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To: Our Wheat Growing Friends

Subject: Falling Numbers update

Wheat quality discounts for low “falling numbers” (FN) had a brutal impact on many PNW growers, as some of you are painfully aware, during the 2016 harvest—with loss estimates likely to approach \$140 million. A big harvest in most places had helped raise hopes despite low wheat prices. Then the bad news many faced of substantial deductions driven not only by pre-harvest sprout (PHS) but especially by late maturity alpha amylase (LMA), triggered by daily temperature variations of forty degrees 25- 30 days after flowering resulting in low falling numbers test results.

Highly variable results added to the frustration. A friend of mine took three samples from the same bucket of grain on the same day and got readings of 140, 260, and 305 seconds. Researchers at the University of Idaho mixed one sprouted kernel with 2,600 sound ones and lowered the FN score by 100 seconds.

Six months ago, researchers, grain inspectors, association and commission leaders and other industry specialists met in our ‘wheat conference room’ with Representative Cathy McMorris Rodgers to survey the damage and come up with a plan. My concern ever since has been that we all make sure the issue doesn’t lapse from the radar screen as we get busy tending to a new crop and meeting other challenges. I shared updates with many of you a couple of times during the winter.

Since then we’ve had three follow up meetings to build momentum. The AMMO agricultural marketing program sponsored by the Washington Association of Wheat Growers (WAWG) met in our training center the last day in January. In early February, the Washington Grain Commission sponsored a FN panel discussion at the Farm Forum in Spokane. I had the opportunity to participate in a Falling Numbers Symposium in Spokane on February 16—a meeting organized by the USDA Agricultural Research Service (ARS) that brought together grain industry leaders from across the PNW—commissions and associations, exporters, federal and state grain grading experts, the research community, and extension services. Our focus was upon short term (3- 6 months) and mid-term (6 months- 2 years) goals. Below are some highly abbreviated notes to give you a flavor of work underway.

How can the current test be improved? Improving the current protocol is a major focus---fine tuning variables such as varying ages of machines and service and maintenance and individual operator training. There is need to improve adjustments for barometric pressure and to be more detailed than to have benchmarks at one thousand and two thousand feet. Another goal is to move current variables of five percent or 30 second differences to one percent or ten seconds. Much work is underway to meet these challenges.

Can alternative technologies be used to measure FN? We still don't know the effect of LMA on end-use quality. A rapid test is needed and a more sensitive method. A test has been developed in Australia, using antibodies, and known as ELISA—work needs to be done to ensure this test can create an assay capable of differentiating between PHS and LMA. The patent for the process states that the test offers “within day precision”—five-minute assay time—and “can not only be used by grain handlers or traders but also by individual wheat growers,” allowing them “to detect sprouting on farm prior to harvesting to prevent contamination of sound wheat.” “Simple and easy to use” says the patent.

Craig Morris, head of the Western Wheat Quality Lab in Pullman, and I volunteered to take the lead in pursuing the ELISA process. Bayer Crop Sciences, the patent-holder, hasn't developed it commercially but has given us permission to use the technology. Now we're working on finding sources for the needed antibodies for ELISA kits. Our short-term goal is to get access to the technology and get research on it underway. It could be a valuable tool and we have high hopes.

What are the relative roles of genetics and environmental effects on PHS? On LMA? How do flour and starch properties interact with LMA? Same as PHS or differently? USDA/ARS Pullman and our three land grant schools are working together collaboratively researching these and other questions. Short term goals include categorizing varieties, summarizing data of the past three or four years, and screening new varieties. Medium term focus is on building models to predict the risk of specific varieties in specific regions and on defining timing and temperatures that induce LMA. Jerry Brown of the Idaho Wheat Commission described these efforts well: “an integrated, multi-discipline, multi-state research team to address the FN issues.”

A strong focus is ongoing to determine variety responses to LMA and PHS and relationships to crop maturity so growers can make good varietal decisions. The Washington Grain Commission began funding FN research analysis four years ago on all varieties in the WSU Variety Testing Program to build a database on varieties (see steberlab.org.) Short term emphasis is on developing color-coded variety ratings until more robust models and systems are available. Cat Salois, head of our research department, has developed one such model she'll be glad to share with interested growers.

Research efforts thus include: improving the current test, developing a more rapid and simple test and developing new assays to measure PHS and LMA that are repeatable, affordable, and accurate while looking at other variables and examining impact on end-use of the grain we grow.

What efforts are underway on the political and administrative front?

