We open this report with a strong note of gratitude to our checkoff supporters. As the importance of our mission to improve the viability of agriculture in Maryland continues to grow, and the outside community becomes more interested in our daily work, you have held firm in supporting our efforts. Thanks to you, this report details another strong year of activities under the Maryland Grain Checkoff Program. All checkoff dollars have been allocated to projects considered key to helping farmers operate more effectively to be profitable, and to be stewards of the land and water to ensure that their farm can continue in the future.

For 25 years, the Maryland Grain Producers Utilization Board has been a leader in initiating the development of science-proven tools for farm efficiency and the careful choice and use of natural resources. This year, results from projects such as the fall nitrate test for wheat, crop rotation recommendations for slug control, and management of nutrient application with Green-Seeker technology, are no exception.

We received high acclaim for conducting the extremely successful Phosphorous Symposium, bringing together experts to share the latest research in the search for science-based solutions to phosphorous use. Join us for the next symposium on August 9th at Chesapeake College, where experts will utilize the Choptank River Watershed as a case study to evaluate what has been done, what is working, what is not, and what we can share across the Chesapeake Bay from this intense study.

Maryland grain producers benefit from free trade. The United States is the world’s leading exporter of corn, dried distillers grains, ethanol, and sorghum. Maryland farmers’ involvement on the national level serving as national organization officers, testifying on Capitol Hill, participating in trade missions, or hosting trade delegations cannot be understated as to its impact in seeing the passage of favorable trade agreements and expanding markets for our products. Expanding domestic markets of ethanol will see demand for corn increase, particularly as consumers switch to more environmentally-friendly E15 and E85 fuels.

Educating the consumer and encouraging them to seek answers about food and farming from farmers remains a priority for creating an ag-friendly marketplace. Our premier project, *Maryland Farm & Harvest*, has reached millions of Marylanders and people throughout the world, with a true picture of the business of farming. The opportunity to reach students with a basic understanding of agriculture helps to build a future generation more educated and interested about agriculture. Web and social media continue to be viable venues to improve the image of Maryland farmers by informing the public of what today’s farmers do to provide food, fiber and energy products for the country.

We encourage you to continue to support the Maryland Grain Checkoff Program for research, education and promotional activities and vote “Yes” at the July 29th referendum. In our last referendum, farmers have voted a resounding 93% in favor of the checkoff. This program is the primary funding source for research and promotional activities that are directly focused on Maryland growers’ needs. As a board, we are responsible for making sure that the checkoff program is working with an effective model and a transparent structure that everyone associated with the organization understands. If you have any questions about the Utilization Board or the Association, do not hesitate to reach out to me or one of our board members.
MONITORING FIELD LEVEL GROUNDWATER QUALITY IN THE UPPER CHESTER SHOWCASE WATERSHED

Intensive environmental and agronomic data collection has been underway since 2013 at two adjacent fields with corn, soybean and small grain production. A major goal of the project is to study the effectiveness of irrigation as a conservation practice at reducing the amount of nitrogen remaining after crop removal. This residual nitrogen is potentially available to move as nitrate into groundwater. Initial analysis of nitrogen uptake efficiencies (nitrogen removed in grain/nitrogen applied as fertilizer) by the University of Delaware for the 2014 corn crop were 66% for the irrigated field and 50% for the dryland field. Work is ongoing to understand differences and any changes in water quality, in particular nitrate concentrations, between the two fields, both before and after irrigation began in the 2014 growing season. Monitoring of soil water, soil nutrients, and groundwater will continue until the end of the 2016 growing season. Dissolved phosphorus is also being studied as part of this project. To date, water samples indicate very little or no transport of phosphorus to groundwater from fertilizer and manure applied to the land surface at this study site.  

2015 Funding $49,875; 2016 Grant $15,000

EVALUATE TRITICALE AS A COVER CROP ALTERNATIVE TO RYE AND WHEAT
University of Maryland, Plant Science | www.psla.umd.edu/extension/md-crops

Six advanced triticale lines obtained from the North Carolina State University (NCSU) small grain program were evaluated for important cover crop and grain production performance characteristics at two Maryland locations during the 2015 production year. The performance of the triticale lines was compared to four rye varieties including the most widely planted rye variety (VNS – variety not stated) in the 2014-2015 Maryland Cover Crop Program, five commercially available triticale varieties, two wheat varieties, and two barley varieties. This research has produced the following results: Three of the six NCSU triticale lines were selected for concurrent seed increase and a final year of research evaluation during 2015-2016. For cover crop performance, one of these three selected NCSU triticale lines was comparable to three of the four rye varieties tested. For grain performance, another of these three NCSU triticale lines was comparable to the best wheat variety tested. Of the 19 entries tested, the VNS rye ranked near the bottom for both cover crop and grain performance attributes.

Following the completion of field testing in 2016, the University of Maryland and the Maryland Crop Improvement Association anticipate identifying at least one NCSU triticale line for variety release as a locally produced cereal species cover crop option for Maryland’s cover crop program participants.  

2015 Funding $4,000

SOIL TEST PHOSPHORUS AND SORPTION CAPACITY FOLLOWING LONG-TERM APPLICATION OF POULTRY LITTER AND COMERCIAL FERTILIZERS
University of Delaware | www.udel.edu

Field sites receiving long-term applications of manure and/or inorganic phosphorus fertilizer at Georgetown, Delaware and Chestertown, Maryland were maintained through 2015. Routine soil samples from 2014 showed minimal increase in soil test phosphorus following increased rates of poultry litter application. Soybeans were planted in 2015; no phosphorus was applied. Routine soil and tissue sampling was completed; results are pending. Evaluation of sorption characteristics of the soils revealed that long-term manure and fertilizer phosphorus applications did not affect overall phosphorus sorption capacity. However, preliminary results showed that long-term application of manures and inorganic phosphorus fertilizer led to significant increases in phosphorus concentrations in all soil pools (labile and recalcitrant). In addition, analysis of selected samples from the University of Maryland long-term phosphorus drawdown study revealed a clear decrease in soil phosphorus following 12 years of grain cropping, with more dramatic reductions in the labile phosphorus pools. Results are preliminary and must be confirmed with additional data and statistical analysis. Overall, the project goal is to provide Maryland farmers with better information about the chemistry and fate of phosphorus in soils with a long-term history of manure or fertilizer applications. This information will help farmers make informed decisions about future phosphorus applications and remediation of legacy phosphorus.  

2015 Funding $32,495; 2016 Grant $8,800
over time, regardless of initial soil phosphorus level. A more severe decrease in soil phosphorus concentration has been monitored via soil sample measurements collected bi-annually. In phosphorus removal between grain and forage cropping systems, with forage systems, in removal for grain and forage cropping systems. By 2010, there was a significant difference in concentrations.

There are agricultural fields throughout Maryland that have high concentrations of phosphorus caused by historic application of manure. Practices are needed that will more rapidly reduce high soil phosphorus concentrations to levels suitable for manure use. To address the issue of soil phosphorus drawdown, a long-term evaluation of the effects that two different cropping systems (grain based and forage based) have on soil phosphorus concentration was started in the mid-1990’s with the establishment of five soil phosphorus levels at three Maryland Research and Education Center sites. Since inception, crop phosphorus uptake and removal measurements have been collected annually. In addition, change in soil phosphorus concentration has been monitored via soil sample measurements collected bi-annually. In general, all locations showed a general trend for decreased soil phosphorus concentrations over time, regardless of initial soil phosphorus level. A more severe decrease in soil phosphorus concentration was observed for all locations for the highest soil phosphorus concentrations from 2010 to 2012. Starting in 2003, a visual difference was observed between phosphorus removal for grain and forage cropping systems. By 2010, there was a significant difference in phosphorus removal between grain and forage cropping systems, with forage systems, in general, having greater phosphorus removal than grain systems. The greater phosphorus removal by the forage cropping system did not translate to a similar decrease in phosphorus concentrations. 2015 Funding $29,022

