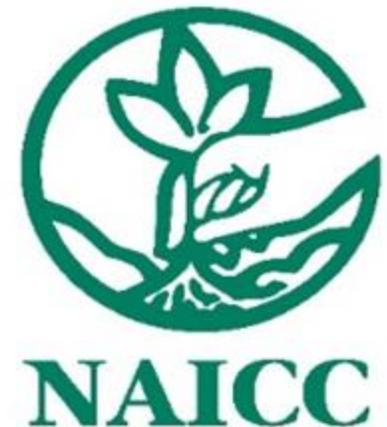


WSSA & NAICC Crop Tour to WISCONSIN On ENDANGERED SPECIES

November 4, 2024



Please put questions in the chat box.

We will only address questions about the tour and are appropriate to ESA.

If you were on the tour, please list anything you learned.



Yes, they are in a cranberry marsh.

Great discussions on and off the bus. And thanks to everyone for all the great pictures.



Introduction



Steve Hoffman

Independent Crop
Consultant; WI
NAICC Governmental Affairs
Consultants Subcommittee



Greg Dahl

President,
Weed Science Society of
America,
St Paul, MN

Wisconsin: Why was it selected for the tour?



Great location to show multiple projects and groups working to protect listed species

Wide range of environmental conditions



Opportunity to see how spray drift adjuvants are tested and shown to reduce drift

Groups that were represented



Locations



1. Delavan, Great Lakes Ag Research Service Farm: Massasauga Rattlesnake habitat

2. Richfield NRCS: Presentation on Conservation Programs

3. Fond du Lac, Greendale Farm: Rusty Patched Bumble Bee habitat



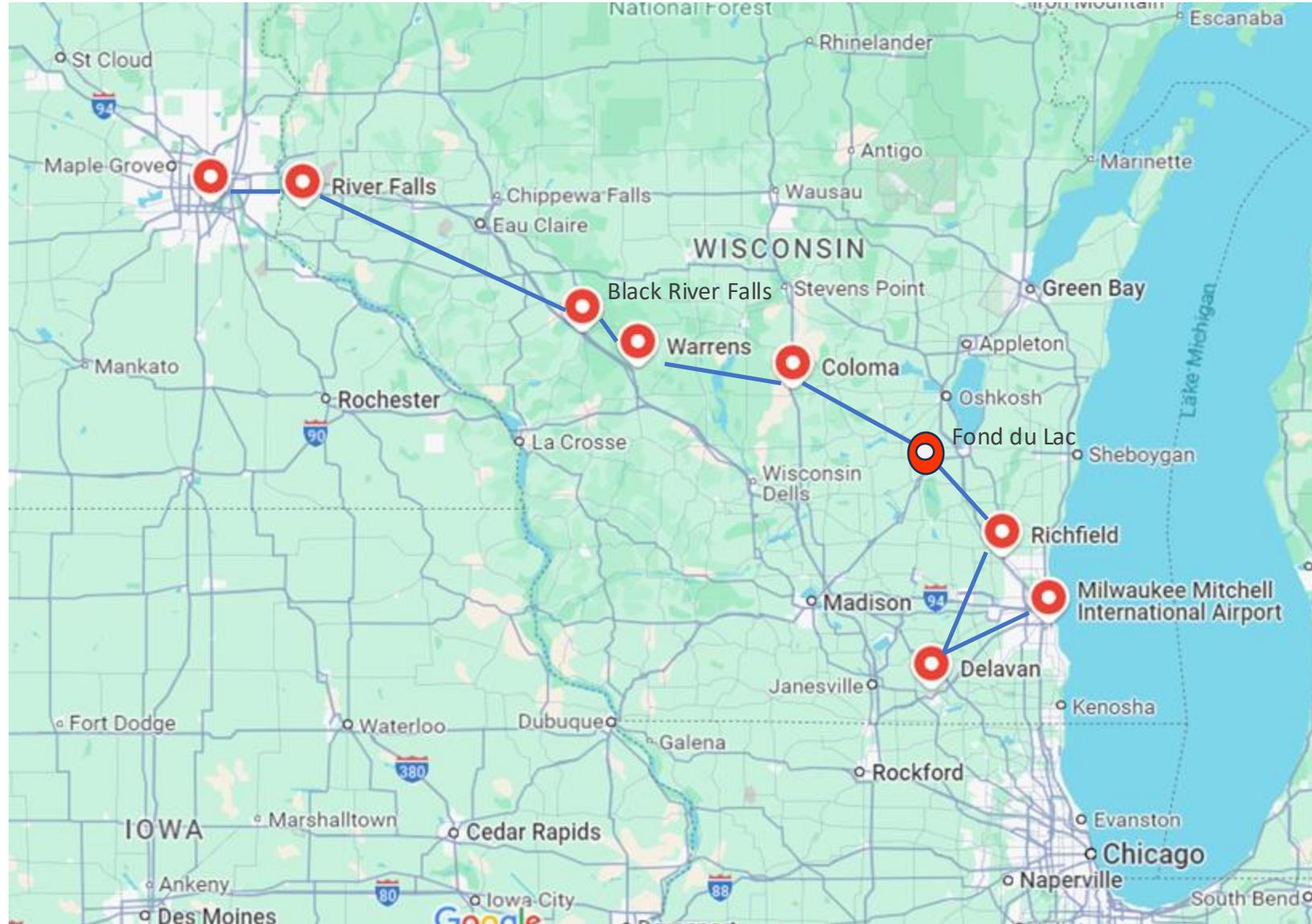
4. Coloma, Coloma Farms in central sands of WI: Healthy Potato Program, planting in pivot comers, wetland restoration

