

SPRING 2022

Growing Montana



**MABA 2022
BOARD
MEMBERS**

**PAM LANGLEY
MEMORIAL
SCHOLARSHIP**

**ENDANGERED
SPECIES ACT
Q & A**

A Publication of
MONTANA AGRICULTURAL BUSINESS ASSOCIATION

TABLE of CONTENTS

President’s Message..... 3

MABA 2022 Board Members.....4

EARC Conducts Research6

Pam Langley Memorial Scholarship8

Value-Added Ag..... 11

Tired Crews15

Congressional Comments16

Farmers and Ranchers Invested in Climate Solutions..... 20

Points to Ponder 22

What's the Cost of Poor Deposit Uniformity?..... 23

Montana Fertilizer Advisory Committee 27

Great Montana Ag Rally Golf Scramble & Sponsorships... 28

EPA Protection Policy for New Pesticides..... 30

MABA Participates in Governor's Ag Roundtable31

Endangered Species Act Q&A..... 32

EPA Announces Updated Schedule..... 37

Constitutional Initiative – CI-121 38

Calendar of Events 40

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MABA OBJECTIVES:

- To encourage the proper use of all pesticides, plant food, seeds and other agricultural products.
- To promote educational programs to bring together those who are associated with the aforementioned practices and uses.
- To provide a means for an exchange of information and ideas among persons associated with agricultural business.
- To encourage and support research and educational programs.
- To cooperate with local, state, regional and national agencies, both public and private, in the solution of problems and/or in the proposal of legislation relating to all such practices.
- To sponsor desirable laws and law changes that would be beneficial to the Association and its members.
- To serve as a clearing house for the legislative requests of various organizations regarding programs affecting the Association.



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A Message from the President

I want to start off by saying Thank You to each one of you for your support and participation at our annual convention a few months ago! With Covid still lingering and positive tests within our membership I was uncertain what the attendance would be. As the show got rolling, I was amazed at the strength of our membership. We were resilient and made it through the days of zoom meetings eventually to be rewarded with the 2022 convention. To finally see faces and interact in person was an amazing experience. The convention was a success because of our members, speakers and sponsors. I am excited for the Golf Tournament this summer and the opportunity it will provide us to gather as one. At the end of the day, we are all on one team in this business and we must continue to work together and support one another.

Starting my first year as president I want to establish strong communication between the membership and the board. This goes both ways and as a board we will work to improve our communication through our task forces. I am excited about our current board members and what each of them offers. I encourage you to reach out to any one of them or myself and share your thoughts and concerns and let us know what you like or dislike. I have heard back from several members with suggestions for the 2023 convention and I am thankful for the input. Please let us know topics you want covered at convention so we can work on speakers and provide what you need. We cannot improve or make the convention better without your input. We have 6 task forces/committees, and we welcome and encourage you to join. You can find these task forces on our web page at www.mtagbiz.org under the Who We Are tab.

This spring season will again be challenging, and emotions will run high at times from the field all the way through the supply chain. I know with confidence we will get through all of it and come out stronger. Our industry is resilient and if we stay together, we will succeed. Don't forget we are all on the same team and your MABA board is here to support you however we can. As always, look out for one another and stay safe. ■



Jake Yates

President

*Montana Agricultural
Business Association*

MABA 2022 Board Members



Jake Yates, President
Nutrien

Jake is a Regional Sales Manager in the West for Nutrien where he is responsible for wholesale fertilizer sales in Montana, South Idaho, Utah and Wyoming.

Before working for Agrium/Nutrien he completed the General Manger Trainee Program with CHS and Prairie Lakes Co-op in Minnesota. He moved back to Montana and went to work for Town & Country Supply first as a CES (Certified Energy Specialist) and then as an Agronomy Location Manager.

Jake currently lives in Billings, MT with wife Keri, sons Bridger and Jaxon and daughter Robbi. He is a graduate of Chinook High School (GO Sugar Beeters!) and graduated with a degree in Ag Business from Montana State University (Go CATS!!).



Tanner Hoversland, Vice President
Moore Farmers Oil

Tanner was born and raised on a farming family in Scobey, MT and graduated Scobey High School in 1996. Attended Carroll College and graduated with a B.A. in History, then continuing his education at Montana State University-Bozeman receiving a B.S. in Agricultural Economics. Tanner worked

for the J.R. Simplot Company for five years in Caldwell, ID and Grand Forks, ND. Yearning to be closer to family, Tanner accepted an Agronomist/Sales position with Moore Farmers Oil in 2008 and is currently the Agronomy Manager. Tanner lives in Lewistown with his wife Kelsi, their son Keegan and daughter Kit.



Johnnie Scott, Secretary
Syngenta Crop Protection

Johnnie Scott works in northern MT as a sales rep for Syngenta Crop Protection. He holds a bachelor's degree in Agribusiness from Texas A&M-Commerce. Although a native Texan, Johnnie is very passionate about Montana Agriculture. He has been fortunate to work in the industry across several states including: Texas, Arkansas, Mississippi,

and Montana. He is always up for new challenges, and works diligently to promote and advance agriculture.

Marcus Weatherhead, Treasurer
Corteva

Marcus is a West Virginia University graduate who has had several roles within retail agronomy in the southern Montana market. He has most recently taken a position

with Corteva as a Strategic Account Manager. He currently lives in Huntley Montana with his wife Teale Weatherhead and 2 boys Nolan Weatherhead (5) and Reed Weatherhead (3).

Marcus really enjoys contributing to MABA with his perspective and experience from a large retailer, cooperative and manufacturing.



Dan Brattain
Helena Agri-Enterprises LLC

Dan grew up in Great Falls Montana helping on his family's ranch and graduated from CMR High School in 2007. He attended Montana State University-Bozeman from 2007-2012 and graduated with a B.S. in Agriculture Business and a minor in economics. After college Dan worked for CHS in Kalispell as an agronomy sales representative from 2012 to the end of 2014. At the beginning of 2015 he started at Kernaghan's Service, Inc. in Great Falls as their agronomy sales representative. At the beginning of 2019 Kernaghan's Service was acquired by Helena Agri-Enterprises LLC. Dan is currently still the agronomy sales representative for Helena Agri-Enterprises Great Falls retail and is helping on his family ranch with both his parents, wife, and daughter Teagan.



Burl Brawley
Helena Agri Enterprises LLC

Burl was born and raised in Great Falls MT. He has spent most of his career in the Ag Industry in Montana. Burl has worked in Ag Chemical retail and the majority of his career has been spent in the Wholesale Ag Chemical Business. Burl has spent time as a Truck Driver, Logistics Manager, Outside sales and most recently he is the Location Sales Coordinator for Helena Agri Enterprises LLC at their new facility in Great Falls MT.



Ryan Helmer
Wilbur Ellis

Ryan grew up in Minnesota before studying Ag Business at Montana State. He then farmed and ranched full time for 6 years south of Wolf Point. Ryan started working for Wilbur-Ellis Company in 2012 after a short stint at Agland Coop in Wolf Point. Ryan specializes in Precision Agronomy and Field Technology. Ryan lives north of Sun River with his wife Megan and daughters Grace, Paige and Claire. His family raises black angus cattle with partners in the Geraldine area. Ryan and his family love to hunt, fish, spend time outdoors and enjoy Montana agriculture.





Don Soper
CHS Big Sky

Don was born and raised in Larslan MT, a little community south east of Opheim MT where His family farmed and ranched. Don graduated from Opheim High School in 1989. Don then decided to see the country and started a stint on the custom harvesting circuit with his uncle's combining business.

After 3 years Don moved back to Montana to start his agronomy career. He went to work for Valco Agri-Services in Glasgow Mt. in 1993.

Don moved to Havre the summer of 1995 and started working for an independent agronomy company. After spending 14 years there, Don moved on in his endeavors, and started a new job in agronomy sales for CHS in 2009, where he is currently residing.

His wife has been a school teacher in Box Elder since 1998. Hobbies include, camping, and spending as much time as possible at their family cabin in Eureka MT.



Casey Odom
Nutrien Ag Solutions

Casey Odom is employed by Nutrien Ag Solutions in Billings Montana. Casey has worked for several legacy Nutrien companies for the last 13 years including United Agri Products, Crop Production Services and Nutrien Ag Solutions. Casey has earned a distinguished career in multiple roles starting with his career in Glasgow, Montana as a facility

Manager. Company changes gave Casey an opportunity to take a sales role in Billings covering southern Montana and northern Wyoming.

Casey's success is a direct result of working hard, answering the call, building relationships and having common interests with what he engages, that being Montana agriculture. Casey takes pride in helping producers meet their goals and growing successful operations.



Tim Takes
KALO Inc.

Tim was born and raised on a farm in Power MT. He attended Northern MT College and obtained a degree in Ag-Business. After college he worked a year for USDA Soil Conservation Service in Havre. He decided government work was not for him and began his ag business career with Harvest States as a pesticide applicator in the Billings area. In

1995, he moved to Stevensville, where he currently resides, to be a field agronomist for Farmers Exchange - CHS. Afterwards, he spent 9 years managing the agronomy division

of CHS Mountain West. In 2011, he made the move to the wholesale side of ag business and worked for CHS Wholesale Crop Nutrients supplying fertilizer to ag retailers in MT, ID, WA, OR, and UT. Following company restructuring and a departure from CHS after 24 years, he spent a year working outside of the ag industry. Feeling that ag had always been his professional calling, in 2019 he became the Northwest Area Manager for KALO, an adjuvant company, where he helped test and bring new technology to Ag retailers across the northwest to improve the performance of their crop protection products. Tim has and still does spend time sitting on other ag based organizations and boards including Ravalli Co Weed Board, Montana Weed Control Association, Right to Farm/Ranch, MSU Western Ag Research Station Advisory Council, and Far West Ag Business association. He married with 2 children, a son at Stevensville High School and a daughter attending Montana Tech. He spends his free time working and playing golf at the local course, fishing, camping, hiking and enjoying all the great outdoors of western Montana has to offer.

James Baguley
Corteva Agriscience

James Baguley grew up on a small fruit production operation in west Michigan. While attending Michigan State, James began his work in the ag chemical industry with BASF. Working in Michigan, North Carolina, Tennessee, Missouri, Arkansas, Montana and South Dakota for BASF. In the winter of 2017, James had the opportunity to return to Montana's agriculture industry with Corteva AgriScience as the Territory Manager for Western Montana.



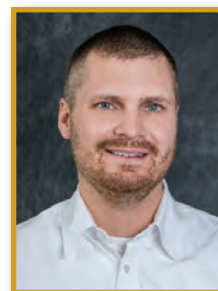
NEW BOARD MEMBER

Luke Neal
Rocky Mountain Supply

Luke is the Agronomy Division manager for Rocky Mountain Supply. He has been with the company since 2019.

Before working for Rocky Mountain Supply, he worked for three other co-ops in Washington, North Dakota and Montana. He has worked in the Ag retail industry since 2010.

