

# Grain Store

MARYLAND GRAIN PRODUCERS ANNUAL REPORT

2021 - 2022



# Maryland Grain Producers

## Association

A grassroots membership organization that represents your interests in regulation and policy issues so that you can focus on raising the best crop you can.

**JOIN TODAY!**

[MARYLANDGRAIN.ORG/MEMBER](http://MARYLANDGRAIN.ORG/MEMBER)

### MGPA OFFICERS

President: Melvin Baile, Jr.

Vice President: Justin Brendel

Treasurer: Bobby Guy

Secretary: Charlie Cox



## Utilization Board

Implements the Maryland Grain Checkoff Program, collecting funds and providing grants focused on market development, research, and education for the collective benefit of Maryland farmers.

### MGPUB OFFICERS

President: John Bruning

Vice President: Steve Ernst

Treasurer: Allen Davis

Secretary: Charlie Cox

## Letter from the Utilization Board President

Overall, 2021 seemed to be a good year for most grain farmers. Despite the drought, farmers chatted about their higher than expected yields bringing in 1,350,000 bushels of barley, 74,375,000 bushels of corn, and 12,640,000 bushels of wheat. William F. Willard Farms was recognized nationally for growing 141.41 bushels of dryland wheat and Rigdon Farms was also recognized for a corn yield of 366.8 in the Strip, Min, Mulch, Ridge-Till, Non-Irrigated division.

To serve you, the Maryland Grain Producers Utilization Board (MGPUB) continued to work toward our mission of improving the bottom line of Maryland's grain farmers through research, market development, and education. Using your investment, MGPUB was able to fund projects that improved public understanding of agriculture, sought to improve production through research, and helped to support the production of ethanol as well as other market opportunities.

This past year, our team held their 7th referendum. Grain producers voted with an 88% approval to continue collecting 0.5% of the net value of each bushel of grain sold. These funds will be administered by our farmer board to fulfill our mission through grants voted on annually by our Utilization Board.

Lastly, the Grain Producers were ecstatic to hold a successful in-person Commodity Classic in July. At our annual meeting, five students were awarded a scholarship for the 2022-2023 school year and Delegate Charles Otto received the 2021 Dr. Miller Award.

We know that 2022 looks uncertain, if there is anything the Utilization Board can do for you, please reach out to any representative on our board. We wish you a bountiful 2022!

President  
John Bruning

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**IN 2021, GRAIN CHECKOFF DOLLARS FUNDED 7 MARKET DEVELOPMENT GRANTS, 13 EDUCATION GRANTS, AND 12 RESEARCH GRANTS. WE HAD 44 EVENT SPONSORS WITH AN ATTENDANCE OVER 275 FOR THE MARYLAND COMMODITY CLASSIC. FIVE STUDENTS WERE AWARDED A TOTAL OF \$12,500 IN SCHOLARSHIP FUNDS, AND WE ENDED THE YEAR WITH A SUCCESSFUL REFERENDUM VOTE TO CONTINUE THE CHECKOFF PROGRAM FOR FIVE MORE YEARS.**

**You can learn more about each grant on our website.**



# Education

## 13 Funded Grants | \$367,753

### My Maryland Farmers

The Maryland Soybean Board received grant funding from the Maryland Grain Producers Utilization Board in 2021 to support the efforts of their "My Maryland Farmers" project. My Maryland Farmers is a consumer-focused project that reached Marylanders through a blog, website, and social media to introduce them to Maryland agriculture. Regularly citing farmers from across the state, My Maryland Farmers helps to bridge the communications gap between consumers and local farms. The project has produced tremendous results on social media and continues to grow as a respected and trusted source of information about food and farming.

While the project covers all things related to agriculture, the funding provided by this grant, included a campaign of four blog stories (one per quarter) along with supporting social media content specific to grain farmers in 2021. An additional bonus blog post was included with the campaign titled, "*Farmers Drive Food to Table Safely*," featuring Justin Brendel published in March 2021, at no cost. My Maryland Farmers also continued to support Maryland Grain Producer's social media presence by sharing their content with our followers.

*Funding from MGPUB | 2021 - \$10,000 | 2022 - \$10,000*

### Maryland Farm & Harvest

Agriculture is the state of Maryland's number one industry, yet few Marylanders have ever visited a farm. Even fewer of them understand how much work goes into growing our food and fiber. To help showcase this important industry and the people behind it, Maryland Public Television (MPT) in partnership with the Maryland Department of Agriculture created *Maryland Farm & Harvest*, a television show and multimedia series that puts a human face on farming.

Hosted by two-time Emmy Award-winning Host Joanne Clendening, *Maryland Farm & Harvest* continues to take viewers around the state to see and experience what it's like to run a 21st-century farm - from technological advances and conservation challenges to age-old problems like bad weather and pests. Now in the ninth season, MPT has produced and aired 118 episodes and visited over 435 locations!

The series continues to be MPT's #1 rated regional show, attracting an audience of over 12 million viewers in its first eight seasons. MPT earned 12 Emmy nominations in 2021, and was awarded 4 Emmy Award for *Maryland Farm & Harvest*! This educational series continues to make major progress in connecting the general public with the agricultural industry and helps to foster a better understanding of the work farmers do.

