

Wheat Briefs

Wheat Quality Council

Pierre, SD

Spring, 2001

WHEAT QUALITY COUNCIL ANNUAL MEETING and Technical Review drew a large crowd to the Airport Embassy Suites Hotel in Kansas City, February 20-22, 2001. The forum on Export Quality of U.S. Wheat received great reviews from those in attendance.

IMPORTERS GIVE INSIGHTS INTO U.S. QUALITY & POTENTIAL CHALLENGES OF BIOTECH WHEAT

The following article, reprinted in its entirety, was written by Lester Aldrich, BridgeNews.

Kansas City, Feb 22 (BridgeNews) – An official from a large U.K. wheat miller and importer said his company would not consider buying genetically modified Roundup Ready wheat from U.S. grain companies. He told those attending the Wheat Quality Council's convention here that his company would go to other countries or do some creative blending to avoid any genetically modified grain.

In an interview later, Jim Shine of Rank Hovis Ltd., said buying from U.S. grain firms after a genetically modified wheat was released might be possible if the industry could guarantee it wasn't possible to get the genetically modified wheat. But even then, consumers in the U.K. would have to be convinced they weren't buying bread made with GM wheat.

"Europeans are positively paranoid about food safety," Shine said. It's easy to see where they get it. They've dealt with major food problems in the past few years and been lied to by officials so many times that they don't trust anyone and end up with a zero tolerance for anything new.

So, to satisfy his customers and to protect market share, Rank Hovis will simply avoid U.S. wheat, he said.

The whole issue of identity preservation kept cropping up in presentations to the group and in conversations during breaks.

John Oades, director of the West Coast office of U.S. Wheat Associates, said buyers all over the world are becoming more demanding of the market. Even food-aid customers are getting pickier about what they get.

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Oades told the group the market is no longer one of price, price, price, but is quickly becoming one of consistency, consistency, consistency.

There are cases where it is delivering. Shine said shipments of spring wheat are very consistent. His firm likes certain varieties that it now imports.

But in addition to warning about GM grains, Shine said that in a few years, his company could be sophisticated enough to demand those certain varieties. And he expected to get them.

Shine said in an interview that that period could be as short as two years.

Oades urged breeders in the audience to focus on quality in the varieties they are developing. The market will get more sophisticated in segregating for quality in the next few years.

He said the industry must be able to measure and certify functionality. Class, protein content and other factors no longer are good enough.

Derek Westall from Grupo Trimex, a large wheat importer in Mexico, pounded home the issue of consistency. Currently, Mexican millers are grinding almost nothing but U.S. hard red winter wheat from the Kansas area. His firm has learned over the years to be very specific about what it wants in the wheat it purchases, or it will get something less than they expect.

Grupo Trimex also has had trouble in the past with excessive dockage and small and shrunken kernels. It all comes out in the cleaning house and is unmillable. He also wondered aloud why wheat exporters on the Gulf aren't cleaning wheat like they are in the Pacific Northwest.

Westall urged a tightening of Federal Grain Inspection Service specifications for export wheat. It wouldn't affect domestic users but could lead to greater consistency in exported lots.

When asked about Mexican consumers' reaction to GM wheat, Westall said wryly, "Up to now, we haven't run into the problem of GM, but I expect Greenpeace to help us out."
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John Oades, director of the West Coast office of U.S. Wheat Associates, said buyers all over the world are becoming more demanding of the market.



Derek Westall (above) from Grupo Trimex, a large wheat importer in Mexico, pounded home the issue of consistency.

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“Capturing Hidden Value in Crops”

(Editors note – By Ben Handcock, WQC) Following informative presentations by our importing customers and our domestic users and exporters, it was apparent that the customer sometimes had difficulty obtaining exactly the quality of wheat he desired. Likewise, our domestic users and exporters encountered some of the same problems in procuring the

qualities they desired for their own use or for satisfying their export demands. Consistency of quality, mainly by means of identity preservation, was the main theme of several speakers. The following presentation, on americrop.com, appealed to me as one idea that has tremendous potential for helping maintain consistency in our products and for allowing everyone in the chain to capture some value for themselves.

