

# Advanced Six-Row Feed Barley Trial

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## Cooperators

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## Background and Objectives

The barley breeding effort at AAFC Brandon is aiming to develop new varieties of six-row malting barley well-suited to western Canada with improved disease resistance and agronomic performance combined with enhanced quality. The lines that do not meet the quality malting profile are evaluated for feed purposes with a focus on high grain yield. In the current study, 12 barley varieties were evaluated at Arborg site.

## Materials and Methods

In addition to two registered feed varieties, AC Ranger and Vivar, 10 numbered breeding lines were evaluated in a replicated trial (Table 1). These numbered entries are advanced breeding lines with potential advancement to the cooperative testing system.

Table 1. 2016 Advanced Six-Row Feed Barley Trial Varieties at Arborg, MB

<i>AC Ranger</i>	A515-03-085	A515-05-008	A515-05-129
<i>Vivar</i>	A515-04-029	A515-05-028	A515-05-136
A515-03-042	A515-05-005	A515-05-102	A515-05-149

Other trial details are as follows –

Number of replications – three

Seeding date – May 10

Fertilizer – 90 lbs/acre of N and 27 lbs/acre of P at the time of seeding

Weed control – 0.81 L/acre Curtail + 0.48 L/acre Axial on June 14

Harvesting – August 18

Plot size – 8.22m<sup>2</sup>

Data on plant height, days to maturity, lodging and grain yield were taken and were statistically analyzed using ANOVA. The means were separated at P = 0.05.

## Results

The trial had a good CV (coefficient of variation) of 8.9% for grain yield. In the testing conditions at the Arborg site, none of the barley lines evaluated had higher yield or plumper grain than the check cultivars, AC Ranger and Vivar (Table 2). Based on the data collected from

this site, none of the malting lines evaluated will be suited for feed since they do not present improvements over the feed checks.

Table 2. 2016 Advanced Six-Row Feed Barley Trial Results.

ENTRY #	ENTRY NAME	YIELD KG HA <sup>-1</sup>	YIELD RANK	YLD AS %RANGER	DAYS		LODGING RATED 1-9	KERNEL WEIGHT g M <sup>-1</sup>	TEST WEIGHT KG HL <sup>-1</sup>	%PLUMP >6/64	GRAIN PROTEIN (%)
					TO MATURITY	HEIGHT CM					
1	AC Ranger	7533	2	100	79	85.0	1.0	47.4	67.1	96.0	10.4
2	Vivar	7546	1	100	91	91.7	1.0	50.8	67.7	96.4	10.9
3	A515-03-042	7270	3	97	79	98.3	1.3	49.0	66.8	96.8	10.6
4	A515-03-085	6620	11	88	84	98.3	2.3	47.8	65.9	94.0	10.4
5	A515-04-029	6580	12	87	88	96.7	1.7	43.4	75.5	90.0	11.1
6	A515-05-005	7135	5	95	79	86.7	2.3	48.2	67.6	94.2	11.5
7	A515-05-008	6990	6	93	94	83.3	3.0	48.0	66.5	93.4	10.6
8	A515-05-028	6978	7	93	84	89.0	2.3	46.4	67.9	93.0	11.8
9	A515-05-102	6630	10	88	84	90.0	2.3	43.4	70.4	90.0	11.9
10	A515-05-129	6952	8	92	84	85.0	1.0	48.8	68.7	95.8	11.1
11	A515-05-136	7231	4	96	79	98.3	1.3	49.4	67.9	94.6	11.2
12	A515-05-149	6769	9	90	86	88.3	3.3	46.8	65.9	94.0	10.6
	GRAND MEAN	7020				90.9	1.9				
	CV	8.9				8.9	63.7				
	LSD	1060				13.6	2.1				
	No. of Reps	3			1	3	3	1	1	1	1

### Project findings

Barley is commonly grown for malting but can also be grown for human food and animal feed. For feeding purposes, barley grain is used primarily as an energy and protein source in beef cattle diets. Ten advanced barley breeding lines evaluated in this trial did not show any promise as they were not better in grain yield as compared to check barley varieties.