) under dry land conditions at eight Maryland sites (2-3 per year). The site-years provided different soil types and weather conditions.

As expected, there were overall performance differences between site-years that reflected the soil types plus timeliness and amounts of rainfall. No interactions between hybrids and nitrogen rates occurred indicating that each hybrid produced a similar response curve to the nitrogen rates. This response supported the use of models (mathematical formulas) to describe the corn yield response to N. In general, these models reflected the soil type and other growing conditions for a location. For two of the site-years, there were no yield differences across nitrogen rates. The first instance for this (2008) saw over 200 bushel/acre yield across the 5 nitrogen rates. This site obviously had high amounts of residual nitrogen present at planting and should have had the PSNT (Pre-Sidedress Nitrate Test) used prior to supplying sidedress N. The second occurrence (2010) was at a location that suffered from severe drought throughout the summer (less than 4 inches rainfall June-August).

For 6-8 site-years where a curvilinear yield response occurred, it fit this formula:

$$\text{Yield} = 67 + (0.755 * \text{nitrogen rate}) - (0.0018 * \text{nitrogen rate} * \text{nitrogen rate})$$

To understand this model, let's break it into its components. The 67 refers to the base yield attained at the 0 nitrogen rate. This is a reflection of the yield potential for the soil residual nitrogen present at planting plus the in season nitrogen added via mineralization of soil organic matter. Added to this base yield is 0.755

bushel of corn for every pound of nitrogen supplied, for example, 100 pounds of nitrogen fertilizer supplied to the crop, will produce 75.5 bushel of corn. The last part of the formula describes the potential yield reduction that can occur when the nitrogen rate exceeds the crop optimum.

Let's look at the example of 200 pound N/acre, an excessive amount.

$$\begin{aligned} \text{Yield} &= 67 + (0.755 * 200) - \\ &\quad (0.0018 * 200 * 200) \\ \text{Yield} &= 67 + 151 - 72 \\ \text{Yield} &= 146 \text{ bushel/acre} \end{aligned}$$

The general model indicates that the 0 nitrogen rate produced an average of 67 bushel/acre, but the yield actually ranged from a low of 25 bushel/acre to a high of 114 bushel/acre across the 6 site-years with the three sandy loam sites averaging 62 bushel and the 3 silt loam sites averaging 72 bushel. Upon further comparison of the sandy loam and silt loam sites, the second component of the model also was found to have slight differences. The sandy loam sites produced 0.59 bushel per pound of nitrogen while the silt loam sites produced 0.92 bushel for each pound of N. The models for these two soil types are:

$$\begin{aligned} \text{Yield (sandy loam)} &= 62 + 0.59 * N - \\ &\quad 0.0015 * N * N \\ \text{Yield (silt loam)} &= 72 + 0.92 * N - 0.0023 * N * N \end{aligned}$$

These models can be used to identify the agronomic (AONR) and economic (EONR) optimum nitrogen rates. Of course, the EONR is dependent upon nitrogen cost and corn price which means it varies as these two components change. The EONR for each soil type was calculated using nitrogen prices ranging between \$0.50 and \$0.75/pound and corn prices from \$3.50 to \$6.00/bushel.

$$\begin{aligned} \text{EONR for sandy loam} &= 125 \text{ pound to} \\ &\quad 180 \text{ pound nitrogen/acre} \\ \text{EONR for silt loam} &= 150 \text{ pound to} \\ &\quad 180 \text{ pound nitrogen/acre} \end{aligned}$$

*What does talk about models, AONR, and EONR really mean?*

It means there can be a number of factors to consider when determining the nitrogen rate to use for corn. However, a more simplistic look found that the application of the commonly used "rule of thumb" for determining nitrogen rate (one pound nitrogen per bushel of realistic yield goal) to both models determined that the nitrogen rate for both fell between the low and high nitrogen rates for both soil types. The sandy loam site's realistic yield goal is 130 bushel/acre. The silt loam site's realistic yield goal is 170 bushel/acre.

*And, what about the influence of genetic technology on nitrogen use efficiency?*

Since there was no hybrid by nitrogen rate interactions observed, the hybrids can be compared using their yield performance averaged over the nitrogen rates. That performance varied by site-year. The conventional hybrids performed either as good as or better than the genetically modified (GM) hybrids at 4-8 site years. For the most complex hybrids, the triple stacked and Smart Stax hybrids, they produced either as good as or better than the conventional hybrids (6-8 site years) and the more simply modified hybrids (corn borer and herbicide tolerant) at 7-8 site-years. This variable outcome indicates that hybrids are still best chosen based upon their stability across locations and years rather than the complexity of their genetic traits.

*The AONR identifies the point where the addition of nitrogen no longer produces a yield increase.*

*The EONR describes that point where economic response to additional nitrogen no longer occurs.*

*What about improvement in nitrogen use efficiency realized with genetically modified hybrids?*

At this time there does not appear to be any current trend indicating that is the case. However, seed corn companies are emphasizing improvement in nitrogen use so it is only a matter of time until hybrids with this trait/s will be available.

## GENETIC IMPROVEMENT AND TESTING OF SMALL GRAINS FOR MARYLAND

JOSÉ COSTA, UNIVERSITY OF MARYLAND

The main goal of the Maryland Small Grains Breeding Program is to develop high yielding, disease resistant, high quality wheat and barley varieties by using superior parental lines and introducing new germplasm from a variety of sources. The second objective is to conduct local testing of all the commercially available and experimental varieties of winter wheat and winter barley at several locations across Maryland to provide growers with the most unbiased and current performance comparisons.

Through this research, markers have been identified that can now cross with other lines to address specific issues to Maryland growers. The seed of the soft red winter wheat variety Chesapeake, formerly known as MV5-46, has become widely available. This variety is high yielding, has high test weight, and continues to have excellent resistance to powdery mildew in tests conducted in Maryland, Virginia, and Delaware. A project to develop a highly scab resistant variety using DNA markers is in the field evaluation stage and seed purification stage. State variety trials information will be posted at <http://www.mdcrops.edu>.

## ENHANCING MD GROWN SOFT RED WHEAT CONSUMPTION

LIANGLI YU, UNIVERSITY OF MARYLAND

This research promotes the production and consumption of value-added Maryland-grown soft wheat varieties for disease prevention and health promotion. Tasty whole-wheat foods including tortillas and apple pockets rich in health beneficial factors have been developed for improving human health. These recipes have been modified to optimize the bioavailability of their health beneficial components. In addition, it was shown that whole wheat extracts have anticancer potential by significantly suppressing human cancer cell growth. This research has generated several research articles and book chapters.