5. Warrens, Van Wychen Cranberry Farm: Cranberry marsh practices and possible habitat

6. Black River Falls WI Cranberry Res Station: Cranberry marsh construction and pest control topics



7. River Falls, Winfield United Innovation Center: Spray Drift Adjuvants



Habitats for Listed Species



Can farmers modify an existing practice to create habitat



Habitats are very species specific which makes them harder to describe to applicators/growers.

- Corners of center pivot systems
- Area adjacent to a field
- In the field itself



Need FWS expertise to provide input on questions of habitat



Comment from Coloma stop: “There should be a landscape management level change to have an increase in biodiversity”

Habitats for Listed Species: Lack of basic knowledge about these species and other endangered species



Massasauga rattlesnakes at Great Lakes Ag Research Service Farm in Delavan

- They need wet areas to reproduce and hibernate and woodlands for food the rest of the year.
- They need corridors to link the areas.
- Fragmentation is a problem.



Great Lakes Ag Research, Massasauga Rattlesnake Habitat

Photo by Mike Redmer, USFWS

Great Lakes Ag Research, Massasuaga Rattlesnake Habitat



Habitats for Listed Species: Lack of basic knowledge about these species and other endangered species



Rusty Patched Bumble Bee at Greendale Farm in Fond du Lac

- Improving habitat for pollinators through soil health practices such as cover crops and prairie strips
- Habitat can be flowering plants grown adjacent to the field and inside the field (e.g., flowering plants planted between the crop rows for insects)



Greendale Farm, Rusty Patched Bumble Bee Habitat

Riveredge Nature Center, Saukville, WI

Greendale Farm, Rusty Patched Bumble Bee Habitat



Habitats for Listed Species (cont.)

Healthy Grown Potato Program

- **Plant habitat in corners of central pivot:** Prairie plantings in corners of center pivots
- **Windbreaks in the central sands region:** this part of Waushara County has deep sandy soil deposits, over 100 feet deep, and windbreaks are planted to stop wind erosion and snow. Could the windbreaks be planted to species suitable for listed species habitat?
- **River headland restoration:** WI has a program to restore river headlands to protect water and it also created habitat. Restoration was cooperative work between council, farmers, and state.

Cranberry operations

- Have areas that could be evaluated as potential habitat.
- Large water holding areas for field flooding
- Ditch banks and berms

Coloma Farms, WI central sands – potato production, windbreaks, prairie planting



Windbreak
as possible
habitat

Prairie planting
in pivot corners



Center pivot irrigation
systems



Van Wychen Cranberry Marsh, Permanent Berms and Possible Habitat



WI Cranberry Research Station, Laser leveled fields and Permanent Berms



NRCS Discussion at Richfield WI

Conservation Programs could help listed species

Great Lakes Restoration Initiative



Mitigations

NRCS: Presentation and Discussion in Richfield and Greendale Farms in Fond du Lac

- They talked about NRCS programs: currently focused on conservation but these practices can help listed species
- Great Lakes Restoration Initiative
- Many questions about sources of funding
- There are multiple programs (E.g., EQIP, Ag Conservation Easement Program-Ag Land Easement, etc.) and expertise to help with conservation practices and education
- How can we help users know about programs?