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IDENTITY PRESERVATION IS VITAL TO WHEAT DEVELOPMENT & MARKETING

By Lester Aldrich, *BridgeNews*

Kansas City, Feb. 22 – The ability to preserve the identity of wheat is critical to the final development and release of genetically modified wheat. The issue appears central to the whole debate about bioengineered crops as the grain industry moves toward more specialty crops aimed at specific markets.

The issue of being able to give customers what they want is so critical that a Monsanto representative refused to give a specific time period as a goal for releasing Roundup Ready spring wheat to the market. Michael Doane, industry affairs manager for Monsanto, spoke to a gathering of the Wheat Quality Council here and talked with reporters afterward.

The company appears to be even more vague about when this technology might be released than it has in recent weeks. Doane would not be nailed down to a question from reporters about when the technology might be released to farmers. Instead, he focused on the company's policy of open communications between researchers, growers, processors and consumers.



Michael Doane, industry affairs manager for Monsanto, spoke to a gathering of the Wheat Quality Council

Ronald Olson, vice president of grain operations for General Mills, spoke to the group as well and said consumers are demanding a connection between health and food. Consumers also are becoming increasingly brand conscious and are seeking products that fit their

specific needs. As a result, the food industry is providing different products for each segment.

Food companies, then, are focusing on different varieties of wheat for specific products, making identity preservation even more important, Olson said. Identity preservation creates more value for the farmer and for the processor because the industry can be demand driven as opposed to supply driven.

By being able to identify various wheats, the processing part of the industry has a chance to enhance its marketing efforts, which drives what the company is looking for in wheat and other grains.

In a short interview after his presentation, Olson said General Mills already is contracting with farmers to grow specific varieties of crops just for the company. The crops have to be segregated or else there is no point in contracting.



Ronald Olson, vice president of grain operations for General Mills

Olson said this process currently is easier in the northern plains because farmers there typically have more on-farm storage available than those in the central plains. There are problems with identity preservation in areas where on-farm storage space is lacking or where an elevator isn't available to keep it separate. But the company is willing to work on these issues with farmers.

In his presentation, Doane said there were benefits and risks associated with biotechnology. He stressed the importance of keeping a dialogue going with all segments of the industry.

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By keeping all segments of the production and consumption food chain up to date, those problems can be dealt with before they become big issues. Each piece of the chain – farmers, millers and consumers also must see the benefits, and this can't be done without dialogue and marketing.

Twenty years ago, Monsanto began exploring ways to make spring wheat tolerant of a herbicide called Roundup, which the company also produces, Doane said. Roundup circumvents a plant's ability to develop, and kills nearly every plant to which it is applied. Farmers use it extensively because it gives such good weed control. But spraying it on crops also kills the crops.

Monsanto realizes it has to create a market for Roundup Ready wheat and not just wait for the market to come to it. With milling companies and consumers demanding specific products, the market has to be there or the product might not be a success.

To that end, Monsanto is working toward answering questions about cross-pollination, outcrossing with other varieties, how the technology might fit into agronomic systems, how to manage volunteer wheat and assessing

the environmental effects. All must be done before release. This is why Doane refused to be specific about a potential release date. "It's a moving target."

Monsanto also must do the work for regulatory oversight of the technology, Doane said. Roundup already is used in wheat, and the company has already appealed to the U.S. Environmental Protection Agency to grant a label change allowing its use on Roundup Ready wheat, even though the wheat hasn't been released yet.

Approval for Roundup Ready wheat also must be made by the U.S. Department of Agriculture and U.S. Food and Drug Administration, and applications haven't been submitted yet. In the interview Doane stressed that it was Monsanto's responsibility to get this approval.

The company also was looking forward to getting unrestricted approval for Roundup Ready spring wheat from other countries. Canada, Japan and the EU were mentioned as key areas, but Doane did not say approval must come from these countries before the technology was released in the United States.