## FALLING NUMBER RESEARCH ON WHEAT (PRE-HARVEST SPROUTING)

JOSÉ COSTA, UNIVERSITY OF MARYLAND

This study evaluates the resistance level or susceptibility to field pre-harvest sprouting, measured by the Falling Number test, among varieties of soft red winter wheat currently grown in Maryland. This test is used by grain buyers to determine the baking quality of the grain.

The Falling Number test was evaluated among samples of soft red winter wheat from the 2009 and 2010 MD state variety test harvested at the Wye. In 2009 and 2010, conditions for harvest were relatively dry and thus there were no locations that were exposed to field sprouting. Samples were taken at the normal ("early") harvest time and then taken 40 days after ("late" harvest) so they would be exposed to weathering and sprouting. Falling number tests were conducted on all samples at the USDA-ARS, Soft Wheat Quality Laboratory in Wooster, Ohio.

Detailed results from the 2009 and 2010 harvest show that after exposure to weathering some cultivars still had relatively high Falling Number values (good quality and most resistant to pre-harvest sprouting). These included: Coker 9553 and McCormick. Those with low Falling Number values after weathering were: Pioneer 25R62, Chesapeake, SS520, USG3592. These were among the least resistant to pre-harvest sprouting.

Alpha-amylase levels were also tested on both years, showing that Falling Number declines even with minimal changes in alpha-amylase.

## EQUIPMENT FOR MEASURING PRE-HARVEST SPROUTING

EDWARD SOUZA, USDA AGRICULTURAL RESEARCH SERVICE, OHIO

Pre-harvest sprouting in wheat occurs when the crop is exposed to rain after a field reaches maturity. Sprouting of the grain produces  $\alpha$ -amylase, an enzyme that rapidly breaks starch into simple sugars. The value of the grain declines rapidly as the level of  $\alpha$  amylase increases. Grain elevators pay lower prices to growers who deliver sprouted grain because they have very limited options for resale of the grain. In cases of severe sprouting, the only use is for animal feed.

This grant provided the USDA Soft Wheat Quality Laboratory with new laboratory mixers and water baths to increase their capacity to measure pre-harvest sprouting damage. Trials in Maryland were evaluated for three years in collaboration with the University of Maryland, resulting in these conclusions: 1) cultivars differ greatly in their sensitivity to moisture/rainfall after maturity, with Coker 9553, McCormick, SS 8302, and SS 8404 being the least prone to pre-harvest sprouting as measured by Hagburg Falling Number Test, and 2)  $\alpha$ -amylase enzyme activity, which falling number measures indirectly, often does not increase immediately in all cultivars and often is not significant until falling number values are significantly less than 300 seconds. The cultivar information is directly useful for grower planting decisions. Also, the  $\alpha$ -amylase results should assist with marketing moderate falling number grain lots (240 sec to 350 sec) at a greater price.

### What is Falling Number?

Falling Number is the standard test used by the grain industry (AACC Method 56-81B). The degree of sprouting is measured by heating a meal or flour sample in a water solution to thicken the starch paste. A plunger is dropped through the thickened slurry. The test units are expressed in seconds with 60 seconds a minimum number for the test, as that is the time for heating the solution before the plunger drops.

Alpha-amylase is an enzyme found in sprout-damaged wheat. If germination occurs before harvest there is a dramatic increase of this enzyme. The greater the amount of alpha-amylase in the wheat, the thinner the starch paste and faster the plunger falls through the slurry. In addition to pre-harvest sprouting, grain moisture, protein concentration, meal or flour particle size and native (un-sprouted) structure of the starch all affect the time for the plunger to drop.

A high Falling Number (the longer it takes the stirrer to fall) indicates the wheat is sound and satisfactory for most baking processes. For cake flours and batters, 350 is a common minimum value. For breakfast cereals, cookies and other high sugar products values of 250 are more common cut-off values. Snyder's of Hanover (PA) requires a minimum of 275 for pretzel manufacturing. Wheat with a score below 250 is often discounted by grain buyers.

## WHEAT DISEASE MANAGEMENT TO ADDRESS SOIL-BORNE VIRUSES AND FUNGICIDE EFFECTS ON VOMITOXIN

ARV GRYBAUSKAS, UNIVERSITY OF MARYLAND

Wheat spindle streak mosaic virus (WSSMV) and soil-borne wheat mosaic virus (SBWMV) can cause losses that are almost hidden from producers if they do not actively look for these problems in early spring. They are carried into plant tissue by a vector, primarily the soil-borne fungus *Polymyxa graminis*. The vector is active in cool moist weather soon after planting. The viruses, once inside susceptible host tissue, are also unusually active in cool weather from fall through spring, but symptoms are generally only seen in spring. What makes losses from these diseases nearly hidden is the disappearance of symptoms from infected plants during warm weather. The primary management tool for these diseases is resistance. However, only a few seed companies have information on resistance of their varieties to these viruses and it is often listed as resistance to the soil-borne virus complex.

Resistance evaluations were conducted at the Wye Research and Education Center where the long-term WSSMV nursery was located and on the Cooper farm near Allen, where SBWMV was

discovered in 2008. For the second year in a row, symptom development in the WSSMV nursery was very spotty and no virus data could be collected from this location. It is hard to tell if two unfavorable years occurred or if the limited rotation has slowly depleted the vector population. However, tan spot, a debris-borne disease, developed in the nursery and entries were evaluated for this disease reaction. Wheat has been grown at this site continuously since 2000, as either cover or nursery planting so it is not surprising that tan spot built up.

Like *Stagonospora glume blotch*, it appears that resistance to tan spot is quantitative rather than qualitative. The range in tan spot disease severity was pretty narrow 0.3%-18% with no strong breaks in the possible reactions within that range. More resistant varieties exhibited symptoms on less than 5% of the leaf area, whereas more susceptible varieties had greater than 10%. Among the public lines, it appears that Jamestown and Merl are relatively susceptible and Chesapeake and McCormick are more resistant to tan spot.