*Funding from MGPUB | 2021 - \$150,000 | 2022 - \$150,000*

### LEAD Maryland | Pictured Above

The LEAD Maryland Foundation provided education to their program participant (known as Fellows) through in-person multi-day seminars and virtual training throughout 2021.

Fellows completed a seminar, commonly called, "*The Grain Seminar*," held in Kent and Queen Anne's Counties, June 15 - 17. Fellows identified roles of the MGPA, MGPUB, and Maryland Soybean Board, and learned about the economic impact of the industry. Through visits to dairy and hog farms, Fellows learned about grain utilization and the positive roles of animal agriculture. In November, Fellows completed a seminar in Baltimore City where they visited the Port and several urban farms.

The program as a whole provided education focused on leadership, public issues, policy, agricultural literacy, and skills such as communications, civil disclosure, and advocacy. Fellows became more equipped and confident to solve problems, identify resources, educate the public, and influence public policy.

Fellows will complete studies in Washington, DC in the spring of 2022 and will complete a study tour in Spain in the fall of 2022. A new cohort, Class XII (2022-2023) held their first seminar, in person this January.

*Funding from MGPUB | 2021 - \$15,000 | 2022 - \$20,000*



### U.S. Farmers and Ranchers in Action!

The support and partnership of MGPUB has made it possible for U.S. Farmers & Ranchers in Action (USFRA) to deliver on the organization's mission to connect farmers and ranchers with food and agricultural leaders across the value chain, elevating the U.S. farmer and rancher perspective into key sustainability- and climate-related conversations where the producer's voice has traditionally been missing. Through USFRA's signature leadership convening, the Honor the Harvest Forum held in September 2021, as well as USFRA producer organization participation in key dialogues in coordination with the 2021 UN Food Systems Summit & Climate Change Conference of the Parties (COP26), among other events - MGPUB's partnership has supported the effort to highlight the critical needs and fundamental role that US producers play in sustainably feeding a growing global population and addressing the challenges of a changing climate.

*Funding from MGPUB | 2021 - \$65,000 | 2022 - \$65,000*

### Maryland Envirothon

Educating tomorrow's decision-makers on the importance of conservation is vital to the health of our natural resources and the Chesapeake Bay. The 2021 Maryland Envirothon helped students become more involved in protecting natural resources by challenging their problem-solving skills and instilling a sense of stewardship in these future leaders. The 2021 Maryland State Envirothon competition was held virtually due to COVID restrictions, and their team is pleased to report that **50 teams throughout Maryland participated, with a team from Richard Montgomery High School in Montgomery County taking top honors.** Also, new this year, resource professionals developed training videos for aquatics, forestry, soils, and wildlife, as in-person training was not an option, again, due to COVID. The videos were available for students and teachers on the Envirothon website and YouTube. MGPUB sponsored scholarship checks were presented to each student on the first, second, and third-place teams at the conclusion of the 2021 event.

*Funding from MGPUB | 2021 - \$2,500 | 2022 - \$5,000*

### Road Safety Campaign

The Maryland Road Safety Campaign is a broad educational effort to decrease farm vehicle-related crashes on public roads. The campaign brings awareness to the unique nature of driving near slow-moving vehicles (SMVs), and safety measures to take when driving a SMV. **Educational resources have been developed, promoted, and disseminated to reinforce steps required to operate farm equipment at its safest level when traveling on public roads.** Safety checklist posters were created and made available at farm events and online at [www.FindMeDriving.com](http://www.FindMeDriving.com). Facebook postings have promoted safe operating tips. A training video module with animated clips was created and posted on the campaign website for use by farm managers to promote safety with employees, promoted at meetings where SMV drivers are present and shared through social media to highlight the importance of "Safety First." This Road Safety Campaign is decreasing the number, cost, and severity of farm vehicle-related crashes on Maryland roads and improving the image of farmers as putting safety first when traveling roadways.

*Funding from MGPUB | 2021 - \$8,500 | 2022 - \$8,500*

### Maryland FFA Foundation | *Pictured Above*

During the 2021 project year, the FFA State Officers and Staff presented virtual workshops for organizations and student members.

Spring judging events were held virtually over a 3-week period. Followed by State Convention, also held virtually this past June. There were **over 1,200 users from Facebook and YouTube that tuned in** to hear from the state officer team, keynote speakers, and much more! Then in November, Maryland chartered Maurice J. McDonough High School in Charles County.

The 2021 MGPUB grant helped the Maryland FFA Foundation provide valuable educational and leadership experiences for FFA students across the state. These events benefited students greatly as they were presented with new thoughts, ideas, and formal leadership skill training.

*Funding from MGPUB | 2021 - \$13,000 | 2022 - \$14,500*



# What is AGRICULTURE?

Agriculture is a big word. D

## MidAtlantic Common Ground

CommonGround is a national collaboration between the National Corn Growers Association and state programs to reach urban consumers with the factual story of food production. The goal is to build trust between consumers and farmers in the food system, showing that farmers share consumers' values and concerns. Volunteer farm women learned about the CommonGround program, goals, and philosophy, and built skills in effectively relaying their personal perspectives on farming and food to consumers at the national CommonGround conference. Credible third-party resources were provided to back up the personal farm knowledge of the volunteers. Opportunities were created for volunteers to engage with consumers and food influencers. During the 2021 pandemic era, volunteers continued live conversations with over 11,000 consumers and influencers at the national dietician conference, farm markets, and on-farm events to help their community learn about agriculture, and reached over 120,000 consumers through digital media and publicity conducted in the Mid-Atlantic region.