Oyster shell continues to be a limited commodity that is vital in any oyster recovery program. The Oyster Recovery Partnership’s (ORP) Shell Recycling Alliance continued to grow over the last year and now includes over 250 restaurants, hotels, caterers and seafood distributors. Funds from the MGPUB grant directly supported the collection of nearly a thousand bushels of shell out of the nearly 22 thousand bushels of oyster shells recycled throughout 2015. Shell collected through this recycling program are aged, cleaned and then reused as the host shell for baby oysters that are replanted in the Bay. Spat on shell was produced at ORP’s facility on the campus of the University of Maryland Horn Point Hatchery in Cambridge. The grant funds also provided the planting fees associated with the July 29th planting of 6.46 million spat on shell on Tighman Wharf reef in Harris Creek, the world’s largest oyster sanctuary located on the Eastern Shore. The project exceeded the grant deliverable of planting two million oyster spat on shell and brings the total of oysters that have been planted with the Maryland Grain Producers Utilization Board’s (MGPUB) support to 38 million. ORP has promoted MGPUB via its social media venues as a partner and will continue to feature MGPUB over the next year. A hatchery tour was also provided for MGPUB members, staff and NCGA Board members this past summer. 2015 Funding $15,000; 2016 Grant $10,000

The Farm Stewardship Certification and Assessment Program (FSCAP) provides recognition to farmers who have met an agricultural conservation certification standard. Since its inception in 2010, the project has certified 117 agricultural conservation stewards protecting 31,961 acres in 19 counties. Maryland Department of Agriculture (MDA) removes all certified farms from the routine nutrient management inspection list for three years. Each certified steward receives a Stewardship Notebook with information and references about advanced conservation and nutrient management programs and techniques pertaining to their particular operation. Stewards value their certification as not only a recognition of their accomplishments in conservation, but something that is also good for business. Twenty-two stewards have had baseline assessments conducted with MDA software that determines an individual’s achievement of the local and regional Total Maximum Daily Load Plan (TMDL) and eligibility to participate in MDA’s Nutrient Trading Program and the Agricultural Certainty Program. Two stewards upgraded to more efficient energy systems by participating in the Farm Energy Efficiency Audit Program. FSCAP reviews were conducted for the first time in Charles, Howard and Worcester Counties in 2015. To date, 19 of 23 counties have FSCAP activity. 2015 Funding $30,000; 2016 Grant $20,000

Oyster Recovery Partnership
www.oysterrecovery.org

This is the third year of a Chester River Association (CRA) project to introduce farm use of GreenSeeker Normalized Difference Vegetative Index (NDVI) technologies as a method to more efficiently applying nitrogen than historical practice. Year Two utilized the observations and data collected in Year One to maximize the performance of the technology and to provide additional comparisons between GreenSeeker application and historical application practice. In Year Two, the project focused on first, increasing acres mapped from 17,900 in 2014 to 24,200 acres mapped in 2015. This brings the total number of acres mapped in Years One and Two to 41,200 acres. Second, CRA purchased and installed variable rate application nozzles in order to have a quicker response between the computer’s algorithm-derived determination of nitrogen application rate and the actual application of nitrogen. This step maximizes the performance of the equipment by reducing lag time in on-field application response. Third, a ramp trial was conducted of varying and increasing uniform nitrogen application in addition to side-by-side Pre Sidedress Nitrate Test and GreenSeeker trials to provide an additional tool to compare yield with uniform application at different rates. 2015 Funding $50,000; 2016 Grant $25,000

Long-Term Cropping Systems Effects on Soil Phosphorus
University of Maryland, Plant Science | www.psla.umd.edu/extension/md-crops

There are agricultural fields throughout Maryland that have high concentrations of phosphorus caused by historic application of manure. Practices are needed that will more rapidly reduce high soil phosphorus concentrations to levels suitable for manure use. To address the issue of soil phosphorus drawdown, a long-term evaluation of the effects that two different cropping systems (grain based and forage based) have on soil phosphorus concentration was started in the mid-1990’s with the establishment of five soil phosphorus levels at three Maryland Research and Education Center sites. Since inception, crop phosphorus uptake and removal measurements have been collected annually. In addition, change in soil phosphorus concentration has been monitored via soil sample measurements collected bi-annually. In general, all locations showed a general trend for decreased soil phosphorus concentrations over time, regardless of initial soil phosphorus level. A more severe decrease in soil phosphorus concentration was observed for all locations for the highest soil phosphorus concentrations from 2010 to 2012. Starting in 2003, a visual difference was observed between phosphorus removal for grain and forage cropping systems. By 2010, there was a significant difference in phosphorus removal between grain and forage cropping systems, with forage systems, in general, having greater phosphorus removal than grain systems. The greater phosphorus removal by the forage cropping system did not translate to a similar decrease in phosphorus concentrations. 2015 Funding $29,022

Your Farm Name Here
Certified Agricultural Conservation Steward

Stewards are recognized with a sign on the farm and a page on the FSCAP website that describes their farming operation and can link to the farm’s webpage.
Fall Soil Nitrate Test for Small Grain Production

Maryland Department of Agriculture has a regulation for use of fall nitrogen for small grains that is dependent upon a fall soil nitrate test (FSNT). If the residual soil nitrate concentration for a proposed wheat field is 10 parts per million (ppm) or less (6-inch sample), up to 30 lbs. fertilizer nitrogen per acre will be allowed. If the nitrate concentration exceeds 10 ppm, no fall fertilizer nitrogen is to be used. For a proposed barley field, the residual soil nitrate concentration must be 15 ppm or less for use of 30 lbs. fall fertilizer nitrogen. This project compared the results obtained with the standard laboratory procedure with those obtained using the NitraCheck Quicktest kit which is used by Nutrient Management Consultants, and assessed the yield performance of wheat with and without the use of 30 lbs. per acre fall fertilizer nitrogen. Residual soil nitrate can be measured using a NitraChek Quicktest kit; the same kit used to conduct the FSNT (Pre Sidedress Nitrate Test). Currently, up to 30 lbs. fall fertilizer nitrogen per acre is recommended for wheat where ≤12 ppm nitrate is measured with the Quicktest procedure. This study verified that the target nitrate concentrations for the two procedures are suitable (≤10 ppm Lachat or ≤12 ppm Quicktest) for recommending use of fall fertilizer nitrogen.

Using the same soil samples collected following corn harvest, a total of 347 Lachat and 567 NitraCheck measurements were made. Per the comparisons made between the two procedures, a correct recommendation about use of fall fertilizer nitrogen occurred 94% of the time. An incorrect recommendation occurred for 6% of the comparisons and is attributed to three factors: 1) Soil nitrate concentration very close (+/- 1 ppm) to the decision benchmark for both procedures. 2) Equipment calibration. All NitraChek Quicktest kits need to be calibrated each season with the same set of standard soil samples to insure accuracy. 3) Human error. Consultants who conduct the FSNT with NitraChek Quicktest kits should have annual training.

Of the 347 samples analyzed, 30 had FSNT measurements that indicated no fall nitrogen should be used. Of those, a profitable outcome occurred for the decision to not use fall nitrogen 23 times (77% success rate). Across the nine locations where wheat was harvested, average wheat yield response with the use of 30 lbs. fall nitrogen per acre was 2.4 bushels per acre. Of those nine locations, only one had an amount of additional yield enough to be profitable (6.4 bushels per acre yield for $10.96 per acre profit). For the other eight locations (all of which had residual soil nitrate concentrations that recommended fall fertilizer nitrogen be used), a loss of over $13 per acre occurred. 2015 Funding $6,930

Managing Sub-Surface Drip Irrigation for Maximum Profitability in Corn

Utilization of Sub-Surface Drip Irrigation (SDI) as a tool to efficiently irrigate land previously considered too cost prohibitive to irrigate is quickly expanding in the Delmarva region. This project will study a total of six irrigation treatments, replicated four times to define the best practices to manage SDI over a range of local soil types. In each of the three years of testing, no significant difference was determined in yield across all SDI treatments. While each of the three years should be considered exceptional corn production years as evidenced by the high state corn yield averages, there is also indication that the irrigation scheduling method is not critical in determining yield. Each year, the plot location in the field and the resulting soil type had much more of an effect on yield than irrigation amount or timing.

In a dry year, there may be a significant advantage to using soil moisture as a tool to trigger SDI irrigation, especially if an automated triggering system is utilized. Despite the potential for soil moisture monitoring to reduce the overall amount of irrigation applied, the practical challenges to implement are prohibitive. With the lower pumping costs of SDI (approximately $2 per inch), it is much easier and cost-effective for a producer to simply predict crop water use with an evapotranspiration (ET) model and set an automatic timer to trigger the system than purchase, install, maintain and analyze soil moisture equipment.