Great Lakes Restoration Initiative
(\$ 368 Million in FY 2024)
Demonstration Farms are one of five GLRI focus areas to help farmers and consultants research new and effective conservation practice.

- Might be an information source for ESA conservation practices.
- Help identify early adopters.
- EPA administers the program - do they administer other similar programs?

Mitigations (cont.)

At several stops we discussed mitigation opportunities

Many examples at Great Lakes Ag Research Service, Greendale Farm, with NRCS at lunch, at Coloma Farms, Van Wychen Cranberry Marsh, WI Cranberry Research Station

Can habitat also count towards conservation points or spray buffers?

Can windbreaks (central sands region) or pollinator habitat (Greendale Farms planted habitat for Rusty Patched Bumble Bee) count towards conservation points or spray buffer percentages?

Cranberry operations

Fields are laser leveled, have berms around the marsh, and use on-farm manufactured specialized application equipment which can reduce drift

As a result, these fields might be exempt from runoff and drift restrictions

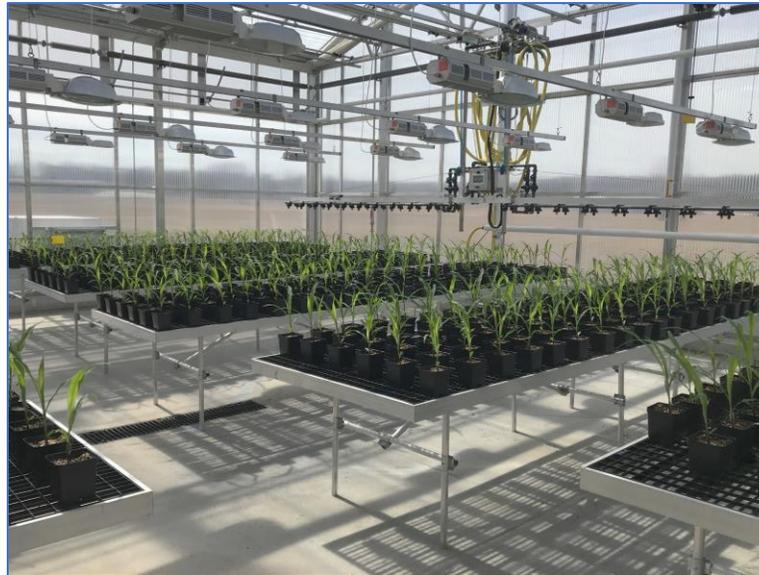
WINFIELD® UNITED

Innovation
Center
River Falls, WI



CHEMISTRY

- Make & break products
- Supply & quality assurance
- User experience testing



CONTROLLED ENVIRONMENTS

- Year-round testing
- Market support



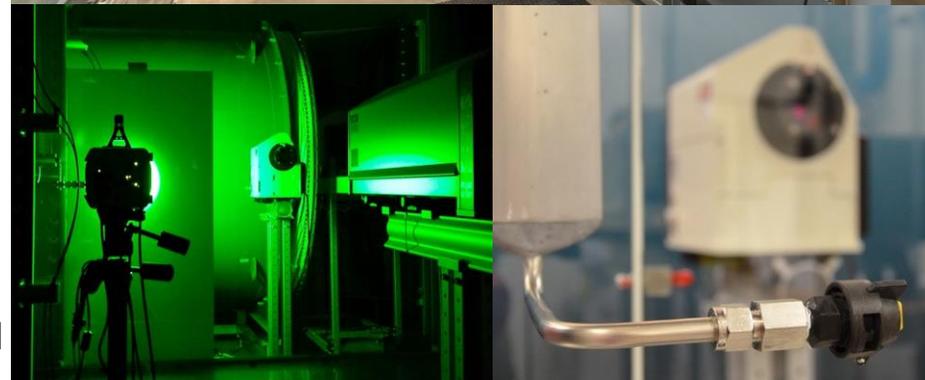
SPRAY TECHNOLOGY

- Droplet size and distribution
- Drift and deposition analysis
- High speed videography
- Ground & aerial capabilities