Luke is originally from Augusta MT, where he was raised on a ranch 6 miles west of Augusta. He graduated from UMW-Dillon. ■



Eastern Agricultural Research Center Conducts Research to Address Stakeholder's Needs

By Chengci Chen

The Montana State University Eastern Agricultural Research Center (EARC) is located in Sidney, MT, and provides services to all area of eastern Montana. Crops and production systems are very diverse in the eastern part of the state. Large acreages of pea, lentil, spring wheat, durum wheat, and canola are produced in this region; the majority grown on dryland. Sugar beet, soybean, corn, and malt barley are grown under irrigation along the Yellowstone River Valley. Sugar beet, in particular, is an important cash crop that anchors the local economy in the MonDak area.

FACILITIES AND EQUIPMENT:

The EARC has two research farms for dryland (40 acres) and irrigated (140 acres) crop research. The irrigated farm has three linear irrigation systems, two of which are equipped with variable rate irrigation control systems for evaluating irrigation timing and water management in different crops. The newest linear irrigation system, installed in 2021, allows to facilitate irrigation scheduling based on soil moisture sensors. The EARC also has equipment to conduct field studies on grain crops and sugar beet, including equipment for planting, fertilization, harvesting, and grain processing.

In 2011, with the funding support from the state legislature, Richland county, and generous donors

from the community, a \$2.8 million office-lab-greenhouse complex was built at the EARC (Fig.1). This complex has greenhouses for conducting winter experiments and provides each research group with laboratory space for both chemistry and molecular analyses. A large conference room allows the EARC and the Richland County Extension Office to host educational events for the regional agricultural and scientific communities.

One agronomy lab is equipped with a combustion nitrogen analyzer, NMR oilseed analyzer, NIR grain analyzer, sucrose analyzer, and spectrophotometer for colorimetric analyses. The Plant Pathology research program has a molecular biology laboratory that is equipped to grow, identify, and store plant pathogens for research. This equipment includes PCR machines, ultracold freezers, microscopes, biosafety equipment, and pathogen incubators. Additionally, it allows us to produce more than 350 lbs of fungal inoculum for scab resistance screening each year.

RESEARCH PROGRAMS:

The EARC has been conducting research to support the agricultural producers and stakeholders in the eastern portion of the state since it was established in 1948. The research results produced here are applicable to other regions of the state and beyond. Currently, the EARC has an Agronomy research program led by Dr. Chengci Chen and a Plant Pathology research program led by Dr. Frankie Crutcher.

1. Sugar beet research:

Plant breeding and cultivar evaluation is the key to develop better sugar beet cultivars with improved genetics to produce higher root yield, higher sucrose concentration, and reduced disease impacts. The EARC Agronomy research program tests sugar beet cultivars at on- and off-station locations each



Fig. 1. Picture of Eastern Agricultural Research Center office complex.
Image by Chengci Chen



year. The EARC Plant Pathology program conducts separate trials to evaluate disease resistance of the new cultivars to the disease Fusarium yellows, a historically difficult disease for producers in the region to control. The MonDak Variety Approval Committee consisting of beet growers and representatives from Sidney Sugars holds a meeting each year to approve superior cultivars based on yield, sucrose concentration, and disease resistance. The cultivar development and testing effort has made a positive impact on the industry. During the past decade, on average the sugar beet root yield has increased 0.8 ton/ac each year and sucrose concentration increased by 0.2% each year (Fig. 2).

The Agronomy research program has also conducted a no-till sugar beet project funded by the Western Sustainable Agricultural Research and Education Program from 2015-2018 (Fig. 3). The results have showed that planting sugar beet without tillage is feasible and the sugar beet yield and sucrose concentration were similar between conventional and no-till practices. In addition, no-till reduced the costs in tillage operations. Other research activities included fertility and irrigation management in no-till and conventional tillage. Currently, research effort is focused on developing agronomic strategies to increase both yield and sucrose concentration.

2. Pulse crop research:

Montana is ranked #1 in pulse crop (pea, lentil, and chickpea) production in the United States. Cultivar development and evaluation is critical for the sustainability of the industry. The EARC Agronomy research program leads and coordinates the pea, lentil, and chickpea cultivar testing at multiple locations across Montana with the cooperation of other research center scientists and producers. Advanced breeding lines and named varieties from USDA-ARS Pullman, NDSU Fargo, MSU Bozeman, and private seed companies are tested each

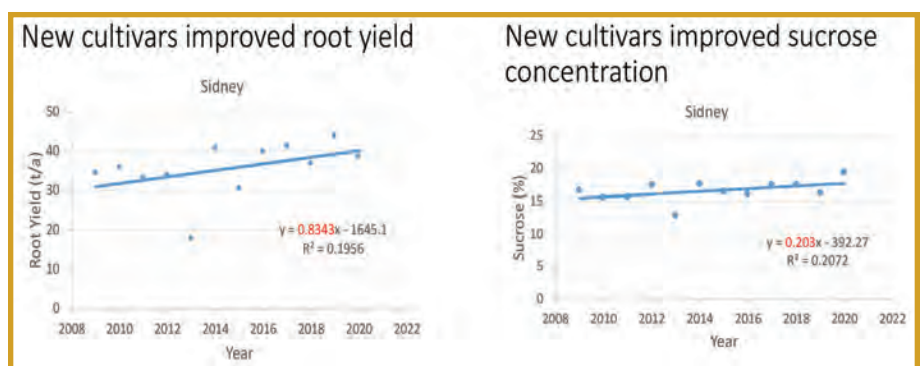


Fig. 2. The average sugar beet root yield (left) and sucrose concentration (right) increased over years in the cultivar evaluation nursery in Sidney.



Fig. 3. A picture of a sugar beet tillage, nitrogen, and water management study at the Eastern Agricultural Research Center in Sidney, MT. Image by Chengqi Chen



Fig. 4. A picture of cultivar evaluation plots in a farmer's field in Richland, MT. Image by Chengqi Chen

year for yield and quality. Field days are organized each year and annual reports are published to guide growers and seed dealers on cultivar selection (Fig. 4). The research team is currently studying how genetics, environment, and agronomic management practices affect protein and mineral nutrient concentrations in pulse grains. The goal is to select superior cultivars and develop agronomic strategies

EARC continued on page 12

Pam Langley Memorial Scholarship

The Pam Langley Memorial Scholarship has long been an MABA activity - one that the association has been very proud to promote and support. Starting in 2017, MABA and its membership worked hard to establish the Montana Agricultural Business Foundation (MABF). The MABF was formally established in the fall of 2018 and is now in operation.



One of the benefits of MABF is that it is organized as a charitable foundation therefore removing any question regarding the appropriateness of providing scholarships to our membership and their children. In 2019, the Pam Langley Memorial

Scholarship transitioned away from MABA and to MABF for administration and granting. This is a great opportunity for MABA members to provide funding to MABF to bolster these types of activities.

The current MABF Board of Directors include: Nichole Drake, Chris Barge, Tom Burchett, Nathan Brooks, Nate Fairbanks, and Branden Stone. Please reach out to any of them for additional information or to provide funding for the foundation and its activities.

Please spread the word to your employees and others in your business so that this scholarship opportunity isn't missed. The deadline for applications is May 15. ■



Our Mission

To preserve Montana's agricultural heritage and to foster its future by supporting and developing sound agricultural practices and promoting the positive impacts of agribusiness on agriculture, the environment, and Montana communities.



Montana Agricultural Business Foundation SCHOLARSHIP APPLICATION



PAM LANGLEY MEMORIAL SCHOLARSHIP

Deadline: May 15

There is no longer a requirement that an applicant be entering their second year – the student must be enrolling in next semester.

ELIGIBILITY:

Three \$2,000 scholarships will be awarded to students in pursuit of post-secondary education. Scholarships are not limited to in-state schools or to any field of study. The applicant or legal guardian of applicant must be employed a minimum of 800 hours per calendar year or be retired from a career with a business that is currently a member of the Montana Agricultural Business Association and its adjoining states. A student receiving a scholarship may reapply for subsequent years but will not be awarded a scholarship more than twice.

SELECTION:

The selection committee policy does not advocate, permit nor practice discrimination based on sex, race, age, color, national origin or handicapping condition. The selection committee shall consist of at least three members of the MABF Board of Directors. Committee members should not have potential applicants. The president may select committee members from the general membership if necessary. Winners will be announced and funds awarded before the fall semester.

PERSONAL INFORMATION:

Name _____

Current Phone _____

Marital Status _____ # of Dependents _____ Email: _____

Current Address _____

Permanent (home) Address _____

Name of Parent or Guardian _____

Parent or Guardian Address _____

Parent or Guardian Phone _____ Parent or Guardian Email _____

Number of brothers and sisters: older _____, younger _____, # in college now _____

MABA MEMBERSHIP INFORMATION:

Parent or Guardian Employer _____

MAMA Member: Yes No

MABA Employment Location _____

MABA Employment Address _____

over

PREVIOUS EDUCATION:

1. High School _____ Town _____
High school rank: ____ of ____ in class. Year graduated _____
2. Post Secondary Education (if any):
 - A. School _____ Town _____
Years completed _____ Degrees earned _____ GPA _____
 - B. School _____ Town _____
Years completed _____ Degrees earned _____ GPA _____

ACTIVITIES AND ACHIEVEMENTS:

1. What has been the nature and extent of your participation in activities of: (answer for both your high school and post-secondary years; use additional sheets if needed.)

Your School:

Your Community:

2. List any special recognitions or awards you have received.
3. Why do you feel you deserve this scholarship?
4. What work experiences have you had?
5. Write a paragraph or two indicating what your career plans are.
6. In which School and Program do you intend to enroll in seeking this scholarship?
Name of School _____
Major _____
Option or Area of Concentration _____
7. Are there any other circumstances, financial or otherwise, which you would like the committee to consider as an additional reason to grant aid?

REFERENCES:

Give the names, positions and addresses of three persons (not relatives) as references. It is preferable that at least one be a person for whom you have worked.

Name and Position:

Address:

_____	_____
_____	_____
_____	_____

Attach two letters of recommendation, your high school and postsecondary transcripts and a photo (the winners photos will be used for publicity). Return to Scholarship Committee, PO Box 7325, Helena, MT 59604 by May 15. **Preferred method: Application materials may also be submitted to: mabamgea@gmail.com**

I understand that this application is for \$2,000 in aid for the next school year. Any breach in enrollment or other unsatisfactory performance in my course of study will result in cessation of aid.

Date _____ Signature of Applicant _____



Montana Food and Ag Development Centers, Industry Reps Gather to Talk Value-Added Ag

The Montana Department of Agriculture hosted Ag industry leaders and representatives from Montana's Food and Ag Development Centers (FADC) in Helena on March 11th to learn more about each other and identify future avenues for collaboration.

