Berry industry in Alberta: Exploring the processing system

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Aleksandra Tymczak studies the berry industry, an expanding industry in Alberta's agricultural system. Here, she discusses the current capacity for processing berries as well as the challenges and emerging opportunities to develop the berry processing system

The success of one's berry operation within the agricultural system hinges on the established processing system. The processors are responsible for transforming the raw berries into value-added products. Processing procedures may include freezing, sorting, cleaning, and packaging.

Traditionally, a single processing hub (in the form of a larger-scale operation) can control processing within an agricultural system. They tend to buy producers' berries at lower prices and adjust the value of the processed product based on market prices.

The key processing procedures in the berry industry

An important component of processing to consider is the available infrastructure and equipment. Conducting a U-pick will not ensure that all berries are harvested throughout the season; therefore, supplemental mechanical harvesting is inevitable. However, purchasing a harvester is cost-prohibitive below a certain scale or number of bushes, causing a cycle of economies of scale. Growers may also look to acquire cleaning and destemming equipment and harvesters.

In addition to harvesting, freezing fresh berries is the predominant processing operation within the berry industry.

The fruit itself has a very short shelf life. Typically, 95% of a grower's crop comes from the field into a freezer. To afford instant freezers or flash freezer equipment, a grower must produce to scale between 60,000 and 100,000 bushes to avoid prohibitive processing costs. In particular, cryogenic processing is a popular method. For cryogenic processing, producers use carbon dioxide or nitrogen to freeze.

Essentially, the berries pass through those gases to freeze the outer skin very quickly, but the cost of the cryogenic process is three times more expensive compared to commercial freezing. In addition, it must be conducted on the producers' farms because berries do not transport well due to their high liquid content.

Packaging is often an overlooked aspect of processing within agricultural systems. Cardboard is mainly used for the main boxes, and the food packaging that goes into the boxes should be food-safe plastic. However, the importance of using recyclable materials has emerged as an important factor to implement in processing practices, which depends on manufacturing availability, established supplier relationships, and the preferences of growers. Many growers have diligently sought more biodegradable packaging materials but have only found such manufactured in China, requiring a higher input cost, which consumers are unwilling to pay at the market.

Nonetheless, the transition to biodegradable packaging will require some innovation, and there is hope that a handful of innovators within the agricultural system will come up with the material that is going to work. Until this transition happens in the system, waste management technology will be too costly for the individual grower.

Collaboration as a means to develop the berry processing system

Overall, berry processors are lacking in Alberta's agricultural system. Although a few processors can offer such processing privately, their processing is specific to the berry variety. Several individual growers conduct processing exclusively for themselves for value- adding (sauces, jams, jellies, and pie fillings to be sold at farmers' markets). Some individual growers have large commercial kitchens but do not perform custom processing.

Another consideration for many berry growers is the location of processing operations, as most of them are 5-6 hours away, with the cost of trucking alone wiping out any potential profit. Some growers export bulk shipments of their berries to the United States, China, or Japan, essentially making the product leave the local agricultural system and putting it into other hands before it goes to the final buyer.

In light of the current processing system in Alberta, central processing hubs or organizations, have emerged. Two such processing organizations associated with haskap berries are: Vitala Berry and North 49 Fruit Core. Vitala Berry is a group of growers organized for one very specific goal: finding new markets. Every berry producer pools their harvest, and the berries are typically processed into value-added products, such as crushed purees for other processors, such as ice cream companies, or frozen for restaurants. The processing is all conducted in a single CFIA- and Canada-GAP-certified facility, giving buyers on the market assurance that they are receiving a high-quality product. The mandate of Vitala Berry is not to be the company itself, and the organization is not about making a considerable profit; 99% of the revenue goes back to the individual growers.

Vitala Berry has specific requirements that a grower must meet before joining the cooperative. First, a producer must grow a minimum of 1,000 bushes to be able to contribute a certain yield of berries into the pool, making it difficult for smaller-scale growers or new growers to join and access processing operations. These requirements are in place to accommodate economies of scale and address the relatively high input and processing costs.

The second processing organization is a growers' alliance called the North 49 Fruit Core. Twelve producers in Western Canada are part of it. They are united by their need to work together to supply larger markets and adhere to food safety requirements, packaging pricing, and other processing requirements. It became much easier for them to work together as a team rather than compete with each other.

As part of North 49 Fruit Core, the growers could get their processed products, such as toppings, into Sobeys, Safeway, and IGA, using novel packaging, such as stand-up resealable pouches. Overall, growers agree that there are more opportunities to collaborate with processors when you can pull your production together and present a larger yield.

> Tymczak, A. (2025). Navigating Challenges and Opportunities in Alberta's Small-Scale Agricultural Sector: Pathways for New Entrants, Knowledge Transfer, and Institutional Barriers [Unpublished doctoral dissertation]. University of Alberta.

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