Wind Tunnel 1 High Throughput Droplet Sizing

- Industry-leading operating procedures
- Conforms with EPA drift measurement protocols
- Only privately owned systems with multiple droplet sizing methods
- Participate in international standards development
- Continuously improving and adding capabilities
 - Droplet size distributions
 - Speed and shear analysis
 - Atomization analysis
 - Physical properties
 - Marketing support
 - Air sampling
 - Pulse width modulation

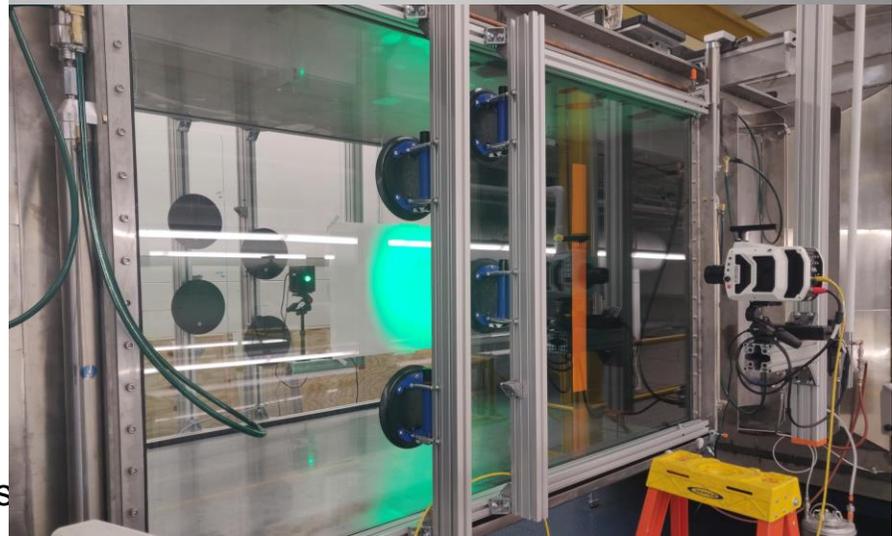




Wind Tunnel 2

Aerial Sprays

- Split-level design: High-speed aerial and Low-speed boom-scale sections
- Only wind tunnel of its type in the world used for agricultural research
- Enclosed design with spray collection allows measurement of active chemistries
- High speed testing up to 160 mph for simulated aerial application
- **Aerial section**
 - High speed video
 - Droplet sizing in development
 - 7-foot downwind interrogation region