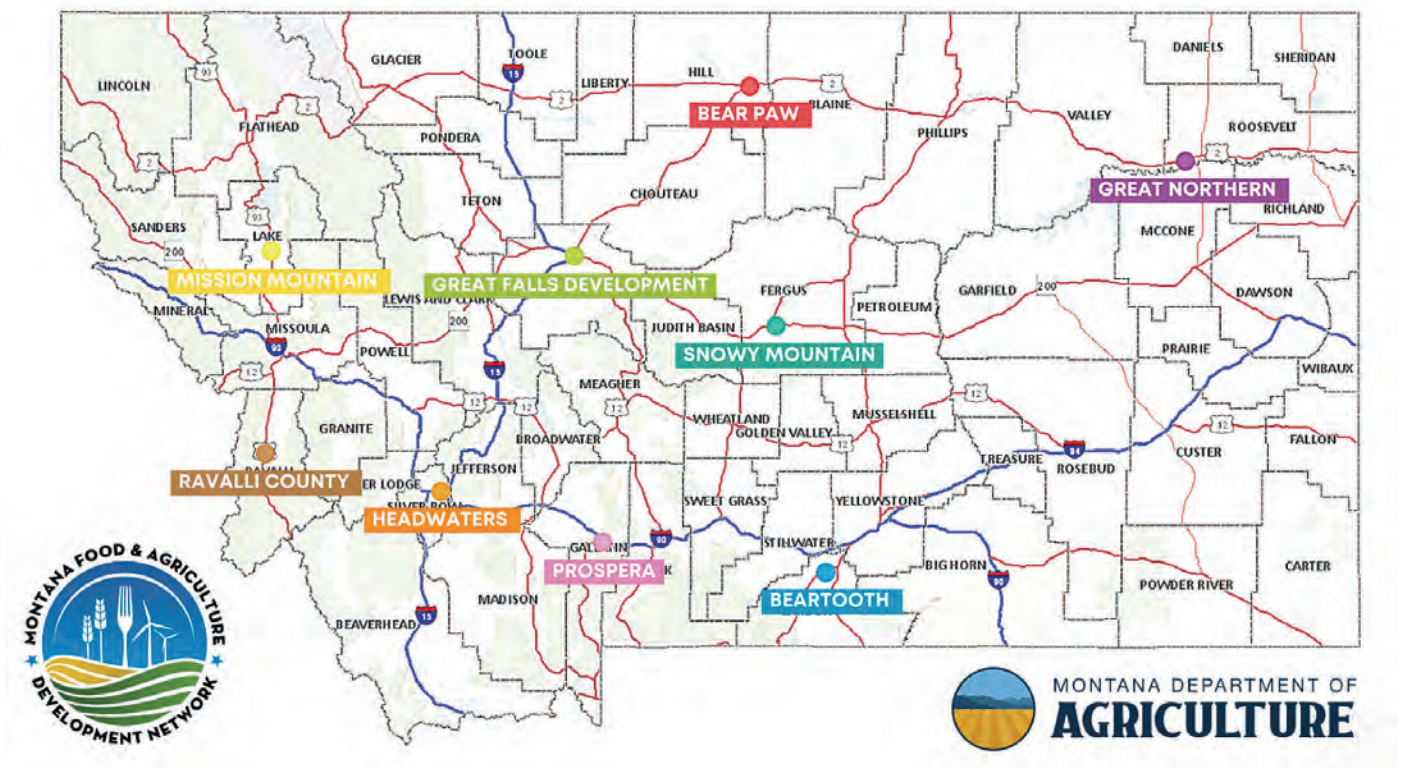
Representatives from FADCs in Ronan, Hamilton, Butte, Havre, Lewistown, Joliet, Baker, and Wolf Point provided introductions and updates on the work they're currently doing, both in their own communities and at a statewide level. Discussions included everything from working together to advance the Beef to School movement to arranging meet and greets in each of the FADC communities to get acquainted with more members of ag groups and continue building on industry partnerships.

Facilitated through the Montana Department of Agriculture, the food and ag development centers

operate as a statewide network to help community-based businesses and Montanans innovate and grow businesses that produce and commercialize food and agricultural processes.

The network supports economic development by ensuring that more of our state's food and ag dollars circulate in Montana. Each center provides training, coaching and technical assistance, including: product development, testing and analysis, regulatory compliance training, food processing, business planning and development, market research, business networking, access to financing, cooperative development, education on industry dynamics and technologies.

Visit the department's website to learn more: agr.mt.gov/Food-and-Ag-Development-Centers ■



EARC continued from page 7

for growers for consistent production of pulse grains with high protein and mineral concentration. Part of these results were published in Crop Science journal in 2022 and featured by the Crop Science Society of American News.

A primary focus of the EARC Plant Pathology research program is to study how different management practices effect diseases of pulse crops. Currently, there are three main projects addressing this topic. The first project is funded through the Western Sustainable Agricultural Research and Education Program to study intercropping chickpea and flax for control of Ascochyta blight, the primary limiting factor in the production of chickpea. This project is a collaborative effort between the Agronomy and Plant Pathology programs to measure how different

growth configurations affect agronomic variables such as yield, and determine the mechanism of how intercropping controls disease (Fig. 5). Root rots in pulse crops have become an increasing issue for pulse producers in recent years, and questions have been raised by producers how cropping rotations affect root rots. To the address this, the Plant Pathology program has initiated two projects funded by the Montana Department of Agriculture Specialty Crop Block Grant examining how long-term rotations and cover crop mixes affect the development of both Fusarium and Aphanomyces root rots. Additionally, the Plant Pathology program conducts pulse crop fungicide trials in collaboration with industry to provide unbiased efficacy data to producers in our region.

3. Cereal crop research:

Wheat is one of the most important commodities grown in Montana and the EARC supports winter wheat, spring wheat, barley, and durum breeders in Bozeman to develop superior varieties with high yield, improved seed quality, and resistance to diseases. With funding support from the Montana Wheat and Barley Committee, breeding nurseries are planted under both dryland and irrigated conditions, and the performance of each cultivar is evaluated in dry or wet environments so that superior cultivars can be identified across a diverse range of moisture conditions (Fig. 6, Fig. 7). Selected advanced breeding lines and new cultivars are also tested on farmers' land in Wibaux, Roosevelt, Sheridan, and Valley counties.



Fig. 5. A chickpea – flax intercropping study conducted at Sidney, MT. Image by Chengci Chen

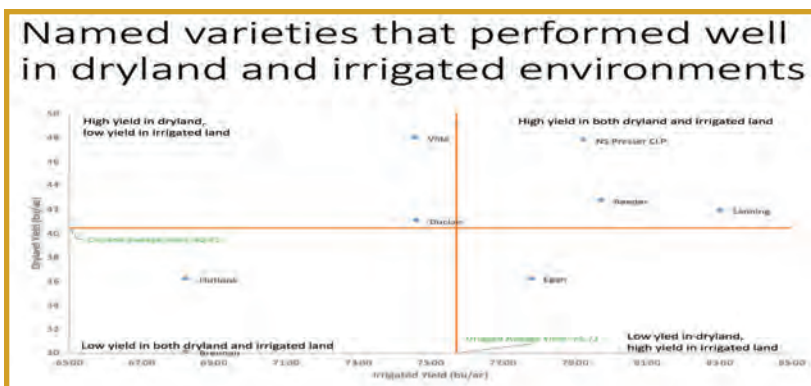


Fig. 6. A plot showing the yields of spring wheat cultivars in dryland and irrigated environments. The orange lines are the average trial yield of the dryland and irrigated nurseries (Zhou and Chen, 2018).

In 2017, the Plant Pathology program initiated a Fusarium head blight (also known as scab) screening nursery (Fig. 7), funded through the U.S. Wheat and Barley Scab Initiative, to provide cereal breeders with real world data on how their varieties perform under disease pressure. Because of this work, the spring wheat breeding program under the leadership of Dr. Jason Cook has been approved to release Montana's first moderately resistant spring wheat variety MT1716 with the tentative name MT Sidney.





Fig. 7. A spring wheat, barley, and durum wheat nursery under irrigation (left, image by Chengci Chen) and a *Fusarium* head blight screening nursery in Sidney, MT (right, Image by Frankie Crutcher).

4. Oil seed crop research:

Oil seeds have been grown in Montana for food (canola, flax, safflower, soybean) and for industrial use (camelina, hemp). The EARC Agronomy research program conducts cultivar testing and fertility studies to support the oilseed industry in Montana. Recently, Dr. Chengci Chen participated in a multi-disciplinary project led by Dr. Chaofu Lu in the Plant Science and Plant Pathology Department, Montana State University to screen camelina germplasm for higher nitrogen use efficiency and identify genes that control traits that contributed to higher nitrogen use efficiency. The project is funded through US Department Energy (<https://www.montana.edu/news/20472/msu-researchers-to-lead-11-million-study-to-deepen-understanding-of-camelina>) and over 212 accessions were evaluated in low and high N regimes for their growth, yield, oil concentration, and nitrogen uptake. In addition, industrial hemp has been studied at the EARC for fiber, seed, CBD oil, seed oil, and protein (Fig. 8).

STAKEHOLDER ENGAGEMENT AND STUDENT TRAINING:

EARC scientists work closely with growers, grower's associations, agricultural industries, the federal risk management agency, the Montana Department of Agriculture, federal funding agencies, and the local community. The EARC holds a field day at the research center each year. Growers, industrial repre-



Fig. 8. Field study to evaluate industrial hemp cultivars for CBD oil (left) and fiber and seed (right) in Sidney, MT. Image by Chengci Chen

sentatives, government agency officials, researchers and educators, and the general public are invited to attend the event (Fig. 9). In addition to the on-station studies, EARC scientists also conduct research on producer's land in Richland, Wibaux, Roosevelt, Sheridan, and Valley counties (Fig. 10). Some of the on-farm sites have been collaborating with the center for 38 years on research and variety testing. The pulse crop on-farm trial site initiated by Dr. Chengci Chen, Valley County Extension, and the cooperating farmers near Richland, MT has continued for 15 years. The EARC has also worked closely with the Montana Wheat and Barley Committee, Montana Pulse Advisory Committee, MonDak Sugar Beet Growers Association, Montana Fertilizer Advisory Committee, Northern Pulse Growers Association, and USA Dry Pea and Lentil Council.

EARC continued on page 14

EARC continued from page 13



Fig. 9. A field day held at the Eastern Agricultural Research Center in Sidney, MT. Image by Chengci Chen

The EARC provides training opportunities to postdoctoral researchers, graduate students, college interns, and high school summer student workers (Fig. 11). Currently, we have two postdoc researchers and four graduate students at the research center. Additionally, each summer we hire high school and college students from Montana and North Dakota to work as summer workers or as part of an internship.

These are great opportunities for young people to gain experience in agriculture and research that will be valuable for their future careers in farming, science, or agriculture.

Students interested in joining our team should contact Dr. Chen (cchen@montana.edu) or Dr. Crutcher (frankie.crutcher@montana.edu) or call 406-433-2208. ■



Fig. 10. A pulse crop tour held at Richland, MT (left), a cereal crop tour held at Flaxville, MT (center), and a sugar beet tour held at Fairview, MT (right). Image by Chengci Chen.



Fig. 11. Student interns working with the EARC Plant Pathology program. Image by Frankie Crutcher.

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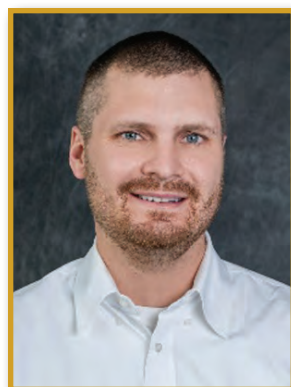
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Tired Crews

It is common in the workplace to go over overall safety tips. I can't count how many safety trainings I have sat through where we discussed extension cords being left out, ladder safety, icy roads, and lifting with your knees. All these are still important topics, but there is a safety topic that I found important for the Ag industry that is not always discussed this time of year. This topic is tired crews.