Funding from MG PUB | 2021 - \$12,000 | 2022 - \$12,000

## MAEF Amazing! Maryland Agriculture Book & Commodity Map | Pictured Above

The Maryland Agriculture Education Foundation utilized check-off dollars to update their elementary-focused book based on Maryland agriculture. "Amazing! Maryland Agriculture" introduces students to the crops grown in our state, geography, environmental issues, equipment, local foods, and more. The book and accompanying commodity map are used as a basis for lesson plans that teachers can incorporate into their core subject areas of language arts, science, and history. Fifteen final copies will be delivered to every elementary school in the 24 local school systems and made available online.

Funding from MG PUB | 2021 - \$5,000 | 2022 - \$5,000

## Kids Growing Grains | Washington County

The Washington County 4-H Youth Development, part of the University of Maryland Extension has converted the Kids Growing with Grains program to a fully online, virtual bitmoji classroom. The program is available to all 4th graders in the county. In 2021, the program reached 500 students with 3,066 contact hours! Students learn about grain nutrition, foods, and science while developing a connection between themselves and agriculture in their community.

Funding from MG PUB | 2021 - \$1,000 | 2022 - \$1,000

# National Yield Contest Results

## National Wheat Yield Contest

William Willard from Montgomery County placed first in the Dryland Winter Wheat division with a yield of 141.41.

## National Corn Yield Contest - State Winners

### Conventional Non-Irrigated

- John Rigdon - Jarrettsville - 324.04
- Brenda Walsh - Hampstead - 283.25
- George Windsor - East New Market - 272.20

### No-Till Non-Irrigated

- William Rigdon - Jarrettsville - 324.22
- Brad Rill - Hampstead - 301.07
- Brad Rill - Hampstead - 300.56

### Strip, Min, Mulch, Ridge-Till Non-Irrigated

- Harrison Rigdon - Jarrettsville - 366.83
- Chad Rigdon - Jarrettsville - 316.12
- Brad Rill - Hampstead - 290.13

### Conventional Irrigated

- Jason Sheubrooks - Sudlersville - 317.01
- Michael Wood - Denton - 288.95
- Bruce Bartz - Denton - 288.53

### No-Till Irrigated

- Catherine Bostic - Church Hill - 273.32
- Dan Dulin - Queen Anne - 273.04
- Ronnie Andrews - Hurlock - 258.19

### Strip, Min, Mulch, Ridge-Till Irrigated

- Christopher Davis - Galena - 302.70
- Olin Davis - Galena - 289.57
- Michael Wood - Denton - 274.99



**Dr. James R. Miller Award**

In 2021, Delegate Charles Otto, known to us as just Charlie, was recognized for his outstanding service to the Maryland grain industry. Delegate Otto served as a Maryland Grain Producers Board Member since the inception of the check-off, Treasurer of MGPUB, and President of MGPA until his election to the Maryland House of Delegates. Charlie is deeply rooted in the agricultural community as a certified crop consultant and sales representative at Nutrien in Salisbury while farming himself. Charles has also served on the Somerset County and Maryland State Farm Bureau Boards and is a member of the American Society of Agronomy and past Chair of the Salisbury Chamber of Commerce Agribusiness Committee.



Delegate Otto has served in the Maryland House of Delegates since January 2011 representing District 38A including Somerset, Wicomico, and Worcester counties. During his tenure in the legislature, Delegate Otto has served on the Environment and Transportation Committee and the Natural Resources and Agriculture Subcommittee, where all agricultural bills are referred. Charlie has chaired the Rural Caucus as well as the Eastern Shore Delegate. He is also a member of the Nutrient Management Advisory Committee and Pesticide Advisory Committee. Whether he is explaining to his colleagues exactly how a pesticide is used, what farmers do with their nutrient management plans, or what conservation practices we implement; Charlie is always a voice for the farmers of Maryland.

**2021 Scholarship Recipients**

**Dylan Hill**

Raised on a grain and beef farm and Pioneer seed business, Dylan Hill is currently attending the University of Delaware working on a Plant Science Degree. In Newark, Dylan is involved with the Alpha Gamma Rho fraternity while gaining a stronger understanding of plant biology and genetics to bring his knowledge back to the family farm as the sixth generation.

**Chad Patterson**

Raised on a dairy and grain farm in Chestertown, Maryland, Chad Patterson is currently a Sophomore at Perdue University. At Purdue, Chad is working towards a degree in Agriculture Systems Management to bring efficiency back to the family's multi-generational farm. During the summer of 2021, Chad interned with Nutrien Ag Solutions. In Indiana, Chad has been involved in the Dairy Club, Agriculture Systems Management Club, and the Agriculture Tech and Innovation Club.