It was concluded that an ET based predictive model or a crop water use curve is the most cost-effective and practical method to schedule subsurface drip irrigation. The addition of 1-3 soil moisture probes per field may improve water use efficiency but are not likely to improve yield significantly. 2015 Funding $15,817

WeAre Innovators
THE POTENTIAL OF DRONES FOR DETECTING CROP MOISTURE STRESS
University of Delaware Extension | www.extension.udel.edu/ag/irrigation/

This project is assessing the viability of Unmanned Aerial Vehicles (UAVs) as a crop survey technology in the Mid-Atlantic. The four in-house UAV flights generated large amounts of both visual spectrum and near infrared imagery (a total of roughly 8 Gb) but only one orthomosaic was able to be created from the data due to processing difficulties. Going forward the data management and processing component poses a greater challenge to UAV practicality than regulations or equipment.

Producers will also need access to ample data storage, depending on how often they sample and if they keep multiple years of data. Analysis of imagery will require paid services or software to use the images for precision agriculture applications, although simply scouting for crop stress may not. However difficult the current issues from either a legal or data acquisition standpoint are, this technology demonstrated a fast turnaround in flight time as well as image analysis (when it worked). Future studies are necessary to determine whether the difference in cost for UAVs and sensors is important for agriculture. More importantly, whether the images obtained can produce valuable information on crop stress that can be harnessed by other precision agriculture technologies needs to be addressed.  

2015 Funding $5,892

DETERMINING THE IDEAL IRRIGATION STRATEGY FOR HIGH INTENSITY CORN PRODUCTION
University of Delaware Extension | www.extension.udel.edu/ag/irrigation/

This project aims to determine the ideal irrigation management strategy for intensively managed center pivot irrigated corn through replicated testing of 11 levels of irrigation intensity. Each of the three years of this study demonstrated different trends regarding the best method to schedule pivot irrigation. 2013 tended to show that the wetter treatments performed best; in 2014 there was no need to irrigate as the dryland yields were not significantly lower than irrigated; and in 2015 the yields were good as long as some irrigation was provided; relative timing and degree of dryness seemed to be irrelevant. The main conclusion that can be drawn is that 2013–2015 seasons were ideal corn production years with little natural moisture stress. In order to draw a relevant conclusion from this project, continued research in a year with inadequate rainfall for corn production is necessary. 2015 Funding $27,395; 2016 Grant $27,398

GROWING WHEAT AFTER CORN OR SOYBEANS FOR MAXIMUM ECONOMIC YIELDS
Mulford Agronomics

2015 wheat yields and quality were lower than 2014. This project showed poorer wheat yields and quality where wheat had only been out of the rotation for a single year. Best wheat grain yields and quality came from wheat planted after three years of consecutive corn with no wheat in the rotation. Next was wheat planted after soybeans in a corn soybean rotation or two years of consecutive corn. The poorest wheat yields and quality came after corn planted in a corn/wheat/double-cropped soybean rotation where wheat was out of the rotation for only one year. High wheat yields and quality improved the longer wheat was out of the rotation (two years or longer). Wheat quality, such as test weight, was higher and less head scab, for example. A summary of three wheat studies where wheat had only been out of the rotation for one year, the average 2015 wheat yield was 80.6 bushel per acre. In three other studies where wheat had been out of the rotation either three or two consecutive years, wheat yields averaged 99.7 bushel per acre. This will be evaluated with intensity in 2016 as mills are demanding better quality wheat. 2015 Funding $5,000; 2016 Grant $5,000

NEONICOTINOID SEED TREATMENTS, SLUGS, AND SLUG PREDATORS IN NO-TILL GRAIN FIELDS
Penn State University, Entomology www.ento.psu.edu/extension/field-crops

Slugs are among the most problematic pests that no-till growers face, and one estimate figures that at least 20% of no-till acreage in the mid-Atlantic region annually suffers yield losses due to slugs. Some growers cite slugs as primary obstacles to adopting no-till, and the reason growers have returned to tillage. Thus, beyond yield benefits associated with better slug control, improved slug management in no-till systems has the extended potential of contributing to improved ecosystem health and the health of the Chesapeake Bay.

During this research, evidence was found that neonicotinoid seed treatments, an ubiquitous, preventative pest management tactic in corn and soybean production, can be transferred via slugs to valuable predators that contribute to slug control. Significant neonicotinoid residues were measured in slugs and a trend for greater slug activity where seed treatments were used was observed. Fields planted with neonicotinoid seed treatments can expect to have more slugs because the seed treatment moves through the food chain and simplifies the predator community, allowing slug populations to grow unchecked. Data collected thus far indicates that *C. tricolor* is a key natural enemy species that is helping to keep slug populations in check. *C. tricolor* from treated and untreated fields both eat slugs, so the difference in levels of predation may be associated with their abundance in fields with and without neonicotinoid seed treatments. Maximizing in-field populations of predators generally, and *C. tricolor* in particular, will help keep in check troublesome populations of slugs.

Importantly, some related ongoing cover crop research is indicating that the combination of no-till, diverse rotations with cover crops, and Integrated Pest Management (IPM) are the best ways to foster larger populations of *C. tricolor* and other valuable predators that can contribute to pest control. Inherent in using IPM is avoiding unnecessary pesticides, including seed treatments and preventative broadcast sprays at other times of the year. Minimizing insecticide use provides a strong opportunity for predator populations to build in the stable and diverse fields provided by no-tilled, cover cropped fields with longer rotations. 2014 Funding $24,868
Variety Development and Accelerated Breeding for Scab Resistance in Soft Red Winter Wheat
Virginia Polytechnic Institute | www.cropgenetics.cses.vt.edu

Scab epidemics in wheat have become more common in the Mid-Atlantic region where environmental conditions and production practices favor development of the disease. Scab epidemics were widespread in the Mid-Atlantic region in 1998 and 2003 and resulted in overwhelming economic losses due to reduced yields, poorer grain quality and high vomitoxin levels. Scab epidemics also were notable in 2009 and 2013. Until highly effective and stable resistance to scab is incorporated into commercial wheat cultivars, the crop and food supply are at serious risk. Production and integrated disease management including use of fungicides and scab tolerant cultivars such as those developed at Virginia Tech including Roane, Tribute, Jamestown, and USG 3315 are needed to reduce yield and quality losses due to scab. In 2015, 586 elite wheat lines included in local and regional trials for agronomic performance and scab resistance were evaluated. More than 198 scab breeding populations and 2,500 wheat head rows, derived from scab breeding populations or as doubled haploid lines, were evaluated, and 58 pure lines were selected for advancement in the 2016 Scab Observation Yield Test. More than 97 single and 150 three-way crosses, including scab resistant parents, were made. DNA markers were used to select 590 plants, derived from 13 top crosses, having the major scab resistance gene Fhb1 and/or other combinations of multiple resistance genes. Genes on chromosome 1B conferring scab resistance in Jamestown wheat were confirmed, and genes on chromosomes 1A, 2A, and 3B were identified in Tribute. 2015 Funding $12,000; 2016 Grant $9,000

Repeate use of Neonicotinoid Insecticide Treated Seed in Crop Rotations on Non-target Invertebrates and Soil Microbes
University of Maryland, Plant Science | http://hambylab.weebly.com/grain-projects.html

Neonicotinoid insecticide seed treatments, including Cruiser (thiamethoxam, Syngenta Crop Protection) and Gaugcho (imidacloprid, Bayer CropScience), are considered a convenient and economical way to protect a variety of crops from insect pests. Given their widespread use, the same field could receive repeated applications of these treatments, possibly leading to an accumulation of insecticide residues in the soil and development of insecticide resistance for soil pests. The University of Maryland is investigating the effect of continuous seed treatment use in a mid-Atlantic three-year crop rotation: soybean, followed by fall-planted wheat, double-cropped soybean and corn. They are evaluating impacts on plant growth, yield, changes to the pest and beneficial arthropod community, and on microbes such as nitrogen-fixing soil bacteria. In the first year (2015), both Cruiser and Gaugcho significantly reduced both pest and beneficial arthropod abundance in full season soybeans. However, harvest data suggested neither neonicotinoid insecticide provided any significant yield benefit relative to untreated and fungicide treated seed. Other data are being processed and analyzed. Data collected from this study will help producers make informed long-term management decisions regarding crop protection and management. 2015 Funding $18,000; 2016 Grant $18,000

Doe Harvest Incentive Program - Doe Harvest Challenge
Farmers and Hunters Feeding the Hungry | www.fhhf.org

Hunters are invited to complete a Doe Harvest Challenge entry card for every doe donated to Farmers and Hunters Feeding the Hungry (FHFH) during season. Junior Hunters may participate with their own separate portion of the contest. By participating hunters will ease crop damage losses for farmers, help feed the hungry, and get a chance to win one of over 60 Bass Pro Shops gift cards to be awarded by random drawing after the season. Last season, generous hunters of Maryland donated 3,380 deer to FHFH providing over 650,000 meals of venison to food banks, soup kitchens, and churches across the state. A successful Doe Harvest Challenge will add to those donation numbers and help feed thousands of individuals and families struggling with hunger across Maryland. The Doe Harvest Challenge is sponsored by the Maryland Grain Producers Utilization Board, the Maryland Soybean Board, the Maryland Farm Bureau, Bass Pro Shops of Hanover, and Farmers and Hunters Feeding the Hungry. Have a safe and successful hunting season. And remember, one deer can feed over 200 people. 2015 Funding $50,000
Crops are challenged to prosper amidst exposure to adverse weather, disease and pests. We seek options to minimize these challenges.