**Targeting research on better products and improved practices specific to Maryland's growing conditions is the focus of 33% of the checkoff grants.**

## CONTROL OF WEEDY GRASSES IN SMALL GRAINS

RONALD RITTER, UNIVERSITY OF MARYLAND

One study was conducted at the Central Maryland Research and Education Center comparing a number of standards (Axiom, Axial, and Osprey) to one of the newer products (PowerFlex) and a potential new product (Atlantis) for control of Italian ryegrass in wheat.

Wherever Axiom was applied (even at the spike stage of wheat), a tremendous amount of injury was experienced. With the heavy rains in the fall/early winter of 2009, this was expected. When the study was rated about four weeks after the post applications were made, significant injury from all treatments was observed.

However, this was due to the poor stand of wheat and was not treatment-effect related. By the last rating, control from Axiom was minimal.

Control from post applications of Osprey or PowerFlex averaged less than 60%. Post applications of Axial only averaged in the 70 percentile. Best overall control was achieved when Axiom was applied at the spike stage of wheat followed by Osprey. Control of Italian ryegrass with Atlantis varied depending upon the adjuvant system. Best Italian ryegrass control with Atlantis was achieved when tank-mixing it with a non-ionic surfactant plus UAN.

## BARLEY FOR USE IN FUEL, FEED, AND FOOD

CARL GRIFFEY, VIRGINIA POLYTECH INSTITUTE

This project was implemented to assess and enhance the yield and end-use potential of hulled and hullless barley lines targeted for use in fuel, food and feed industries. It was also aimed at developing high yielding, disease resistant and high quality winter barley cultivars for the mid-Atlantic and southeastern regions. The end-use quality assessment of superior barley breeding lines also facilitates the release of new cultivars that are not only agronomically superior to existing varieties, but have improved end-use quality and marketability.

Accomplishments following the 2009-2010 season include the release of Dan hullless barley (formerly VA03H-61) as the third winter hullless barley developed at Virginia Tech, denoting continued progress of the breeding program. Dan is a short-stature, full-season, long-awned, six-row winter hullless barley having good winter hardiness, straw strength, and very high test weight and grain starch concentration.

Two advanced hullless Thoroughbred progeny (VA05H-147 and VA06H-24) and two hulled (VA06B-48 and VA06B-19) barley lines were grown as potential release candidates, having improved grain yield potential across a broad range of production conditions, and have excellent seed qualities. Advanced lines VA06B-19 and VA06H-25 will be proposed for release in 2011. Other breeding populations derived from crosses with barley lines introduced from various sources are being advanced in the program. Many lines have improved yield, straw strength and grain plumpness and have better resistance to diseases (eg. Leaf rust, powdery mildew, net blotch, scab and scald).

In addition, a multi-disciplinary field, greenhouse, and laboratory research project has been initiated to improve yield potential of hullless barley. Performance data for both hullless and hulled entries in the State Barley Trials showed the experimental lines yielding higher than current varieties available for both hulled and hullless entries.

## STUDYING NITROGEN AND MANAGEMENT SYSTEMS ON WHEAT QUALITY

RONALD MULFORD, UNIVERSITY OF MARYLAND, POPLAR HILL

Four studies were conducted in 2010 to evaluate several nitrogen sources, nitrogen source blends and nitrogen additives in no-till wheat planted after corn.

Study one came about following a 2008 study where geese grazed half of this experiment in early February. Data was generated on the effect of allowing geese to graze wheat just prior to greenup showing that wheat yields can be reduced by as much as 18 bushel/acre. No-till wheat yields were reduced by 23 bushel/acre compared to 12 bushel/acre in the minimum tillage wheat.

Study two evaluated 17 nitrogen sources in no-till wheat. There were ten dry fertilizer sources or blends, six liquid nitrogen sources or blends and one check receiving no nitrogen. Conclusions from this study were: 1) Yields were low because of having to replant all wheat studies in late November, and 2) In both the dry and liquid nitrogen sources, blending ammonium sulfate with the nitrogen sources (dry or liquid) improved grain yields.

Study three looked at fungicides applied at different timings for improved wheat yields and quality. The approach to this objective had to be reduced to just four treatments plus a check. Warrior at either 2- or 4-ounces plus the fungicide tilt applied at Feeks growth stage 5/6 gave the best yield over the next treatment by either 10 to 11 bushels/acre.

Study four, the last year of a three-year study, looked at a comparison of fall and spring fertilizer management practices. Conclusions from the three-year study include: 1) Blending Nutrisphere-N with the Fall and Spring applied Urea improved wheat yields by 9 bushel/acre, 2) Blending Avail with the Fall starter nitrogen and P fertilizer improved yields by 6 bushel/acre and by 17 bushel/acre over just urea fertilizer applied in the Fall, and 3) Blending Avail with the Spring Fertilizer improved yields by 2 bushel/acre.

## THE ROLE OF QOL FUNGICIDES IN FIELD CORN PRODUCTION

ARV GRYBAUSKAS, UNIVERSITY OF MARYLAND

Quadris was the first fungicide in the U.S. in the class that is called QoI, for the specific mode of action. They are also known as strobilurins, for the generic class of chemical compounds. Strobilurins have activity against a wide variety of fungal pathogens, but have a specific mode of action which makes them very valuable tools, but ones that are also very susceptible to resistance development. Sales of this class of fungicides have increased because of aggressive marketing highlighting occasional yield responses even when disease pressure seems light. These responses are due to a variety of non-target plant physiological changes during exposure to the active ingredient. Yield increases do not occur in every field. The conditions that lead to responses are poorly defined but are believed to be associated with mild to moderate stress as the biochemical response includes compounds involved in plant stress reactions. Overuse could lead to resistance to the class of fungicides, and loss of a valuable disease management tool. This project is aimed at better understanding when responses occur so that unnecessary use can be clearly defined.

Corn was planted at three locations with different potentials for gray leaf spot disease development. The Western Maryland Research and Education Center (WMREC) has a history of relatively high gray leaf spot development, the Central Maryland Research and Education Center (CMREC) and the Wye Research and Education Center (Wye) have a history of low to moderate gray leaf spot development.

The study at CMREC was planted no-till into corn stubble to increase the disease potential and the study at the Wye was planted following soybeans to keep the disease potential low. At all locations, Dekalb 64-79 was grown. DeKalb 52-59, a shorter season hybrid with greater drought tolerance but with similar disease

susceptibility, was also grown at the Wye. All sites had a split-block experimental design, with whole plots being irrigation or hybrid X irrigation and the subplots were fungicide (with or without Headline at 6 fluid ounces/acre). Irrigation was included to test if fungicide treatment may have an effect on plant stress that is not associated directly with foliar diseases. Data was collected over the course of the growing season on crop growth, leaf area development, disease severity and net photosynthesis.

