

Explained in Brief

Barley - Alberta's Number 3

Ag-Economics Analytics

Barley acreage in decline

In Alberta, barley holds the third largest acreage after wheat and canola. At \$263 million in 2018 barley generates 7.7 per cent (rank four) in terms of Farm Cash Receipts (FCR) behind canola, wheat and dry peas. Alberta is the largest barley producer in Canada, and accounts for just under four million tonnes, almost half of the Canadian production. Globally, Alberta grows almost three per cent of barley worldwide. While barley production and acreage are small in comparison to canola and wheat, barley is still significant in Alberta.

However, since the mid-1990s barley acreage and production have steadily declined. The area planted to barley has decreased from 5.8 million acres in 1996 to less than 3 million acres in 2017, and production shrunk by almost one third (figure 1).

Figure 1. Barley acreage and production, Alberta 1995-2017*



*Source: Statistics Canada. Table 32-10-0359-01, <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3210035901>

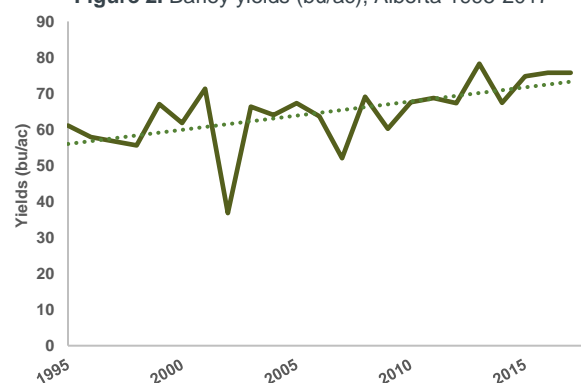
So, why are farmers across the province growing less barley? The AgriProfit\$ database (**) contains more than 20 years of information on barley yields,

production costs and net returns and can help illustrate the economics of barley and why it may have grown less popular over time.

Barley yields

Our data includes feed as well as malting varieties. This allows us to compare our data to production and acreage data (figure 1). The proportion of feed to malting barley in Alberta is about 80 per cent to 20 per cent. Our sample resembles this split with 75 per cent and 25 per cent, respectively.

Figure 2. Barley yields (bu/ac), Alberta 1995-2017**

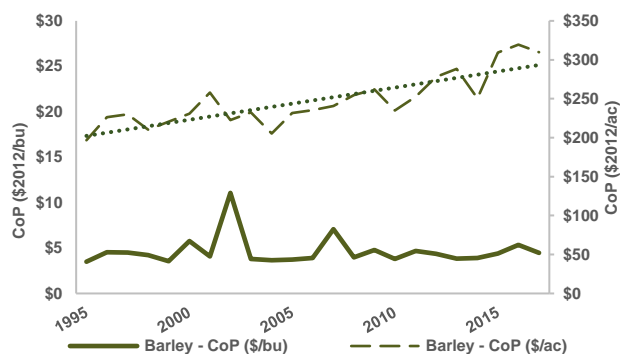


Long-term (1995 to 2017) average yields are about 65 bu/ac (figure 2). Average yields (feed and malting) grow almost 0.8 bu/ac per year, with malting barley growing slightly more at 0.9 bu/ac per year. Yield growth partly compensates for acreage loss.

Cost of production

Figure 3 shows total cost of production (variable plus capital costs) for barley in constant 2012 Canadian dollars per bushel (dashed line, left axis) and per acre (solid line, right axis). Production costs average

Figure 3. Barley - Cost of Production
per acre (\$/ac) and per bushel (\$/bu), Alberta (1995 - 2017)**



about \$248/ac and \$4.65/bu between 1995 and 2017. Costs per acre have increased by about \$5, but yield growth kept real costs per bushel remarkably constant over the years, except during severe drought years such as 2002 and 2007.

Market at work

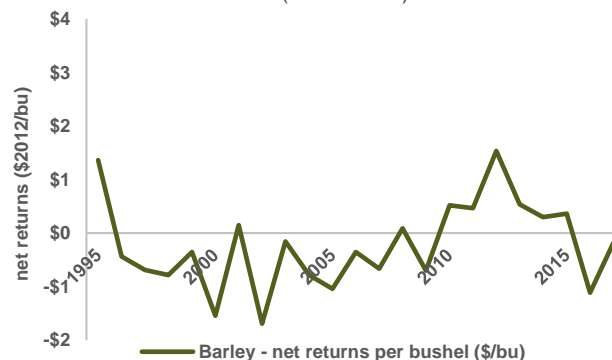
Barley net returns in figure 4 shed light on the underlying economics of acreage and production decline shown in figure 1. This reveals that returns drastically declined during the late 1990s, and remained largely negative during the first 10 years of the 2000s. Poor and erratic returns hurt the competitiveness of barley, even with occasional successes in growing malting barley.

There are multiple reasons for low barley returns¹: Barley returns are quite variable year over year, making them unreliable. Moreover, the complexities of assessing the likelihood of “making the grade” for malting add production risk². As with most agricultural commodities, barley production costs are tight and profits are subject to demand and prices. Events in the cattle industry, like Bovine Spongiform Encephalopathy (BSE) in 2003 or bovine tuberculosis in 2017, influence the demand for feed

barley. Increasing success with pulses and a rise in energy demand for local ethanol production and, hence, for soft white wheat have given farmers cropping alternatives and contributed to acreage decline. Barley farmers have adjusted as expected: when returns are low, farmers shift away from the crop, until returns start to pick up. After 2010, when barley net returns increased, so did acreage.

However, due to high protein content and better starch digestion in ruminants, barley has superior feed qualities for cattle and dairy cows, compared to corn³. It will likely maintain its place in Alberta’s agriculture as a feed and rotational crop.

Figure 4. Barley – Real net return per bushel (\$/bu)
Alberta (1995 - 2017)*



Take home messages

- Barley remains a significant field crop in Alberta, but acreage has almost halved since the 1990’s.
- Acreage reduction seems to be farmers’ response to lasting low barley returns. In addition, cropping alternatives (pulses, soft white wheat) have emerged.
- Despite its difficult economics, barley is an important rotational and feed crop.



AgriProfit\$ is a business analysis and research program operated by Agriculture and Forestry’s Economics and Competitiveness Branch. It monitors the ongoing economic and financial performance of Alberta’s agricultural sector, and supports informed decision making by government and industry.

¹ We appreciate the contributions of Neil Blue, CMAS.

² AgriProfit\$ Technical Bulletin April 2013 describes the complexities of choosing between feed and malting barley.

³ Government of Alberta, Alberta Barley. Nature’s Advantage (2018).