

Berry production in Alberta: Improving production system through research

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Aleksandra Tymczak studies the berry industry – an expanding industry in Alberta’s agricultural system. Here, she discusses the research activities occurring within the horticulture industry and the impact on berry production and berry producers

Research plays a prominent role in improving various aspects of berry production. This research activity occurs within several facets, including collaborations with producers, academic institution actors, governance actors, and particular stakeholders, such as greenhouse associations.

For example, berry producers participate in conducting soil abatement trials with the possibility of installing a fertigation system (adding fertilizer to an irrigation system) or in pest management projects in collaboration with the federal and provincial governments. The whole idea of conducting these trials is to accumulate funding for market and various trial research.

Cross-provincial research partnership

Another research component pertaining to enabling the increased production of berries in the Alberta agricultural system is the cross-provincial partnership with the University of Saskatchewan (UofS), a central actor within the Alberta agricultural system. The UofS breeding program began in 2001 and was embedded within the 101-year-old horticulture program at the university. They have become the coldest fruit program in North America. It is worth noting that haskap berries emerged as the predominant berry being researched and cultivated, motivating berry farmers to start haskap production and scale up their operations. The university initially received four varieties of haskaps: three Russian varieties that were characterized as being long, skinny, sour in taste, and fragile on the branch, and one other variety that was described as being short, stocky, sweet in taste, and strong on the branch. Researchers at the UofS are hybridizing these varieties to produce new ones. Although embedded within the agricultural system, the haskap industry is peculiar in that 50 cents of every UofS variety bush sold goes back to the fruit program, making it a well-funded program. This research system will not be in danger because it has also been funded privately through producers purchasing royalties. The UofS procures its berry bushes from proprietors whose nurseries use its stock. It dissipates its bushes out to these nurseries, which, in turn, sell them and send a 50-cent royalty back to the UofS.

Breeding trait priorities for production

It is worth noting an important goal dependency that outlined the commencement of the research: to breed haskap varieties with the ideal attributes for mechanical harvesting – an enabler to scale up within the production system. These attributes include plants that will ripen all at the same time so as not to run the harvester more than once on the same row and varieties that ripen at different times to avoid the burdensome process of harvesting all your acres at one time. This would allow producers to spread out their harvesting season and processing operations, whether freezing or transforming the berries into different value-added products (such as jams and jellies). This also takes into account the small labour force associated with individual berry farms, which could support the spreading out of the labour throughout the season, making this a unique feature of the berry industry compared to other intensive industries within the agricultural system, such as the livestock or grain industry. Furthermore, breeding traits like firmness, compression resistance, and size are being researched and optimized to improve mechanical harvestability and minimize scarring, internal bruising, and early decay. This, in turn, improves the shelf life of both fresh berries on the market and processed berries (such as frozen berries).

Other breeding traits, such as high soil adaptation to soil pH, cold hardiness, frost resistance, heat tolerance, drought tolerance, and arthropod resistance, are prioritized to increase crop yield. Lastly, understanding what consumers value at the market end of the agricultural system is an important consideration when prioritizing breeding traits. Traits such as sweetness, flavour, juiciness, and texture (crispness, lack of mealiness) are all being researched.

Future research and implications

An identified research gap concerns insights into scaling up operations. In particular, the UofS currently has no research on processing and equipment innovation. Other areas where research and support in the agricultural system could be increased include best practices around pruning paths, soil health, harvesters specific for haskaps, products to deter birds, novel market channels, and new strategies to promote berries, especially those that are less known by consumers, such as haskap berries.

Lastly, stakeholders within the academic branch of the agricultural system alluded to an emerging interest in greenhouse production in the prairies – a potential future enabler in the production system. A substantial grant has recently been presented by the Western Family Foundation to increase efforts to extend the growing season for berries. A predominant actor that has emerged within the agricultural system is the Greenhouse Growers Association, which lobbies the government on behalf of producers. After making their presence known within the agricultural system, especially in the sphere of governance actors, greenhouse growers are now more acknowledged within the province. For instance, producers with greenhouse operations received subsidies when natural gas prices spiked, in addition to receiving a gas rebate. However, these supports are nowhere near the level of support received for larger established commodities in Alberta, such as ranchers, cattle producers, and grain crop growers.

References

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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