Field leaf photosynthesis measurements did not support a hypothesis that fungicide application on leaves that do not display disease symptoms would be more productive. In fact, at CMREC, 15 days after fungicide application, net photosynthesis was significantly reduced as well as all measures of light use efficiency. Water use efficiency did go up at that assessment as a consequence of reduced stomata conductance and transpiration, but was significantly reduced at 24 days after and was not significant at three or eight days after fungicide application. At WMREC on irrigated corn, nine days after fungicide application net photosynthesis was also reduced but water use efficiency was not affected. There were no occasions where net photosynthesis was greater in fungicide treated leaves regardless if irrigated (less water-stressed) or not.

Yield responses to Headline are much more likely if disease is present. The apparent but non-significant increases in these trials were either coincidental and truly not significant, or were masked by other sources of variation that cannot be easily controlled in the field. Either way, the lack of clear response in the absence of disease indicates the physiological effects on stress reactions in plants is relatively small compared to their effect on fungi. They are good fungicides and not very good plant growth regulators.

**STRATEGIES TO REDUCE TOXIN LEVELS IN BARLEY GRAIN AND FEED AND FOOD PRODUCTS**

DAVID SCHMALE, VIRGINIA POLYTECHNIC INSTITUTE

Dried distiller's grains with soluble (DDGS) are becoming a significant component of feed for domestic animals. DDGS can be contaminated with the mycotoxin deoxynivalenol (DON).

Levels of DON were determined for harvested grain from 18 selected barley varieties and elite experimental lines. Fermentation studies showed that DON was concentrated about two times in DDGS. Yeast expressing a detoxification gene showed the potential for DON to be reduced in DDGS during fuel ethanol fermentation.

Knowledge, techniques, and products resulting from our research are aimed at providing barley producers and grains, feed, food, and biofuel industries with a means to diminish toxin levels and losses in grain yields and quality.

**SWEET SORGHUM GRAIN AND BIOMASS FOR ETHANOL VARIETY SCREENING TRIAL ON DELMARVA**

SAM GELETA, SALISBURY UNIVERSITY

Sweet sorghum has the potential to become an important feedstock for the production of clean burning fuel ethanol in the USA. It concentrates sucrose like sugar cane, and is drought tolerant, requiring less than half of the water needed for corn. The sweet sorghum cane is used as a feedstock for ethanol production, while its edible seeds can be used for animal feed or ethanol production.

Field trials of eight varieties of sweet sorghum were conducted in Wicomico County during 2009 and 2010. The preliminary results of these field trials indicate that sweet sorghum can be successfully grown in the Mid-Atlantic. A third year of field trials will be conducted in 2011 and recommendations will be provided for interested growers.

**STATE CORN HYBRID TEST: INCLUSION OF BENCHMARK HYBRIDS**

ROBERT KRATOCHVIL, UNIVERSITY OF MARYLAND

Beginning in 2001 and every year since, Maryland Grain Producers Utilization Board has funded the inclusion of benchmark, check hybrids in the University of Maryland Corn Hybrid Performance Tests.

During 2010, eight benchmark hybrids were included in the three maturity group tests conducted at five Maryland locations. Of those eight hybrids, three represented Pioneer, two each represented Dekalb and Augusta brands, and one represented T.A. Seeds. The 91 hybrids tested ranged the spectrum of genetic technology currently available; from conventional (non-GM) to SMART STAX.

Corn performance during 2010 was impacted significantly by the summer drought that varied in severity across the state. Average yield was 137 bushel/acre; a 30% reduction from the near record yield attained in 2009. Learn more about the 2010 and previous years' tests at [www.mdcrops.umd.edu](http://www.mdcrops.umd.edu).

**DOE HARVEST INCENTIVE PROGRAM**

KURT FUCHS, MARYLAND FARM BUREAU

The 2010 Doe Harvest Challenge (DHC) was a pilot program taking place on the Mid-Shore (Talbot, Caroline, Queen Anne's, Kent and Dorchester Counties) and in Southern Maryland (Anne Arundel, Calvert, Charles, St. Mary's, and Prince George's Counties) to reduce crop damage and improve yields while simultaneously helping support the less fortunate in their communities. These regions were targeted as they were experiencing unacceptable and sustained levels of agricultural damage as a result of overpopulations of whitetail and sika deer. The root cause of this localization is not attributable to any single condition, geographic characteristic, or hunter profile. Instead the factors range from lack of hunting pressure and a desire to trophy hunt, to ideal feed sources such as agricultural crops and ample sanctuary areas for deer.

According to the National Agricultural Statistics Service, an estimated \$10 million in economic losses occurs from wildlife damage in 2009 of which nearly 74%, or \$7.33 million, was directly attributable to deer.

The DHC partnership included Maryland Farm Bureau and the Farmers and Hunters Feeding the Hungry (FHFH) with a goal of reducing local overpopulations of deer by incentivizing the legal harvest and donation of does within participating counties.

Beginning on opening day of bow season, each time a hunter donated a legally harvested doe to a participating FHFH processor, they were eligible to enter into a drawing for a prize package valued at \$500. The program was split into five, three-week cycles with drawings taking place at the end of each cycle. Hunters were able to enter as many times as they donated a doe and winners of previous cycles remained eligible for participation in future drawings.

The hunter in each region that donated the most deer throughout the entire program receives a grand prize package valued at \$1,000. With each region holding five contest cycle drawings and awarding a grand prize valued at \$1,000, participating hunters had a total of 12 opportunities to win over \$7,000 in prizes simply by donating their harvested does.

[www.mdcrops.umd.edu](http://www.mdcrops.umd.edu)

The Cropping Systems Research and Extension website at the University of Maryland offers growers an extensive resource with local research categorized in the following areas:

- Corn
- Soybeans
- Small Grains
- Nutrient Management

In addition, catch up on the latest news through issues of:

*Mid-Atlantic Agronomists Newsletter*  
*UM Extension Agronomy News*

[www.mdcrops.umd.edu](http://www.mdcrops.umd.edu)

**Grain  
Research**



**NATIONAL BARLEY GROWERS ASSOCIATION**

www.nationalbarley.com  
www.mgga.org

The National Barley Growers Association sponsored a non-traditional barley breeding conference that brought together key stakeholders from Canada, United States, France, Germany and Australia to discuss the expectations and opportunities to utilize biotech breeding tools in future barley germplasm improvement and commercial variety release.

