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## August 9-10, 2023

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  - Drastically reduce noxious odors



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- **5 WELCOME** from the expo chairs
- 7 **DAY ONE** agenda (tours, expo, demos, safety)

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- **9 DAY TWO** agenda (*education, expo, demos*)
- **10 SESSIONS** and speakers
- **18 INDOOR** map and exhibitors
- 20 **OUTDOOR** map and exhibitors
- 22 SAFETY and operations knowledge event
- 27 NOTES
- 31 WEDNESDAY BBQ

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# Welcome to the 'roots' of the North American Manure Expo

isconsin is excited and honored to again host the North American Manure Expo in 2023 at the University of Wisconsin-Madison Arlington Research Station. The "roots" of the North American Manure Expo (NAME) began in Wisconsin in 2001. After more than 20 years of growth, our goal for this year's show is to provide an opportunity to showcase our tagline: Research. Innovation. Solutions. I hope you learn a thing or two at the Expo to improve your operation or business.

The manure handling industry reacts rapidly to meet the ever-changing demands of farmers, regulations, ordinances and agencies. The unique ability of the North American Manure Expo to bring all these audiences together in one place for the common good of protecting our water and air makes it a special event.

It takes many people to make an event like this possible, and I would like to especially thank the management and staff of the UW-Madison Arlington Research Station for going above and beyond to make the Expo possible. Superintendent Mike Bertram, assistant Scott Evans, and station staff have worked tirelessly to prepare the grounds, tours and fields, and to provide support for the event. I greatly appreciate their time and dedication to help the Expo run smoothly behind the scenes. The Professional Nutrient Applicators Association of Wisconsin have provided support and leadership to many of the demonstrations you will see at the Expo. Isaac Lemmenes and Dana Cook have once again been an invaluable resource to make the demonstrations safe and educational. I want to thank UW-Madison Division of Extension for their support as well as their recognition of the value the Expo brings to connect production agriculture with environmental stewardship. Columbia County has provided support through their Land and Water Conservation Department with assistance in designing the layout of the grounds.

Annex Business Media is the NAME event manager, and I want to thank all its team members for their hard work behind the scenes to deliver a highly organized and detailed show. I am extremely appreciative of the support from sponsors, exhibitors and vendors for their help in making this event possible. I encourage you to visit and learn from them as they provide information on cutting-edge technology and research in the manure handling industry. I also want to thank our many presenters, moderators and volunteers helping to make the Expo a success. If you see them helping around the show, please thank them for their support.

As a reminder, please be aware of biosecurity practices as you move around the Expo grounds and return to your work or other livestock-centered farms.

I hope you enjoy the Expo, visit and learn with one another and experience research, innovation and solutions.





Aariculture Institute

#### 2023 Expo Co-Chair Kevin Erb, CCA

Program manager, conservation professional training program UW-Madison Division of Extension Natural Resources Institute NorthAmerican

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# DAY ONE AGENDA WEDNESDAY, AUGUST 9, 2023

Expo grounds and tradeshow opens at 11:00AM

#### **START TIME**

7:30am	Tour registration opens at welcome tent. Registration and payment required for morning tours; fee includes transportation & lunch voucher. Transportation departs from the expo grounds.
8:00am	EnTech digester tour departs
8:00am and 10:00am	Arlington Research Station agronomy tour departs
10:00am	Dairy facility and manure separation tour departs
11:00am	Expo grounds & tradeshow open
11:00am	Ride and drives open
12:45pm	Manure separator demos
1:50pm	Manure agitation demos
3:00pm	Safety & operations knowledge event
5:30pm	Evening BBQ – grab your BBQ & Beverage voucher at the CASE IH booth
5:00pm	Tradeshow grounds close

#### **DAY ONE TOURS**

*Pre-registration is required and includes transportation and lunch.* 

#### **EnTech digester tour**

The tour of the Entech Solutions digester will include the dairy manure to RNG digester which highlights a first-of-its-kind microgrid designed to improve operations and lower the facility's Carbon Intensity score. The system features over 2MW of solar ground mount and rooftop, battery energy storage and DC fast charging.

