Western Organic Oats Participatory Plant Breeding

Project duration: May 2021 – August 2021
Objective: To evaluate oat varieties for organic production.
Collaborators: Katherine Stanley, University of Manitoba

Background
Research suggests that selection of cereal crops specific to organic agriculture should be conducted on organically managed land [1,2]. Conventional management systems may mask or confound certain plant characteristics, resulting in selection of sub-optimal cultivars for organic production systems. The trial was grown on certified organic land belonging to a local organic producer.

Results
The majority of the entries in this test are unregistered varieties. The yield and plant heights (Table 1) are provided for reference and to allow interested producers to track the entries in the future. The low yields and short plant heights are due to low precipitation and high competition resulting from regrowth of the alfalfa green manure crop. The variability between replications was high and results should be interpreted with caution.

Table 1: Varieties, mean yield (bu/ac), mean height (cm), LSD and %CV

Variety	Mean (bu/ac)	Height (cm)
Summit	19.03	43.00
11P17-16-JM	12.68	45.00
11P07-16-KS	12.57	46.00
11P17-16-FB	11.79	45.33
11P19-16-FB	11.72	47.33
CDC Dancer	10.91	37.33
11P22-16-FB	10.04	46.67
11P22-16-JM	9.93	41.33
11P01-15-AS	9.66	47.33
11P13-15-IG	9.39	45.67
09P02-15-TM	9.24	47.00
11P13-15-ML	7.98	44.67
AC Morgan	7.85	40.00
11P19-16-JM	7.62	39.67
11P05-15-ML	7.29	47.00
11P06-15-KS	7.23	47.33
11P20-15-TM	5.86	45.67
11P06-16-MW	5.77	49.33
11P02-15-IG	5.76	47.67
11P10-16-KS	5.32	43.00
11P21-16-AS	5.03	41.33
11P20-15-ML	4.89	44.67
11P15-16-MW	3.81	50.33
AAC Kongsore	3.60	44.00
LSD	**4.89**	**9.42**
% CV	**50.38**	**12.62**

Materials and methods

Experimental Design:	Random Complete Block Design
Entries:	24 varieties
Seeding:	May 12
Harvest:	Aug 26

Data collected	Date collected
Weekly Maturity:	early Aug
Height:	early Aug
Lodging:	Aug 26
Yield:	Aug 27
Moisture:	Aug 27

Agronomic info

Previous year's crop:	Organic wheat
Soil Type:	Erickson Clay Loam
Landscape:	Rolling with trees to the south
Seedbed preparation:	Cultivated and harrowed

Table 3: Spring 2021 Soil Test

	Available
N	103 lb/ac
P	16 ppm
K	305 ppm

(Organic trial: no fertilizer or herbicide applied)