**Jennifer Gannon**

Raised in Centreville, MD on her parent's grain and pork farm, Jennifer Gannon has an in-depth knowledge of agriculture. Growing up, Jen was very involved in the Pony Express 4-H Club and local FFA Chapter, today volunteering her time back to these organizations. In 2018, Jen began her secondary education at Chesapeake College. Now, Jen is a Junior at the University of Maryland Global Campus majoring in Marketing. Jennifer is currently employed part-time at Talbot County Extension as their Program Assistance and at Thompson Ag Consulting as one of the college student interns. Through Jen's experience, she plans to return to the family farm and one day add agri-tourism to the farm to educate the public on the importance of agriculture.

**Austin "Dutch" Nickerson**

In Kent County, Dutch Nickerson continues to work on the family's farm while attending the University of Delaware as a full-time student. From Chesapeake, Dutch transferred to the University of Delaware to study Agriculture and Natural Resources. Dutch plans to return to the family farm after graduation, where his mom, Kristen is employed full time. While working alongside his family, Dutch plans to grow his already established seedling tree planting business and expand the family's operation.

**Will Turner**

From Preston, Maryland, Will Turner graduated from Colonel Richardson High School this May. Will was very active in his school's football, soccer, and baseball teams while academically being involved in the National Honor Society, the National Technical Honor Society, and serving as a Student Government Office. Will has worked alongside his father, Greg Turner on the family's grain farm, for a number of years and hopes to expand his knowledge on production agriculture at Delaware Technical Community College. As a Freshman, Will plans to major in Agribusiness Management while playing baseball for the college.



# Market Development

## 7 Funded Grants | \$376,597

### National Corn Growers Association

The National Corn Growers Association (NCGA) and the Maryland Grain Producers work together to build existing markets for ethanol and livestock while expanding market access for U.S. corn and corn products around the globe. NCGA provides updates on the NextGeneration Fuels Act, the first step to transition the gasoline supply to higher octane fuel. A 98 Research Octane Number (RON) standard would support mid-level blends like E25 and E30, which would generate new corn grind by increasing annual ethanol usage by 5 billion gallons or more. That's 1.8 billion bushels of corn annually.

In 2021, NCGA released the first-ever U.S. Corn Sustainability Report that provides the background behind Corn's commitment to continuous environmental improvement. Lastly, NCGA protected farmer interests by submitting comments on behalf of corn growers to maintain access to products like atrazine, glyphosate, metolachlor, and several neonicotinoids.

*Funding from MGPUB | 2021 - \$155,000 | 2022 - \$120,000*

### U.S. Grains Council | Pictured Above

The U.S. Grains Council works together in trade with partners to advance our mission of developing markets, enabling trade, and improving lives. With 1 in 3 acres being planted for export, the market for U.S. agricultural products is global, and trade directly impacts every farmer. This growth means profitability for farmers, economic support for local communities, and jobs for rural America.

The Council actively works to present U.S. farmers with opportunities for export growth, which benefits their bottom lines and agriculture as a whole. Through a full-time presence in 13 key markets, representatives in an additional 15 locations, and programs in more than 50 countries and the European Union, USGC is carrying out this work on behalf of Maryland producers.

In Maryland, exports of grain and grain products were valued at \$96 million, 41% of overall Maryland grain and co-products value in 2018.

- The economic "ripple effects" of these grains and grain products exported created:
  - \$165.4 million in economic output
  - \$92.1 million in gross state product (GSP), and
  - 1,110 full-time equivalent jobs in the state economy.

*Funding from MGPUB | 2021 - \$84,357 | 2022 - \$85,411*

### Wheat Growers

The National Association of Wheat Growers' (NAWG) past year was very productive despite continued challenges around the COVID-19 pandemic. Throughout FY20-21, NAWG adapted to the COVID-19 pandemic and continued conferences, meetings, and other interactions virtually. NAWG remained active with the media and was featured in 1,600 articles reaching over 430 million people as well as sending out 32 press releases and conducting several media campaigns. NAWG also launched two new social media accounts on Instagram and LinkedIn.

The organization has been at the forefront of important debates on issues including trade, agriculture appropriations, environmental regulations, tax reform, the regulatory framework for new breeding technologies, and many others. NAWG was successful in securing funding authorization for several research priorities including the U.S. Wheat and Barley Scab Initiative, the Small Grains Genomic Initiative, and the Wheat Genetics Resource Center. Climate and conservation became an increasingly large topic and NAWG continued highlighting the positive impacts that wheat growers have already had on the environment. Further, NAWG formed the Special Climate and Sustainability Committee to discuss and define NAWG's stances on these issues and to formulate strategies and priorities.

*Funding from MGPUB | 2021 - \$11,000 | 2022 - \$11,000*





#### U.S. Wheat Associates | *Pictured Above*

This past year, U.S. Wheat Associates (USW) used its grant from MG PUB and 16 other state wheat commissions to earn federal matching funds and demonstrate to overseas buyers the functional value and performance of flour from soft red winter (SRW) wheat. Head-wins that limited SRW demand in 2019/20 didn't end in 2020/21. Despite improved crop quality, increasing SRW export prices, a large U.S. soft white crop, and cheaper competing supplies added competition. As a result, 2020/21 SRW exports of 67.6 million bushels were 23% less than 2019/20.