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#### Arlington Research Station agronomy tour

The Arlington Research Station tour will focus on runoff research related to tillage, cover crop, and dairy liquid manure interaction within a corn silage cropping system. The tour also includes a stop at the Wisconsin Integrated Cropping Systems trial which was implemented in 1989. The trial is designed with real-world farming in mind. The cropping systems represent a range of farming practices in Wisconsin that are grouped by enterprise type including cash grain, dairy forage or perennial native grass-based systems.

#### Dairy facility and manure separation tour

The Arlington Research Station Manure Separation and Facility tour will showcase manure separation processes, movement of liquid manure and separated solids, and manure gas safety.

#### **RIDE AND DRIVES**

Visit the Dairy Innovation Hub tent

#### **SMART Maps for accurate application**

Hosted by: UW-Madison SnapPlus Program Day One: 11am – 5pm Day Two: 8am – 2pm

See first-hand how an in-field spreading map app can help get manure where you want it and not where you don't.

#### **GPS for hazard mapping**

Hosted by: InDepth Agronomy Day One: 11am – 5pm Day Two: 8am – 5pm

Experience a live GPS spread hazard map showing setbacks and restricted areas as you drive through the field. Record keeping capabilities will be demonstrated.

# On-the-go nutrient analysis



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# DAY TWO AGENDA THURSDAY, AUGUST 10, 2023

Expo grounds open at 7:30AM

#### **EDUCATIONAL SESSIONS & DEMONSTRATIONS**

Credits will be available at sessions & demonstrations – see tent/demo moderator for sign-up details.

START TIME	<b>Tent #1</b> Sponsored by Puck Enterprises	<b>Tent #2</b> Sponsored by Soil Regeneration Unlimited	Tent #3 Sponsored by DSI	Tent #4 Sponsored by Oxbo		
8:00AM	Manure emissions during agitation and processing: Reducing risks from hydrogen sulfide Becky Larson	Real-time nutrient sensing for precision manure application Joe Sanford	Interaction of cover crops and manure Matt Ruark	Manure innovations of the Northeast Heather Darby + Kirsten		
8:30AM	Applying fall manure for hybrid rye Melissa Wilson	Biochar and manure management Joe Sanford	What's the relationship between manure and soil health? Matt Ruark	Workman (8:00AM-9:00AM)		
9:00AM	Nitrification inhibitors and manure Melissa Wilson	Nitrogen mineralization in treated manures Chris Baxter	A web-based interactive calculator to estimate manure value Nesli Akdeniz	Impact of copper sulfate footbath use on manure, soil and forage copper concentrations – Eastern Wisconsin Aerica Bjurstrom		
9:30AM	Testing manure: Variability and trends over time Nancy Bohl Bormann	Dealing with uncertainty in manure for application decisions Dan Anderson	Are you future-ready? Shelly Mayer	Manure separation systems Becky Larson		
10:30AM		SOLID MANURE D	EMONSTRATIONS			
12:15PM	<b>INDUSTRY SESSION:</b> <b>Puck's Pump School</b> <i>Puck Enterprises</i>	INDUSTRY SESSION: Completing the liquid manure management puzzle Soil Regeneration Unlimited	SPECIAL SESSION: Economic and environmental outcomes from a manure management decision support tool Sudharsan Varma Vempalli	INDUSTRY SESSION: Unveiling the future of agriculture: Exploring innovative manure products for sustainable farming Oxbo International		
1:00PM		LIQUID TANKER & DRAG HOSE DEMONSTRATIONS				
3:30PM	RAPID REL	RAPID RELEASE DEMONSTRATION / HOSE BREAK SAFETY DEMONSTRATION				
5:00PM	EXPO GROUNDS CLOSE FOR 2023 - SEE YOU NEXT YEAR IN AUBURN, NEW YORK					

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#### **SPEAKER BIOS AND SESSION DESCRIPTIONS**