Luke Neal

*Board Member
Montana Agricultural
Business Association*

When spring fertilizer season hits, it is common to have the crews running 12-15 hour days, 6-7 days a week. These crews are busting their buns to cover as many acres as possible in the least amount of time. They are combating, weather, angry producers and upset bosses. They also have their own personal lives still going on at home when they return from these long days. When crews are tired, it can lead to mistakes. When you run heavy equipment, drive tender trucks, and climb towers for repairs, these mistakes have a great chance of being very harmful, if not fatal.

I challenge the crew supervisors and managers to talk about this safety issue. It is commonly overlooked, because it is a short season, with a tight workforce and there is no getting around the long days. Even when a rainy-day hits, those are most often used for equipment repairs instead of rest. Talking about the hazards of working on little sleep is one of the first steps to be taken to avoid mistakes.

I believe it is important to encourage short naps in the cab in-between fills for your tender drivers. Or encourage short naps if your applicators are waiting for a tender truck. And encourage the crew to speak up if they are concerned about falling asleep at the wheel before they run down the road with a heavy load of seed or fertilizer. I believe it is important to get away from the narrative that you shouldn't take naps while waiting. Often times in the season, I will have to take some short naps just so I stay awake when I am driving. Please encourage the managers and supervisors to not avoid this topic.

Have a safe spring. ■

Congressional Comments



Jon Tester

*United States Senator
For the State of
Montana*

U.S. SENATOR JON TESTER

With input costs near all-time highs, and moisture levels near all-time lows – farmers and ranchers have been hurting.

In order for suppliers to succeed, producers need to succeed, and last year’s bad conditions put a lot of folks in a bind.

Historically low yields made it hard for family farms and ranches to stay afloat, which is why with your help, we took action.

Last month USDA announced that it will begin distributing emergency relief payments through the

FSA’s new Emergency Livestock Relief Program (ELRP) to the ranchers to combat the high cost of feed.

This relief is targeted directly to producers hit by drought and wildfire.

When producers can make their operations pencil, it strengthens the whole agribusiness industry, and this relief will strengthen family farms and ranches across the treasure state.

But making up for lost revenue is only one part of the puzzle, which is why I’m working with my colleagues in the Senate to lower input costs and help provide certainty to the ag industry.

High energy costs lead to higher shipping costs, and in order to maintain our food security, our small and mid-sized ag businesses have to afford supplies.

We’re all feeling the pain at the pump, but after working with my colleagues on both side of the aisle, we’ve pushed the Biden Administration to take action and spur responsible domestic energy production while also releasing oil from the Strategic Petroleum Reserve.

These are concrete steps that will help combat the high price of energy as we deal with the ongoing impact of COVID-19, corporate profit taking, and Putin’s war in Ukraine.

Bad weather and high prices have made for a tough past year, but I know that folks in agribusiness are tougher.

Together we’ll ensure that producers and suppliers have what they need to stay strong, and as your Senator, please know that my door is always open.

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U.S. SENATOR STEVE DAINES



Steve Daines

*United States Senator
For the State of
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Montana is home to thousands of family farms and ranches that feed not only our state and nation, but the entire world. That's why I'm always working in the United States Senate to support and promote Montana ag.

Montana farmers and ranchers are experiencing increased input costs on essential items like fertilizer due to skyrocketing inflation, the supply chain crisis and Russia's ongoing invasion in Ukraine which has impacted our nation's energy and food security.

Instead of supporting Montana farmers and family ag operations, Congress is pouring gasoline onto the already out-of-control inflation fire. We should be doing all we can to support hardworking Montana families, not spending money we don't have, raising their taxes and worsening the inflation crisis.

That's why I'm working in the United States Senate to find common-sense solutions to help minimize the financial burdens caused by these crises and to lower input costs for hardworking Montana farmers and ranchers.

I recently sent a letter to President Biden calling on his administration to review all possible options to lower the cost of fertilizer. President Biden can take steps including, but not limited to: eliminating the cross-border vaccine mandate for transporters and increasing United States gas and oil production.

Quickly undertaking these measures is the most immediate—and perhaps only—near-term opportunity to begin lowering the record-high costs of fertilizer impacting Montana farmers and ranchers and ultimately Montana families.

What's happening in Ukraine and Russia should serve as a stark reminder that we must do everything we can to enhance America's food and energy security and support our Montana farmers and ranchers as they work to feed our state, nation and world. Strong agriculture and energy security means a strong country.

I'm also working to cut burdensome, bureaucratic red tape for Montana producers. Montana farmers and ranchers are longstanding stewards of our lands and waters—they shouldn't be burdened with more bureaucratic red-tape like those that would allow the federal government to regulate every pond, puddle, or ditch.

Congressional Comments continued on page 18

Congressional Comments continued from page 17

To prevent this, I've championed efforts to maintain President Trump's Navigable Waters Protection Rule (NWPR) and avoid a return to burdensome regulations like those imposed by the Obama-Biden Waters of the U.S. Rule (WOTUS), which threatened the independence of Montana farmers and ranchers.

WOTUS was a massive land and water grab that sought to give unprecedented power to unelected bureaucrats in Washington, D.C. at the expense of Montana producers. The WOTUS rule asserted categorical jurisdiction over typically-dry channels and a variety of intrastate, non-navigable, isolated waters. This radical escalation gave federal agencies' nearly unlimited authority to regulate any pond, puddle, ditch, stream, or creek and threatened the very way of life of our Montana farmers and ranchers.

I will continue to fight to ensure we do not return to similar heavy-handed regulations but instead maintain a partnership with states and local communities to provide clear, commonsense guidance defining what waters are subject to federal jurisdiction.

As your voice in the United States Senate, I will continue working to support and protect Montana family farms and ranches from bureaucratic red tape, tax hikes and higher prices caused by out-of-control government spending.



REMEMBER . . .
IT'S THAT TIME OF YEAR AGAIN!!



**Know what's below.
Tap, Click, or Call
811 Before you dig.**

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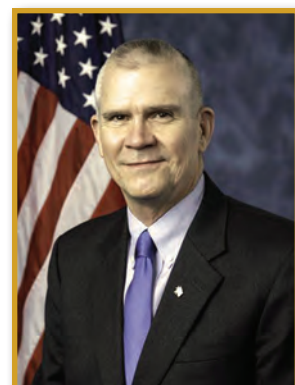
U.S. REPRESENTATIVE MATT ROSENDALE

With warm, dry weather just around the corner, Montana is facing another drought season. Minimal rainfall will leave farmers and ranchers at risk of losing crops and livestock, endangering their livelihoods, and causing essential goods shortages around the country. Necessary water projects keep will help keep Montana alive.

“This past year’s drought highlighted just how critical Montana’s water infrastructure is. Water is the driving force of all nature, a necessity that we can’t live without—whether for drinking, power generation, irrigation, or recreation. I have been working with House committees and the Biden administration, emphasizing the importance of many key rural water projects in Montana.

Last year, I introduced the Saint Mary’s Reinvestment Act in the House, to authorize funding and set a cost share for the Saint Mary’s project after the drop 5 structure collapsed, jeopardizing access to water for many throughout the Hi Line.

In January, I co-introduced a bill to authorize hydropower in the Bureau of Reclamation’s Sun River Project, including at the Gibson Dam. Enabling Greenfields Irrigation District to harness the benefits of hydropower generation while protecting access for irrigators is a critical move for Montana’s agricultural community. I will do everything I can to ensure that such critical water infrastructure projects are secured for our state, codifying Montanans’ access to clean drinking water and wastewater systems. ■



Matt Rosendale
US Representative
For the State of
Montana

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Opinion: Setting the Record Straight: American Farmers and Ranchers are Already Invested in Climate Solutions

By Rep. Collin Peterson

Watching the video series on American agriculture that the New York Times recently published reminded me that those of us who champion agriculture and rural America have a lot of work to do to overcome negative perceptions about what it takes to feed and fuel our world.

Americans in communities large and small have for years been working to find common-sense solutions to climate change, and it is unnecessarily polarizing to have far left-leaning activists distract from this task by using false sensationalism to place blame for pollution solely on the shoulders of U.S. agriculture.

The New York Times series is rife with inaccuracies, which even U.S. Department of Agriculture Undersecretary Robert Bonnie, formerly of the Environmental Defense Fund, called “horrible.”

Using half-truths and outright lies to belittle the farmers and ranchers who provide us with a reliable and affordable supply of food is detrimental to our shared mission to protect the planet. So, let us set the record straight.

U.S. agriculture accounts for less than 10 percent of GHG (greenhouse gas) emissions, according to the Environmental Protection Agency (EPA). This puts U.S. agriculture behind transportation (29 percent), electricity (25 percent), industrial (23 percent), and commercial and residential sources (13 percent).

In fact, on a net basis, U.S. agriculture and forestry eliminate more GHGs than they produce, removing some 729 million metric tons of CO₂ equivalent in 2017 alone.

While beef cattle are often targeted for the methane they naturally emit, in reality, a recent government study concluded that U.S. beef cattle account for just 3.3 percent of GHG emissions.

Despite their small share of GHG emissions, America’s farmers and ranchers have invested significantly in proven technologies and conservation management practices to protect our land, air, water, and wildlife while also further reducing GHGs. This includes no-till farming, the planting of cover crops, the introduction of biotechnology, the use of methane digesters, and even specially formulated cattle diets to reduce burping.

In fact, over the last 70 years, U.S. agriculture has tripled production while usage of land, energy, fertilizer, and other inputs has remained fairly steady. Moreover, roughly 140 million acres of farmland have been dedicated to conservation and habitat preservation objectives.

The activists who on one hand say they want to slow or stop climate change, on the other hand are steadfast in their opposition to these innovations in agriculture.

Let’s just be clear. If these so-called environmentalists were able to wave their magic wand and implement their pie-in-the-sky ideas, it would frankly jeopardize the food supply that ensures Americans seldom experience empty shelves and guarantee that food costs would skyrocket and become unaffordable to the average family who carefully budgets for their weekly meals.



Activists in these videos deliberately conflate farms and ranches with large corporate food companies and meat packers in their attempts to sway public opinion. This sleight of hand is akin to purportedly giving you a glimpse into the lives of the average Amazon employee by showing images of Jeff Bezos' yacht. It is an insult to our intelligence.

A government report last year affirmed that 98 percent of farms and ranches are family-owned and even the small number of nonfamily farms are often made up of relatives and neighbors who opt to farm together. But we do not have to rely on statistics to be confident in this: a short road trip into rural America is all the evidence anyone needs.

When confronted with these facts, environmental activists simply declare that everyone else is wrong and that the whole spectrum of political leaders — from Senators Elizabeth Warren (D-MA) and Bernie Sanders (I-VT) to former President Donald Trump and Senator Mitch McConnell (R-KY) — are in on the conspiracy.

As the former Democratic Chairman of the House Agriculture Committee, I can tell you firsthand that they are wrong. Congress has been working alongside U.S. agriculture for years to enact voluntary, incentive-based initiatives to reduce and sequester GHGs and achieve other important environmental objectives.

Farms and ranches are, in fact, already regulated under a vast number of environmental laws — ranging

from the Clean Water Act to the Endangered Species Act. But to achieve even greater air and water quality, soil health, wetlands and wildlife protection, and other important public policy objectives, lawmakers from both sides of the aisle understand that we must partner with farmers and ranchers under the incentive-based conservation programs authorized under the Farm Bill.