EVALUATION OF PALISADE AND ALTERNATIVE FUNGICIDE TIMINGS FOR INTENSIVE WHEAT PRODUCTION
University of Delaware Cooperative Extension | http://extension.udel.edu/ag/

Palisade growth regulator offers growers more options for fungicide management programs because the product can be applied safely as late as Feeke’s growth stage (FGS) 7 along with additional nitrogen, thereby potentially improving yield without increasing the risk for lodging. A FGS 7 fungicide application may “push back” foliar disease development enough to improve the efficacy of FGS 10.5.1 applications targeting head scab and late season foliar and glume diseases. Researchers tested Palisade and Quilt Xcel applied at FGS 7 (solo and in combination with Prosaro applied at FGS 10.5.1) in irrigated and non-irrigated settings to assess its impacts on plant height, disease control, phytotoxicity, and yield relative to standard, solo fungicide applications FGS 8 and FGS 10.5.1.

The additional nitrogen applied with Palisade did not improve yields, likely as a result of a prolonged drought not making the nutrient available at critical times in plant growth. Treatments containing Palisade significantly reduced plant heights compared to untreated controls without increasing phytotoxicity. Quilt Xcel applied at FGS 7 followed by Prosaro at FGS 10.5.1 provided greater yield and disease suppression than standard FGS 8 fungicide applications in the irrigated study and equivalent yields and disease suppression to standards in the dryland study. Treatments only receiving Palisade had the lowest yields.

Preliminary data analysis indicates that although the addition of a FGS 7 application may improve disease control compared to standard solo applications at FGS 8 or FGS 10.5.1, the yield increase is not likely to pay for application cost without an additional yield bump. Proper incorporation of nitrogen after application with Palisade is more likely to improve yields and increase potential profitability. In 2016, irrigation will follow nitrogen application with Palisade to better assess the economics of high input programs using Palisade in wheat.

2015 Funding $1,783; 2016 Grant $1,944

EXAMINING THE UTILITY AND ECONOMIC RETURNS OF FUNGICIDE APPLICATION PROGRAMS TO MANAGE FOLIAR DISEASES OF WHEAT
University of Delaware Cooperative Extension | http://extension.udel.edu/ag/

The most commonly occurring disease issue in Mid-Atlantic wheat is Leaf Blotch Complex (LBC), caused by a set fungal pathogens including Pyrenophora triticirepentis, Septoria tritici, and Stagonospora nodorum. LBC can be managed in season with fungicides. Standard foliar fungicide applications occur around flag leaf emergence [Feeke’s growth stage (FGS) 8]. However, over the last several years of fungicide programs including applications prior to FGS 8 at green up (FGS 5), at flowering (FGS 10.5.1), and two pass programs (FGS 5 + 8 or FGS 10.5.1) have been implemented. There is little regional data pertaining to the efficacy of these programs and their impact on yield. In addition, programs differ in application cost, which will affect their grower profitability.

Experiments were conducted at four sites on Delmarva to compare the new programs to standard FGS 8 programs for efficacy, yield, and potential profitability. Treatments consisted of five commonly used fungicides applied at FGS 8, FGS 10.5.1, and a combination of FGS 5 + FGS 8 or 10.5.1. Foliar disease severity was measured over time and yields obtained. Disease pressure from LBC was present at all sites to different degrees, ranging from 3.4% to 12.6% severity on the flag leaf in the untreated controls. Relative to untreated controls, all fungicide programs significantly reduced foliar disease by 75% to 94% and improved yield by 4.3% to 6.7%. Across timings, no differences between standard FGS 8 and new fungicide programs were noted. Net returns from 2015 indicated that 9 of the 13 tested programs returned a profit using 2015 commodity prices.

The study will be replicated in 2016 on an additional seven sites across Delaware, Maryland, Virginia, and Pennsylvania to build a more robust dataset and generate models and decision tools to assist growers in making profitable fungicide application decisions to small grains.

2015 Funding $5,050; 2016 Grant $5,088

ROW CROPS TEST PLOTS TO ALLEVIATE DEER PRESSURE
Clear Spring High School

Large deer populations and high deer pressure have been observed at the Clear Spring High School farm through wildlife observation experiments. Students observed deer browsing at various times of the day and night using digital imaging and visual observations. It was determined through this experiment that deer caused a major crop yield loss. Students in the Agricultural Academy and FFA created test plots of corn to determine if varying row spacing and directions would help alleviate deer pressure and maximize yield potentials. Row spacing in three test plots alternated in 15 inch rows, 30 inch rows and 20 inch rows in alternating patterns. This grant enabled students to buy seed, plant seed, balance soil chemistry through soil tests for optimum yields, examine soil structure, and monitor deer browsing test plots.

Yields of 1/1,000 of an acre were harvested at the front, middle, and back from the successional edge in the given test plots. Overall, 27 test plots, 14.93 acres, were harvested with a yield of 1,362.5 bushels. Based on this experiment, it was determined that the field had the potential to yield 180 bushels per acre, but only yielded 91.26 bushels per acre due to loss from wildlife. This means Clear Spring FFA lost $5,100.83 due to deer damage. 2015 Funding $7,500

Hold the Date!

CHOPTANK SYMPOSIUM
August 9, 2016, 9 AM—4 PM
Todd Center for the Performing Arts
Chesapeake College

The Choptank River watershed community has been aggressive in conducting projects and research to improve water quality. Experts from local, state and federal levels will review what has been learned and explore what results can mean to the farmers and homeowners of the Chesapeake Bay watershed.
GROWING MARKETS, GROWING CONSUMERS’ KNOWLEDGE
Maryland Grain Producers Association | www.marylandgrain.com

As the grassroots organization for grain farmers, the staff and board members of the Maryland Grain Producers Association (MGPA) expend significant efforts in fighting for fair policies for farmers to responsibly operate a viable agricultural business in the state. To help bust myths about tough issues such as GMOs, ethanol, and pesticides, MGPA provides printed materials electronic news, and billboards with factual information to the public, as well as through social media (Facebook, Twitter and YouTube) and websites (www.marylandgrain.com and www.goE85.com). Informational displays, including the new “My Maryland Farmers” campaign, at state and county fairs and festivals provided the opportunity to educate consumers about grain producers and farm issues in Maryland. MGPA partnered with the Maryland Grain Producers Utilization Board, Maryland Soybean Board, and Mid-Atlantic Soybean Association to host the 17th Annual Maryland Commodity Classic, featuring issue updates and keynote by the Peterson Brothers. Exhibits at Farm Bureau Convention, university events, extension meetings, and Commodity Classic, provided one-on-one contact with farmers to discuss the benefits and results of Maryland Checkoff projects. The College Scholarship Program provided each of four students with a $2,500 scholarship to support their pursuit of a career in agriculture. MGPA is a member organization of dues-paying farmers and associates who support a viable and prosperous grain industry in Maryland. 2015 Funding $177,600; 2016 Grant $127,000

E85 MARKETING AND INFRASTRUCTURE DEVELOPMENT
Sustainable Energy Strategies, Inc. | www.sesi-online.com

This year’s E85 infrastructure and development project had several major successes. Sustainable Energy Strategies, Inc. (SESI) and partners secured a seven million dollar grant to install 20 stations and 100 ethanol pumps in the state of Maryland in 2016. This Mid-Atlantic Biofuels Infrastructure Partnership (BIP) grant will be managed by Virginia’s Department of Mines, Minerals and Energy and will also add 21 stations and 100 ethanol pumps in Virginia.