**MANUREXPO** Professionalism in Nutrient Management

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#### **SPEAKER BIOS AND SESSION DESCRIPTIONS**

#### NorthAmerican MANUREXPO Professionalism in Nutrient Management

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#### TESTING MANURE: VARIABILITY AND TRENDS OVER TIME



NANCY BOHL BORMANN UNIVERSITY OF MINNESOTA PhD candidate, soil, water and climate department

#### MANURE INNOVATIONS OF THE NORTHEAST



HEATHER DARBY UNIVERSITY OF VERMONT Extension agronomist specialist



KIRSTEN WORKMAN CORNELL UNIVERSITY Senior extension associate, nutrient management and environmental sustainability specialist, Pro-Dairy

#### MANURE EMISSIONS DURING AGITATION AND PROCESSING: REDUCING RISKS FROM Hydrogen Sulfide

#### MANURE SEPARATION SYSTEMS



#### BECKY LARSON

WISCONSIN-MADISON Associate professor and extension specialist, Nelson Institute for Environmental Studies, faculty director, Women in Science and Engineering Learning Community

#### **ARE YOU FUTURE-READY?**



SHELLY MAYER PROFESSIONAL DAIRY PRODUCERS Executive director More than 80,000 midwestern manure nutrient samples from the last decade were compared to manure nutrient book values published by MidWest Plan Service in 2004. Find out what trends emerged from looking at these samples and learn more about our efforts to create a nationwide manure test database to dynamically update manure nutrient book values.

Nancy is a PhD candidate in the soil, water, and climate department at the University of Minnesota. A native of New Richmond, WI, she graduated with her BS from Iowa State University in Agricultural Education and Environmental Science and a MS from the University of Wisconsin-Madison in Soil Science. She worked for The Maschhoffs for 14 years as a CCA in the swine nutrient management and environmental services area before returning to graduate school. She resides in north central Iowa on her family's grain farm.

The 2024 North American Manure Expo conference co-hosts will give you an overview of manure innovations happening in Vermont and New York. They will share results from on-farm trials and projects related to grassland injection, manure and cover crops, manure additives, greenhouse gas monitoring, value of manure studies and more. Come get a sneak peek of what you might see when you come to the northeast in 2024.

Heather Darby is an extension agronomist with the University of Vermont. For the last 20 years, she has worked in partnership with the farming community to develop conservation practices that make economic and environmental sense. Heather's applied research and extension program investigates and highlights innovative crop, manure, and soil management techniques that support the needs and interests of farmers.

Kirsten is passionate about the connection between agriculture and the environment. With more than 20 years of experience working with farmers in Washington state, Vermont and New York, she leads extension programming and applied research focused on nutrient management and environmental sustainability for Cornell's Pro-Dairy program and is a member of the Cornell Nutrient Management Spear Program team. As a Certified Crop Adviser, she aims to identify practical and effective strategies that can be adopted by northeast producers that both increase environmental sustainability and improve farm profitability and management.

Emissions from manure systems, particularly from agitating manure, pose health risks for those near the systems. This presentation will cover the conditions in which measured hydrogen sulfide increased concentrations that posed a risk to human health. Various preventative measures can be taken to reduce the risks associated with manure systems.

Manure separation systems are useful to separate manure into multiple components. This presentation will cover the different separation systems available, their separation efficiencies, why those separation efficiencies are important and how to measure them and review the data.

Dr. Larson is an associate professor and extension specialist in the Nelson Institute for Environmental Studies at the University of Wisconsin-Madison. She completed her B.S., M.S., and Ph.D. in Biosystems and Agricultural Engineering at Michigan State University. The main component of her work focuses on increasing sustainability of food waste and livestock manure systems to reduce environmental impact while maintaining profitability.

Shelly Mayer is a dairy producer, and the executive director for the Professional Dairy Producers of Wisconsin (PDPW). As the director, she advocates for a proactive approach to bring dairy producers and neighbors together to reduce potential conflict and work for creative, win-win solutions.