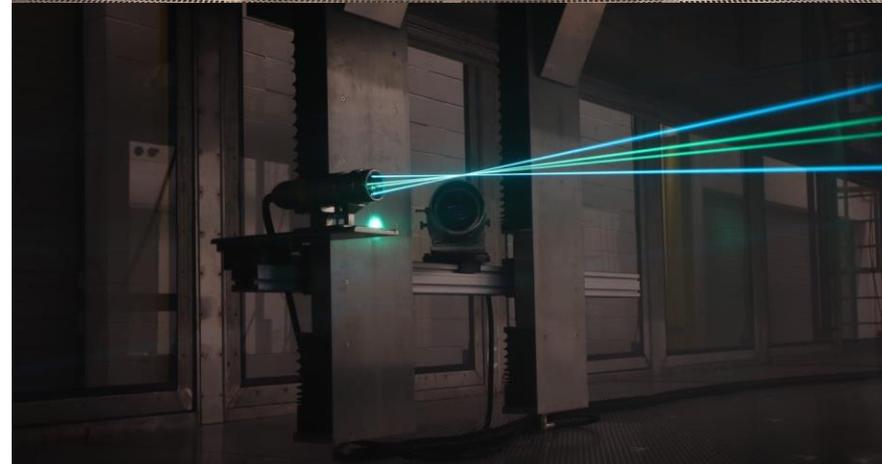




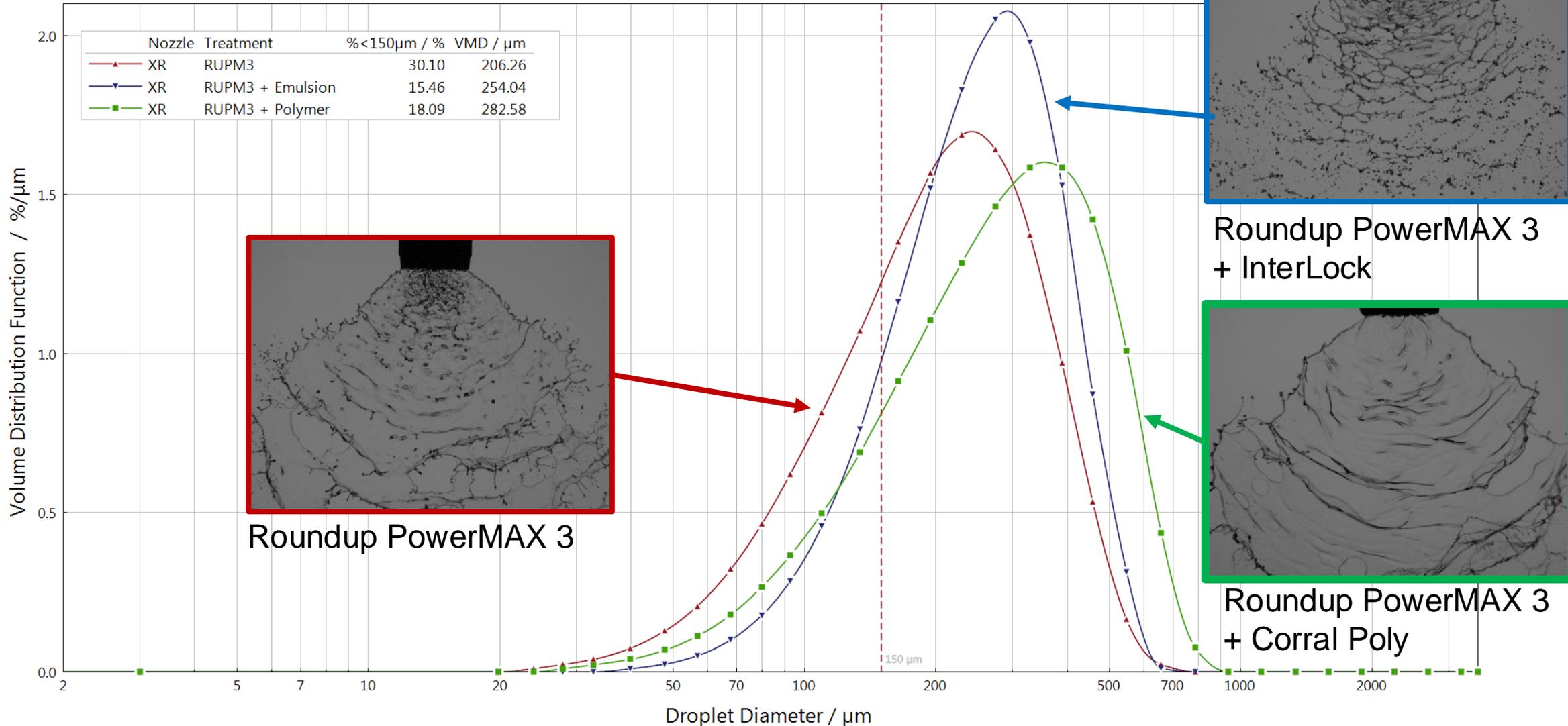
Wind Tunnel 2 – Continued

Field Simulation

- Low speed testing up to 40 mph for simulated boom-scale field drift and deposition measurements
- **Low speed section**
 - Wet Phase-Doppler Particle Analyzer for droplet size and velocity
 - Physical samplers- Monofilament, filter cards, and impactors (tunnel, rotational, and cascade)
 - High speed imaging
 - Laser imaging- Laser sheet for particle image velocimetry and Optical Patternation, columnated light for Schlieren Interferometry
 - Water sensitive cards and physical patternation
 - Living plants for injury rating
 - Flexible spray delivery options – multiple boom sections, Pulse width modulation systems, spray orientations, etc



Droplet Size Distributions



Education from the Tour

- **Farmers are aware of conservation practices and soil health – we can help do the same with ESA**
- **What is the best way to tell growers and users “why” species should be protected**
- **Evolution of Bulletins Live! II for ease of use**
- **Demonstration Farms: Opportunity to showcase and work with growers**
- **Educational Roles**
 - Accessible information to facilitate discussions
 - Roles of different Federal Agencies?
 - Roles of producers’ and supporters?
- **Documentation/Record Keeping**
 - EPA or States create guidelines?
 - How to describe Mitigation and Spray Drift Calculators?