While environmental activists deplore the idea of voluntary, incentives-based programs, the Biden Administration has fully embraced the approach, recognizing that U.S. agriculture can not only reduce and sequester the small levels of GHGs emanating from the farm and ranch but can also offset significant GHGs from other sectors — an important realization given the ambition of cutting U.S. GHGs by fully 50 percent in just eight years.

Meanwhile, opponents of common-sense farm policies would rather hunt for a solution in search of a problem by convincing the public that we cannot fix the climate problem until we fix American agriculture — even though it is American agriculture that holds the key to the solution they are seeking.

That's a shame. ■

Collin C. Peterson is former Chairman of the House Agriculture Committee and represented Minnesota's Seventh Congressional District as a Democrat from 1991-2021. He was one of the few CPAs to serve in Congress. He is President and Founder of The Peterson Group.

For more opinions and ag news, go to: www.agri-pulse.com.



Tanner Hoversland

*Vice President
Montana Agricultural
Business Association*

Points to Ponder

Spring will have sprung for many of us by the time you are reading this newsletter edition. Unfortunately, this year’s Spring has not provided much relief from the extended drought most of the state has been experiencing for nearly two years. Hopes were high coming into Winter, that we would receive normal or above normal snow accumulations. That never materialized and yet we remained optimistic that early Spring storms would bring the much-anticipated high moisture weather events that are commonplace in our state. As I am writing this, we are tracking a strong Spring storm that has the potential to drop 6-8 inches of snow in the coming week.

What a difference a couple tenths of moisture would make, not only for the grass, alfalfa and crops planted and ready to be planted. But also, for the psyche of all of us who make our living working in the soil.

Challenging would be an understatement when it comes to describing the past year. Unfortunately, it looks like the hits are going to keep on coming. Even with the forecasted moisture, much of the state is likely to remain under severe drought conditions. Add to that the large swaths of Montana that are likely to see increased grasshopper pressure. At this moment I’m not sure what they are going to eat, there is hardly a stitch of green grass to be found. And let us not forget about the supply chain disruption that has left many of us scrambling to find enough of the right products to meet our customers demands. Oh yeah, and then there is some sort of regional conflict taking place in Eastern Europe, which I guess a substantial quantity of global fertilizer comes from. The conflict has made the procurement and supply of certain fertilizer products volatile, thus, further elevating already stratospheric prices. Let’s not even start in on inflation and interest rates that may send me into a tailspin.

I don’t mean to make light of the challenges we are facing as an industry, state, and country. They are serious concerns that often keep me up at night. Yet with every challenge there is an opportunity to adapt and put your business in a better position for future success. It’s often hard to look past that obstacle in your road, but beyond it is a stronger and sounder industry. We are almost certainly going to take some lumps this year and there may be some significant changes to retail and wholesale landscape. What the industry looks like in the future is what we have an opportunity to mold during these trying times. Let’s take advantage of these challenges and really focus in on making the industry what we want it to be. As the adage states, “when one door closes another one opens”. Go out and find that door and if it’s not open, kick it in. Now is the time to lay the foundation to a better future, not only for you but the Ag industry in Montana. ■

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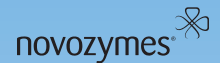
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What's the Cost of Poor Deposit Uniformity?

By Tom Wolf (Nozzle_Guy)

We've heard it often: calibrate your nozzles to be sure your boom output is uniform across its entire width. The downside of poor uniformity is obvious: strips of over- or under-application causing problems with pest control or crop tolerance. A graduated cylinder held for 30 s under each nozzle is the approach of choice. Several electronic versions exist to make the job easier, for example the Spot On.

But there's more to the story. Nozzle calibration only ensures volumetric uniformity from nozzle to nozzle. It serves to identify worn, plugged, or damaged nozzles, and little else.

After release, the spray is atomized and distributed across a wider area with a properly developed pattern. An operator adjusts boom height or spray pressure to generate proper overlap for a given fan angle at the target height. Unfortunately, the uniformity of this pattern can't be measured with a graduated cylinder, so we've traditionally used a "patternator",



A spray patternator determines the uniformity of a stationary boom's spray distribution (Photo: TeeJet)

a flat collector placed under a few nozzles that uses a series of channels to show the peaks and valleys of the volumetric distribution. Both calibration and patterning are done with a stationary spray boom. Nozzle manufacturers employ both methods to ensure their products meet international uniformity standards before marketing.

But even that isn't enough. We can have good volumetric distribution but still have inconsistent coverage in places. To identify those regions, we need a way to measure small amounts of spray deposit under a moving boom, ideally in the canopy we intend to treat. Here we have a few options. We can place a tracer (dye, salt, etc.) in the tank, and collect spray on small collectors placed throughout the area to be treated. We collect



Plastic straws can act as collectors of sprays under field conditions.

Nozzle Guy continued on page 24

Nozzle Guy continued from page 23



Monofilament strings can be used to collect spray over long distances.



Water-Sensitive paper provides a quick visual indication of the deposit, not just amount but also qualitative aspects such as droplet size and distribution.

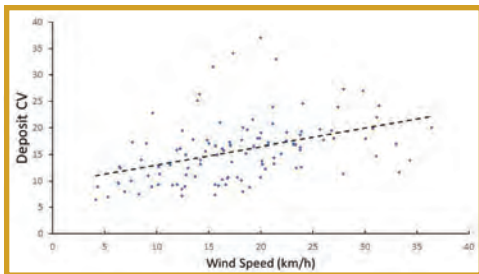
the samples, wash them, and analyze the solvent for the tracer. This requires special equipment and takes time. It's useful, but only measures dose, not droplet size or density.

A faster way is to use water-sensitive paper, about which we've written here and here. Using WSP is fast and easy, and it can provide additional information such as the number of droplets per unit area, or the total percent of the area covered, or even the size of the deposits, with the right equipment. We call this "coverage", and believe this to be one of the two components of good pest control (the other being "dose", the total amount of material deposited). Because the world isn't fair, WSP isn't great at quantifying dose.

The industry has done a good job of identifying the dose required for good control, and this is reflected in the rate recommendations on a label. But there are a few gaps. They don't tell us, for example, what "good coverage" is, despite often telling us to "ensure" it.

BACK TO DEPOSIT UNIFORMITY

We quantify deposit uniformity by calculating the Coefficient of Variation (CV) of a series of measurements. The CV is defined as the standard deviation of these measurements, expressed as a percent of the mean value.



Spray deposit uniformity, observed during various spray drift studies, tended to decrease with higher wind speeds.

Because it's hard to measure, it's easy to ignore. But here are a few basics our research has told us: (In the first three examples, deposits were measured under a spray boom using petri plate or drinking straw samplers. There was no interference from a canopy. The last example was taken from within a canopy.)

- When measuring the deposited

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dose, the CV under a boom tended to rise with increased wind speed. This is no surprise, as it reflects that more wind has a greater chance to displace spray from its intended destination.

- Higher booms and increased travel speed also tended to increase deposit CV.
- Finer sprays tended to increase deposit CV. This makes sense, as the finer droplets are more easily displaced by air movement.
- Deposits were reduced and became more variable deeper in a broadleaf canopy. Again this makes sense, as there are a lot of obstacles to clear and canopies themselves are by no means uniform.

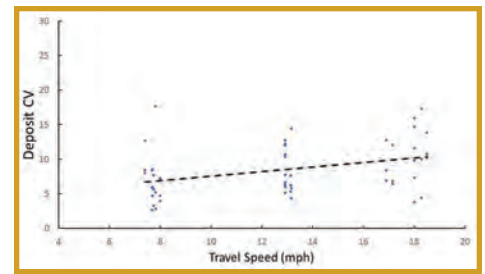
Also note that the CV in the canopy was quite a bit higher (40 – 60%) than for the exposed targets (10 – 20%). That’s another challenge.

To recap, the best uniformity was achieved with low booms (as long as patterns overlap sufficiently), slow speeds, low winds, and coarser sprays. It’s easy to see that current spray practice isn’t always conducive to uniform deposits.

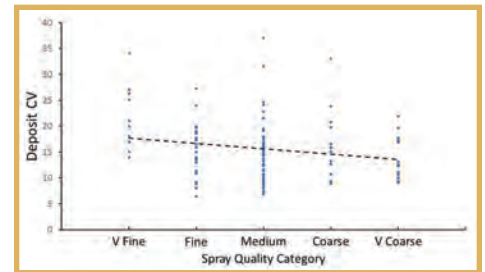
SO WHAT?

Why does uniformity matter? It matters because more variable deposits are less efficient. They require higher doses for the same effect as uniform deposits. Here’s why:

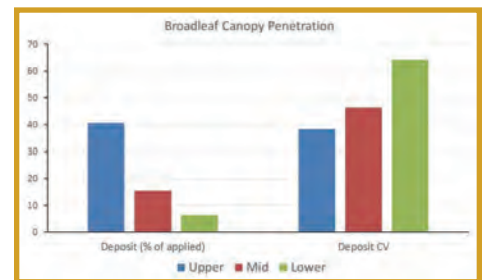
The figure to right shows a typical



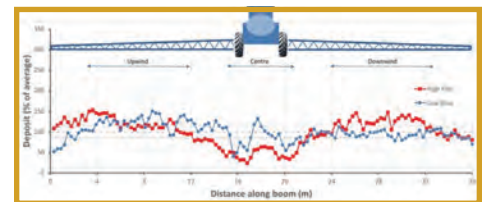
Faster travel speeds during spray drift studies tended to decrease uniformity.



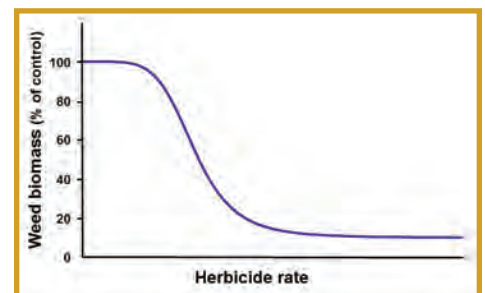
Coarser sprays created more uniform deposits possibly because they were more resistant to turbulent displacement.



Deposit amount was lower in the canopy, as expected. But the lower deposit was also more variable.



Deposit variability as captured by a 2 mm diameter string with two sprayer configurations.

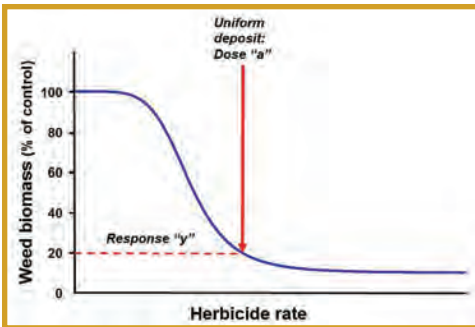


A typical dose response curve for a herbicide.