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WHEAT CLASSIFICATION SYSTEM AND INFORMATION TECHNOLOGIES NEED TO BE ON FRONT BURNER

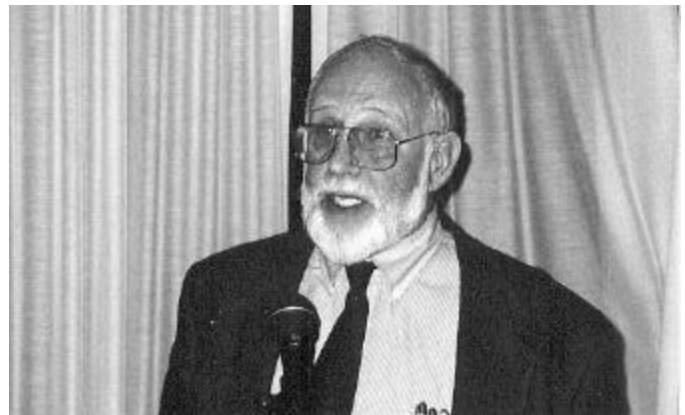
By Lester Aldrich, *BridgeNews*

Kansas City – Feb. 22 – The U.S. wheat classification system needs to be updated to facilitate international and domestic trading, and it should be built around the wheat's functional quality, said an economic advisor and consultant to the wheat industry.

Robert Drynan (right) of Trigonmica of the Americas urged those attending the group's annual convention here to get with buyers and to develop such a system.

Asked later how he envisioned such a program, Drynan had few specifics. He pointed to the French system, which relies heavily on contract growing for a specific buyer.

Under that system, farmers contract to grow a specific variety of wheat, and when it is harvested and delivered,



they certify that what was delivered is what was contracted to grow. The wheat is then tested for verification, and there are penalties for misrepresentation.

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Drynan chided the convention attendees for past practices of sending poor-quality wheat into overseas markets. The U.S. system of growing wheat, he said, lent itself to producing too much lower-quality wheat.

In the interview, he said the Canadians and other countries have low-quality wheat, too, the result of bad weather during the growing and harvest seasons. But their system isn't designed to produce the poorer wheats like the U.S. system. When they do it, it's because of factors that are out of the farmer's control.

Other speakers also alluded to the same problem, encouraging growers to aim for higher-quality wheat deliveries. One explained that going for yield alone tended to give lots of wheat with poor milling qualities.

Tim Daugherty, president of grain and grain processing for Farmland Industries, said in a presentation to the group that he expected huge changes in the wheat industry over the next few years. The coming of genetically modified wheat varieties, for instance, offered "immense marketing opportunities" but also presented huge challenges with identity preservation.

Daugherty predicted information technologies would facilitate the wheat industry's revolution and inferred they would bring about the types of changes Drynan urged in his speech. He also urged the Wheat Quality Council to become engaged in the process and not allow everybody else to dictate how the changes would take place.

Grain companies also will accelerate their efforts to market wheat rather than just to sell it, Daugherty said. The trick will be to figure out the consumer's signals and then take them back to producers and breeders to grow the types of wheat that will produce the products the consumer wants.

Referring to the StarLink situation with corn, Daugherty said the wheat industry shouldn't shy away from genetically modified varieties, but should learn from past mistakes. The challenges presented by having such varieties that some consumers might

not want are immense, but so are the opportunities. He urged attendees to be proactive in defining and implementing the new rules. —0—



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Randy Englund, Executive Director of the South Dakota Wheat Commission unveiled a new web site devoted to capturing the hidden value in crops. The idea was conceived by and has been supported by wheat producers in South Dakota. Although only wheat information is on the web site at present, the intention is to broaden the base and include other crops in the future. Englund stressed the point that this program was designed by South Dakota producers but was never intended to be only for them. The web site will be available to all producers, nationwide. In fact, several other states have expressed strong interest in being participants, Englund said.

According to Englund, information is the key to capturing value from your wheat. Information costs, and someone has to pay. In the case of americrop, the farmer pays. Each farmer can choose the information he/she wants listed on the web site. Listing the variety and location will cost less than one cent. Milling information costs two cents. Dough characteristics and baking quality costs another cent, and mineral data about one cent. The bottom line—total quality data for about a nickel, based on 10,000-bushel lot sizes.

