



DATE: January 22, 2019
TO: Variety Release and Recommendation Committee Members
FROM: Mike Giroux, Chair
RE: 2019 Variety Release Minutes and Committees
Chair: Mike Giroux, Interim Department Head PSPP
Secretary: Andy Hogg, Research Associate, PSPP

Present:

Mike Giroux, Andy Hogg, Dave Gettel, Phil Bruckner, Luther Talbert, Jamie Sherman, Liz Elmore, Hwa-young Heo, Nancy Blake, Anton Beckerman, Doug Holen, Heather Unverzagt, Daniel Juliano, Alan Dyer, Sreekala Bajwa, Craig Cook, Darin Oelkers, Andy Burkhardt, Kevin McPhee, Ron Ramsfield, David Weaver, Harvey Teslaa, Perry Miller, Jason Cook, Robert Hoffman, Joe Jensen, Scott Christensen, Collin Watters, Trevor Schafer, Jessica Williams, Devon Miller, Jordan Skaley.

Called in:

Dale Clark, Ken Kephart, Peggy Lamb, Darrin Boss, Gadi Reddy, John Miller, Jed Eberly, Patrick Carr, Chengci Chen, Todd Hansen, Chris Westergard.

Absent: Deanna Nash, Jessica Torrion, Prashant Jha

Agenda for 2019 Variety Release Meeting

Following is the agenda for the 2019 Variety Release meeting held on **Tuesday, January 22, 2019 at 1:00 pm in 108 Plant BioScience Building.**

1. Approval of the 2018 meeting minutes.
2. Discuss and vote on the motions submitted to the Wheat and Barley Crop Committees.

Mike Giroux
Department Head and
Professor
Department of Plant Sciences
and Plant Pathology
College of Agriculture
119 Plant BioScience Building
PO Box 173150
Montana State University
Bozeman, MT 59717-3150

Telephone: 406-994-7877
Fax: 406-994-7600

2019 Meeting Minutes

1. Approval of the Minutes of the 2018 meeting.

- Phil Bruckner motioned to approve the 2018 minutes.
- Alan Dyer seconded the motion.
- Motion passed unanimously, 13-0.
- Daniel Juliano from MSU tech transfer gave an update on revenue generation from new cultivar releases. Moving forward, a higher percentage of income generated from new cultivar releases will be reinvested into the breeding programs.

2. Wheat Committee

- **Phil Bruckner – Motion to release MTS1588 hard red winter wheat as a public protected variety.**
- Phil Bruckner discussed the crossing pedigree and selection method used. The cross involved two solid stem experimental lines and a hollow stem experimental line.
- Phil Bruckner- Testing over multiple years in sawfly nurseries showed MTS1588 had the least cutting of solid stem lines and was more solid than Warhorse.
- Phil Bruckner- Compared to other solid stem lines in sawfly areas, MTS1588 was the highest yielding, with yields statistically comparable to Loma. MTS1588 performed best in Conrad and Havre, which are active sawfly areas. Under sawfly pressure, there was a 10% yield increase compared to Judee.
- Phil Bruckner- MTS1588 has acceptable protein and other quality traits comparable to current varieties.
- Phil Bruckner- MTS1588 has stripe rust resistance at seedling stage and likely the adult stage.
- Perry Miller wondered if the short height is beneficial or detrimental?
- Phil Bruckner thought under high drought stress/low rainfall it could maybe be an issue, but in general, he has been pushing his lines to be shorter.
- Dave Gettel commented that as a grower he thought it was beneficial to have shorter solid stemmed wheat in no till because it's easier to seed into.
- Phil Bruckner motioned to release MTS1588 hard red winter wheat as a public protected variety.
- Doug Holen seconded.
- Motion passed unanimously, 13-0.

Commented [DI1]: Was there a second to this motion or any of the other initial motions?

- **Phil Bruckner - Motion to release MT1564 hard red winter wheat as a public protected variety**

- Phil Bruckner- MT1564 is an early maturing variety which is unique for Montana winter wheats. The cross involved a spring wheat that carries stripe rust resistant alleles YR5 and YR15 which was crossed to Yellowstone and Yellowstone derivatives (~75 % Yellowstone). Bulk selection through F₅. Winter hardiness was selected for in F₄ and stripe rust resistance was selected for in the F₆ and F₇. Multi location testing was carried out for 4 years.
- Phil Bruckner mentioned that Jason Cook confirmed that the two stripe rust resistant genes are present in MT1564 using molecular markers.
- Phil Bruckner- Data from NRPN indicated that MT1564 did not carry YR15 using molecular markers. However, stripe rust testing at Washington State by Xianming Chen showed it had resistance to all races at the seedling stage and several races in the adult stage. Field testing showed that MT1564 was highly resistant to stripe rust. MT1564 is moderately resistant to stem rust.
- Alan Dyer made a comment that an early heading variety is useful to help prevent wheat streak mosaic virus. Should help eliminate green bridge.
- Phil Bruckner- In advanced trials MT1564 had a high yield potential, similar to Yellowstone and SY-Wolf.
- Phil Bruckner- MT1564 has similar quality to Decade and Yellowstone in preliminary tests. Compared to the varieties Four-O-Six and Northern, MT1564 has improved mixing tolerance and higher flour yield.
- Jim Berg mentioned it has good mixing tolerance, which is preferred by bakers.
- Darin Oelkers asked if Phil knew why it did not perform well in 2018.
- Phil Bruckner said he did not observe anything last year that was unusual.
- Heather Unverzagt recommended that it have a white seed tolerance written into the PVP to avoid a problem if it is to be grown in Washington state.
- Phil Bruckner motioned to release MT1564 hard red winter wheat as a public protected variety.
- Motion was seconded by David Weaver.
- Motion passed unanimously, 13-0.
- **Phil Bruckner - Motion to release MTCL1601 Clearfield hard red winter wheat as a licensed, protected variety.**
- Phil Bruckner- MTCL1601 came from a cross between an experimental semi-solid hard white line and a Clearfield resistant experimental line. It carries 2 *a/s* resistance genes.
- Mike Giroux asked if the Clearfield trait will become publicly available soon.

