DATE: January 21, 2020

TO: Variety Release and Recommendation Committee Members

FROM: Mike Giroux, Chair

RE: 2020 Variety Release Minutes and Committees

Chair: Mike Giroux, Department Head PSPP

Secretary: Andy Hogg, Research Associate, PSPP

Present committee members:
Mike Giroux, Phil Bruckner, Deanna Nash, Mary Burrows, Doug Holen, David Weaver, Heather Unverzagt

Called in or sent in vote and comments by email:
Peggy Lamb, Patrick Carr, Ken Kephart.

Absent Committee Members:
Ed Davis, Perry Miller, Darrin Boss, Jessica Torrion, Chengci Chen, Marc Vogel, Mike O’Hara.

Others present:
Daniel Juliano, Jason Cook, Sam Anderson, Dave Gettel, Ron Brown, Robert Brown, Bob Hoffman, Heather Unverzagt, Rebecca Papke, Cameron Delaney, Scott Christensen, Ryan Holt, Darin Oelkers, Hwa-Young Heo, Jim Berg, Nancy Blake, Ron Ramsfield, Sam Ackerman.

Agenda for 2020 Variety Release Meeting

Following is the agenda for the 2020 Variety Release meeting to be held on Tuesday, January 21, 2020 at 1:00 pm in 108 Plant BioScience Building.

1. Approval of the Minutes of the 2019 meeting.

2. Discuss and vote on motions

Motion to be considered by Wheat VR Committee: Giroux/Hogg
- Release of MTD16005 spring durum wheat:
  http://plantsciences.montana.edu/foundationseed/varietyrelease/2020.html
2020 Minutes

1. Approval of the Minutes of the 2019 meeting.
   - Jed Eberly and Pat Carr called in from CARC.
   - Ken Kephart sent in his proxy vote by email and commented “MTD16005 looks good to me and I have no significant concerns since yield was very competitive across locations and protein content and strength also look good. Nice to see that this line has the low cadmium trait since that is important to have now in any new releases and was something lacking in the variety Silver.”
   - Doug Holen mentioned that research fees on MSU seed sales are increasing this year. To $1/bushel wheat and $1.25/bushel of barley. This is the first increase since 2015.
   - David Weaver motioned to approve the 2019 minutes.
   - Phil Bruckner seconded the motion.

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### 2020 Wheat Variety Release Committee

<table>
<thead>
<tr>
<th>Voting Members, 16</th>
<th>Title / Expertise</th>
<th>Appointing Administrator</th>
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</thead>
<tbody>
<tr>
<td>1. Phil Bruckner</td>
<td>Professor / Winter Wheat Breeding</td>
<td>PSPP Department Head</td>
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<tr>
<td>1. Jason Cook</td>
<td>Assistant Research Professor / Spring Wheat Breeding</td>
<td>PSPP Department Head</td>
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<tr>
<td>2. Deanna Nash</td>
<td>Manager of the Cereal Quality Lab / Cereal Quality</td>
<td>PSPP Department Head</td>
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<tr>
<td>3. Mary Burrows</td>
<td>Professor / Plant Pathology</td>
<td>PSPP Department Head</td>
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<tr>
<td>4. Doug Holen</td>
<td>Manager of the Foundation Seed Program / Varietal Development</td>
<td>MT Foundation Seed Board</td>
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<tr>
<td>5. Heather Unverzagt</td>
<td>Exec. Director of the Montana Seed Growers / Foundation Seed and Seed Quality</td>
<td>MT Seed Growers Association Board</td>
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<tr>
<td>6. Ed Davis</td>
<td>Agricultural Specialist / Cropland Weed Research</td>
<td>LRES Department Head</td>
</tr>
<tr>
<td>7. Perry Miller</td>
<td>Professor / Cropping Systems</td>
<td>LRES Department Head</td>
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<tr>
<td>8. David Weaver</td>
<td>Professor / Entomology</td>
<td>LRES Department Head</td>
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<tr>
<td>9. Peggy Lamb</td>
<td>Research Scientist NARC / Variety Testing</td>
<td>Research Center Department Head</td>
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<tr>
<td>10. Patrick Carr</td>
<td>Associate Professor and Superintendent CARC / Cropping Systems</td>
<td>Research Center Department Head</td>
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<tr>
<td>11. Darrin Boss</td>
<td>Professor WTARC / Entomology, Insect Ecology</td>
<td>Research Center Department Head</td>
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<tr>
<td>12. Jessica Torrion</td>
<td>Assistant Professor and Superintendent NWARC / Crop Physiology</td>
<td>Research Center Department Head</td>
</tr>
<tr>
<td>13. Chengci Chen</td>
<td>Professor and Superintendent EARC / Cropping Systems</td>
<td>Research Center Department Head</td>
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<tr>
<td>14. Ken Kephart</td>
<td>Associate Professor and Superintendent SARC / Agronomist</td>
<td>Research Center Department Head</td>
</tr>
<tr>
<td>15. Marc Vogel</td>
<td>Chair MAES Advisory Council</td>
<td>MAES Advisory Board</td>
</tr>
<tr>
<td>16. Mike O'Hara</td>
<td>Montana Wheat and Barley Director, Representing Teton &amp; Chouteau County</td>
<td>Montana Wheat and Barley Committee</td>
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<tr>
<td>Ex-officio Daniel Juliano</td>
<td>Associate Director of Technology Licensing / MSU Technology Transfer</td>
<td>V.P. for Research and Economic Development</td>
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• Motion passed unanimously, 9-0.