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#### **SPEAKER BIOS AND SESSION DESCRIPTIONS**

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#### **SPEAKER BIOS AND SESSION DESCRIPTIONS**

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APPLYING FALL MANURE FOR HYBRID RYE Nitrification inhibitors and manure	New varieties of hybrid rye provide ground cover over the winter and are being used as feer ingredients. How can we incorporate manure into this system and what rates are needed? We'll discuss results from a study looking at different swine manure sources (liquid finisher manure, bedded pack and composted bedded pack) and application rates to see what produced the most yield.
MELISSA WILSON UNIVERSITY OF MINNESOTA           Associate professor and extension specialist, manure nutrient management & water quality, Department of Soil, Water, and Climate	Nitrogen can be lost after manure application, especially once it transforms into nitrate. Nitrification inhibitors help slow this conversion process down, but do they work with livestock manure? We'll discuss research from Minnesota, Iowa and Wisconsin. Dr. Melissa Wilson is an associate professor and the manure nutrient management specialis at the University of Minnesota with appointments in both research and extension. Her research focuses on filling knowledge gaps about manure nutrient cycling as farming practices, weather, and technologies change. She is also currently evaluating techniques for opening the window of opportunity for manure application.
INDUSTRY SESSION: PUCK'S PUMP SCHOOL PUCK ENTERPRISES	During Puck's Pump School, attendees will learn about operations and crew management, as well as performance systems for an efficient operation. Puck's manure application experts cover a range of topics, cavitation, friction loss, pump curves, safety features, quality of life and more. If you're looking for a one-on-one pump school course, Puck can tailor a session to your
INDUSTRY SESSION: COMPLETING THE LIQUID Manure management puzzle	needs. Visit Puck's booth or call 712-655-9200. New Solutions Ag and Soil Regeneration Unlimited team up to present protocols for preventing greenhouse gas emissions from storage and fields during and following application without creating groundwater contamination.
SOIL REGENERATION UNLIMITED INDUSTRY SESSION: UNVEILING THE FUTURE OF Agriculture: Exploring innovative manure Products for Sustainable farming OXBO INTERNATIONAL	In addition, evidence will be provided to prove by third party soil microbiome demographic that these protocols enhance soil health and control soil-based plant pathogens. Join our educational session on the latest advancements in manure products, where you'll learn about innovative technologies and sustainable solutions that transform animal manure into valuable resources, promoting environmental conservation and agricultural productivity. Discover how these solutions can provide application flexibility, increased application window, reduced costs and improve nutrient application placement on your farm or for your customers.



