New technologies can improve the resilience of Canada's food system

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Advancements in food production technologies provide meaningful opportunities to improve the resilience of Canada's food system, offering people a greater diversity of food sources and building on Canada's position as a global leader in agriculture, according to *The Next Course*, a new expert panel report from the Council of Canadian Academies (CCA).

The National Research Council of Canada asked the CCA to consider the areas of scientific and technological advancement in atypical food production that will most contribute to Canada's national food security within the next two decades. *The Next Course* explores a range of promising food production methods—from controlled environment agriculture (CEA) facilities to cellular agriculture processes such as cultured meat and precision fermentation—as well as the conditions that improve their chances of success.

Working alongside conventional agricultural practices, these innovative methods may enable local year-round fruit and vegetable growth across Canada and provide a greater variety of protein sources. This could diversify the nation's food system, strengthening its resilience in the face of climate change, population growth, limited resources, and geopolitical instability. Critically, food production is only one part of the wider food system; in isolation, increases in production will not guarantee food security for Canada.

"As a top-tier agricultural producer, Canada has tremendous potential to lead the world in novel food-production methods while future-proofing its own food system," says Lenore Newman, chair of the CCA's Expert Panel on Atypical Food Production Technologies for Canadian Food Security.

The benefits of atypical food production will depend on enabling technologies such as genomics, automation, and artificial intelligence; adequate resources, including energy, water, broadband internet, and labour; and successful resolution of policy issues involving land use and food safety. They should also complement, and not replace, conventional methods of food production.

"The CCA is pleased to provide this clear-eyed assessment to support policymakers as they address the complexities of food production in Canada," says Tijs Creutzberg, CCA president and CEO. "I am grateful to the members of the expert panel for their thorough consideration of the questions at-hand, and their thoughtful engagement throughout the assessment process

The Next Course is available for download at cca-reports.ca.

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