USW sustained its promotion work through virtual meetings and video programming. Examples include meetings with a Mexican flour mill serving cookie/cracker processors that resulted in **new SRW sales of \$5 million**. Trade service with five Colombian flour mills helped protect nearly **9.2 million bushels of annual SRW imports**. USW Cape Town showed Nigerian why they would save money while stocking high-quality SRW, leading to higher imports toward the end of the year. This work also helped spark a 40% increase in SRW exports to date in the 2021/22 marketing year.

USW thanks Maryland's farmers for their strong ongoing support.

*Funding from MG PUB | 2021 - \$43,800 | 2022 - \$47,400*

#### NBGA

The National Barley Growers Association (NBGA) represents the interests of U.S. barley growers with regards to industry and government relations at the federal level. Issues relevant to NBGA's work include Research, Domestic Farm Programs, Crop Insurance/Risk Management, Grain Quality, Trade Coverage, Taxes, Farm Labor, Transportation, Energy, Conservation, and Environmental Impacts including Sustainability. All of these topics impact the development and maintenance of domestic and international barley markets.

Specific issues of focus this past year were increasing federal research funding, including the Wheat & Barley Scab Initiative, the Barley Pest Initiative, and the Small Grains Genomic Initiative; securing barley producer eligibility for the USDA Coronavirus assistance programs and the WHIP+ disaster assistance program; maintaining farm program and federal crop insurance support for barley; enhancing trade, transportation, infrastructure, and supply chain systems to **ensure market access and competitiveness for U.S. barley**; promoting the sustainability of U.S. barley production; and expanding relationships with the beer and malting industry.

*Funding from MG PUB | 2021 - \$1,661 | 2022 - \$1,421*

#### Sustainable Energy Strategies, Inc

Build Back Better legislation will provide nearly \$1 Billion in biofuel infrastructure funding over the next year. This grant helped to lay the educational foundation for Maryland retailers and decision-makers. With **56 flex-fuel stations in operation**, Maryland drivers have more choices at the pump than ever before. Of these 56 stations, 40 are open to the public and 16 are for private fleets only. Of the 40 public stations, 24 offer E15 (88-regular) and 39 offer E85. Each public station sells an estimated 800,000-1,400,000 gallons of ethanol-blended gallons annually (source: Protec Fuels). This means the 56 ethanol stations conservatively moved an **estimated 10 million gallons of ethanol in 2021**. This equates to an **estimated 3 million bushels of corn** or as much as 6.8% of Maryland's 2020 corn harvest. (Note: These are unsubstantiated gallons based on historic volumes at E15/E85 stations.) We expect volumes to increase over the next 18 months after retailer Royal Farms completes 15 additional flex-fuel stations.

With the support of MG PUB, in 2021, SESI networked with industry experts to promote Maryland's efforts during the Fuel Ethanol Workshop, Mid-Atlantic Petroleum Dealers Association events, Clean Cities events, county meetings, and directly to retailers and fuel providers. In addition, SESI developed press releases to promote local ethanol stations in regional petroleum and agricultural trade publications to educate retailers and ag producers on the merits of mid and high-ethanol blends and upcoming funding opportunities. We attended and presented at regional meetings to share information on grants, infrastructure, and the future of ethanol.

*Funding from MG PUB | 2021 - \$18,279 | 2022 - \$52,616*



### Maryland Grain Producers Association

As our grassroots membership provides funding to continue strong legislative work in Annapolis, checkoff dollars are used to serve grain producers across the state.

In 2021, our social media channels reached 168,214 people with 68% being non-fans. On July 22nd 278 farmers, agribusiness professionals, sponsors, and more attended our annual Commodity Classic in-person at the Queen Anne's County 4-H Park. The MGPA team also sent 27 bi-weekly newsletters to keep our members informed, 15 press releases, and 25 grant spotlights to showcase how checkoff dollars benefit producers. Lastly, MGPA awarded five students a scholarship to continue their education in agriculture.

Furthermore, staff members attended a variety of events in-person and online to showcase the importance of Maryland's Checkoff Program.

*Funding from MG PUB | 2021 - \$125,000 | 2022 - \$125,000*

### MAIZALL

MAIZALL, the International Maize Alliance, is approaching its ninth year since its formation in May 2013. The members of MAIZALL are Ambramilho of Brazil, MAIZAR of Argentina, the National Corn Growers Association, and the U.S. Grains Council of the United States, which together represent about 50% of total global production and 70% of total global exportable surpluses.

Through MAIZALL, US, Brazilian, and Argentinian farmers have good access to international institutions and high-level policymakers and stakeholder organizations in the main importing countries. Our directors also speak at international conferences that provide a platform for a pro-innovation message and coalition building.

As part of MAIZALL's strategic plan (2019-2021), the focus has been on the European Union (EU). The EU continues to exert considerable influence on the development of policy and legislation in many countries around the world. As such, MAIZALL has decided to continue that focus on their new strategic plan (2022-2024).

*Funding from MG PUB | 2021 - \$10,000 | 2022 - \$10,000*

## Medius.Re

Check-off dollars funded the launch and ongoing maintenance of the Medius.Re database to benefit producers across the state.

Currently, this database contains the state variety trial results for corn and small grains. Farmers can access this program to search varieties of corn, wheat, and barley and see performance data from their area.

The platform is now live at <https://maryland.medius.re/> and can be found on the research tab of our website as well. Maryland Grain Producers is excited to fund this platform and hoping it better serves our producers!