The Barley Growers Association monitored the implementation of new programs and changes to old programs of the Farm Bill. Crop insurance reform was an ongoing priority and a critical component of farm policy and risk management.



Robert Hutchison represents Maryland on an affiliated group, the National Barley Improvement Committee (NBIC).

*Robert Hutchison* The objectives of NBIC Director NBIC are to:

- Serve as a national forum for discussion of matters important to barley research, production and utilization.
- Serve in an information distribution capacity to all persons interested in barley.
- Help identify national and regional priorities and encourage their adoption and proper funding.
- Serve in an advisory capacity as is appropriate to national or regional groups.



**NATIONAL CORN GROWERS ASSOCIATION**  
www.ncga.com



*Charles Jamison*  
NCGA  
*Outgoing Director*

Founded in 1957, the National Corn Growers Association (NCGA) represents approximately 36,000 dues-paying corn growers and the interests of more than 300,000 farmers who contribute through corn checkoff programs in their states. NCGA and its 48 affiliated state association and checkoff organizations work together to help protect and advance corn growers' interests.

NCGA was able to undertake several significant activities in 2010 to answer the challenges facing our industry.

NCGA challenged ethanol industry groups to work together by seeking the common ground of fair regulation and legislation that would allow for the continued success of the industry. NCGA worked tirelessly this year to help create a unified message from the ethanol industry.

In addition, NCGA partnered with Growth Energy to sponsor a new promotion of ethanol through NASCAR. Key messages that will be promoted throughout the five-year contract is that ethanol is American made, American grown, and powering NASCAR.

NCGA also served as the focal point in organizing a campaign that encouraged collaboration amongst state and national organizations. This unprecedented campaign actively promoted the image of the U.S. corn farmer both in the Beltway and the public while internally activating grower grassroots efforts. This project, still in its first year, made a tremendous impact. From reaching millions in Washington, DC with messages about the facts on farming and the benefits of ethanol to giving growers the tools to become activists, this campaign energized the rural base while reacquainting America with those who grow their food.

NCGA has also worked closely with national agricultural groups and growers in Midwestern and East Coast states to present a united front against proposed misguided water quality regulations affecting the Mississippi River, the Gulf of Mexico and the Chesapeake Bay. NCGA remains vigilant on water quality, biotechnology and inputs regulation issues to keep corn farmers free of burdensome regulations and able to deliver feed, food, fuel and fiber to the world.



*Chip Bowling*  
NCGA  
*Incoming Director*



**Market Development is key to seeing growth for our industry. Of the grants funded, 39% go towards advancing our products across the world.**

**Partnering with our national agricultural organizations, we maximize investment dollars and provide input on national policies that impact Maryland growers. Individuals pictured here are your representatives at the national level.**



**US WHEAT ASSOCIATES**  
www.uswheat.org

As the export market development organization funded by America's wheat growers, U.S. Wheat Associates (USW) supplies information and training to wheat buyers and wheat food manufacturers in more than 100 countries. The activities of USW are made possible by producer checkoff dollars managed by 19 state wheat commissions and through cost-share funding provided by USDA's Foreign Agricultural Service.

*USW is the only organization promoting the use of Maryland's soft red winter (SRW) wheat in overseas markets.* The overall goal of USW was to meet or exceed USDA's SRW export forecast - initially estimated at 147 million bushels and adjusted to 110 million bushels. USDA estimates total SRW exports reached 109 million bushels. Black Sea wheat was plentiful and cheaper than SRW through the 2009/10 marketing year. Even USW's strong relationship with Egypt's government buyers could not fully overcome cheap Russian wheat and lower freight costs. However, maintaining a 15% to 20% market share in Egypt reflects on-going USW efforts to promote the reliable supply, quality and transparent price. In addition:

- USW used detailed milling and processing information based on a SRW quality analysis to increase confidence in SRW performance -- activities that helped increase SRW sales to China.
- USW helped spur growth in Nigeria by helping buyers identify new uses for SRW.
- In Central America and the Caribbean, where SRW market share remained strong in 2009/10, USW helped buyers find purchasing options and suppliers that can consistently meet their needs.

*Export Promotion Yields 23 to 1 Return.*

U.S. wheat producers invested about \$10 million per year in export promotion between 2000 and 2007, and every \$1 they invested returned \$23 back in net revenue, according to an economic analysis of wheat export promotion U.S. Wheat commissioned in 2009/10.



*Jason Scott*  
*US Wheat Director*



**US GRAINS COUNCIL**  
www.grains.org

Exports are vital to the US feed grains industry. US corn exports create valuable markets for US grains, keeping domestic supply in balance. Demand for US grains is growing with global population growth and the expansion of the consumer class, leading to a demand for more and better quality food. Exports are forecast at a record \$126.5 billion in fiscal year 2011, an increase of \$17.8 billion from a year ago.

The US Grains Council has been conducting overseas market development programs since 1960. Initiatives continue in several areas of focus, among them:

- 1) DDGS has seen the most explosive growth this past year to China and many other countries.
- 2) Southeast Asia remains one of the world's fastest growing regions with an average annual economic growth of five percent since 1999.
- 3) Mexico and Latin America continue to be substantial growth markets.
- 4) India is one of the most promising, although long term, investments.
- 5) Value-added products, including DDGS.

The Council's global staff members have extensive experience in international market development. The Council is a cooperator with the USDA Foreign Agricultural Service and with its partners, receives matching funds on a basis of \$50.30 for every \$1.00 of membership investment.



*Chip Councill*  
*USGC Director*



*National Association of Wheat Growers*

**NATIONAL ASSOCIATION OF WHEAT GROWERS**  
www.wheatworld.org

The National Association of Wheat Growers (NAWG) is the wheat producer's voice in Washington, DC, as the grass-roots advocacy organization comprised of 21 member-states.

In the past year, NAWG has been particularly active in efforts to craft legislative solutions to minimize the impact on farm operations of regulations related to the Clean Water Act and Clean Air Act, including those related to the Chesapeake Bay watershed. NAWG has also closely followed 2008 Farm Bill implementation efforts and has started

policy discussions around the next Farm Bill. Work continues to ensure a smooth introduction of biotechnology into wheat. In all efforts, NAWG works closely with sister wheat associations, including U.S. Wheat Associates, and other agricultural organizations.