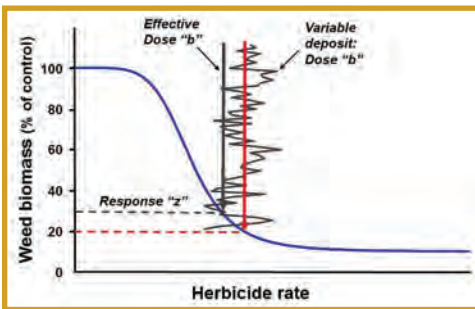
Nozzle Guy continued on page 26

Nozzle Guy continued from page 25

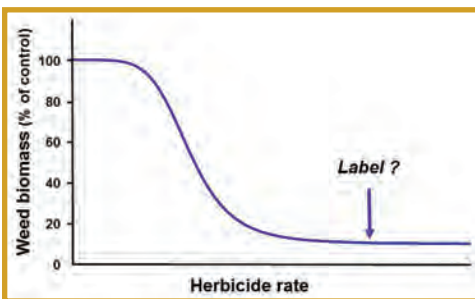
dose response curve for a herbicide. On the y-axis, we see weed biomass, on the x-axis herbicide dose. At low pesticide doses, not much happens. (In fact, we often see a slight increase in biomass with very low herbicide doses.) As we increase dose, biomass begins to decline, and as dose increases further, the effect begins to taper off. At a certain dose, no further biological response is possible.



A dose response curve represents the weed biomass that resulted from any applied dose.



A variable dose across a field results in many individual weed biomasses because of deposit variation. The net result is lower control.



Label rates are typically in the flat region of the dose response curve to allow for variable conditions in weed susceptibility, weed growth stage, growing conditions, and deposit variability.

dose is near the lower inflection point of the dose response curve. Perhaps we're shaving rates. Perhaps the weather is challenging the herbicide's perfor-

mance. Or perhaps the weed is difficult to control. Under those conditions, any gain in performance with a higher dose is less than the penalty from a lower dose.

There are two ways to correct this performance loss. One is to apply a higher herbicide rate. It's commonly done, as insurance against – you guessed it – variability, and it's one reason why label rates have some flexibility. The second way is to improve deposit uniformity. In effect, better uniformity allows for rate reductions.

TAKE HOME MESSAGE

Uniform spray deposition improves overall control. Our examples used herbicides, but the same is true for fungicides and insecticides. It's true for field crops as well as fruit and vegetable sprays.

Uniformity is especially important when the application is done under adverse conditions in which the pesticide performance is challenged. It's a fundamental part of good application practice.

It's not always easy to improve uniformity. But at least it should be measured. Without measuring it, an applicator may never know how much product is being wasted. Have a look at the Crop Adapted Spraying approach Jason is using, it's a template for all sorts of applications.

What can you do? The easiest task is to record the flow from each nozzle. The results might be surprising. Ensuring proper and consistent boom height is also important. Using water-sensitive paper to visualize the quality of the job would be icing on the cake. And adjusting application method, with uniformity as a goal...that gets you a gold star. ■

ABOUT TOM WOLF (NOZZLE_GUY)

Tom Wolf is based in Saskatoon, SK and has 33 years research experience in the spraying business. He obtained his BSA (1987) and M.Sc. (1991) in Plant Science at the University of Manitoba, and his Ph.D. (1996) in Agronomy from the Ohio State University. Tom focuses on practical advice that is research-based to improve the efficiency of producers. See all posts by Tom Wolf (Nozzle_Guy). *Sprayers101.com, used with permission.*



Montana Fertilizer Advisory Committee

MABA has two representatives on The Fertilizer Advisory Committee that are appointed by Dr. Bajwa with input from the MABA Board of Directors. The current MABA representatives are Brad Weaver, CF Industries and Ryan Lammers, CHS. Over the past year, MABA has been active in recruiting input and feedback from MABA membership on fertilizer research needs across Montana. Please take a moment to take the fertilizer research study survey. The information that is gathered will be shared with the Fertilizer Advisory Committee to help inform their decisions moving forward.

You can take the survey by using the below QR code or going to www.mtagbiz.org.

The Montana Fertilizer Advisory Committee met on the MSU campus February 8-9 to contemplate research proposals for fiscal year 2023. For this period the committee's research priority areas were: Nutrients related to oilseeds such as camelina and hemp; Fertilizer research on forages; Finding crops or practices to increase efficiency of fertilizer inputs; and Improving relative feed value of forages for cat-

tle. Board vice-chair Brad Weaver said that the decisions made by this year's board will increase 'profitability for producers' by supporting work that is needed by a wide range of crops across the state. A proposal by Jessica Torrion at the Northwestern Agricultural Research Center in Creston, MT will address questions that are critical to support recent investments in local meat processing as well as accurate and sustainable fertilizer use. In addition to the traditional focus on nitrogen fertilization, a new understanding of the importance of sulfur in the production of mustards, forages, pulse crops and small grains also received attention from the researchers and the panel. The funds support continuing research as well as several new investigators at Montana State University..

Those selected for funding in FY23 are as follows. Information and history of the Montana Fertilizer Advisory Committee can be found at: <https://agriculture.montana.edu/mfac/index.html>. ■



MSU Research Lead	Proposal	FY23 Funding
Beiermann	Winter canola planting date and fertilizer application timing in Montana	23,500
Beiermann	Optimizing nitrogen inputs for varying plant populations and market classes of winter wheat	21,960
Chen	Sugarbeet nutrient uptake and partitioning in relation to root yield and sucrose concentration	27,416
Ewing	Research Analytical Chemist, Environmental Analytical Laboratory	30,000
Giroux	Identifying Vrn-3D Allelic Variation to Improve Plant Yield While Minimizing Nitrogen Application	57,330
Goosey	Assessing Sulfur Fertilization as a Means to Improve Statewide Forage Quality and Value by Reducing Nitrate Accumulations in Cereal Forages	19,242
Jones	Sulfur source and rate effects on yield and quality of wheat, pea, and canola	22,386
Lamb	Is there a Legacy Effect of Deep Application Phosphorus in No-Till Systems? (Year 5 of 6, Crop Years 2018 through 2023, 2 Trial Cycles)	35,026
Lamb	Nitrogen Fertility and Plant Population Optimization for Dryland Industrial Hemp Grain Production	45,475
McVay	Camelina grain and oil response to fertilizer nitrogen and sulfur application and the impact on soil microorganisms.	47,000
Miller	Legacy Effects on Soil pH and Perennial Forage Productivity following 18 yr of N Management in Alternative Crop Rotations.	21,692
Rakkar	Combating soil acidification to avoid large economic losses to Montana farmers	54,465
Sherman	Relationship between fertility management, production and quality of advanced spring forage, feed and malt barley lines	44,400
Torrion	Nitrogen requirement for sustained yield and optimal quality of cool-season perennial forages	48,117
	Total \$\$ funded	\$498,009



The Great Montana Ag Rally Golf Tournament was a great success last year, so we have decided to do it again. Get your teams together and get ready for a really fun event that will include a Calcutta on Wednesday evening and golf tournament on Thursday, with awards and social immediately following the golf tournament. Registration is below and Sponsorship Information can be found on the next page.

The Great Montana Ag Rally Golf Tournament

July 27-28, 2022

You may register a four-man team or as an individual golfer.
We ask that all players be MABA or teams sponsored by a MABA member.

Contact Name: _____

Contact Address: _____

Email: _____ Phone: _____

TEAM OR GOLFER REGISTRATION

GOLF TEAM | Team Fee - \$600.00

4 players, includes course fee, Calcutta dinner, Golf day breakfast and Golf day lunch

Do you need a cart or carts? | Golf Cart Rental - \$50.00 | How many carts _____

INDIVIDUAL GOLFER | Individual Golfer - \$150.00

Includes course fee, Calcutta dinner, Golf day breakfast and Golf day lunch

Team Name: _____

Player #1: Name: _____ Handicap _____

Player #2: Name: _____ Handicap _____

Player #3: Name: _____ Handicap _____

Player #4: Name: _____ Handicap _____

Golfer Registration includes all meals:

Calcutta Dinner | Golf Day Breakfast | Golf Day Lunch

Additional meals for guests also available for purchase at the event

Calcutta Dinner: \$40 | Golf Day Breakfast: \$15 | Golf Day Lunch: \$20

Please go to **mtagbiz.org** to register! We look forward to seeing you!



Great Montana Ag Rally Sponsorships

Golf tournament partners receive acknowledgment in the MABA Growing Montana Magazine and at the event.

Your company logo linked to your website is posted on the MABA website for the entire year!

Business fliers may be included in the golfer registration bags.

Please go to www.mtagbiz.org to provide your sponsorship information!

You can also fill out the form below and email to mabamgea@gmail.com

Sponsorships are first come/first served. | Thank you for supporting MABA!

HOLE SPONSORSHIPS

A prize valued at \$100 is awarded on the sponsor's behalf immediately following the golf tournament. The sponsor may donate the prize or pay an additional \$100 and MABA will purchase the prize.

Hole Sponsorship - \$500 MABA Purchase Prize - \$100

DETAILS

- *Golfers will see your company name displayed at the tee box of the sponsored hole - can't miss it!*
- *Your company name and logo will be displayed prominently with the hole prize during the Calcutta dinner.*
- *18 hole sponsorships are available.*

MEAL SPONSORSHIPS

Calcutta Dinner - \$3,500 Golf Day Breakfast - \$1,000
 Golf Day Lunch - \$2,000 Post Tournament Snacks - \$1,500

DETAILS

- *As the exclusive meal sponsor, your company's name will be displayed on a large sign at the event. Can't miss it!*
- *You will have an opportunity to be introduced and say a few words at the event.*

DRINK TICKET SPONSORSHIPS

Calcutta Evening Drink Tickets - \$1,500 Golf Day Drink Tickets - \$1,500
 Post Tournament Drink Tickets - \$1,500

DETAILS — *The Drink Ticket sponsors are very popular!*

- *Your company logo will be displayed prominently on the drink tickets; one given to each golfer.*
- *Drink Ticket sponsors receive extra tickets to hand out during the event.*
- *Verbal Acknowledgment as drink sponsor.*

OTHER PARTNERSHIP OPPORTUNITIES

Team Photos - \$1,000 Mulligans - \$500 Golfer Bags - \$500
 Putting Green - \$500 Driving Range Balls - \$500 Golfer Balls - \$500

COURSE SPONSORSHIP

General Sponsorship - Minimum \$200

DETAILS

- *Team Photos: includes your company name as sponsor posted on the MABA website.*
- *Mulligans: includes company name/logo on mulligan cards distributed to every team.*
- *Golfer bags: sponsor provides their logo'd 12x15 vinyl bags provided to each golfer.*
- *Putting Green: includes a prominent sign at the putting green.*
- *Driving Range Balls: includes a prominent sign at the driving range.*
- *Course Sponsorship: you choose the amount of investment, \$200 and up. Course sponsors receive signage at the #1 tee box by the clubhouse.*

Hard copy forms can be returned to: mabamgea@gmail.com

Please submit payment to: Montana Ag Business Association | PO Box 7325 | Helena, MT 59604



EPA Announces Endangered Species Act Protection Policy for New Pesticides

POLICY WILL ADVANCE PROTECTION OF FEDERALLY LISTED THREATENED OR ENDANGERED SPECIES BEFORE REGISTERING NEW CONVENTIONAL PESTICIDE ACTIVE INGREDIENTS

Reversing decades of practice, the U.S. Environmental Protection Agency (EPA) is taking meaningful action to further the Agency's compliance with the Endangered Species Act (ESA) when evaluating and registering new pesticide active ingredients (AIs). Effective Jan. 11, 2022, before EPA registers any new conventional AI, the Agency will evaluate the potential effects of the AI on federally threatened or endangered (listed) species, and their designated critical habitats, and initiate ESA consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services), as appropriate.