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HARD WINTER WHEATS

Six advanced lines of hard winter wheat from four states and one private company were evaluated this year by the cooperators in the Council. Each was compared to a top quality variety currently grown in the state.



<u>Wheat Data Collected</u>	<u>Milling & Flour Data Collected</u>
FGIS Classification	Straight Grade Flour Yield
Test Wt (lb/bu)	Moisture %
Hectoliter Wt (kg/hl)	Protein %
1000 Kernel Wt	Ash %
NIR Hardness	Wet Gluten %
Kernel Size (sieved)	Dry Gluten %
Single Kernel Hardness	Agtron Flour Color
Single Kernel Wt	Simon Flour Color
Single Kernel Diameter	Falling Number
Moisture %	Avg. Micron Size
Protein %	Farinographs
Ash %	Mixographs

Sample analysis and report preparation cooperators were USDA-ARS-GMPRC-HWWQL, American Institute of Baking, Federal Grain Inspection Service and KSU Department of Grain Science & Industry.

Baking cooperators included: ADM Milling Co, AIB, Bay State Milling, Cargill Inc, Cereal Food Processors, ConAgra Inc, KSU, Mennel Milling, University of NE, Hard Winter Wheat Quality Lab, Hard Spring Wheat Quality Lab and Western Wheat Quality Lab.

The baking cooperators scored the flours on sponge characteristics, bake absorption, bake mix time, mixing tolerance, dough characteristics "out of mixer," dough at "make up," crumb grain, crumb texture, crumb color, loaf volume and overall baking quality.

The one Colorado line was rated lower than the check. (Prowers)

The one Kansas line was rated about equal to the check. (Jagger) It is being tested as a replacement for 2137 in Central Kansas.

The one Nebraska line was rated about equal to the check. (Millennium) It has been released as "Wahoo" and is intended as a replacement for Arapahoe in the panhandle area of Nebraska.

There were two Oklahoma lines submitted. One line rated lower than the check and one was rated higher than the check. (2174) Both lines showed some quality problems due to wet weather for a month after they were ready to harvest.

The private company AgriPro Wheat entered one line for evaluation. It was rated higher than the check. (Jagger) It has been released as "Thunderbolt."

"Each year the mill chemists give an award to the breeder of the top line evaluated. This year the award went to AgriPro breeder, John Moffatt, for his new variety "Thunderbolt." The new variety is best suited for dryland production in the western high plains. --0--



Dave Green (right) ADM Milling Co., presented the top breeder award for 2000 to Rob Bruns (left) accepting for John Moffat of AgriPro Wheat.

The Mill chemists take money out of their own pocket and present this award on an annual basis.

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HARD SPRING & DURUM WHEATS

Ten experimental lines of hard spring wheat were entered in the test this year. They were planted in four locations in North Dakota, South Dakota and Minnesota. All were compared with the variety Grandin, a high quality variety grown in the region.

The USDA-ARS Hard Spring & Durum Wheat Quality Laboratory in Fargo, ND; milled the samples and used the following methods of analysis.

Test Weight
NIR Kernel Hardness
Wheat and Flour Protein
Wheat and Flour Ash
Falling Number
Mixograph
Farinograph
Kernel Size
Percent Flour Extraction



The flours were baked and scored by the following cooperators: ADM Milling Co, Bay State Milling, Cargill Inc, Cereal Food Processors, ConAgra Inc, Montana State University, North Dakota State University, North Dakota Mill, USDA-ARS-GMPRC-HWWQL in Manhattan, KS and USDA-ARS-HRS and Durum Lab in Fargo, ND.

Scores were based on bake absorption, bake mix time, mixing tolerance, loaf volume, crumb color, crumb grain, crumb texture and an overall baking rating.

- The one North Dakota line entered was rated slightly higher than the check.
- Two lines were entered by World Wide Wheat. One rated slightly higher than the check, and one equal to the check.
- Two South Dakota lines were entered. One rated about equal to the check and one lower than the check.
- Two Minnesota lines were both rated somewhat lower than the check.
- Two lines from Western Plant Breeders were both rated lower than the check.
- One AgriPro Wheat line was entered and rated higher than the check. It is being tested as a replacement for "Gunner."