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#### **INDOOR EXHIBITORS**

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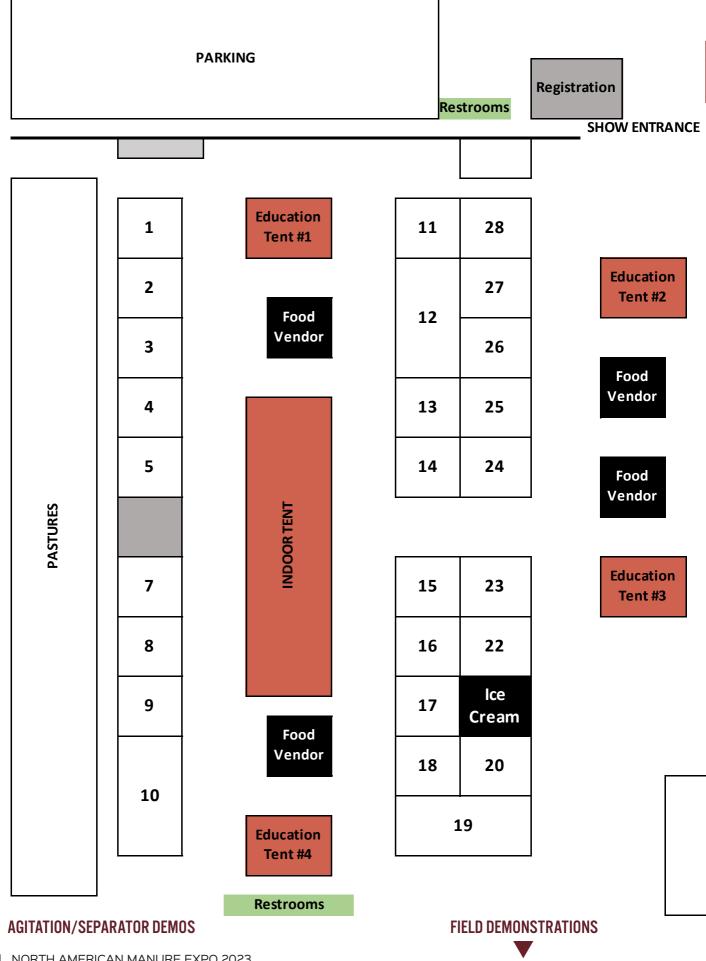
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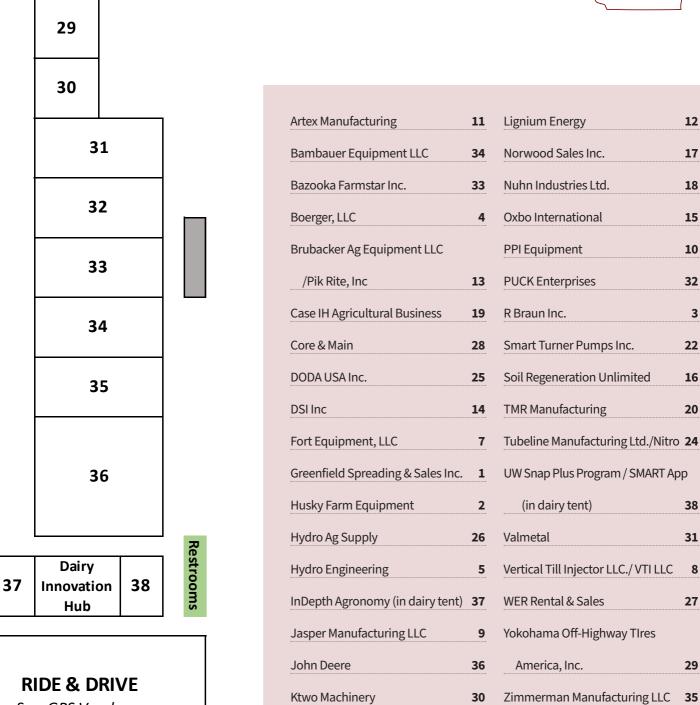
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20 | NORTH AMERICAN MANURE EXPO 2023

#### **OUTDOOR EXHIBITORS**



See GPS Vendors in Dairy Innovation Hub NorthAmerican

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Join us for interactive and engaging sessions on-site at the manure expo that focus on safety across different aspects of manure management. These vital sessions will start during the agitation demo, followed by breakout groups where attendees will visit the remaining concurrent sessions around the expo grounds!

#### **CONFINED SPACES AND GAS SAFETY**

**Speakers:Francis Johnson, Ernine Sundstrom** Location: Agitation Pit during demonstration (1:50pm start time) This discussion provides a high-level overview of the key points that applicators, farmers and their employees need to know about the importance of gas monitors and usage, dangers of manure gasses and confined spaces, action steps when a problem occurs and firsthand experience of keeping staff and employees safe.

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#### **SAFETY WITH SPREADERS, TANKERS and SEMIS**

Speakers:Fernando Perez, Walter Grose, Megan and Eric Dresbach, Ryan Debroux Location: Greenfield and Husky booths This session provides a hands-on opportunity to learn from experienced manure applicators (from multiple states) and industry contacts on how to prevent common accidents and problems, reduce downtime, and best practices to improve safety, efficiency, and profitability. The equipment focus of the session includes large solid spreaders, tractor tankers and manure transferred in semis, with special emphasis on load distribution, common driver errors and road safety.

