

Collaborative Agreement on Barley Breeding Research

Project objectives

Over the past decade we have seen a shift in barley varieties planted to specific market classes within Western Canada. There is now a nearly even split between two-row (2R) general purpose (GP) and malt acres, while six-row (6R) barley of all classes now represents ~7% of acres and hulless barley represents just ~1%.

The CDC barley program would allocate funding towards breeding varieties in the following market classes as such:

2R Malting:	70%
2R General Purpose:	20%
2R Hulless (food/malt):	10%

This allocation recognizes the value malt barley can bring to producers and thus keep barley within the crop rotation. The GP allocation is an increase from the 10% currently devoted to this class in recognition of its increased acreage. A higher percentage was not allocated since numerous lines not suitable for malting are automatically considered and evaluated under the GP class. The allocation to hulless barley, which exceeds the current acreage devoted to this class, is to recognize that this class holds the most potential for increasing barley acreage should a new/enlarged food/malt barley market arise. The absence of any allocation to 6R barley breeding is due to the downward trend in acreage and the expected continuation of this trend as AB InBev shifts completely away from 6R malting barley.

All three classes have common objectives relating to agronomics, physical grain quality and disease. Malting and food barley varieties have additional specific quality objectives. These are:

1. Agronomics

Higher grain yield, lodging resistance, acceptable plant height, acceptable maturity, shattering tolerance (Is sprouting tolerance a trait that you focus on in your breeding program? In the last BAC meeting it was identified as an issue for farmers.)

2. Physical Grain Quality

Higher test weight, plumpness, kernel weight, threshability (hulless)

3. Disease

Resistance to spot blotch, scald, net blotch, FHB, stem rust, true loose smut, false loose smut, covered smut, septoria (Is stripe rust a trait that you focus on in your breeding program? In the last BAC meeting it was identified as an issue for farmers.)

4. Malting Quality

Lower grain protein, high germination energy and low water sensitivity, a range of starch degrading enzyme levels (alpha amylase and diastatic power) ranging from very low (for craft brewers) to very high (for industrial adjunct brewers), moderate to high extract, moderate to high free amino nitrogen, low beta-glucan, high friability, low malt peeling.

5. Food Quality

Low amylose (<5%)/high beta-glucan (>7.0%) starch types, high amylose (>40%)/moderate beta-glucan (6.0-6.5%) starch types, and black aleurone types.