2. Wheat Committee

• **Mike Giroux** motion to release the spring durum MTD16005 as a public protected variety.

• Mike Giroux acknowledged that MAES research stations are vital for testing and eventual release of new varieties and that it is a team effort and that the proposal represents the work of many MAES faculty and staff.

• Mike Giroux went over the top grown Durum cultivars in Montana. He noted that Alzada is dominant in the North Central region due to its preferred quality characteristics and contract acreage but that NDSU varieties dominate the NE region of Montana.

• Mike Giroux discussed the pedigree and background of MTD16005. One of the parents, M175, was developed at MSU originally with the intent of developing a high amylose durum line in association with a private company. MTD16005 carries a mutation in a starch synthase IIa gene (ssIIa) that increases pasta firmness but does not modify amylose content. It was also mentioned that M175 was the donor of the low cadmium accumulation allele present in MTD16005.

• Mike Giroux presented data tables from field testing at 7 locations over three years, all at MAES. MTD16005 is yield competitive or higher yielding than the commonly grown durum cultivars in Montana. MTD16005 is 35 inches tall and flowers a day later than Mountrail and Divide. It has a similar appearance to durum cultivars developed at NDSU, i.e. Mountrail and Divide. MTD16005 had similar quality to currently grown cultivars with acceptable test weight, semolina yield, protein and semolina protein content, and a high yellow color. It also has improved gluten strength compared to Mountrail, which is widely grown, but was equal to Divide and less than Alzada. MTD16005 had the lowest grain and semolina ash.

• Dave Gettel mentioned that it showed no damage from wild oat herbicide applied at a high rate.

• Jim berg asked how screening for low cadmium accumulation was accomplished.

• Mike Giroux replied that is a simple CAPS marker assay for the low accumulation allele that can be done in the lab and that Andy Hogg had confirmed that MTD16005 has low cadmium in its grain relative to varieties lacking the low accumulation allele.

• Mike Giroux discussed the disease evaluations performed on MTD16005 which included stripe rust testing in Washington over 2 years, stem and leaf rust testing at MSU, leaf spot evaluations at MSU, and Fusarium head blight (FHB) testing over 2 years performed by Frankie Crutcher at EARC. MTD16005 was found to have high resistance to the stem and leaf rust isolates tested, seedling susceptibility to stripe rust followed by high temperature adult plant resistance, and moderate susceptibility to FHB. Resistance/susceptibility to stripe rust and FHB was comparable to all other durum cultivars tested.

• Doug Holen confirmed he has ~30 bu for foundation seed production in 2020.

• Heather Unverzagt asked if yield testing was conducted by any private companies?
- Mike Giroux replied that it was only tested at MAES locations.
- Mike Giroux motioned for release of MTD16005 as a public protected variety.
- Peggy Lamb seconded the motion.
- Vote was taken and passed unanimously 9-0.
- Meeting was adjourned at 1:30 pm.