NAWG's activities pay dividends back to local farmers in the form of federal farm programs; appropriate representation on agricultural issues before government regulators; and in other efforts to publicize and advocate for wheat priorities.



## AMERICAN ETHANOL PARTNERSHIP WITH NASCAR

[www.americanethanolracing.com](http://www.americanethanolracing.com)

Maryland Grain Producers Utilization Board joined state affiliates of the National Corn Growers Association in backing American Ethanol, a partnership including NASCAR and Growth Energy.

This new partnership, announced by NASCAR in December, comes after the popular racing organization said in October it would fuel all races with Sunoco Green E15, a 15 percent corn ethanol blend, starting with the 2011 season.

NCGA's involvement comes with the generous support of state corn checkoff investments. With precision farming, innovation, technology and hard work, farmers can double their harvest in the years ahead. NASCAR is a high-profile way to showcase one use for this abundance.

As part of the multi-year agreement, American Ethanol will be highlighted on every vehicle running in a NASCAR race and be prominent on NASCAR's Green Flag. In addition, American Ethanol will sponsor a new award for every race, be featured on-site race day events and more. American Ethanol will support drivers, teams and tracks with marketing, promotional activities and advertising.

American Ethanol's new partnership with NASCAR is much larger and more ambitious than a typical sports sponsorship. An entire industry is looking to NASCAR to communicate its message that America is capable of producing its own renewable, greener fuel. The entire NASCAR industry will benefit from American Ethanol's multi-faceted support of NASCAR, as well as from thousands of farmers and members of the ethanol supply chain now serving as new ambassadors for the sport.

Led by Growth Energy, nearly one hundred different entities - from individual ethanol plants to NCGA to biotech companies - are rallying around NASCAR to communicate their ethanol message.

## ETHANOL ISSUE BRIEFS

[www.cleanfuelsdc.org](http://www.cleanfuelsdc.org)

The Clean Fuels Development Coalition (CFDC) recently completed a project continuing the *Issue Brief* series produced by the *Ethanol Across America* education program. *Economic Impacts of Ethanol Production* is the fifth installment of these Issue Briefs which are used to provide policy makers, media, students, and all interested parties with timely, accurate information on current issues associated with the production of ethanol.

The second phase of the project is the bi-annual Ethanol Fact Book, a unique document that is distributed nationwide through state energy offices, extension and rural development offices, and various industry outlets. These publications serve as critical tools to combat anti-ethanol sentiment. This is particularly important as the industry faces issues related to the blend wall, rising grain costs, subsidies, and environmental impacts. As Maryland continues to benefit from the use of grain for ethanol production, this kind of information assuring the public that there will be no adverse affects on the environment - while providing significant benefits - will remain an important tool.

## E85 MARKETING AND INFRASTRUCTURE DEVELOPMENT

[www.sesi-online.com](http://www.sesi-online.com)

Sustainable Energy Strategies, Inc. promoted and expanded the use of E85 throughout the region through the implementation of a multi-year, million dollar U.S. Department of Energy and industry infrastructure project awarded last year. The contract was signed in April and included five regional partners who will install nine refueling pumps at seven sites in Maryland, Virginia and the District of Columbia. Six stations will be E85, two biodiesel and one propane. The first station opened in Hayes, Virginia in October and sells E85, biodiesel and propane.

Throughout the year, an estimated 500,000 gallons of E85 fuel was sold at MGPUB supported stations. Highlights of the project include supporting regional E85 stations, coordinating efforts with Virginia Clean Cities and Maryland, and participating in Clean Cities, Earth Day and Odyssey Day among other promotional activities.

This year, E85 Underwriters Laboratories certified dispensers became available for sale, E15 was granted a waiver to be used in certain vehicles, and blender pumps are being used in stations across the nation.

## ETHANOL RACING CARS

[www.bunnyburkett.com](http://www.bunnyburkett.com)

The Bunny Burkett Racing Team, with their two Ethanol-powered Dodge Avenger Funny Cars and newly added Nostalgia '79 Corvette, promoted ethanol traveling all over the East Coast competing in actual races. The team attended another 14 days of exhibits where they displayed the cars and distributed literature at various agricultural functions, fairs and shows. The cars were seen by literally thousands of people while participating in over 20 events in six states!

Ethanol received coverage in race articles in various magazines, film clips on numerous TV channels, personal appearances for radio coverage, promotional items and souvenirs purchased by fans and displayed repeatedly, collectors model die-cast cars displaying the Ethanol Performs logo, which are for sale nationwide, and race car displays. The Team displayed at places such as store grand openings, CVS, Shoppers Food Warehouse, Children's Hospital, Press Tours, Agricultural Events, and World of Wheels Auto Shows. The Team is very active in the Junior Drag Racing League, showing the cars and educating youth on the use of Ethanol as an alternative fuel, as well as the many other uses of grain.



### LEAD MARYLAND FOUNDATION, INC.

[www.leadmaryland.org](http://www.leadmaryland.org)

The LEAD Maryland Foundation (LEAD) works to increase the numbers and capacity of leaders serving the agriculture, natural resources, and rural community sectors. As a 501 (c)(3) nonprofit public charity, LEAD relies on grants and donations to support educational programming offered to selected LEAD Fellows.

In 2010, twenty-two Fellows completed a series of five multi-day seminars held at locations throughout Maryland. The Fellows also completed research in preparation for the international study tour in January 2011 to Hong Kong, Vietnam, and Taiwan.

The LEAD fellowship curriculum focuses on providing public issues education, skills building, leadership development, and personal growth. Through program participation, Fellows become more equipped to solve problems, identify resources, educate the nonfarm public, and to influence public policy important to Maryland's farmers.

### SUPPORT FOR MARYLAND GRAIN PRODUCERS UTILIZATION BOARD

MARYLAND GRAIN PRODUCERS ASSOCIATION (MGPA)

[www.marylandgrain.com](http://www.marylandgrain.com)

The Maryland Grain Producers Association provided support to the MG PUB through the production of two "Grain Store" newsletters which are sent to approximately 3,500 individuals and distributed at grain exhibits. The 12th annual Maryland Commodity Classic was conducted jointly with the Maryland Soybean Board and Mid-Atlantic Soybean Association. For the sixth year, the event included a morning tour at the Wye Research and Education Center and displays to enable farmers to see the results of checkoff funded research. The program included topics on product marketing and energy markets, crop insurance, Chesapeake Bay restoration, and public policy impacting grain farmers.