- Daniel Juliano thought perhaps once its patent expires.
- Phil Bruckner- MTCL1601 was selected with herbicide tolerance 2x rate for several years. Currently waiting for approval from BASF confirming that it has acceptable herbicide resistance.
- Phil Bruckner- MTCL1601 has intermediate stem solidness and exhibited some cutting by sawfly similar to Loma and Judee. Lower yielding than other solid stem lines in sawfly areas due to higher cutting.
- Phil Bruckner- MTCL1601 has a better yield potential than Brawl CL Plus but comparable to SY Clearstone 2CL, both which are Clearfield resistant varieties.
- Phil Bruckner- MTCL1601 has adequate quality but lower mixing tolerance and bake water absorption compared to Yellowstone.
- Phil Bruckner- MTCL1601 has good stripe rust resistance and is moderately susceptible to stem rust.
- Phil Bruckner motioned to release MTCL1601 Clearfield hard red winter wheat as a licensed, protected variety.
- Alan Dyer seconded.
- Motion passed unanimously, 13-0.
- **Luther Talbert – Motion to release MT1621 hard red spring wheat as a public PVP, title V protected variety.**
- Luther Talbert- Rationale for release was improved protein and quality compared to Vida but have the stay green trait and more solid stems. Mentioned it has been difficult to separate the stay green trait and lower gluten strength. Was selected to have an earlier heading date so it might escape the hottest part of the summer/grain fill.
- Luther Talbert- Over 2 years, 2017-18, it had highest yield, statistically similar to Vida.
- Luther Talbert- MT1621 has increased protein content compared to Vida.
- Luther Talbert- MT1621 has a 3 day earlier heading date than Vida and senesced earlier. This means it has essentially the same grain fill period as Vida.
- Luther Talbert- MT1621 is an intermediate stem solid line. Has some sawfly resistance, not as good as Choteau or Duclair.
- Dave Gettel asked if early heading affects sawfly infestation?
- Dave Weaver commented that the heading date does not affect sawfly infestation.
- Mike Giroux asked about the increased protein content being site specific.
- Luther Talbert thought not given its performance across statewide yield trials.
- Luther Talbert- MT1621 has a much higher mixing tolerance than Vida and Reeder.

- Jim Berg mentioned the standard mix tolerance across the country is a 3.0 or higher.
- Luther Talbert- MT1621 was found to be moderately resistant to stripe rust, similar to Lanning and Duclair.
- Luther Talbert- MT1621 is susceptible to Fusarium head blight. Data was not consistent across trials.
- Luther Talbert motioned to release MT1621 hard red spring wheat as a public, PVP, Title V protected variety.
- David Weaver seconded.
- Motion passed unanimously, 13-0.

3. Barley and Oats Committee

- **Jamie Sherman – Motion to release MT124112 spring malt barley as a public protected variety.**
- Jamie Sherman- This line was originally crossed by Tom Blake, parents included LK644, Hockett. The rationale was to replace Hockett which maltsters have an issue with because it is slow to germinate and requires the addition of an enzyme for quicker seed germination.
- Jamie Sherman- Parental material LK644 donated the low protein gene. This should be beneficial to growers as it will help prevent them from having too high of protein.
- Jamie Sherman- MT124112 has similar yield to Hockett but lower protein, about 91% of Hockett. MT124112 has comparable % plumps and test weight to Hockett.
- Jamie Sherman- MT124112 heads about 2 days earlier and matures a little later compared to Hockett.
- Jamie Sherman- MT124112 has lower lodging potential than Metcalfe and Hockett so could be grown under irrigation.
- Jamie Sherman- Under high fertility (nitrogen) MT124112 maintains a lower protein compared to Hockett and a high yield potential.
- Jamie Sherman- MT124112 seeds hydrate faster compared to Hockett which would be advantageous to maltsters. She was not sure how this relates to pre-harvest sprouting.
- Jamie Sherman- MT124112 has a higher malt extract than Hockett and lower beta glucans. The beta glucan content was similar or higher than Metcalfe.
- Jamie Sherman- Fusarium head blight disease severity is similar to Hockett.
- Jamie Sherman motioned to release MT124112 spring malt barley as a public protected variety.
- Alan Dyer seconded.

- Doug Holen mentioned there was a lot of seed on the ground in the breeder seed increase. Wondered if shattering would be an issue.
- Liz Elmore did not think the shattering was unique to this line, but perhaps due to the late rains knocking the seed out.
- Collin Watters asked if the lower diastatic power made MT124112 a target for all-malt brewing. Jamie thought it would be acceptable by both all-malt and adjunct brewers.
- Mike Giroux asked if the quality data was produced at MSU or another lab.
- Jamie said it was half and half. She said dryland was done at MSU, and the difference between the two labs is likely due to differences in the malting process.
- Motion passed unanimously, 13-0.
- Dave Weaver motioned to adjourn.
- Alan Dyer seconded the motion.
- Meeting was adjourned.