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DRAGLINES, PRESSURE SAFETY, BOATS and BARN AUTOMATION

Speakers: Ernie Sundstrom, Dave Eisentraut, Isaac Lemmenes Yokohama representative: Mike Ferlita Location: Separator demo area This session focuses on manure gas safety, dragline and pressure considerations and safety at the manure treatment system. Hear firsthand from an experienced applicator how they get their employees to take manure gas safety seriously in the field and at the treatment system. Discover how to reduce the risks of working around high pressure pumping equipment and air compressors and learn hints on safe and efficient dragline layout and humping.

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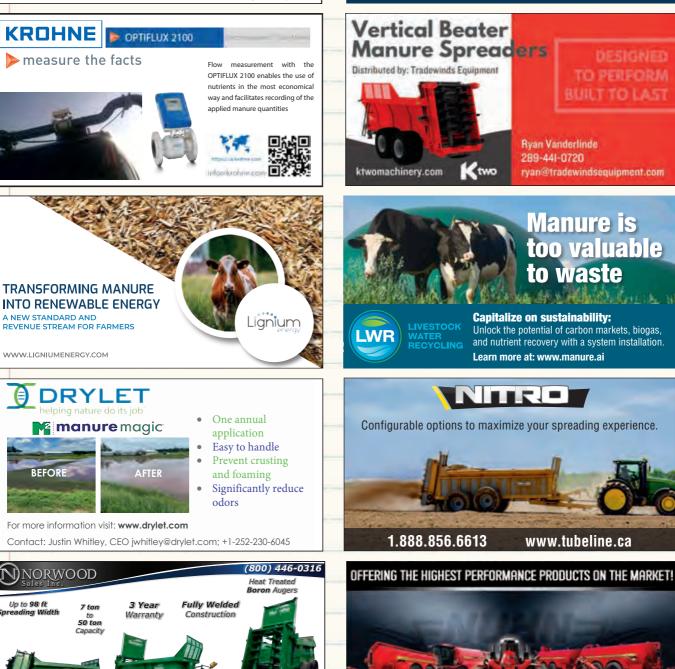
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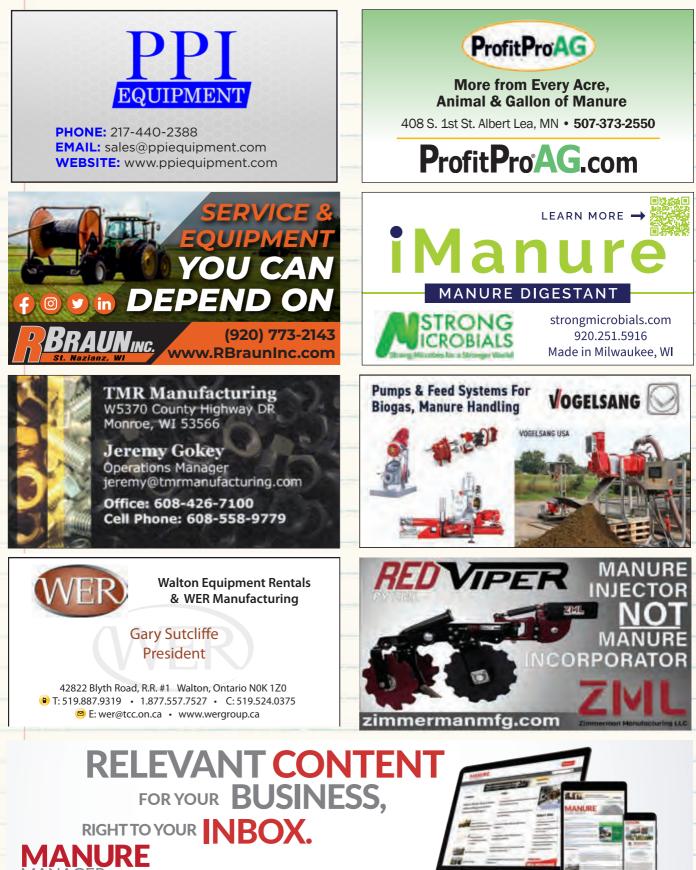
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