# Research

## 12 Funded Grants | \$140,300

### Determine the Best Systems Approach to Managing Fusarium Head Blight in Wheat and Barley

For developing robust best management practices for controlling Fusarium Head Blight (FHB) and DON in grains, the University of Maryland performed a two-year project (2020 - 2021) where they experimented with various combinations of genetic resistance, fungicide combinations to control FHB and DON content. The experiments were conducted at two locations: in the artificially maintained high FHB pressure misted nursery conditions at Beltsville research facility and under normal conditions at Wye Research Station. **Anthesis/flowering was found to be still the best stage of spray for controlling FHB even with the Miravis-Ace.** However, the spray with the new chemistry at 50% head emergence still led to a lower but significant control of FHB severity and DON content. A detailed cost-benefit analysis indicted the per-acre cost to the farmers of application of both Miravis-Ace is labeled, it does seem to provide an advantage to the Maryland farmers. The broader application timing of Miravis-Ace is not the best at controlling FHB and DON but provides significant control on FHB and DON as compared to the untreated plots/non-FHB fungicides. Similar results were also observed for barley, where the best stage of application was heading, as anthers are not visible externally on barley heads.

University of Maryland | Dr. Nidhi Rawat | *Funding from MG PUB | 2021 - \$20,000 | 2022 - \$20,000*

### Modified Fertilization Strategies to Increase Grain Protein Content of Soft Red Winter Wheat

This project has the potential to provide Maryland wheat growers with an economic benefit by producing a higher-value grain that can be sold for a premium price. The University of Maryland selected three varieties of soft red winter wheat and subjected them to four nitrogen fertilization strategies in an attempt to economically increase grain protein content at two locations in Maryland. Two varieties were selected based on the high protein content reported in the Virginia Cooperative Extension Small Grains Variety Trial results. The third variety was a soft red wheat variety commonly grown in Maryland. **In 2019, it was not economically feasible to increase wheat protein content** at either location without local grain buyers offering an unrealistically high premium for increased grain protein. In 2020 and 2021, the low yields at both locations likely do not warrant the extra costs associated with increased protein content: either purchasing seed with the genetic potential for higher protein content or purchasing and applying additional N fertilizer.

University of Maryland | Dr. Nicole Fiorellino | *Funding from MG PUB | 2021 - \$7,500*

### Optimizing Early Season Insect Pest Management in Field Corn | *Pictured Above*

To improve the efficiency of at-planting insect management in field corn, an experiment compared 1) an untreated control, 2) Capture LFR (an in-furrow pyrethroid insecticide), and 3) Poncho 250 (neonicotinoid insecticide coated on the seed) in a Bt and a non-Bt hybrid. Fields were planted at three University of Maryland farms. The goal was to determine the individual efficacy of these frequently combined tactics (Bt traits, neonicotinoid seed treatments, and in-furrow pyrethroids) against Maryland insect pest pressure that may not warrant treatment. In the first two years of this experiment, insecticide treatments did not improve yield in either the Bt or non-Bt hybrid, and completely untreated corn performed well. Pest pressure was low across the sites. While the treatments reduced pest damage to seedlings at some locations, the damage was not yield-limiting. Poncho 250 was generally the most effective against soil insects; however, **less than 3% of plants were damaged by soil pests in any treatment in both Bt and non-Bt fields.** A better understanding of the contributions of each component of field corn insect management will allow producers to maximize profits and potentially reduce insecticide use.

University of Maryland | Dr. Kelly Hamby and Grad Student Maria Cramer | *Funding from MG PUB | 2021 - \$18,000 | 2022 - \$18,000*

### State Corn Test: Benchmark Hybrids

The performance of a statistically-sound and unbiased field trial provides producers with an unbiased corn variety comparison to be used in selecting varieties on their operations. Producers can appreciate a side-by-side comparison of commonly produced corn varieties as well as varieties that are new or experimental and may be lacking long-term performance data in the Mid-Atlantic region. A randomized complete block design, replicating and randomizing corn varieties across a field, is the only way to utilize statistical analysis to provide producers with confidence that the results determined in the experiment are likely to be repeated under similar conditions. The goal of this project is to provide Maryland producers with an unbiased comparison of corn variety performance across the geographic and climatic regions of Maryland to aid in corn variety selection. View 2021 results online at <https://psla.umd.edu/extension/md-crops>.

University of Maryland | Dr. Nicole Fiorellino | *Funding from MG PUB | 2021 - \$6,500 | 2022 - \$8,286*



#### Developing Improved Soft Red Winter Wheat Cultivars

This year, the University of Maryland accomplished critical evaluations of advanced UMD germplasm for its suitability to release as MD cultivars and initiated a pipeline to develop new germplasm. A total of 32 advanced MD lines are being tested in the MD State trials. A total of 20 MD advanced breeding lines are being tested in the regional Mason Dixon trial (multi-location trials conducted in Virginia, Kentucky, and North Carolina). Seed increases are planted for 5 top-performing high-yielding, FHB tolerant MD lines, and based on this year's data selection will be done to release superior MD cultivars. **The UMD team developed useful germplasm by making new crosses and head rows of this germplasm that are currently being analyzed.** Selected head rows derived from these populations will be harvested and the resulting lines will subsequently be evaluated in the yield trials at Wye, Clarksville, and Beltsville, MD. Using the excellent collaboration that our team has with regional breeding programs, 24 double haploid lines were selected that harbored multiple genes/QTL against FHB with enhanced resistance against leaf and stripe rust diseases and higher yield content. Seeds of these lines will be increased and used for evaluations for yield, disease resistance, and quality traits under state and regional trials. Best performing lines will be released as MD cultivars.