Much work was already underway before the Spokane meeting and the pace continues to accelerate. Tri-State wheat leaders of our associations and commissions have been busy meeting with Members of Congress from the Northwest and beyond, in conjunction with the February meeting of the National Association of Wheat Growers (NAWG) and U.S. Wheat Associates (USW) and in other trips to share our concerns to Washington, D.C. as well. They met, for example, with Debbie Stabenow of Michigan, ranking member of the Senate Ag Committee, and staffers for Pat Roberts and Heidi Heitkamp, also members of the same committee. As Darren Padget, chair of the Oregon Wheat Commission, puts it: “Having the three states show up as a united front is very beneficial to the cause.”

Senator Patty Murray of Washington has visited with the nominee for USDA Director, Sonny Perdue, on the subject and on her work leading the charge for the research requests through the Senate appropriations process. The WAWG and WGC are also working closely with Washington State Members of Congress on Appropriations (Newhouse, Beutler, and Kilmer) with favorable support. Representative McMorris Rodgers has been educating other members on the issue and will take the lead on a member letter addressed to the Appropriations Committee and Subcommittee ranking members and chairs. The three state commissions formed a committee, headed by WGC Commissioner Dana Herron, to pursue the matter. Washington, Idaho and Oregon wheat association leaders have worked closely together, too. Leaders from all three states have made visits to ARS, NRCS, FSA, RMA and other federal agencies. NAWG and USW have signed on and are pitching in to help. The outreach efforts have been well received and have generated a lot of interest.

The ask? A programmatic increase of a million dollars for ARS to address falling numbers in soft white wheat—a joint effort by WAWG, Idaho Grain Producers, the Oregon Wheat Growers League, the Washington Grain Commission and its Idaho and Oregon counterparts. A competitive grant from the National Institute for Food and Agriculture (NIFA) for \$2 million, over three years, to provide additional funds specific to soft white wheat falling numbers work. In today's political environment it will be a heavy lift for the FY '18 budget, but we are making progress!

What about RMA and quality deductions impacting actual production history even where claims haven't been filed? Michelle Hennings of WAWG and other PNW leaders have been determined to see change and RMA has been more positive than they were in the winter—indicating a willingness to consider a proposal to change the policy. The National Association of Wheat Growers, representing twenty-one states, has joined the effort and will address discount factors and policy changes to help farmers impacted by quality issues beyond their control. As Curtis Evanko, head of our risk management team, puts it: "This is a battle that can be won at the grassroots level—growers working through their associations." Because of these diligent efforts, twelve Members of Congress—six Senators and six Representatives—wrote letters urging action by RMA. That didn't stir action last winter but now there is a willingness to listen and progress can be made. We have gained RMA's attention through these efforts to the extent they are working on potential proposals for farmers to review and provide comments.

WSDA and the Washington Grain Commission working with GIPSA. Derek Sandison, director of the Washington State Department of Agriculture, and Glen Squires of the Washington Grain Commission have gained the support of GIPSA—the USDA grain inspection agency—to work together to improve existing protocols and develop improved testing methods. Sandison has been instrumental in earning the support for the Western Caucus of the State Directors of Agriculture in addressing this urgent issue.

It hasn't slipped off the radar screen—far from it.

My biggest concern, when several of us met with Representative Cathy McMorris Rodgers last September following a similar meeting Idaho growers had on the Camas Prairie earlier was that we'd all get so busy handling the many new challenges that would come our way that this issue might fade from view despite all our good intentions. Instead it's been, as I told the AMMO group earlier, a well-coordinated three state focus on 'keeping the pedal to the medal.'

Kudos to the Washington, Idaho, and Oregon wheat commissions and associations, USDA/ARS, OSU, UI, and WSU researchers, WSDA Director Sandison, regional grain inspectors, and the hard work of wheat grower volunteers for their steadfast efforts. The goal, as Glen Squires put it, "is to find solutions and relegate PHS and LMA to the backburner." Whether impacted on our own farms by the luck of the draw last harvest or not, it is vital to pull together and move forward in addressing an issue that caused so much harm and could do so in the future as well. As Joe Anderson of Potlatch, president of the Idaho Grain Producers, puts it: "If not addressed, this difficult problem will continue to cost growers and the wheat supply chain millions of dollars and we risk losing some of our most valuable customers." Working together, we will make sure it is addressed and solutions found so we can solve the challenge and move it to the back burner. Together, we will make it happen.

We'll likely be calling upon you to pitch in and help us win the day with support letters to Congress or in other ways. Stay tuned for details...

Best regards,

A handwritten signature in cursive script, appearing to read 'Alex'.