Two new E85 fueling stations opened in 2015, one in Annapolis and one in Montgomery County. Three ethanol storage facilities will soon be available to provide ethanol closer to the region, thereby lowering transportation and fuel costs. Protec provided ethanol storage for the state and opened an E85 station at NEXCOM in Annapolis. E85 fuel sales have increased to a projected one million gallons in Maryland.

SESI continued to work with Flex Fuel station owners/managers, federal fleets, distributors, government officials, and others to promote increased ethanol infrastructure and fuel sales in Maryland. SESI presented at more than a dozen outreach and education events promoting ethanol and flexible fuel vehicles. SESI educated station owners and auto dealers about E85 benefits and local availability; completed deliverables for the Department of Energy Clean Cities Infrastructure Grant; and initiated efforts with the Maryland Comptroller to develop an E15 specification. 2015 Funding $43,333; 2016 Grant $56,000 included in new BIP grant

ETHANOL RACING CAR
Bunny Burkett Racing Team | www.bunnyburkett.com

With another successful year, 24 in a row, Bunny and the Boys Funny Car educated thousands about ethanol at County and State Fairs. The goal is to ensure that accurate information is on hand regarding the superior performance characteristics of ethanol. Drivers of today’s vehicles need to be reminded that ethanol burns cleaner than gasoline; it is a renewable, domestic, environment-friendly fuel that enhances the nation’s economy and energy security; and, ethanol has a higher octane rating. Using a professional ethanol fueled race car to garner attention, Bunny and crew educate their audience about the truth of ethanol. The logos of ETHANOL PERFORMS, along with the Maryland Grain Producers, are prominently displayed on the tent, table, uniforms, trailer and race car at all functions attended. With all the tools at hand to effectively promote ethanol, Bunny and the Boys Racing Team have the opportunity to meet and greet people of all ages, gender and lifestyles on how ethanol makes their lives better in many significant ways, encouraging a positive impact. ETHANOL PERFORMS. 2015 Funding $10,500
VARIETY DEVELOPMENT AND TESTING OF SMALL GRAINS FOR HIGHER YIELDS, DISEASE RESISTANCE, HARVESTABILITY AND NITROGEN UPTAKE
University of Maryland, Plant Science | www.psla.umd.edu/extension/md-crops

Statewide evaluation using data from 84 commercial wheat lines in a total of 1,260 plots across five locations within Maryland was performed. Selection of the leading Maryland State Trial Varieties versus average performers resulted in a yield gain of 8.6 bushel per acre. Top performers had an average statewide yield of 69.4 while the lowest yielding variety averaged 52.8 bushel per acre statewide. Evaluation using data from seven commercial barley lines in a total number of 42 plots across two locations was performed. The statewide leader was 77.2 bushel per acre while selection of the poorest yielder averaged 67.5 bushel per acre. One line was released with high yield potential and excellent scab resistance to Limagrain Cereal Seeds 15 MW 134 for an accelerated release schedule. Plantings were increased for 11 elite breeding lines, four wheat and five triticale, plus head rows for line purification of promising germplasm of 23 wheat lines. Collaborating with breeders in three uniform nursery wheat trials and two uniform barley nursery trials, data was collected on 528 total plots for evaluation of breeding material under Maryland’s conditions. Statewide Trials of 57 commercial wheat lines and seven barley lines for a total of 1,068 plots were planted. Data collected will include yield, test weight, maturity, height, lodging, scab resistance, baking and milling quality. 2015 Funding $34,500; 2016 Grant $16,000

STATE CORN TEST: BENCHMARK HYBRIDS
University of Maryland, Plant Science | www.psla.umd.edu/extension/md-crops

Beginning in 2001 and every year since, the Maryland Grain Producers Utilization Board has funded the inclusion of benchmark hybrids that are used as checks in the University of Maryland Corn Hybrid Performance Tests. The criterion for check hybrid selection is proven performance which allows them to be used for comparisons with the newer hybrids that are tested. During 2015, nine benchmark hybrids were included in the three maturity group tests conducted at five Maryland locations. Three companies were represented; Pioneer (P210AM; P1184AM; P1498AM), Dekalb (DKC57-92RIB; DKC61-88RIB; DKC65-19RIB), and Augusta Seed (4758; 4959; 6465). The 58 hybrids tested during 2015 ranged the current spectrum of genetic technology; from conventional (non-genetically modified) to SMART STAX, Viptera, and RIB (refuge in the bag). Corn performance during 2015 was considered very good. Average yield over the five locations for the 58 hybrids (check hybrids included) was 186 bushels per acre, 25 bushels per acre less than the record 211 bushels per acre average in 2014. The nine check hybrids averaged 184 bushels per acre, and indicated that they were representative of 2015 performance. 2015 Funding $8,250; 2016 Grant $6,350

END-USE QUALITY IMPROVEMENT OF EASTERN SOFT WINTER WHEAT FOR BETTER MARKETABILITY
USDA-ARS Soft Wheat Quality Laboratory | www.ars.usda.gov

Quality evaluation of wheat breeding lines is crucial for the development of wheat varieties possessing the required grain characteristics preferred by domestic and overseas buyers. The Soft Wheat Quality Laboratory cooperatively worked with 19 regional public and private wheat breeding programs on the development of eastern soft wheat varieties carrying desired end-use quality by evaluating 5,236 wheat breeding lines and varieties in 2015. Falling number, a measure of pre-harvest sprout damage, critically affects the marketability and price of wheat. It was determined that falling number of wheat grain increases during storage, and the magnitude of the increase was largely dependent on temperature and to a lesser degree on grain moisture content. With a higher storage temperature, a greater increase in falling number of wheat grain can be achieved. The use of eastern soft wheat for steamed bread presents an unexplored opportunity to increase international and domestic markets. Several soft red winter wheat varieties produced acceptable to good quality steamed bread. Dough strength-governing traits such as gluten content and strength greatly impacted the quality of steamed bread. These findings will increase the interest in using eastern soft wheat for steamed bread and provide a guideline for selecting wheat for steamed bread production. 2015 Funding $15,000

DEVELOPMENT OF BARLEY FOR USE IN FEED, FOOD AND FUEL
Virginia Polytech Institute | www.pubs.ext.vt.edu

Primary breeding efforts of the Virginia Tech Barley Breeding Program during the 2014-15 crop season were focused on development and improvement of yield potential of winter barley cultivars, and incorporation of value added traits geared towards development of new markets. As a result, one winter barley cultivar (Secretariat) evaluated as VA08B-85 was released in March 2014, and is targeted for production in the Mid-Atlantic as a potential commodity for feed and fuel ethanol. One elite hulled (VA118-141) barley line is being considered for its improved grain yield potential across a broad range of production conditions. Breeder seed for this advanced line is being multiplied for release in 2016. Agronomic data for Secretariat and other advanced lines can be obtained from the Virginia Tech Small Grains Variety Trial website.

The program has also initiated population development and a series of field testing trials to develop superior winter malt barley cultivars for the malting and brewing industries. The strategy is to use superior germplasm from the Winter Malt Barley Trial (WMBT) as parents in crosses with elite material from the Virginia Tech program. As results are favorable, cultivars with superior malt quality, strong grain yield and excellent disease resistance will be recommended for production in the eastern U.S.

A new winter malt barley cultivar, Violetta, developed by Limagrain and tested in the WMBT, was recommended for production. This cultivar has performed very well in trials at Blacksburg and Warsaw, VA. To accelerate development of superior, widely adapted, high yielding winter malt barley cultivars, the breeding program, in collaboration with Oregon State University, has initiated development of pure lines using double haploid techniques. Last spring, sixty initial double-haploid (DH) lines planted in head rows were evaluated in the field. Forty-eight DH lines possessing good agronomic characteristics were selected and planted in observation plots last fall. In 2016, these malt barley lines will be evaluated for agronomic characteristics and malt quality. An additional 460 malt barley DH lines were planted in head rows last fall and will be evaluated this spring. 2015 Funding $8,000; 2016 Grant $5,000

Regardless of the variety, we are working to improve the farm economy in Maryland.
BUILDING A FUTURE FOR CORN
National Corn Growers Association | www.ncga.com

Despite producing the third largest crop in history in 2015, corn farmers remember not too long ago the concerns over corn availability. This is why the National Corn Growers Association (NCGA) must defend and grow today’s successful demand-builders like ethanol and exports, but also look years down the road, to anticipate the needs of the next generation of family corn farmers, and the next generation of consumers. Examples include defending the Renewable Fuel Standard (RFS), conducting the Prime the Pump initiative, building exports and pushing for opening markets in places like Cuba, promoting investments in export infrastructure, bio-renewable chemicals and more, plus key policy initiatives like Trade Promotion Authority and crop insurance that support demand growth and farmers’ bottom lines.