### MARYLAND FFA FOUNDATION

[www.mdffaoundation.org](http://www.mdffaoundation.org)

In 2010, the Maryland Grain Producers Utilization Board was designated a 4-Star Partner for their sponsorship of: four FFA career development events, an FFA proficiency award, a motivational speaker at the State Convention, and four student leadership development workshops.

A CDE sponsorship provides funds for the recognition of student achievement and helps reduce student costs in representing Maryland at the next level of competition. The CDE events sponsored were: Junior Extemporaneous Speaking, Agricultural Issues, and two Agriscience Events.



In October, 176 FFA students, advisors and chaperones attended the FFA Convention in Indianapolis, Indiana where 95 FFA members participated in 24 National CDE events and received 10 bronze awards, 13 silver awards and one gold award. Also throughout the convention, one Maryland student performed in the National Talent activities and one participated in the National FFA Band. Five Maryland students were awarded the American Agriculturalist Degree, the highest degree that can be awarded to an active member. Supporting the development of future leaders for Maryland agriculture is vital to the future of agriculture.

A Social Media Workshop was conducted to provide hands-on training in social media to two dozen Maryland "advocates". Informational signs were distributed widely across the state to inform consumers about farmers' best management practices and identify ways consumers can also take actions at home to do their part in helping clean the Chesapeake Bay. Four college students received funding to further their studies in agriculture through the scholarship program. Exhibits at fairs, university events and agricultural meetings, press releases, the Association website [www.marylandgrain.com](http://www.marylandgrain.com), and online media sources were utilized to educate consumers about the grain industry.

### MARYLAND ENVIROTHON

[www.mascd.net/envirothon](http://www.mascd.net/envirothon)

The Maryland Envirothon is an environmental educational competition designed for high school students. The Envirothon enhances local high school's science curriculum by providing hands-on field based activities and instruction from natural resource professionals. The Envirothon program is a partnership between the soil conservation districts, natural resource professionals and high-school science teachers, with training practical and scientific.

During the school year, students are trained and tested in five natural resource areas: aquatics, forestry, soils, wildlife and a current environmental issue. During the 21st Annual Maryland Envirothon, 1188 students from 20 counties were presented with the fifth issue objective of "Protection of Groundwater through Urban, Agricultural and Environmental Planning." Each Envirothon student had the opportunity to be trained by biologists, foresters, soil scientists, and other natural resource professionals as they prepared for local, state and national competitions.

At the state event, students learn tree classifications, soil classifications, wildlife species identification



and oral presentation team-building skills. The winning team was from the Carroll Boy Scout Venturing Crew 202 of Carroll County. Those students received the honor to represent Maryland at the Canon Envirothon. They returned home with a new found knowledge of how to apply land stewardship practices to today's environmental concerns.

Even though state schools are mandated to teach environmental education, many cut related activities due to on-going curriculum changes and initiatives. The Envirothon continues to fill the void by offering students such educational needs to invest in tomorrow's future environmental stewards.

## GROWING WITH GRAINS

JENNIFER BENTLEJEWSKI AND LACIE ASHBY,  
ALLEGANY COUNTY EXTENSION ADVISORY  
COUNCIL

The Growing with Grains educational program of 2010 was developed and presented to 16 different 4th grade classes among ten different public and private schools in Allegany County during the fall. The program reached a total of 429 students and 25 adults.

During the 16 different presentations, an effective program was conducted to educate children and families on all aspects of grains. One objective of the program was to better educate youth on nutrition and the importance of whole grains. Other objectives were to inform and educate youth on other aspects of grains, including agriculture production, manufacturing, processing, and utilization. Students learned the growth process from the seed to harvesting, milling, and manufacturing grains into the food on their table. These ideals were reinforced by making a fun and healthy snack consisting of whole grain cereals.

School education incorporated at-home activities, handouts, and other materials such as experiments, recipes, fact sheets, and coloring pages to further involve the family. This will better equip families and youth with the knowledge and resources to meet basic human needs to lead positive, productive, contributing lives. Materials were also given to teachers to include in future curriculum.

Used in education and evaluation, Student Response Cards, or "Clickers", were used to make the program more exciting and interactive. Both youth and teachers enjoyed the technology, "Great use of technology and visuals" and "Thank you for letting us use those remote things, I really liked that!"

End-of-program evaluations indicated that teachers felt the lesson was relevant as it tied into their nutrition/health unit. Teachers also stated that they will refer to this class during science instruction.

## KIDS GROWING WITH GRAINS

DONIELLE AXLINE AND DEBORAH RHOADES,  
FREDERICK COUNTY EXTENSION ADVISORY  
COUNCIL

Frederick County youth had a "field trip of a lifetime!" as five public elementary schools and three private schools participated in the popular program that began over a decade ago. This past fall, 417 fourth grade students and their teachers came to the farm. The students, with 44% representing minorities, participated in four learning stations designed to teach them about grains.

- 1) They begin with a tour of the farm viewing fields in production, valuing machinery and recognizing grains from field to table. Each made a grain jar with five grains grown on the farm.
- 2) At the corn station, students learned the many uses of corn, everything from crayons to gasoline and corn syrup to grits and made tortillas using masa.
- 3) The nutrition station explained the health benefits of eating grains, especially whole grains. Students sampled steel cut oats and made buckwheat pancakes. Each student received a spiral bound recipe booklet to take home to prepare grain foods at home.
- 4) At the animal station, students met cows, goats, and sheep and learned how much grain the animal is fed to produce for our needs. Teachers report this is the favorite part of the field trip!

"Very Engaging; full of useful information for me and the students."  
*teacher comment*

"It was a lot of fun and I learned a lot about grains."  
*student response*

## TRI-COUNTY MIDDLE SCHOOL GRAINS EDUCATION PROGRAM

DEBORAH RHOADES, FREDERICK COUNTY  
EXTENSION ADVISORY COUNCIL

This innovative new project reached middle school students using a "train the trainer model" to access 49 Family and Consumer Science teachers in Carroll, Frederick and Howard counties. Teachers participated in comprehensive training on whole grains to:

- Learn about the health benefits of whole grain foods to the diet and recommendations for serving sizes based on the USDA My Pyramid.
- Sample and evaluate a variety of newly created reformulated grain based food products available in the marketplace.
- Understand how to read food labels on grain food products to determine nutritional value.
- Become familiar with the "Whole Grain Stamp" voluntary labeling system developed by the Whole Grains Council.