Before this announcement, in most cases, EPA did not consistently assess the potential effects of conventional pesticides on listed species when registering new AIs. This resulted in insufficient protections from new AIs for listed species, as well as resource-intensive litigation against EPA for registering new AIs prior to assessing potential effects on listed species. EPA's new policy should reduce these types of cases against the Agency and improve the legal defensibility of new AIs, which often have lower human health and ecological risks than older pesticides.

"Protecting listed species and their habitats is essential to EPA's mission to protect human health and the environment," said Assistant Administrator for the Office of Chemical Safety and Pollution Prevention Michal Freedhoff. "With this policy, EPA is taking a critical step to register new pesticides in a way that prioritizes protections for listed species."

"Incorporating ESA assessments into the registration process for new pesticides is a key component of EPA's larger effort to meet the Agency's ESA obligations efficiently and effectively," said Ya-Wei (Jake) Li, Office of Chemical Safety and Pollution Prevention Deputy Assistant Administrator for

Pesticide Programs. "I look forward to seeing the positive impact of this new approach and working on additional improvements that are both beneficial for species and fair to pesticide registrants."

Under this policy, if EPA finds through its analyses that a new conventional pesticide AI is likely to adversely affect listed species or their designated critical habitats, EPA will initiate formal consultation with the Services before granting a new AI registration. As part of its analysis and under its existing authorities, EPA will consider the likelihood that the registration action may jeopardize the continued existence of listed species or adversely modify their designated critical habitat and provide its findings to the Services. To determine or predict the potential effects of a pesticide on these species and habitats, EPA will use appropriate ecological assessment principles and apply what it has learned from past effects determinations and the Services' biological opinions.

If EPA determines that jeopardy or adverse modification is likely, the Agency will only make a registration decision on the new AI after requiring registrants to implement mitigation measures that EPA determines would likely prevent jeopardy or adverse modification. If EPA finds that a new AI is likely to adversely affect listed species or their critical habitat, but that jeopardy/adverse modification is not likely, it may nonetheless require registrants to include mitigation measures on their registration and product labeling to minimize the effects of incidental take to listed species that could result from use of a pesticide. In both situations, formal consultation with the Services is still necessary. Further, EPA may determine that it is necessary for registrants to incorporate a link to Bulletins Live! Two—an online system that describes use limitations for EPA-reg-



istered pesticides by geographic area—into the product’s labeling.

When identifying necessary mitigations to prevent jeopardy/adverse modification, EPA will consider a variety of factors including how species or critical habitats are exposed to a pesticide and what the likely effects of the pesticide exposure will be. Because listed species are often exposed to pesticides on treatment sites or in off-site habitats that receive spray drift and runoff, EPA expects that mitigation measures will often include avoiding or minimizing these exposure routes. Where possible, EPA intends to provide several mitigation options to allow flexibility for growers while ensuring protections for listed species.

EPA is also continuing to explore applying these new ESA approaches to new biopesticide AIs and new antimicrobial AIs. EPA is currently developing a detailed work plan to outline additional improvements to further the Agency’s compliance with the ESA, including steps to implement protections for high-risk species more efficiently, provide growers with more flexible mitigation measures, and increase stakeholder engagement.

To learn more about EPA’s Endangered Species Act Protection Policy for New Pesticides (<https://www.epa.gov/endangered-species/progress-toward-protections-federally-listed-species>), read the Q&A document on starting on page 32. ■

MABA Participates in Governor Gianforte Ag RoundTable

Governor Gianforte hosted a Montana Agriculture Roundtable in recognition and support of Montana Agriculture. MABA was happy to participate with other Montana Agricultural Organizations in this great opportunity to share primary goals and objectives with the Governor, his Staff, and the MT Department of Agriculture. MABA highlighted the Montana Innovation Hub for Agriculture Technology and the great opportunities MIHAT will provide to Montana innovation. We are very appreciative of

the Governor’s respect and recognition of the value of agriculture to Montana’s economy. The roundtable was a great opportunity to share with other organizations and continue to improve relationships and coordination. ■



Endangered Species Act Policy for New Active Ingredients: Q&A

GENERAL QUESTIONS

When does this policy take effect?

The policy takes effect immediately. EPA will include Endangered Species Act (ESA) analysis in all new conventional active ingredient (AI) applications already submitted for consideration (in house) as well as incoming applications.

What information should registrants provide to EPA when submitting a new active ingredient (AI) registration application?

EPA is determining whether any new information would be useful for assessing the potential impacts on listed species from a new active ingredient. EPA will contact registrants that have a new AI application currently under consideration to discuss whether additional information is necessary for EPA's ESA assessment for their new chemical.

How will EPA apply this policy to new AIs already submitted to EPA for consideration that have not completed registration?

EPA will apply this new policy to all new conventional active ingredient applications already submitted to EPA that have not been completed. In the coming weeks, EPA will contact these registrants about AI applications currently under consideration. EPA is considering how it may apply this policy to antimicrobials and biopesticides in the future.

What determinations may EPA make after assessing the potential effects of a pesticide's registration on listed species and their designated critical habitats?

Under the ESA, EPA must ensure that agency actions are not likely to result in jeopardy or adverse modification of designated critical habitat for species federally listed as endangered or threatened (listed species). To determine whether the action "may effect" listed species or designated critical habitat, EPA makes species-specific effects determinations. There are three types of effects determinations: No Effect (NE), Not Likely to Adversely Affect (NLAA), and Likely to Adversely Affect (LAA). If EPA makes an NLAA determination, then EPA seeks concurrence on that determination from the Fish and Wildlife Service, the National Marine Fisheries Service, or both (collectively, the Services). If EPA makes an LAA determination, EPA initiates formal consultation and, concurrently, determines if (and to what extent) measures to further reduce exposure are warranted.

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The Agency will also determine whether the registration of a pesticide with an LAA determination is likely to jeopardize the continued existence of listed species or destroy or adversely modify their designated critical habitat, using existing biological opinions and other analyses the Services have issued as a guide. While EPA may predict jeopardy/adverse modification (J/AM), the final J/AM determinations are made by the Services through consultation that evaluates any effects of the pesticides on entire species. The purpose of EPA's J/AM analysis is to address potential J/AM issues earlier in the registration process through mitigation, to help EPA focus its time and resources on the most significant effects to listed species, and to make the entire consultation process more efficient. In some circumstances, EPA may be able to identify sufficient mitigation measures to allow the Agency to revise preliminary effects determinations.

Will EPA not register a pesticide until consultation with the Services is complete?

In general, EPA expects that applicants for most new active ingredient applications will need to incorporate some degree of ESA mitigation prior to EPA issuing a new registration decision. This is true even if EPA has not begun to formally consult with the Services on that new active ingredient.

Prior to registering a new active ingredient, EPA will complete assessments for all new pesticides, their proposed uses, and any mitigation to make an NE, NLAA, or LAA determination. If EPA makes a NE determination for the action, there is no need to consult. If EPA makes only NLAA determinations for a pesticide, then the Agency will seek Service(s) concurrence, adopt any mitigations necessary to support the NLAA determinations, and, assuming the Services concur, move toward registration for the new active ingredient.

When EPA makes an LAA determination, the Agency will consider whether the registration action is likely to cause J/AM based on the Services' data and EPA's experience with previous and ongoing consultations. EPA will initiate formal consultation if it makes an LAA determination. Where appropriate, EPA will also identify mitigations necessary to avoid or minimize exposure to listed species and/or offset potential impacts on listed species, thereby avoiding or minimizing the likelihood of J/AM and in turn potentially reducing the effects of incidental take. EPA expects to include these mitigation measures in the registration and/or on the labeling before the pesticide can be used. The registration may also include mechanisms to allow EPA to readily amend the registration/labels if additional mitigation measures are identified as necessary through formal consultation. Such mechanisms will generally include labeling language requiring pesticide users to follow mitigation measures in Bulletins Live! Two (additional details below under Mitigation).

Q&A continued on page 34

Q&A continued from page 33

In phasing in this new policy, EPA may issue some registrations before completing any necessary formal consultation with the Service(s). This phased-in approach is designed to provide regulatory predictability to registrants, growers, and other pesticide users. Under ESA section 7(d), EPA may issue registrations before completing formal consultation so long as issuing the registration will not result in irretrievable or irreversible commitment of resources that would foreclose the Services' development and EPA's implementation of any ESA reasonable and prudent alternatives (RPAs). To facilitate this approach, EPA expects to discuss with applicants the adoption of early mitigation to avoid J/AM. As consultations become more efficient and Agency resources allow, EPA expects to complete formal consultation, where necessary, before issuing registration decisions for new active ingredients.

How will EPA address Pesticide Registration Improvement Act (PRIA) timelines when registering new active ingredients?

EPA strives to complete new AI applications within PRIA timelines. If EPA expects to need additional time to complete a new AI registration, based on additional work that may be needed including development of a streamlined approach to conduct ESA effects determinations for new active ingredients and to consult with the Services (particularly for applications that are already in house), EPA will work with affected registrants to renegotiate the PRIA deadline, as necessary. Even if some PRIA deadlines need to be extended, EPA believes that the long-term benefits of today's policy are significant. This includes reducing litigation risk for new AI registrations.

NEW USES AND OTHER ACTIVE INGREDIENTS

How will EPA address ESA for new uses?

EPA is developing a comprehensive strategy to address ESA for pesticides at all stages of the registration process. Due to resource constraints, EPA will

implement this strategy in phases. EPA is beginning a phased approach where effects determinations are first incorporated into the registration process for new conventional active ingredients. Accordingly, in FY22, the Agency will prioritize ESA analyses and consultations for new active ingredient applications in the registration process. The Agency will continue to incorporate ESA analyses for new uses on GMO, pesticide-resistant crops. Further, in any new use applications where there are significant environmental concerns, including for listed species, EPA may wait to consider whether to approve a new use until the requisite ESA analysis can be completed, based on available resources. EPA will ultimately work to incorporate pending new uses into any in-progress consultations or consider whether completed consultations can be updated to address any pending uses.

What about implementing ESA for antimicrobials and biopesticides?

EPA is prioritizing conventional chemicals at this time, as this category of pesticides has a comparatively greater potential for effects on listed species. Many listed species have a very limited likelihood of coming in contact or being affected by many antimicrobials due to the limited, and often indoor, use of those pesticides. Biopesticides generally have a non-toxic mode of action and are derived from certain natural materials. Thus, many of them may be less likely to impact listed species than conventional chemicals. As part of EPA's long-term plan to address its ESA obligations, the Agency will work on methods and processes to further its approach to ESA assessments for antimicrobials and biopesticides.

REGISTRATION REVIEW / OLD CHEMICALS

Will the additional steps required to address ESA in the registration process disadvantage new AIs, which often have lower human health and ecological risks than older pesticides?



EPA understands that, as registered, new Als often have fewer human health and ecological risks than older pesticides. EPA believes it is important that these tools be available to growers with the appropriate measures to protect listed species and their designated critical habitats. To this end, this policy will help support the legal defensibility of new Al registrations.