University of Maryland | Dr. Vijay Tiwari | *Funding from MG P U B | 2021 - \$20,000 | 2022 - \$25,000*

#### Effects of Increasing Corn Tissue Boron & Sulfur Concentrations on Nitrogen and Yield | *Pictured Above*

The University of Delaware looked at increasing applications of sulfur (S) and boron (B) on corn yields and nutrient uptake. As anions, S and B leach easily from the soil surface (particularly sandy loams), potentially leading to crop deficiencies. **Although no yield differences were observed**, additions of S and B did affect the uptake of at least Mg, but maybe also N and K. In fields where those nutrients were deficient, interference in uptake may exacerbate yield issues. To increase B uptake in corn, it may be necessary to add S at sidedress as well. When considering the leaching of anions, B did not move to the subsurface by harvest, but sidedress S additions did. This only represents one year of data and cannot necessarily be compared across all soil types of field conditions.

University of Delaware | Jarrod Miller | *Funding from MG P U B | 2021 - \$8,000 | 2022 - \$7,206*

#### Survey of Plant Parasitic Nematodes in Mid-Atlantic Cornfields & Evaluation of Nematicide Seed Treatments

Plant-parasitic nematodes cause yield loss across numerous field crops, including corn. In recent years, nematodes consistently ranked in the top-10 most destructive diseases of corn in the southern US. While many people feel that nematodes are present and reduce corn yield potential, very little is known about the actual distribution or population densities of nematodes that are pathogenic to corn in the Mid-Atlantic. This project sought to address preliminary questions to improve understanding of nematode distribution and to begin an assessment of potential management products. Objectives included: (1) Determine which nematode genera are present in corn acreage across the Mid-Atlantic (2) Survey farmers regarding field history and perceived yield loss from nematodes (3) Screen products for efficacy to reduce corn yield losses from nematodes and assess seed treatment effects on field nematode populations (4) Disseminate research results to Mid-Atlantic farmers. In the survey sites, ten nematode genera were recovered. Lance nematode was one of the most notable findings, being present in 73% of fields and above medium thresholds in 45% of fields. **No differences in nematode populations or yield were observed in the on-farm strip trial with Propulse applied in-furrow.**

University of Delaware Carvel REC | Alyssa Koehler | *Funding from MG P U B | 2021 - \$7,230 | 2022 - \$9,053*

#### Phytoremediation of Soils with High Phosphorus - A Long-term Evaluation in MD

Many agricultural soils throughout Maryland, and the greater Delmarva Peninsula, have high concentrations of Phosphorus (P) due to long-term history of manure applications at or exceeding rates designed to meet crop nitrogen needs. Unfortunately, in fields where only grains are harvested, we estimated that it will take decades to reduce P concentrations to a point where manure can again be used at P-based rates to fertilize grain crops. The University maintained the current long-term drawdown rotation plots at the University of Maryland by maintaining corn, wheat, double-crop soybean, and cover crop rotation, and collecting grain and soil samples to monitor trends in soil test P, grain yield, and crop P uptake as influenced by various soil test P concentrations. We are evaluating soil samples collected throughout the lifetime of the project to gather a more complete picture of soil P dynamics under P drawdown scenarios. By determining the form of P within a soil sample, we can better understand how to manage high P soils in the Mid-Atlantic region.

University of Maryland | Dr. Nicole Fiorellino | *Funding from MG P U B | 2021 - \$12,500 | 2022 - \$8,373*



#### Field Evaluations of Small Grain Cultivars in MD for Scab Resistance, Yields, and Reduced Disease | *Pictured Above*

The goal of this project is to perform a critical evaluation of the public and experimental lines to provide robust data on the adaptability of the cultivar in the Mid-Atlantic environment, yield, diseases, and agronomic performances of the public and commercial small grain cultivars available to growers and stakeholders. Local evaluation of commercially available and experimental small grains varieties are replicated and controlled state trials is the only way that growers can obtain unbiased information on the best performing varieties under Maryland's conditions. In addition to it, a major goal of this project is to aid the regional public breeding programs by testing the developed new germplasm for yield, disease, and other agronomic traits under the MD environment.

For the cycle year 2021, UM received 67 entries of wheat and 19 entries of barley. In addition to these, the project also supported the evaluation of a large number of head-rows and yield plots for the MD germplasm, as well as yield and adaptability tests for the wheat cultivars from regional breeding programs. These cultivars were tested for their agronomic performances at Quantico, Queenstown, Beltsville, Clarksville, and Keedysville to provide statewide evaluations and allow producers to choose cultivars most suited to their environment, cropping system, and needs.

