BRITISH COLUMBIA
Canada

Agritech

Where agriculture, processing and food meet innovation

British Columbia, *Naturally.*

BritishColumbia.ca

British Columbia's (B.C.) agritech sector has the **potential to transform agriculture around the world**, making it more productive, sustainable and resilient.

British Columbia's thriving tech industry, top universities and research centres converge with one of Canada's most diverse agriculture, seafood and food processing industries. There are more than 3,400 food processing businesses, over 200 primary agriculture products and 100 fish, shellfish and marine plant species produced in B.C. Not to mention, there are over 11,000 tech companies, employing 220,000 British Columbians. It is no surprise that technology is one of the fastest-growing sectors in British Columbia. Coincidentally, B.C.'s 150-plus agritech companies are applying technology and innovation to the farm, food processing and seafood sectors to address global issues ranging from food safety and production, to food security and sustainability.

By 2025, it is anticipated that revenues in British Columbia's agritech sector will be between $117.3 - $147.2 million and agritech export revenues will be $238.7 - $284.9 million, both at a compound annual growth rate of 8.35 percent.

Strong Environmental, Social and Governance (ESG) Practices

British Columbia's agritech sector is increasingly attracting private capital and investors, both from within Canada and globally. B.C.-based agritech firms have a competitive advantage over global counterparts in attracting investors who value high ESG scores due to their focus on environmental stewardship and sustainability, access to clean sources of energy, high-quality water and opportunities to partner with First Nations communities.

Vibrant Climate

British Columbia is known globally for its rich, fertile land, abundant fresh water supplies and diverse geography. An impressive history of farming and fishing originates from the natural wealth of the province. Today, B.C.'s agrifood and seafood sectors offer abundant resources and supports that result in economical advancements. In 2019, B.C.'s agritech sector generated $500 million in revenue.

British Columbia has an excellent environment for agricultural activity and research and development in the agritech and foodtech space, because of its temperate climate, diverse array of agricultural commodities and a variety of unique biogeoclimatic zones. For agritech, this creates advantages from being a "living lab" for the development and trial of a wide range of new agricultural and food technologies.

Opportune Location

British Columbia is well positioned to export agritech products and services to key markets given its strong trading relationships with several Asian countries and the United States. B.C. is Canada's gateway to the Asia-Pacific region. Another advantage of British Columbia's geography is the proximity of urban tech-development ecosystems to productive farms in some parts of the province.

Growing Agritech Sector

The agritech sector in British Columbia is a vital and expanding network of investors, researchers and businesses – advancing opportunity and cultivating new knowledge. The sector is modernizing by testing and adopting innovative technology to respond to new opportunities and challenges such as climate change, food security and increasing pressures on agricultural land – conditions faced worldwide.

The British Columbia government, in partnership with Simon Fraser University (SFU), launched the B.C. Centre for Agritech Innovation (BCCAI) dedicated to building and commercializing agritech innovation. The Province is investing as much as $6.5 million over three years for the centre, while the federal government is providing $10 million over five years through Pacific Economic Development Canada. BCCAI announced at the 2024 Pacific Agriculture Show that 13 agritech projects that they are funding, represent a total investment of $2 million.

Skilled Workforce

British Columbia's vibrant and thriving tech sector has helped the industry grow by providing access to trained talent. Attracting agritech talent is often in part due to the worker's passion for agriculture, food security, or climate change. Employment in the agri-food technology industry has grown at a faster rate than other "traditional" areas of the economy over the last 10 years.

Industry Profile

Precision Agriculture

Precision agriculture is a farm management strategy that involves a suite of technologies (e.g., GPS, sensors, big data and AI, application programming interfaces (APIs)) to collect and share information about the local soil, climate, plants and livestock to inform agriculture processes and decision-making for increased productivity and costs savings. Precision agriculture can help to guide targeted farm management activities (e.g., seeding, input application, harvesting) to improve the sustainability, efficiency and productivity of agricultural operations.