EPA has increasingly faced litigation on registrations of new active ingredients issued without adequate compliance with the ESA. In general, ESA section 7 obligations apply to most EPA pesticide actions, including registering new active ingredients. EPA believes that improving ESA compliance in this area will help redirect EPA's resources away from defending new registration decisions and towards a systematic approach that helps ensure all new Als are equally defensible and avoids undue effects on listed species.

At the same time, EPA acknowledges that there are several ongoing lawsuits focused on new Als; using its best efforts, the Agency will continue to meet all deadlines that result from those lawsuits and, as appropriate, to prioritize its response to the cases.

In addition to this policy for new active ingredients, EPA is also developing several efforts to protect listed species from the potential effects of already-registered pesticides through the registration review process. In the coming months, EPA will release its ESA-FIFRA workplan, which will provide additional information on these efforts.

MITIGATION

How will EPA ensure that the registrants adopt mitigations, including ones resulting from formal consultations of new Als with the Services?

EPA expects that ESA protections will be included on pesticide labels or in the registration decisions. For new Al submissions that EPA expects will need mitigation for listed species, the Agency will work

with the applicants to include additional label directions to reduce exposure to listed species and/or that direct users to Bulletins Live! Two, an online system that describes geographically specific pesticide use limitations. Bulletins Live! Two will be updated as needed with use limitations and mitigation measures that result from formal consultation. Additionally, new active ingredient registration notices may contain a term of registration that requires the registrant to implement changes to the pesticide label in accordance with the outcomes of formal consultation with the Services. Registrants who fail to comply with their terms and conditions on their registrations may face a cancellation proceeding brought by EPA. Further, users should also be aware of their obligation to avoid unauthorized "take," which is a violation of ESA.

What type of mitigations will EPA implement in new Als to protect listed species from pesticide related effects?

EPA expects to address effects to listed species from pesticides using the following strategies in the order preferred by the Services: avoid and minimize effects, and where avoidance and minimization are not possible then consider compensatory mitigation (offsets). The Services prefer that EPA first limit potential pesticide effects by avoiding pesticide use where they might impact listed species and designated critical habitat. Where avoidance is not feasible, then EPA looks to minimize exposure and/or impacts from pesticides. Finally, where neither avoidance nor minimization are feasible, or adequate to reduce impacts to listed species, EPA may consider offsets. If EPA determines that offsets are appropriate, these measures will benefit listed species to counteract the negative effects of pesticide exposure. Offsets can include creating or restoring species habitat or helping to implement other actions to recover the species. EPA is currently working with the Services to determine how best to incorporate offsets into the ESA-FI FRA process. Where the EPA cannot avoid, minimize, or offset effects to listed species or

Q&A continued on page 36

Q&A continued from page 35

such measures do not provide sufficient protection, EPA may decide not to register a pesticide.

Where appropriate, EPA anticipates starting with existing mitigation options to address effects to listed species from new active ingredients, including measures to reduce spray drift and runoff, geographic restrictions, and timing restrictions for pesticide application. In the interests of maximizing efficiency and protections to species, EPA is also developing new mitigation options that can be applied to an entire class of pesticide rather than only an individual pesticide (e.g., herbicides), or to a specific manner in which species are exposed (e.g., aerial spraying). EPA will also continue to apply tailored mitigations for each pesticide's particular use pattern and chemical properties.

CONSULTATIONS

How will EPA determine if a formal or informal consultation is required with the Services?

When EPA makes a LAA determination for any listed species, EPA formally consults with the appropriate Service(s). When EPA makes a NLAA determination, EPA intends to continue informally consulting with the appropriate Service and request concurrence on those determinations. EPA does not need to consult with the Services if it makes a NE determination.

What is the relationship between "likely to adversely affect" and "jeopardy" findings?

The "likely to adversely affect" (LAA) determination means that EPA reasonably expects that at least one individual animal or plant, among a variety of listed species, may be exposed to the pesticide at a sufficient level to have an effect, which will be adverse. The LAA threshold for a BE is very sensitive because the likely "take" of even one individual of a species, which includes unintentional harm or death, triggers an LAA determination. As a result, there are often a high number of "may effect" and LAA determinations in a BE. An LAA determination, however, does not necessarily mean that a pesticide is putting a species in jeopardy. Final jeopardy determinations are made by the Services during formal consultation, which evaluates any effects of the pesticides on the entire species. EPA is determining jeopardy/adverse modification to develop more meaningful mitigation measures prior to formal consultation. ■

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EPA Announces Updated Schedule

COMPLETES SAFETY ASSESSMENTS AND DECISIONS FOR HUNDREDS OF PESTICIDES TO ADDRESS RISK AND ENSURE SAFE PESTICIDE USE

EPA released the registration review schedule for the next four years through fiscal year 2025. While EPA has historically updated this schedule once each year, it will be updated on a quarterly basis going forward. In 2007, an amendment to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) formalized a requirement that EPA review each registered pesticide at least every fifteen years. During the registration review process, EPA completes draft risk assessments, proposed interim decisions/proposed decisions, and interim decisions/final decisions. Throughout, EPA makes its information, assessments, and supporting material for each case available to the public through the case's docket at regulations.gov. Registration review ensures that, as the ability to assess risk evolves and as policies and practices change, the pesticide continues to meet the statutory standard of causing no unreasonable adverse effects on human health or the environment. When EPA identifies risks of concern to human health or the environment, it imposes pesticide label amendments designed to reduce risk. Mitigation measures can include the cancellation of uses or pesticide registrations, reduced application rates, spray drift restrictions, personal protective equipment, and advisory language, among myriad other options. For some pesticides registered before October 1, 2007, EPA anticipates that its review will extend beyond October 1, 2022 due to a number of challenges including delays in receiving data from registrants; the demands of responding to COVID-19; and a significant increase in recent years of resources devoted to litigation. Complying with the Endangered Species Act (ESA) is also part of the registration review process. Since 2007, EPA has completed ESA assessments for certain high priority pesticides and, in the coming years, plans to assess the effects of many more pesticides on endangered species in registration review. Further, in the coming months, the Agency will release its first ESA pesticides workplan, which will outline steps the Agency will take to come into compliance with the ESA in ways that are fair and transparent to the agriculture sector. By following the science and making evidence-based decisions that rely on the input of career scientists, EPA will continue to ensure that risk assessments and regulatory decisions reflect the best available public health and ecological science. Visit EPA's website for more information on the registration review process and the updated schedule of upcoming registration review actions. ■

Constitutional Initiative

By Darryl L. James, Executive Director, Montana Infrastructure Coalition

CI-121 is a ballot measure proposing to amend the Montana Constitution with a permanent cap on certain residential property taxes. As the saying goes, if something sounds too good to be true, it usually is. Two former Montana legislators are capitalizing on the general property tax fatigue being expressed by many Montanans, but they're bringing a California solution to a Montana problem.

There is no doubt that Montana has tax policy issues that need to be addressed, but the solution proposed under CI-121 is simply the wrong way to go.

At its simplest level, the ballot initiative proposes to amend the Montana Constitution to freeze property tax values at their 2019 level, and allow a maximum of a one percent increase in value at the next appraisal. This may sound appealing at first, but the implications need to be understood.

First, the valuation is frozen only until the homeowner sells their home. This means young families buying their first home will still face the same (or higher) tax burdens they experience today; and elderly homeowners looking to downsize will struggle to find homes they can afford.

Second, the tax relief would be significant, and result in an equally significant reduction in local government revenues that currently fund schools, police and fire protection, and critical infrastructure like streets, curb-and-gutter, storm drains and solid waste

facilities – all those facilities and services Montana residents expect to receive in their community.

While problematic, this view of the measure would seem to provide a clear choice; however, Montana's tax policies are complex and it is not clear how this measure would work with existing law. To ensure consistent provision of basic local government services, current law guarantees revenue at the same level as the previous year. This provision, coupled with the significant tax relief under CI-121 means that the overall tax burden for a taxing jurisdiction would simply be shifted from residential properties to other non-residential properties.

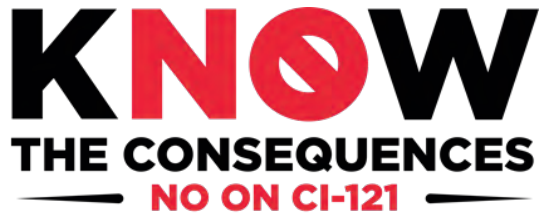
Agricultural properties, small businesses and commercial properties are most likely to bear the burden of this enormous tax shift.

The Legislature has been admittedly slow to act on tax reform, but permanently imbedding specific and poorly constructed tax policy in our Constitution is misguided and dangerous.

We urge our members to decline to sign the petition and keep this measure off the ballot. Instead, call your legislator and let them know it's time to roll up their sleeves and come up with meaningful tax reform in the next legislative session.

For more information, please visit: knowtheconsequences121.com. ■





Pledge of Opposition

We Oppose CI-121 Because We Support Hardworking Montanans.

We do not support Constitutional Initiative 121 due to the reasons below regarding the impacts it would have on our state. The costs are too steep for all hard-working Montanans, including seniors, young families, small businesses, farmers, and ranchers.

This measure dramatically alters the Montana Constitution.

This measure unfairly penalizes new homeowners, young families, and seniors.

This measure shifts the burden to Montana's farmers, ranchers, and small businesses.

- Yes, the coalition is authorized to use my name publicly, as an opponent of CI-121.*
- Yes, the coalition is authorized to use my business/organization name publicly, as an opponent of CI-121.*

Printed Name

Signature

Date

Organization/Company

Title

Address

City/State

Zip

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MABA
CALENDAR OF EVENTS

MAY

15 MABA Scholarship Applications
DUE – Helena

JUNE

20-24 Montana Seed Trade Assoc.
Summer Meeting - Whitefish

22 MSU Field Day Northern Ag
Research Center – Moccasin

23 MSU Field Day Northern Ag
Research Center – Havre

29 MABA Board Meeting –
Great Falls

29 MABA/MGEA Convention
Planning Meeting – Great Falls

JULY

7 MSU Field Day Central Ag
Research Center - Bozeman

12 MSU Field Day Eastern Ag
Research Center – Sidney

13 Dickinson Research Ext. Center
Field Day – Dickinson, ND

14 MSU Field Day Northwestern Ag
Research Center - Creston

19 MSU Field Day Post Agronomy
Farm - Conrad

28 MSU Field Day Western Ag
Research Center – Corvallis

28 MABA Ag Rally Golf Tournament
– Great Falls

AUGUST

19-20 National Lentil Festival –
Pullman, WA

SEPTEMBER

8 MGEA Scholarship Golf
Tournament – Havre

9 MGEA Board Meeting – Havre

OCTOBER

TBA MABA Board to Washington, DC

11 Northeast Montana Ag Expo –
Valley Event Center – Glasgow

21 MABA Board Meeting – Bozeman

21-23 MSU Ag Appreciation Weekend
- Bozeman

NOVEMBER

13-20 National Split Pea Soup Week

29 MABA/MGEA Board Meeting –
Great Falls

JANUARY 2023

25-27 MABA/MGEA Annual
Convention and Trade Show –
Great Falls