University of Maryland | Dr. Vijay Tiwari | *Funding from MG P U B | 2021 - \$16,000 | 2022 - \$20,000*

#### Developing Improved Winter Barley Cultivars for Maryland

The overall objective of this proposal is to develop high-yielding winter barley varieties adapted to the Mid-Atlantic environment with increased resistance against Fusarium Head Blight (FHB). Plant breeding for a targeted trait is the most sustainable option and is needed to meet the challenges of changing and new pathogens and to increase the yield potential of winter barley. This research will deliver high-yielding winter barley cultivars under PVP.

This year 50 new barley crosses were initiated. Out of the new crosses initiated in 2021, a total of 8 populations (top crosses) were advanced under speed breeding set up and the rest of the populations were cycled under traditional breeding cycle. A total of 20 new populations generated in 2019-2020 by combining FHB resistance, early flowering, higher biomass, and yield components, were advanced and planted in the head-rows in growing season 2020-2021. Selected advanced generations of these lines are already planted in the 2021-2022 cycle. Advanced generation head rows from these lines are grown in the field to select the better performing lines for developing improved cultivars. A total of 4 new improved MD barley lines are being tested under MD statewide trials for their critical evaluation for yield as well as other agronomic performances.

University of Maryland | Dr. Vijay Tiwari | *Funding from MG P U B | 2021 - \$10,000 | 2022 - \$15,000*

#### Identification of Triticale Varieties with Best Cover Crop Potential for Maryland

Triticale provides profitable options as a cover crop in Maryland. Winter triticale is not as hard to control as interrye and it is an easier cover crop component to control in rotations where volunteers are undesirable. To date, efforts to enhance triticale yields and cover crop utility for the northeastern USA have been limited. Lack of knowledge and poor understanding about triticale germplasm adapted for Maryland, and non-availability of publicly available triticale varieties present major barriers for increasing triticale acreage in this specific agro-climatic region.

To start the breeding efforts for the triticale cultivars adapted to the MD environment, the University of Maryland started screening a large set of triticale germplasm in the field at two locations (Beltsville and Clarksville). Based on two years of data, a set of 20 triticale lines were selected as the top parental lines for developing breeding-germ plasm. A total of 50 new crosses were initiated this year and a small number of selected top crosses (6) were advanced using speed breeding. By combining populations developed in 2019 and 2020, there were already 90 triticale populations in various stages, and these are planted in the field under 3,000 head rows of triticale breeding lines in this growing season (2021-2022) and new crosses are underway. Through this proposal, the University will update the growers about the multipurpose role of triticale as a crop and will provide a platform for publicly available triticale seeds coming out of the Maryland small grain program.

University of Maryland | Dr. Vijay Tiwari | *Funding from MG P U B | 2021 - \$10,000*



### Improvement and Development of Barley for Use in Feed, Malt, and Food | *Pictured Above*

The Virginia Tech Barley Breeding program aims to develop high-yielding, disease-resistant barley cultivars adapted to the Mid-Atlantic and southeastern U.S. region and with qualities designed for malt, feed, and food. The growth of craft malting, brewing, and distilling industries in the Mid-Atlantic and Eastern US has driven demand for locally grown malt barley varieties adapted to the east coast. VA Tech is currently evaluating malting barley cultivars developed by collaborators in the U.S. and Europe while rapidly developing and testing malting barley experimental lines from the program. This cooperative project is working toward genetic characterization and mapping of over 40 targeted traits in barley breeding lines. Efforts towards the development of high-value barley varieties by improving yield, quality, straw strength, grain plumpness, and disease resistance have been fruitful. VA Tech is pleased to report the release of its first two-rowed winter malt barley variety 'Avalon' (tested as VA16M-2R) and its first two-rowed winter hulless barley variety VA15H-73.

VA Polytech Institute | Dr. Nicholas Santantonio | *Funding from MGPUB | 2021 - \$5,000 | 2022 - \$6,000*

## New 2022 Funded Projects

Improving K Fertilizer Recommendations for Corn on the Delmarva Peninsula | \$18,330

University of Delaware | Amy Shoher and University of Maryland | Dr. Nicole Fiorellino

Grid Sampling Soils to Improve Understanding of Soil Variability and Corn Yields | \$8,563

University of Delaware | Jarrod Miller

Promoting Natural Suppression of Slugs in No-Till Corn | \$14,879

University of Delaware | Michael Crossley

Micronutrient Zinc to Enhance Yield Potential in Corn | \$23,567

University of Maryland Eastern Shore | Dr. Naveen Dixit

Grain Bin Safety Tubes | \$20,000

Nationwide

## MGPUB Financial Report

### Income

Corn \$1,025,196  
Wheat \$159,873  
Barley \$9,230  
Oats \$1,844  
Sorghum \$4,699  
Interest/Other \$1,078

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**Total: \$1,201,920**

### Expenses

Market Development \$379,097  
Education \$357,753  
Research \$139,123  
Program \$66,022  
Refunds \$48,670  
Administration \$27,493  
Other \$11,174

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**Total: \$1,029,332**



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## SAVE THE DATE

The 2022 Maryland Commodity Classic will be held on **Thursday, July 28th** at the Queen Anne's County 4-H Park. Research presentations will begin at 9:00 AM followed by lunch and time to network with our sponsors. At 1:30 PM the business meeting will begin with national updates, the 2022 Dr. Miller Award and Student Scholarship Presentation, and a keynote speaker. We will end the day with a delicious crab feast and BBQ.