There is international investment interest in B.C.-based precision agriculture companies. For example, Semios has raised over $100 million in external capital to date.

Controlled Environment Agriculture

Controlled environment agriculture is an indoor technology-based production system where crops are grown under a modified and highly conditioned environment; common forms are greenhouses, vertical farming and hydroculture.

Windset Farms headquartered in Delta, uses state-of-the-art technology and sustainable growing methods to sell and market over 2,500 acres of high tech glasshouse production – the equivalent of 50,000 acres of field farming.

Sustainable Food Systems

A sustainable food system delivers food security and nutrition for all, while not compromising the ability for current or future generations to meet their needs. It needs to be profitable throughout (economic sustainability), have broad-based benefits for society (social sustainability) and a positive or neutral impact on the natural environment (environmental sustainability).

The global food and agriculture sector accounts for approximately 21 - 37 percent of global greenhouse gas emissions, 70 percent of freshwater use and almost half of the world's habitable land, making food and agriculture a critical sector for agritech companies to engage in climate change, conservation, biodiversity and clean technology. There is a strong culture in B.C. - shared by consumers, processors and producers – of prioritizing sustainability in their decisions and pursuing food and agriculture products that offer sustainability benefits.

A Vancouver-based agritech company, ThisFish, aims to improve profitability and sustainability in the seafood industry through digitization, traceability and innovation.

Carbon Sequestration

Agritech firms in B.C. working on carbon sequestration in plants and soils may be able to realize added opportunities from cross-research and knowledge sharing with other sectors also working on carbon sequestration – the forestry bioeconomy and oil, natural gas, and hydrogen sectors. B.C. firms can look to actively capitalize on opportunities that can arise from having several major fields of carbon sequestration research being simultaneously developed in the province. Soil carbon sequestration, also known as "carbon farming" or "regenerative agriculture," includes many ways of managing land, especially farmland, so that the soil absorbs and holds more carbon.

Lucent BioSciences accelerates sustainable agriculture by delivering crop nutrition that improves yield and soil health while sequestering carbon.

Automation Robotics

Automation robotics represents an area of opportunity to develop new machines that can help farmers and processors to operate in constrained labour markets, while also driving productivity improvements and/or reducing waste. Agriculture robots, or agribots, are advanced machines designed specifically to perform various farming tasks, such as planting seeds, watering crops and harvesting produce by leveraging advanced technologies such as artificial intelligence (AI), machine learning and GPS navigation.

4AG Robotics is one example of a B.C. company that builds high precision robotic solutions for harvesting mushrooms.

Agricultural Biotechnology

Agricultural biotechnology is a set of highly sophisticated techniques and tools used by scientists to understand or manipulate the genetic makeup of organisms for their use in the production or processing of agricultural goods.

Terramera is an agritech company headquartered in Vancouver that is accelerating the transition to biological-based crop protection in agriculture. Backed by their formulation solutions engine that combines machine learning-based design, advanced active-ingredient delivery technology and automated rapid prototyping capability, Terramera brings high-performance biological products to market faster and more cost-effectively than ever before.

Ecosystem Partners

- **B.C. Centre for Agritech Innovation (BCCAI)** is located at SFU Surrey campus. The centre connects small and medium sized enterprises in the agritech sector with academic researchers, government, and industry partners to develop technology solutions that build resilient supply chains and generate global solutions for food security and climate change. BCCAI has been involved in collaborations with over 120 B.C. agritech businesses.
- **Innovate BC** is a Crown agency that helps to connect innovators both large and small with provincial government funding, tools, resources, and support. Innovate BC exists to serve and celebrate innovation in B.C., helping industries grow, while ensuring people throughout the province benefit from a thriving, sustainable, and inclusive economy.
- **BC Food Hub Network** aims to foster growth and innovation in the processing sector through improved industry access to facilities, equipment, technology, technical services, and business supports, in collaboration with industry, communities and post-secondary institutions. The BC Food Hub Network is comprised of regional food processing and innovation hubs ('food hubs'). To date, there are food hubs operating or under development in thirteen communities in B.C.
- **Netherland's Ministry of Agriculture, Fisheries, Food Security and Nature** signed an Innovation Action Plan with B.C. on May 23rd, 2022. The Action Plan sets out to promote increased food security, productivity, diversification, and sustainability of the agritech sector through Government-to-Government dialogue, scientific cooperation, and industry partnerships and exchange opportunities.