The Soil Health Project, National Agricultural Genotyping Center, a best management practices database, and leadership programs are just some of the forward-looking initiatives that take a long view on corn production. Programs like this support everything from growing corn more sustainably to solving production challenges to developing the next generation of ag leaders. As an organization, NCGA will continue offering value for members and emphasize the importance of a strong grassroots when working on Capitol Hill and elsewhere. NCGA looks to recruit a more diverse membership, including women, young people, beginning farmers and minority farmers. NCGA is more than 40,000 members strong, members who are active, engaged and understand the future is about going long. Great things lie ahead. 2015 Funding $222,300; 2016 Grant $230,000

EXPANDING BARLEY OPPORTUNITIES
National Barley Growers Association | www.nationalbarley.com

The National Barley Growers Association (NBGA) represents the interests of barley growers in the areas of farm policy, crop insurance, trade, industry relations, and biotechnology. NBGA has achieved key results for Maryland barley growers in the areas of the new Malt Barley Endorsement policy for crop insurance (available in crop year 2016), expanding relationships with Congressional staff, and re-authorization of the Grain Standards Act. Continued areas of participation include sustainability, re-authorization of a long-term surface transportation bill, and barley acreage stabilization. NBGA will also continue to work at expanding member participation and grow industry participation in the Association. 2015 Funding $2,091; 2016 Grant $2,100

WORKING ON BEHALF OF WHEAT GROWERS
National Association of Wheat Growers | www.wheatworld.org

The National Association of Wheat Growers (NAWG) has been engaged in a number of critical issues facing wheat farmers and the agriculture industry in general. Despite bipartisan passage of the Farm Bill in 2014, farm programs, and crop insurance in particular, have come under attack. NAWG has been looked to as a key resource—particularly with both House and Senate Agriculture Committee leadership—in defending federal farm programs in partnership with other farm organizations. NAWG was heavily engaged in the successful Congressional effort to reauthorize the Trade Promotion Authority, lobbying Congress throughout the debate on the potential for significant gains for wheat that could result from trade agreements. NAWG also engaged the U.S. Trade Representative about the importance of holding firm about expanded market access in countries participating in the Trans-Pacific Partnership (TPP) negotiations and pressed Congress to approve the deal.

Additional highlights of work on behalf of Maryland’s—and America’s—wheat growers include securing wheat growers’ priorities in the Grain Standards Act reauthorization, engaging on biotechnology regulation and on efforts to develop a national voluntary labeling system for food containing GMOs, and continuing efforts to stop the EPA’s Waters of the U.S. (WOTUS) rule. 2015 Funding $10,000; 2016 Grant $11,000
GLOBAL AWARENESS, GLOBAL CONNECTIONS
U.S. Grains Council  |  www.grains.org

For 55 years, a hallmark of the U.S. Grains Council has been its long-term perspective of building global demand, and maintaining and improving markets for trade. Agricultural exports increase profitability for farmers and agribusinesses in Maryland and across the country. With ten international offices, an additional 16 consultants in other foreign markets and active programs in 50 countries, the Council is engaged in ongoing activities to improve animal husbandry, thus creating a market for U.S. feed grains.

Hosting trade teams of international customers is one of the most important ways the U.S. Grains Council accomplishes its mission of developing markets, enabling trade and improving lives. This past year, the Council hosted approximately 30 trade teams in the United States to receive a comprehensive overview of U.S. agricultural production. Team members participated in face-to-face meetings, farm and elevators visits as well as other activities. Trade servicing programs and trade team experiences such as these are essential to making buyers comfortable with purchasing U.S. coarse grains and co-products. The Council also works to improve market access through collaboration with both the U.S. government and MAIZALL, the international maize alliance, which is a strategic partnership of the national corn producer organizations of the three major corn exporting countries of the Americas – Argentina, Brazil and the U.S.

In partnership with the Renewable Fuels Association and Growth Energy, the Council launched a major, long-term ethanol export initiative with the goal of building a robust export market for U.S. corn ethanol. The initial phase of market assessments and prioritization in target countries in Latin America, East Asia and Southeast Asia is complete. Phase II is now progressing with targeted market development programs in Peru, the Philippines, Japan and China, with additional assessments in the United Arab Emirates, India and Indonesia.

This marketing year, U.S. ethanol exports are the second largest on record reaching 870 million gallons valued at $1.9 billion compared to 768 million gallons exported just last year. While this success is a good starting point, there is still much work to be done to keep exports growing. The Council has plans to promote U.S. ethanol as a clean-burning source of fuel to buyers and end-users around the globe including assessments in potential new markets; buyer team visits to the United States; and a series of workshops focusing on the environmental and economic benefits of ethanol use. 2015 Funding $75,000; 2016 Grant $75,000

DEVELOPING EXPORT MARKETS FOR MARYLAND WHEAT PRODUCERS
US Wheat Associates  |  www.uswheat.org

U.S. Wheat Associates develops, maintains and expands international markets to enhance wheat farmers’ profitability by supplying information and training to wheat buyers and wheat food manufacturers in more than 100 countries. Funding is provided by producer checkoffs and cost-share funding from USDA’s Foreign Agricultural Service. U.S. Wheat is the only organization promoting exports of Maryland’s soft red winter (SRW) wheat.

Through its work, U.S. Wheat fostered 2014/15 SRW export sales of nearly 139 million bushels or about one-third of U.S. SRW production. For example, U.S. Wheat encourages SRW sales by helping millers and processors serve an emerging supermarket bakery and snack segment in Latin America. When the SRW crop saw increased deoxynivalenol (DON) levels because of scab pressure, U.S. Wheat convinced the Colombian government to ease its DON standards on imported wheat to help maintain sales in a critical market. A recent study by Cornell University showed that every $1 farmers invest in wheat export promotion through the Maryland Grain Checkoff Program and other state checkoff programs, returns $45 net revenue back to farms. 2015 Funding $43,300; 2016 Grant $54,600

LEAD MARYLAND
LEAD Maryland Foundation, Inc.  |  www.leadmaryland.org

The LEAD Maryland Foundation (LEAD) works to increase the numbers and capacity of leaders serving agriculture. In 2015, LEAD Fellows completed a series of five seminars, for a total of seventeen days in class. Fellows learn through lectures, tours, presentations, training, discussions, assessments, and group projects. Seminars were held at locations throughout Maryland and Washington, DC. Fellows learned about what defines a leader; working with the media; public speaking; land use issues; rural development; engaging and educating others, and more. Fellows had an introduction to the grain industry; economic impact; precision agriculture and conservation technologies; cover crops; production costs, marketing, managing risks; market development, research, promotion, and leadership. The LEAD fellowship curriculum focuses on providing public issues education, skills building, leadership development, and personal growth. Through participation, Fellows become more equipped and confident to solve problems, identify resources, educate the public, and influence public policy. 2015 Funding $45,000; 2016 Grant $35,000

INVESTING IN FUTURE LEADERS
Maryland FFA Foundation  |  www.mdffafoundation.org

Designated a “Silver 3 Star Partner” in 2015, the Maryland Grain Producers Utilization Board sponsorship supported FFA members to compete in three Career Development Events (CDE) areas at the National level: Agricultural Issues Forum, Agronomy, and Agricultural Science Fair (Plant Systems Team Event). Sponsorships allow the FFA Association to recognize student achievement and reduce the student’s cost of representing Maryland at the next level of competition. The grant also provided for five leadership development workshop presentations, several student leadership incentive scholarships, plus a members’ breakfast and motivational speaker at the 2015 State FFA Convention. The State Convention provided valuable educational and leadership experiences for over 500 Maryland FFA members at a reasonable student cost. The development of agricultural leaders is vital to the future of Maryland agriculture and the Maryland FFA Program continues as one of the nation’s best. 2015 Funding $16,000; 2016 Grant $13,000
MARYLAND ENVIROTHON
Maryland Association of Soil Conservation Districts | www.mdenvirothon.org

The 2015 Maryland Envirothon was held in June at St. Mary’s College in Southern Maryland. Over 1,100 students participated in local county Envirothons leading up to the two-day state event. Eighteen student teams of five members each, plus several teams of alternates, participated in this year’s state event. A primary benefit to grain producers is that 1,100+ students were exposed to natural resource concerns, including soils and agriculture. Many of these students (and teachers) were from urban areas with little to no exposure or connection to farming and agriculture. As part of the state Envirothon competition, students received training from resource professionals in five resource areas: aquatics, forestry, soils, wildlife, and the current environmental issue which was urban forestry. This hands-on training, followed by the next day’s hands-on competition, is what makes the Envirothon a unique environmental education program.

