Greetings from Michelle! I am back from maternity leave, and I hope your 2018 season was as fruitful and busy as mine, with a bit more sleep of course!

We hope this newsletter finds you well and that you weathered the seeding season in good spirits. Seeding conditions across the country was a story of extremes; and we recognize that conditions were less than ideal in many parts of the country. Here’s a snapshot of soil moisture across the country in May:

The following map and data show levels of moisture in the top five centimeters of soil in Canada in May 2019. This information highlight where conditions are wetter or drier than normal. Source: Agriculture and Agri-Food Canada.

Of course, we wanted to acknowledge and thank you – the farmer-breeder – for your hard work and dedication to the PPB program and the populations. We appreciate your patience as we shifted and evolved, changed hands, re-organized, etc.

**A General Update on PPB Trial Initiatives**

This year, we have partnered with University of Alberta and several AAFC locations to run replicated yield trials of wheat and oat populations that have undergone 3 years of selection between the years 2015-2018. This year is different from other years as we have separated the yield trials to compare western-bred populations and checks in one trial, and eastern-bred populations and checks in another trial. In this way, we can accurately compare the farmer selections with more appropriate checks. Due to seed quantity constraints, we were limited to two locations of the eastern wheat and oat lines. In the following years, we aim to include more eastern locations as our seed quantities increase.

All the wheat and oat lines were seeded between May 9th and June 4th. If you are interested to know if you have lines in the trials and where they are located, please contact me (Michelle). All the lines are being grown in Manitoba, so I will be able to send a picture or two if you are interested.
Here are few pictures of the trials thus far in Manitoba:

<table>
<thead>
<tr>
<th>Western Wheat Trial Locations:</th>
<th>Eastern Wheat Trial Locations:</th>
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</thead>
<tbody>
<tr>
<td>- Carman, MB with University of Manitoba</td>
<td>Libau, MB with University of Manitoba</td>
</tr>
<tr>
<td>- Swift Current, SK with AAFC Swift Current</td>
<td>Harrington, PEI with AAFC Charlottetown</td>
</tr>
<tr>
<td>- Edmonton, AB with University of Alberta</td>
<td>Checks used: AAC Tenacious, AAC Tradition, Glenn, Vesper</td>
</tr>
<tr>
<td>Checks used: AAC Tenacious, AAC Tradition, Glenn, Vesper</td>
<td>Checks used: AAC Scotia, AAC Fairwind, Acadia, Raven</td>
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<table>
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<tr>
<th>Western Oat Trial Locations:</th>
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<tr>
<td>Carman, MB with University of Manitoba</td>
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<td>Harrington, PEI with AAFC Charlottetown</td>
</tr>
<tr>
<td>Lacombe, AB with AAFC Lacombe</td>
<td>Checks used: AAC Scotia, AAC Fairwind, Acadia, Raven</td>
</tr>
<tr>
<td>Checks used: AC Morgan, CDC Dancer, AAC Kongsore, Summit</td>
<td>Checks used: Akina, Canmore, AAC Nicolas, CDC Orrin</td>
</tr>
</tbody>
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PPB Western Wheat Trial in Carman, MB – July 3 2019

PPB Western Oat Trial in Carman, MB – July 3 2019

PPB Eastern Wheat and Oat Trial in Libau, MB – July 2 2019
Oat Breeding Update

In 2018, Dr. Jennifer Mitchell-Fetch (oat breeder with AAFC from whom we source our F3 oat populations) tested 27 oat lines from 10 different Participatory Breeders in their 2019 Preliminary Organic Oat Trial in two locations in Manitoba and Alberta along with selection in her program and check varieties. The entries were then tested for Quality Traits in Fall 2018.

Using data from the field, disease nursery, and quality analysis, she selected 16 PPB lines and 2 lines from her own breeding program. This means that the PPB lines performed better than her own selections in 2018, so she could only keep 2 selections from her program. The selected lines will enter the B Organic Oat Trial (BORG) at 9 sites across western Canada, where they will be compared to registration trial checks and 2 registered organic oat varieties, AAC Oravena and AAC Kongsore.

Based on performance and quality traits from 2019, Jennifer and her team will be able to make decisions on which line(s) could enter the Western Cooperative Oat Registration Trial in 2020 and therefore have a chance to be registered and marketed in Canada. This is very exciting, great job to all the farmers. We will keep you posted on the progress of the populations.

The PPB program isn’t the first of the kind in Canada...

In the early 1900’s, philanthropist Sir William Macdonald and agriculturalist James W. Robertson encouraged children of farmers to select the best heads out their parents’ wheat and oat crops and seed their own plot. At the end of the first growing season, the children were to select the best heads for their second crop, and continue this for 3 consecutive years. Sound familiar? At the end of the third season, the children mailed their best grain to Robertson. The children who sent in the best heads in size and number of kernels from each type of grain from each region received a prize.

Robertson’s goal was two-fold: not only educate and pique interest in agriculture in children, but also educate their parents to use seed improved through selection. New research at the time was demonstrating that selected seed increased yield per acre and quality traits. However, he knew it would be difficult to change production practices and attitudes through written communication. This was an ingenious way to demonstrate the power of selection to farmers across the country simply, easily, and relatively cheaply.

The results of selection were impressive – 92% of the parents reported their children’s ¼ acre plots were more “vigorous and heavy” than non-selected acres. In addition, the children sent in seeds between years to receive a small amount of money, and when the 1903 wheat crops were compared to the original crops of 1900, there was an 18% increase in the number of grains per head and a 28% increase in the hundred kernel weight. For oats, 19% and 27%, respectively, were observed.

For more information on other agricultural education initiatives started by Macdonald and Roberts, check out Kristen Greene’s PhD thesis: https://open.library.ubc.ca/cIRcle/collections/ubctheses/831/items/1.0055603
Keep in touch...
Thank you for your participation in the on-farm breeding program!

If you have any questions about this program or need guidance during the season, please contact your Regional Coordinator or Michelle.

Who is your regional coordinator?

**British Columbia**
Chris Thoreau - chris@farmfolkcityfolk.ca

**Prairie Region (AB, SK, MB)**
Iris Vaisman - iris.vaisman@organicalberta.org

**Ontario**
Rebecca Ivanoff - rebecca@efao.ca

**Quebec**
Hugo Martorell - hmartorell@usc-canada.org

**Atlantic Region (NB, NS, PEI, NFLD)**
Stephanie Hughes - shughes@usc-canada.org

All the best for the growing season!

Michelle Carkner and Martin Entz

Contact Michelle at 204-474-6236 or michelle.carkner@umanitoba.ca
Contact Martin at 204-474-6077 or m.entz@umanitoba.ca