Four experimental durum lines were grown at Minot, ND and Sidney, MT along with four popular varieties. One experimental line was grown in Yuma, AZ along with two reference varieties from that area.

The lines grown in Minot and Sidney were compared with the quality variety, Maier. The overall spaghetti ratings were as follows:

- World Wide Wheat entered two lines. One line was slightly better than the check and one was lower than the check.

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- ❑ Western Plant Breeders entered two lines. One line was about equal to the check and one was lower than the check.
- ❑ Western Plant Breeders also entered the line grown in Yuma, AZ. It was rated about equal to the two reference varieties from that region, KOFA and TACNA.

The durum lines were milled and processed into pasta at the Northern Crops Institute in Fargo, ND.

Cooperators evaluating the spaghetti cooking qualities were the Northern Crops Institute, North Dakota State University and Dakota Growers Pasta Company. --0--

EASTERN SOFT WHEATS

There were 14 lines of wheat entered in the test this year. They were all submitted to the USDA ARS Soft Wheat Quality Laboratory in Wooster, OH. Lines were entered from four universities and three private breeding companies. A large number of tests were run on the samples, including the following:

Acidulated Flour Viscosity
AWRC
Alpha-Amylase Activity
Alveograph
Ash
Biscuits
Sugar-Snap Cookies
Wire-Cut Cookies
Damaged Starch
Wheat Density
Falling Number
Chopin Milling
Solvent Retention Capacity
Single Kernel Characterization System
Miag Milling
Quadrumat Jr. Milling
Allis-Chalmers Milling
Mixograph
Moisture
Particle Size
Protein Content
Rapid Visco Analyzer
Test Weight
1000 Kernel Weight MacMichael Viscosity
High-Molecular Weight Glutenin Subunits

Quality evaluators were: USDA/ARS Soft Wheat Lab, Star of the West Milling Co., Nabisco Inc., The Mennel Milling Co., Midstate Mills, Siemer Milling.Co. and USDA ARS GMPRC.

Charles Gaines, Soft Wheat Lab, Wooster, OH said, "From this one crop year and these individual observations, the Quality Evaluation Committee summarizes the apparent quality of the submitted samples as follows:"

Sabbe (Robert Bacon, University of Arkansas) received significant rain events before harvest. Its test weight was lowest. It had higher protein concentration and low Lactic Acid retention, which suggest it has weaker gluten strength typical of soft wheat pastry wheats. Sabbe had average soft wheat milling and baking qualities.

Mitchell (Curtis Beazer, AgriPro Seeds) had small kernel size and appeared to have weak gluten strength typical of pastry wheats. Its flour ash was elevated. Its large cookie spreads and other data suggest that it is a typical pastry wheat with average soft wheat milling qualities.

Sisson (Carl Griffey, Virginia Tech University) produced small cookie spread and high cookie stack height. Its soft wheat milling quality was average.

VA96W-247 (Carl Griffey, Virginia Tech University) apparently received significant rain before harvest. It produced small cookie spread and high cookie stack height. Its soft wheat milling quality was average.

VA96W-158 (Carl Griffey, Virginia Tech University) apparently received significant rain before harvest. It had the highest flour protein concentration. It may have stronger gluten strength. It produced higher flour ash, but otherwise had good soft wheat milling characteristics. It appears to have average pastry baking quality potential.

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VA98W-593 (Carl Griffey, Virginia Tech University) also may have potential for strong gluten strength. It produced small cookie spread and high stack height. It had average soft wheat milling qualities.

92201D5-2-80 (Herb Ohm, Purdue University) produced average milling and baking qualities.

92145E8-7-7-3 (Herb Ohm, Purdue University) had typically weak gluten strength for pastry wheats. It exhibited average pastry baking potential and average soft wheat milling qualities.

Beck 107 (Roger Levy, Beck's Superior Hybrids) exhibited good pastry baking quality potential and average soft wheat milling qualities.

