PROJECT DETAILS

- **Title**: Determining best practices for summer storage of canola (part 2)
- **Funders:** Alberta Canola, SaskCanola, Manitoba Canola Growers, Saskatchewan Ministry of Agriculture, Agriculture and Agri-Food Canada
- **Research program:** Canola Agronomic Research Program (CARP)
- **Principal investigator:** Joy Agnew
- **Collaborators/additional investigators:** Jay Mak
- **Year completed:** 2017

Final report

Rationale: Producers are storing increasingly more canola in bins during the summer months due in part to year-round delivery contracts, growth in market and production, and increased bin capacity. Determining the best management practices to maintain proper temperature and moisture in the bins during the prairies' hottest months is required to minimize the risk of spoilage. The previous study, conducted in 2014, indicated that leaving it alone (as opposed to turning and aeration) resulted in the most stable conditions, provided it was cool and very dry (6%).

Objective: To collect bin-scale data and to determine if higher moisture content (9%) canola should be managed differently if it is to be stored over the summer months or for longer periods of time.

Methodology: The temperature profile in three 3,500 bushel bins with 9% canola was monitored throughout the summer (from June to August) in 2016. One bin was left alone, one bin was aerated to even out the temperature distribution, and one bin was turned to even out the temperature distribution. Other bins of varying size were intermittently monitored throughout the summer.

Summary and conclusions: In both years of the study, turning the bin at the beginning of June resulted in the lowest average bin temperature at the end of the monitoring period while aerating the grain in June resulted in the most uniform temperature distribution at the end of the monitoring period (refer to Table 1). However, both turning and aeration resulted in unstable conditions for a short period of time that may have resulted in condensation in the grain. Leaving it alone resulted in the most stable and favorable storage conditions throughout the summer months, provided the canola is dry (<10% moisture content) and uniformly frozen (to <-5°C) going into the spring months. Although one of the intermittently monitored bins had a much higher starting temperature in May and maintained stable conditions until August, this single instance is not enough to expand the recommendation to all starting conditions. Canola should always be monitored during storage to minimize the risk of spoilage.

Table 1. Key temperature indicators at the end of testing for both trials (°C).

	Average Grain Temperature		Core Temperature		Max Grain Temperature		Highest Temperature Gradient	
	July 2014	August 2016	July 2014	August 2016	July 2014	August 2016	July 2014	August 2016
Control	15.2	17.0	-1.9	4.0	23.1	22.5	25.0	18.5
Aerated	21.5	20.2	21.1	17.6	22.6	22.3	3.1	4.7
Turned	14.1	15.6	-3.0	9.5	18.9	21.5	21.9	12.0

Acknowledgements: Funding for this project was provided by the Government of Saskatchewan—Ministry of Agriculture's Agriculture Development Fund under the federal-provincial Growing Forward 2 program, Canola Council of Canada, Saskatchewan Canola Development Commission, Alberta Canola Producer's Commission, and Manitoba Canola Growers.

Find more information on this project and many other relevant canola studies on the Canola Research Hub.
The Canola Research Hub is funded through the substantial support of the Canadian Agricultural Partnership and the canola industry, including Alberta Canola, SaskCanola, Manitoba Canola Growers and the Canola Council of Canada.