British Columbia has the most diverse array of agricultural commodities in Canada, unique biogeoclimatic zones, an internationally recognized sustainable food system and partnerships with academic programs and other nations.

Research Institutions

Institution	Areas of Focus
BCIT Natural Health and Food Products Research Group	The Group's Phytoanalytics Laboratory is fully equipped for research-oriented investigations. Integrated with classical tools and leading-edge technology, the lab is home to a Bruker AVANCE III HD™ 400MHz Nuclear Magnetic Resonance (NMR) spectrometer, the first certified Food screener in North America.
UBC's Dan On Food and Beverage Innovation Centre	Supports entrepreneurs and food processors through services that range from collaborations with some of the world's top scientists in food process engineering, to training workers on the operations of novel, cutting-edge equipment.
Food and Agriculture Institute (FAI)	FAI is an interdisciplinary research centre that focuses on issues, challenges and sustainability solutions related to food and farm systems.
Institute for Sustainable Food Systems	An applied research and extension unit at Kwantlen Polytechnic University that investigates and supports regional food systems as key elements of sustainable communities.
SFU's 4D LABS	Helps academic and industry users solve problems at any scale with a full suite of testing, fabrication and prototyping tools under one roof. Flexible support options and access to industry and academic expertise are available.
Summerland Research and Development Centre	The centre addresses the mitigation of environmental pressures, control of biological threats and integration of sustainable production and processing systems for the delivery of high quality, value-added horticultural and agri-food products.
UBC Food Process Engineering Laboratory	Focuses on developing new and innovative food processing technologies to enhance food quality and safety.
UBC Agricultural Technologies and Bioproducts	The cluster brings together experts with diverse skills in biology, bioinformatics, chemistry and engineering to investigate bioproducts in plants grown for food, medicine, cosmetics and industrial raw materials.

Join these innovative agritech companies, including:

- Ecoaction
- Terramera
- Semios
- 4AG Robotics
- Lucent BioSciences
- ThisFish

British Columbia's agritech sector offers a unique opportunity for companies worldwide to test products and practices to achieve market success.

Supportive Government

PROVINCIAL PROGRAMS:

- **Agassiz Research and Development Centre (RDC)** is the lead centre in Canada for integrated research on peri-urban agriculture. Research focuses on developing intensive yet sustainable horticultural and forage management systems that are integrated within a periurban environment. Four broad strategic areas are: soil health management, innovative crop production systems, integrated pest management and biodiversity enhancement.
- **agriNEXT** is a pan-Canadian, ag-specific accelerator and network hub established by Foresight. This program focuses on ventures with a technology readiness level (TRL) of 4-9+ and accelerates them through technology and industry-specific training, mentorship and ecosystem engagement, and connections to funders, investors and corporate partners.
- **Agritech Concierge** provides government support for agritech businesses to grow, diversify, access new markets and attract investment opportunities. Available to any farmer, food entrepreneur or agritech business that is interested in advancing technology and innovation, growing their business, or establishing a business in B.C.
- **BC On-Farm Technology Adoption Program** provides cost-shared funding to eligible participants to adopt new technologies on-farm that will enhance profitability, productivity, and/or efficiency.

British Columbia's Competitive Advantages

- **Easy market access**
- **Skilled workforce**
- **Supportive governmental programs**
- **Sustainable environmental leadership**
- **Growing agritech sector**
- **Vibrant climate**

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