Teachers received resources for classroom instruction so they could transfer this educational experience to their students. Students learned to read food labels, use the whole grain stamp and evaluate their diets. Cooking labs gave students hands on experience in preparing foods containing whole grain ingredients. The recipe book, *Kids Growing with Grains*, was provided to each student to encourage preparation of whole grain foods at home.

Throughout the year, additional activities were held to promote grains via exhibits, workshops, and newspaper articles.



**Educating the consumer of our farm practices and products, encouraging youth to pursue careers in agriculture, and developing leaders for our industry are the educational goals utilizing 28% of the grant funding.**

**MARYLAND 4-H LIVESTOCK ROUND-UP**

CHRIS ANDERSON, MARYLAND 4-H CENTER

The Livestock Round-Up is an overnight camp for youth interested in learning about livestock-related best production practices, livestock and agriculture oriented careers and businesses. Forty youth attended the Round-Up in Frederick in July and participated in educational workshops in Beef, Goats, Sheep and Swine. Seven 2009 participants gained valuable leadership skills as they served as the committee planning and facilitating the educational workshops, field trips and supporting activities for the 2010 event.

Workshops and sessions focused on grain utilization in the animal industries including Basics of Balancing Feed Rations and Grain Identification. Feeds and grains were included in the Junior Stockman event. A day trip to an area farm to learn about sustainable grazing systems for grasses and grains and to the Virginia Tech Marion duPont Scott Equine Medical Center were highlights of the Round-Up only made possible with MG PUB support.

**CLOSE ENCOUNTERS WITH AGRICULTURE**DOUG TREGONING AND REBECCA DAVIS  
UNIVERSITY OF MARYLAND EXTENSION,  
MONTGOMERY COUNTY

The Close Encounters with Agriculture program promotes and increases the understanding of agriculture. It also demonstrates the inter-relationships and positive aspects of production agriculture, nutrition and the environment. A total of nearly 2,000 fourth-grade students, and 380 teachers and chaperones participated in the program in October 2010. Direct program costs averaged \$3.77 per student.

The program is evaluated through student pre- and post-tests and evaluations by teachers. Students scored an average of 37% correct on the pre-test, compared to 71% correct on the post-test. Ninety-eight percent of participating teachers rated the program a four or five on a scale of 1 to 5. Teachers responded overwhelmingly (85%) that their children had a much better understanding of agriculture after participating in this program.

Close Encounters with Agriculture has won national awards and is a nationally recognized Extension program.

**URBAN WHEAT FIELD**WHEAT FOODS COUNCIL  
[www.wheatfoods.org](http://www.wheatfoods.org)

The Urban Wheat Field opened in Washington, DC for two days on September 23, 2010 with a ribbon cutting ceremony hosted by Collin Peterson, House Agriculture Committee Chairman; Jerry McReynolds, NAWG President; and David Moore, Wheat Foods Council's Chairman.

A quarter-acre of live wheat in various stages of growth was delivered on pallets and placed adjacent to our nation's capital. Bob Kratochvil and José Costa of the University of Maryland led the team who grew the wheat in Maryland for the event. More than 60 producer volunteers, 20 state staff members, plus volunteers from the milling, baking, and nutrition sectors were on hand to engage visitors and answer questions during each stage of wheat's journey from "Farm to Fork."

Approximately 2500 guests, members of congress, hill staffers, school children, members of the media and general public participated in the exhibit. To date media impressions were over 38 million. Visitors were led to further information on the [www.wheatfoods.org](http://www.wheatfoods.org) website where viewers can virtually track "How Wheat Works".

**CAN YOU HEAR ME NOW!**SHARON PAHLMAN, UNIVERSITY OF  
MARYLAND EXTENSION, CAROLINE COUNTY

Citizens participated in hands on learning identifying various grains and the various uses of the grains. Participants identified animals that utilize grains and many ways that people use grains to gain nutrients to maintain a healthy lifestyle. Citizens sampled grains and also identified wheat, barley, soybean plants, etc. and learned about the ways grains are raised in Maryland.

Thirty teens attending the tractor safety class completed hands on learning about hearing awareness and received hearing muffs with instructions to use when working with farm equipment stressing to develop this habit now - before their ears become damaged.

A decibel meter clearly displayed how loud noises can affect ones hearing. Numerous hands on learning experiences helped youth and adults learn the importance of protecting their ears from excessive loud noises.

**NATIONAL AG DAY**AG COUNCIL OF AMERICA  
[www.agday.org](http://www.agday.org)

The Agriculture Council of America energized its Ag Day celebration in 2010 with a new theme: "American Agriculture: Abundant. Affordable. AMAZING." National Ag Week was held March 14-20, 2010 with National Ag Day celebrated on the final day, March 20. Many of the Ag Day events and resources were continued from 2009, but this year Ag Day went viral, launching a blog, video and social media campaign to reach more people than ever. The new campaign reached consumers who think they have no relationship to agriculture, and reinforced that American agriculture is a part of all of us.



**Honoring U.S.  
Farmers by  
Celebrating the  
First Day of Spring  
with National  
Agriculture Day,  
March 20**



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[www.marylandgrain.com](http://www.marylandgrain.com)



13th Annual

Maryland  
**COMMODITY**  
 Classic

**Thursday, July 28, 2011**

**Wye Field Tours**

**Exhibits & Program at  
 Queen Anne's 4-H Park**

*The Maryland Grain Producers Association, Maryland Soybean Board,  
 and Mid-Atlantic Soybean Association would like to thank the  
 following sponsors of the 2010 Commodity Classic:*

Augusta Seed Company  
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**Social Media  
 Training**

*Learn the nuts-and-bolts of  
 making social media work to  
 advocate for agriculture and  
 promote your business.*



**Tuesday, March 1**  
**8 am - 12:30 pm**  
*Frederick County*



**Tuesday, March 1**  
**4 - 8:30 pm**  
*Harford County*



**Wednesday, March 2**  
**9 am - 1:30 pm**  
*Queen Anne's County*



See details on page 5. To register,  
 contact Laurie Adelhardt at 410-705-  
 3700 or visit [www.marylandgrain.com](http://www.marylandgrain.com).