

Organic Wheat Participatory Plant Breeding

Project duration: May 2021 – August 2021

Objective: To evaluate oat varieties for organic production.

Collaborators: Martin Entz, Michelle Carkner, University of Manitoba

Background

The Participatory Plant Breeding project has been led by the Natural Systems Agriculture Laboratory, University of Manitoba. The project’s objective is to develop cultivars that are relevant to farmers’ needs by conducting selection in the farm environment. A second aim is to give farmers more control over seed resources by helping them to develop and maintain their own varieties. The project is coming to an end in March 2022. Several promising lines have been identified by farmers that will be brought to commercial production.

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)
BJ10A-SC	15.16	53.67
AAC Brandon	14.67	29.67
BJ11A-CG	14.21	48.00
BL34A-WM	14.07	48.00
Jake	13.76	55.00
BL41A-MS	13.58	53.00
BL39A-WM	13.50	48.67
BJ15-GW	13.49	51.00
BL28-JM	13.48	47.33
BJ08A-IG	13.41	47.00
BL28-WM	13.27	50.00
BL23-AS	13.17	48.00
BJ11A-SC	13.02	49.00
CDC Kernen	13.00	50.00
BL34-SW	13.00	47.33
BL41A-AS	12.59	46.00
BJ08A-CG	12.11	54.33
BL22A-SW	11.89	50.33
BL43C-TM	11.73	45.67
BJ10A-KB	11.60	48.33
BL23-JM	11.09	47.67
BL28-TM	10.80	50.33
Vesper	10.56	51.67
AAC Tradition	10.46	52.00
BJ15A-GM	10.25	47.33

BJ11A-KB	9.96	43.33
BL34A-JM	9.12	44.67
PWA10B-LD	8.95	47.00
BJ13-GW	8.22	46.00
BJ13-HRE	6.61	44.33
Zealand	6.49	45.00
LSD	12.02	14.80
% CV	58.34	18.50

Materials and methods

Experimental Design: Random Complete Block Design

Entries: 31 varieties

Seeding: May 12

Harvest: Aug 26

Data collected

Date collected

Weekly Maturity: Every Monday, Wednesday, and Friday from the beginning of August

Height: Aug 14

Lodging: Aug 26

Yield: Aug 27

Moisture: Aug 27

Agronomic info

Previous year's crop: Alfalfa

Soil Type: Erickson Clay Loam

Landscape: Rolling with trees to the south

Seedbed preparation: Hoe tillage in fall and spring

Table 3: Spring 2021 Soil Test

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

(Organic trial: no fertilizer or herbicide applied)