



“Breeding cultivars of barley and triticale with improved feed quality and yield”

BREEDING FOR HIGHER FEED YIELDS

PROJECT NO.: 0005-018

RESEARCH INSTITUTION: Alberta Agriculture and Rural Development Field Crop Development Center

LEAD RESEARCHER: Dr. Jim Helm and Dr. Donald Salmon

Objectives:

1. Develop feed grain and silage varieties of barley and triticale with improved yields and feed value for livestock, and
2. Investigate new genetic resources that will lead to continued improvements in feed yield, quality and crop production efficiency.

Background: to the 2006 Competitiveness Study, corn yields in the U.S. increased from 90 bushels per acre in 1980 to 150 in 2005. In Canada, average barley yields increased from 45 to 55 bu/acre in the same time period. This difference is partly because corn can convert sunlight to plant matter more efficiently than crops like barley, wheat and rye, and partly because of climate and other production differences. However, part of the difference is also related to the fact that industry in the U.S. has invested a lot more resources in plant breeding than we have in Canada.

These researchers are working with partners across Canada to develop new varieties of barley and triticale that can resist a variety of plant diseases, use water more efficiently, and produce higher yields of grain and silage in a range of environments. Working with international partners in Syria and Mexico will

allow access to new genetics, and shuttling seed between the northern and southern hemispheres will allow more varieties to be tested in each calendar year. They are also working closely with beef cattle nutritionists to develop improved ways of evaluating the feed quality (nutrient content, rate of fermentation, and digestibility) of the silage and grain varieties produced. This project will continue for at least seven years.

Implications of the Research: Developing new feed barley and triticale varieties with better yields, disease resistance, and feeding quality is essential to improving the competitive position of the Western Canadian beef industry.

UPDATE: To date, this project (and the long-term efforts that preceded it) has resulted in the release of six new barley varieties (including Gadsby, Breton and Amisk), three new spring triticale varieties, one new winter triticale variety, and one new winter wheat variety. In addition, new sources of scald, Fusarium head blight, strip rust, and net blotch resistance have been identified and incorporated into the breeding program.



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