*Wisconsin ESA Tour Participants at WinField United Innovation Center in River Falls, WI on September 5, 2024: (L to R, first row): **Dawn Wyse-Pester**, Director of Innovation, Research & Development at WinField United with Land O' Lakes; **Hilary Sandler**, WSSA President-Elect; **Lori Nordstrom**, Assistant Regional Director for Wisconsin and Minnesota, U.S. Fish & Wildlife Service (FWS); **Jan Matusko**, Director EPA Office of Pesticide Programs (OPP) Environmental Fate & Effects Division (EFED); (second row): **Lee Van Wychen**, WSSA Executive Director of Science Policy; **Matt Eich**, NAICC Independent Crop Consultant, South Dakota; **Kris Garber**, Senior Science Advisor, EPA OPP EFED; **Sarah Chu**, WSSA Science Policy Fellow; **Josh Miranda**, WSSA Science Policy Fellow; **Kaitlin Picone**, Senior Advisor for Stakeholder Engagement, EPA OPP; **Ian Olson**, NAICC Independent Crop Consultant, South Dakota; **Steven Hoffman**, NAICC Independent Crop Consultant, Wisconsin; (back row): **Kevin Pontel**, NAICC Independent Crop Consultant, Wisconsin; **Neil Anderson**, Acting Director, EPA OPP Biological and Economic Division (BEAD); **Mark VanGessel**, WSSA-EPA Liaison; **Charles "Billy" Smith**, Director, EPA OPP Registration Division (RD); **Bill Chism**, WSSA ESA Committee Chair; **Greg Dahl**, WSSA President; **Ed Messina**, Director, EPA OPP; **James Todd**, NAICC Independent Crop Consultant, Texas; **Tim Kiely**, Deputy Director, EPA OPP Pesticide Re-Evaluation Division (PRD).*

Questions that came up on the bus and may take years to answer

- Integrated Pest Management (IPM) is a system. How can we incorporate ESA into it? There has been a shift in the farming community even more towards sustainability
- What does success look like, how will it be documented? Does it look different for various groups?
- ESA wants more habitat, farmers are looking for more mitigations, these are not in conflict but its in crafting the message
- What is the process to add new tactics to mitigation menu?
 - Farmers are very innovative and once this begins to show up on labels farmers will have new ideas to suggest.
- Clarification on PULA versus FIFRA restrictions for generalist's species, one point of confusion and message needs to be “cleaner”
- What is a field?
 - Large continuous property that is rotated between seasons (Greendale Farm), fields that are not planted “edge to edge” (Coloma Farm), and cranberry marsh that does not include the berms (Van Wychen Farm)

Questions that came up on the bus (cont.)

- **Funding:** Is anyone developing a list of funding sources for conservation practices (EQIP money, state funds, tax breaks, etc.)? Who could help with that list? ESA Farm Plans will take time and money, and experts need to be paid.
- **FWS** - Could FWS provide a short list of bullets of what is necessary for a viable habitat. The list would be helpful for training purposes. “Lack of knowledge leads to fear of the unknown and hesitancy to communicate with USFW experts.”
- **FWS** - What to do if endangered species is found on your land.
- **FWS** - Could FWS provide a written description of what can be done to habitat that a grower may have created?
- **FWS** - If I create habitat and a listed species becomes established will there be additional mitigations or things I must do?
- Many questions came up about adjusting pesticide use rates and time of application and the impact on mitigations.
- Comment on bus that while there are a lot of programs available, ESA is unique in that it needs to be focused on endangered and threatened species and their habitat.

The WSSA, NAICC, and other groups would welcome the opportunity to make the Endangered Species Act successful and workable for EPA, FWS, growers, applicators, crop consultants, and other crop advisors, the public and the environment.

Questions from the audience and answers from people on the tour

- Thoughts on what we learned?