CLOSE ENCOUNTERS WITH AGRICULTURE
University of Maryland Extension, Montgomery County | www.extension.umd.edu/montgomery-county

Close Encounters with Agriculture is designed to promote and increase the understanding of agriculture with urban youth and their families in Montgomery County. Approximately 4,000 public and private school 4th grade students, parents, and teachers participated in the program conducted over 14 days in October 2015. Three broad areas of emphasis are production agriculture, the environment and nutrition. The production agriculture segment helps children better understand modern agriculture. Students have the opportunity to see and learn about growing plants such as corn, soybeans, wheat, and vegetables, as well as the relationship between soils and growing these crops, including the environmental importance in soil stewardship. The program has reached over 73,000 youth in the 22 years it has been in operation. Collaborators include the Montgomery Soil Conservation District, Montgomery County Department of Economic Development (Agricultural Services Division), the Natural Resources Conservation Service, Farm Bureau, the Montgomery County Agriculture Center (Fair Board), Maryland National Capital Park and Planning Commission, the Friends of the Agricultural History Farm Park, and over 150 volunteers. Close Encounters with Agriculture is a nationally recognized University of Maryland program. The program has won awards from the American Farm Bureau, the National Association of County Agricultural Agents, the Joint Council of Extension Professionals, and Epsilon Sigma Phi the national Extension honorary fraternity.

KIDS GROWING WITH GRAINS - WASHINGTON 4-H
Washington County Extension Advisory Council | www.extension.umd.edu/washington-county

The Washington County 4-H Youth Development Program, a part of the University of Maryland Extension (UME), presented Kids Growing with Grains, an agricultural education program that is offered as either a field trip or an in school program. This program is made available to all schools in Washington County and targets primarily fourth grade learners. The field trip option is held at the Western Maryland Research and Education Center (WMREC) and offered in the fall. There was an increase in participation this year with a total of six schools and approximately 430 participants. The program was delivered to one school as an in school session with 14 participants. Both the field trip and in school program are designed to meet the needs and interests of the school and offer hands-on learning through a variety of lessons including: Grains and Agriculture, Grains and Nutrition, Grains Food Demo and Tasting, Grains and Chickens, and Animal and Grains. Each lesson is presented by a collaborative team from UME, WMREC, Farm Bureau, volunteers and 4-H/FFA youth who work with the participants to help them understand the health benefits of grains, the use of grains with animals, and develop a connection between themselves and agriculture in their community. 2015 Funding $2,000; 2016 Grant $1,000
Schoolhouse Chicks educates the public about agriculture through an interactive chicken embryology program. The program has been enthusiastically received in county classrooms and has grown by word of mouth in each of its six years. This year, requests were received for the program to visit 180 classrooms in 38 schools across Frederick County. Teachers estimated 4,967 students and teachers actively participated in the program. Actual numbers exposed to the program to visit classrooms housing incubators during the hatch period. Several schools also broadcast via webcam the hatch over the internet. The broad appeal of this program is evident in the variety of classrooms that have requested it, ranging from preschool to high school, from mainstream to special needs schools, and from public to private schools. 2015 Funding $5,000

**MOBILE SCIENCE LAB**
Maryland Agricultural Education Foundation | www.maeonline.com

In 2015, ten $400 matching grants were given to support elementary schools in Maryland who had not had the Maryland Agricultural Education Foundation (MAEF) mobile science labs visit their schools. Each $400 from this grant matched $400 grants from the Maryland Fair Board. MAEF promoted this opportunity to schools and farm bureaus across the state to help publicize the availability of the grants. Ten schools took advantage of this benefit in 2015. The schools were from rural and suburban communities in Western Maryland, Southern Maryland, Central Maryland and the Eastern Shore of Maryland. After experiencing the week-long lab visits, many of the schools and their Parent Teacher Associations recognized the full value of the labs and committed to engaging a lab at their schools in future years. The balance of the grant has been directed to the construction and outfitting of a new Maryland Ag Showcase. The benefits of the grain producers initial investments are paying long-term dividends for schools and students. 2015 Funding $40,000; 2016 Grant $4,000

**GRAINS NUTRITION FOR YOUTH**
University of Maryland Extension, Allegany County | www.extension.umd.edu/allegany-county

The goal of the Maryland 4-H Growing with Grains program is to educate elementary-aged students about the importance of grains. This school enrichment program was taught in a variety of locations utilizing county agricultural centers, University of Maryland research centers, public libraries and in-school programs. In 2015, eight mini-grants helped to cover cost of individual program supplies across the state. Hundreds of youth participated in several of the curriculum lessons including Animals Enjoy Grains Too, Grain Nutrition, Grain Science, Corn Products and Uses, and AG Literacy. Of these lessons, all students participated in hands-on educational opportunities. Each of the programs reporting evaluation information also formed new partnerships within the agriculture industry. 2015 Funding $5,000; 2016 Grant $1,000

**SMALL GRAIN PRODUCTION HANDS-ON LEARNING EXPERIENCES**
University of Maryland Extension, Carroll County | www.extension.umd.edu/carroll-county

The AgVenture Program is designed to target fourth grade students to further their knowledge of Maryland agriculture with a focus on grain through STEM education. Six schools in Carroll County participated in 2015. Students had an opportunity to rotate through stations consisting of Grain Production, Grain Identification, Grain Nutrition, Animal Nutrition (Dairy/Beef), Poultry Production, and Watersheds which were taught by Extension Faculty with assistance from Farm Bureau and local businesses. Students cycled through each station and participated in a variety of hands-on lessons. Students identified grains while making grain jars, created a healthy whole grain snack, saw farm equipment up close, planted seeds and sampled vegetables, experienced land use best management practices, experimented with milk, and interacted with live chickens. Based on pre- and post-test evaluations conducted with five schools, a significant increase in knowledge of grains was indicated. 2015 Funding $2,000; 2016 Grant $1,500

The University of Maryland Extension program AGsproration: The Science of Maryland Agriculture is a signature program that improves students' science abilities through learning experiences that explore agricultural science. In 2015, 122 educators were introduced to the curriculum. Educators attending trainings received resources to implement the AGsproration program. Teacher evaluations indicated that 100% planned to utilize the curriculum within their respective classroom or outreach settings. In 2015, a total of 2,000 youth and adults participated in hands-on lessons and activities from the curriculum. The AGsproration website also provides youth, families, and educators with 24-hour access to lesson plans and supplementary resources. Students who participate in AGsproration develop a better understanding of agriculture’s importance to Maryland’s economy and their daily lives. They also become more interested in pursuing science and agriculture careers including careers related to grain farming. To date, the program has reached more than 22,000 youth and 770 educators, to help accomplish Extension’s mission of creating an agriculturally literate Maryland population. 2015 Funding $5,000; 2016 Grant $3,500
Many thanks to the 2015 Commodity Classic sponsors who partner with us to bring grain farmers the most informative event of the summer!

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MARYLAND FARM AND HARVEST
Maryland Public Television | www.mpt.org/farm

Maryland Farm and Harvest puts a human face on Maryland's agriculture industry, telling the stories of the people who grow the state’s food and fiber. The series chronicles the successes and the challenges that local farmers face working in the state’s number one industry. Last season, Maryland Farm and Harvest explored the complexities of the global grain market, following a crop of Maryland wheat from planting to market. It’s a story that took viewers from a farm field in Talbot County, to the Chicago Board of Trade, and finally to Auntie Anne's Pretzel franchises worldwide. The program has been honored with five Emmy® Award nominations, including one win awarded to Host Joanne Clendining, a veteran actress and the owner of a family farm.

In Season 3, Maryland Farm and Harvest continues to acquaint viewers with the diverse and dynamic world of Maryland agriculture. Highlights include a profile of David Butts, a Frederick County equine dentist, who works on horses without sedating them, a visit to a Nebraska research facility where Genetically Modified Crops are created, and a look at the unique and lucrative world of ginseng farming in Garrett County. The series airs on Tuesdays at 7 p.m. on MPT-HD and is re-broadcast on Thursdays at 11:30 p.m. and Sundays at 6 a.m. Each show also re-airs on MPT’s secondary channel, MPT2, on Fridays at 6 p.m.

