Dear All,

These are unprecedented times, and I hope you are all staying well. Your work involves food production, which is an essential service to society. Canadians are very supportive of our agricultural sector, so you should feel proud about what you do. You are the food system’s “front-line” workers! At the University of Manitoba, we have received approval to conduct some of the research we planned for 2020. Most of the Participatory Plant Breeding projects planned for 2020 will proceed. Here is an update.

Field research in 2020

1. Field evaluation of farmer selected wheat and oat lines.
   a. Eastern field sites: CÉROM, St-Mathieu de Beloeil, Quebec; Charlottetown, PEI (cancelled in 2020).
   b. Western field sites: Oxbow, Saskatchewan, Roblin and Carman, Manitoba; Edmonton, Alberta.

   Measurements will include agronomic responses (height, days to maturity, yield, lodging, etc). Grain quality will be assessed, including grain protein, hectolitre weight (bushel weight), seed size, and % plumps and thins (oats). The Carman site will focus on disease resistance.

2. Stress testing farmer-selected wheat and oat lines.
   a. This project involves subjecting farmer-selected wheat and oat lines to three major stresses: Weeds, nutrients and water stress (drought). These field experiments are being conducted at Carman and Libau, Manitoba.

3. Farmers producing grain from their own selections (new).
   For the first time in the program, we have several farmers growing small fields of their wheat lines. We increased the seed supply for these farmers at the Carman research farm in 2019 (thank you Michelle!). Due to partial shutdown of University of Manitoba research in 2020, we cannot conduct any seed increases this summer.

4. Phosphorous uptake and use efficiency in farmer selected wheat lines (new).
   a. This is the focus of Michelle Carkner’s PhD work.

5. Construction of evolutionary wheat and oat populations (new).
   We have taken an equal amount of seed from each farmer selection and created a number of very diverse wheat and oat populations. We are increasing these populations this summer and they will be available for any interested farmer participant for 2021 planting. These mixtures are referred as evolutionary varieties because they evolve when grown on the same farm for a number of years. You can learn more about research and on-farm production of evolutionary varieties at:
   https://orgprints.org/22440/

Best wishes and stay safe. Thank you for your participation in the on-farm breeding program! Martin Entz and the Natural Systems Agriculture team (m.entz@umanitoba.ca).