Beck 109 (Roger Levy, Beck's Superior Hybrids) had small kernel weights and average soft wheat milling qualities. It exhibited average potential for pastry baking qualities.

26R38 (Greg Marshall, Pioneer Hi-Bred International) arrived with significant sprout damage. It may have possible gluten strength potential. Its kernel texture was somewhat hard for pastry wheats and it produced higher flour ash. Otherwise it had average milling and baking qualities.

25R44 (Greg Marshall, Pioneer Hi-Bred International) had lower protein concentration, but could have stronger gluten strength potential at higher levels of protein. It produced high cookie stack height and had average milling qualities.

25R49 (Greg Marshall, Pioneer Hi-Bred International) had lower protein concentration. It had average milling quality and exhibited potential for average pastry baking qualities.

25R75 (Greg Marshall, Pioneer Hi-Bred International) exhibited average milling qualities. It also exhibited potential for average pastry baking qualities.

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WHEAT QUALITY COUNCIL BOARD OF TRUSTEES

The Board terms of Keebler and Bay State Milling expired this year. Patrick Mitchell of Keebler was unable to attend and receive his plaque. Ken Ulbrich is shown receiving the Bay State Milling plaque from Ben Handcock, Wheat Quality Council.

Dave Green, ADM Milling Company was elected to a seat on the Board of Trustees.

Pat Berglund, Northern Crops Institute in Fargo was re-elected as Chair of the Board of Trustees. She is the first person to serve two terms as Chair of the Board.



Pat Berglund, Northern Crops Institute re-elected as Chair of the Wheat Quality Council.



Ken Ulbrich (left) is receiving the Bay State Milling plaque from **Ben Handcock**, Wheat Quality Council.

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**THE DATES FOR THE NEXT ANNUAL
MEETING OF THE WHEAT QUALITY
COUNCIL ARE FEBRUARY 19 – 21, 2002
IN KANSAS CITY**

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Mr. Englund said, "The farmer is willing to invest in the information that users want, and purchases will signal what information is necessary." Also, "Buyers can email participating farmers and tell them what they want or make actual wheat purchases through direct contact with individual producers by email."

Americrop supporters are encouraging producers to do something different from the way they have always done it. Farmers can build their own supply teams from their own wheat inventories. They can control the quality flow directly to the customer. They can offer their product worldwide by use of this extensive database.

Englund went on to say "Farmers take samples of their fields at harvest or from bins or elevators following

harvest. These samples are sent to a reputable laboratory for all the quality work and for direct posting on the web site. Responses, via email, have already come from Japan and other areas outside the U.S. in addition to our domestic users."

"Purchasers frequently ask about the procurement costs," said Mr. Englund, "and there are none." "Registration to be a buyer is free, searching the database for your desired quality and quantity is free, communicating with your chosen producer(s) is free, the transaction between buyer and seller is free, and there is no web site fee to the purchaser."

Americrop officials hope everyone in the industry will examine the web site, americrop.com, to read about and study this unique opportunity to identify preserve and capture more value from our available wheat supply. --0--

WHEAT QUALITY COUNCIL WHEAT TOURS

The wheat tours, led by the Council are listed below. More information can be obtained from our web site or by emailing us at bhwqc@aol.com

SE Soft Wheat Tour April 23 –April 26, 2001 – (GA, SC, NC, VA) Start in Augusta, GA and end in Richmond VA. Cost: \$50 per person

Hard Winter Wheat Tour April 30 –May 3, 2001 – (KS, NE, CO, OK) Start in Manhattan, KS and end in Kansas City. Cost: WQC Members and University/Government: \$100.00 Others: \$150 per person

Eastern Soft Wheat Tour May 21 –May 25, 2001 – (AR, MO, IL, TN, KY, IN, OH, MI) Start in Little Rock, AR and end in Detroit MI. Cost: \$50 per person

Hard Spring & Durum Wheat Tour July 30 – August 2, 2001 – (ND, SD, MN) Start and end in Fargo, ND. Cost: WQC Members and University/Government: \$100.00 Others: \$150 per person

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