Maryland Farm & Harvest is MPT’s #1 locally broadcast show. Production has begun on the Season 4 series to air this fall.

BAY DAYS PROGRAM
University of Maryland Extension, Queen Anne’s County | https://youtu.be/8KrSjJvkm3k

The Food, Fiber and You Mobile Science Lab from the Maryland Agricultural Education Foundation (MAEF) was obtained to create a YouTube video during Kennard Elementary Schools 2015 Bay Days Program. This is a three-day event held each year to teach the students about their environment focusing on the Chesapeake Bay. The Bay Days program was held on June 1-3, 2015 in Centreville, Maryland. A press release was prepared and sent to all county media sources. The MAFE instructor, Ag Extension Educator, and local farmer worked together for the three days to teach over 250 students and 15 teachers Best Management Practices farmers use to protect the Chesapeake Bay.

The event was covered by the local media and the article was featured in the local newspaper with pictures of farms, students learning and the presenters teaching. One the teaching sessions was filmed by QACTV along with interviews of the presenters, teachers and principal. A 35-minute YouTube video was produced to help teach others about how farmers protect the bay every day. The YouTube video was shared on the QACTV station, Facebook, Twitter, and UME website.

VIDEO PRODUCTION
Maryland Department of Agriculture | www.marylandsbest.net/meet-the-farmers/

The Maryland Department of Agriculture (MDA) developed "soundbooks" on seed breeding, nutrient management and precision agriculture, as well as a feature on research with Dr. Robert Kratchevil. These short videos have been uploaded to YouTube and promoted on www.marylandsbest.net website, put on the Maryland's Best Facebook page and used many times through Maryland's Best and MDA’s Twitter accounts. Maryland's Best Twitter is averaging more than 29,000 views per month. The Maryland's Best website was used more than 150,000 times this year by 64,702 individuals. Grain producers were featured in January and in August on the Maryland's Best website. It is the goal of MDA to continue to use these videos to tell agriculture's story to the public who come to Maryland Department of Agriculture websites and follow Twitter and Facebook. There are now 20 soundbooks of Maryland grain farmers, thanks to grain checkoff grants. 2015 Funding $6,000
Maryland farmers have a good story to tell. Opening consumers’ eyes to modern farm practices is changing their views on farming.

U-LEARN FARM CONNECTING THE DOTS FROM AG TO U!
Maryland 4-H Foundation, Inc. | www.mymaryland4hfoundation.com

The 2015 My Maryland State Fair U-learn Farm connected the dots from Agriculture to the 500,000+ fair attendees. The U-learn farm was the centerpiece of a variety of agriculture learning opportunities on the 110 acre fair grounds including: Seeds, Soils and Students Green Wall, My Maryland Horse Festival, Ag-Mazing Race, My Maryland Farmer and so much more! The U-learn farm featured a John Deere Combine harvesting Maryland grain crops: corn, soybeans and wheat. Visitors were able to virtually drive the combine, feel the harvested grain, and learn about the byproducts and uses for grain. Seasons one and two of Maryland Farm and Harvest were featured on the Ag-Stage, allowing families a chance to rest and learn about Maryland farmers and the agriculture industry. Together with the Maryland Grain Producers Utilization Board, Maryland State Fair, Maryland 4-H Foundation, Maryland Farm Bureau, Maryland FFA, Maryland Agriculture Education Foundation and the Mid-Atlantic Dairy Association, U-learn farm kept fair goers engaged in agriculture for its eighth year. Plans for 2016 are underway to connect Ag to U! 2015 Funding $6,000; 2016 Grant $5,000

WHEAT AND AMERICA’S FAMILIES GO TOGETHER
Wheat Foods Council | www.wheatfoods.org

The Wheat Foods Council’s website with recipes and high resolution images continues to be a vital component of promotion efforts to increase the consumption of domestic wheat and wheat foods. The Council developed and photographed 16 new recipes and an additional nine photos for older, popular recipes. Also created was a toolkit entitled “Wheat – America’s Family Food” which reached dietitians at 25 different grocery chains. The kit contains templates for blogs and newsletters, Tweets, consumer handouts on mix-and-match dinners, and creative ways to use left-overs, as well as recipes with high resolution photos and is available under “Resources” on the website.

The recipe-developer planned several meals around basic wheat products that could be cooked early in the week and used in a variety of meals throughout the week. These were a hit with the target audience for their handouts and lessons. Through this project, the Council has attracted positive attention to wheat and wheat foods by focusing on healthier ingredients that taste great, look appetizing and are quick and easy to prepare. This has also provided an excellent opportunity to dispel the myths that surround wheat by presenting science-based facts about the benefits of wheat and wheat-based foods. By offering new and different wheat containing recipes for people to try, post, pin or share through various social media channels as well as through newsletters, e-magazines, traditional print magazines and newspaper recipe columns, the Council continues to promote wheat as the affordable, easy-to-prepare, tasty, versatile, and nutritious grain that it is. 2015 Funding $16,000

MY MARYLAND FARMERS
Grain and Soybean Partnership | www.mymarylandfarmers.com

The Maryland Grain Producers Utilization Board supported a new initiative, “My Maryland Farmers”, launched at the Maryland State Fair. The campaign encourages consumers to get to know their local farmer and features farmer photos with facts on banners, posters, and photo cutouts. A wall mural with a five-year lifespan highlights Maryland agriculture, includes the www.marylandgrain.com website, and is in a high-traffic area where over a million people will see it annually. A new photo booth added a popular element to the fair exhibit, allowing for increased conversations and email contacts to send further information. Video clips from farms were linked in with the signage, and added to a new www.mymarylandfarmers.com website, Facebook and Twitter accounts to further enhance the campaign. State fair attendance was estimated at 500,000 people, primarily from urban markets, with outreach continuing through social media throughout the year. This consumer education campaign was created by a partnership of the Maryland Grain Producers Association, Maryland Soybean Board, and CommonGround Program. 2015 Funding $10,000

COMMONGROUND
Maryland Soybean Board
www.findourcommonground.com

Health expos, sport events, nutrition tours, food and entertaining shows, and craft fairs are where CommonGround volunteers are reaching out to the public with a positive, factual message about food and farming. CommonGround is a national collaboration to reach urban consumers with a factual story of food production. Volunteer farm women learn about the CommonGround program, philosophy and goals, and gain skills in how to effectively relay their personal perspectives on farming and food to consumers. Third-party resources provide back up to personal farm knowledge. The combination of genuine, personal experiences and credible science is key to developing lasting consumer trust. Last year, volunteers reached over a million consumers through social media and publicity conducted in the region, plus had personal conversations with nearly 10,000 urban consumers and key influencers at CommonGround activities and events. These conversations are leading to more informed consumers with more positive opinions of food production. Support of local grain boards has made the difference in being able to launch this program and truly make a difference in the opinions of Mid-Atlantic consumers.
2015 Funding $15,000; 2016 Grant $2,000

NATIONAL AG DAY
Ag Council of America | www.agday.org

On National Ag Day, the Agriculture Council of America welcomed leaders from national agricultural associations, congressional members and student representatives from FFA, 4-H, AFA, the Consortium and Student NAMA to the nation’s capital. The day began with over 100 student delegates delivering the message of Ag Day to members of Congress and their staffs. A Mix-and-Mingle Luncheon followed, where Congressman Mike Conaway, Chair of the House Ag Committee, spoke about the remarkable contributions of American agriculture to our nation’s economy and culture. Guests gathered at USDA for the National Celebration of Agriculture Dinner where Michael Scuse, Under Secretary for Farm and Foreign Agriculture, addressed the crowd. This year’s celebration was energized, impassioned and well attended, with more than 350 at the luncheon and 150 at dinner.
2015 Funding $500; 2016 Grant $500
Two not-to-miss events coming this summer!

Thursday, July 28, 2016
Queen Anne’s 4-H Park, 10 am—5:30 pm
✓ Research Tours
✓ Checkoff Funded Exhibits
✓ Commercial Exhibits
✓ Hot Topic Updates
✓ Chicken & Pork BBQ and Crab Feast

Friday, July 29, 2016
Maryland Grain Checkoff Program
Sixth Referendum Vote
County Extension Offices, 10 am—2 pm
Call 410-956-5771 for mail-in ballot