



British Columbia Agriculture Technology attracting global attention

British Columbia (B.C.) is home to companies developing and producing world class agriculture technology (Agritech). Progressive farmers and seafood producers are adopting Agritech solutions into their business operations and practices while B.C.'s world class food and beverage processors and retailers are using Agritech to increase their competitiveness as they serve customers in B.C., Canada and around the world.

B.C. Agritech can help meet the challenge of feeding a growing global population without damaging our natural environment, improve food security through efficient farm management, improve the traceability of our food, and promote consumer and producer connectedness. Today, B.C. Agritech innovations are well known internationally, and our reach continues to expand.

B.C. combination for success

BC Agritech innovators and entrepreneurs continue to build on the significant advantages that allow them to grow and expand their business:

- + **A thriving tech community** in close proximity to agricultural operations in the lower mainland that means the sector is well positioned geographically to develop and pilot various new solutions.
- + **Unique commercialization centers**, like Sumas Regional Consortium for High Tech (SRCTec) which delivers the Agrifood Venture Acceleration Program, that attract, coach and train some of the most talented and innovative people working in the Agritech sector.
- + **Diverse crop mix and landscapes** that offer a unique opportunity for B.C.-based technology developers to respond to B.C. agricultural needs with a wide range of custom products and service offerings that have global potential.
- + **A combination of top universities, unique research centers and growing companies** that anchor our Agritech cluster and provide excellent opportunities for talent and idea exchange about the commercial potential of discoveries and innovations.
- + **Government supports** such as The Canada-BC Agri-Innovation Program, which is administered through Investment Agriculture Foundation of BC (IAFBC) accelerates the pace of innovation by supporting research and development activities in agri-innovations and facilitating the demonstration, commercialization and/or adoption

of innovative products, technologies, processes, practices and services.

Agritech Snapshot

DIGITAL CONNECTIVITY PLATFORM

A 2012 study by the University of Northern British Columbia estimated the economic impact of farmer's markets across the province to be over \$170 million, including \$113 million in direct sales. In today's retail economy, even for operations as traditional as farmer's markets, a competitive necessity for continued growth is a bridge that links foot traffic and digital traffic. **Soil Mate**, a B.C. company, created a web-based connectivity platform that connects local communities with nearby businesses that source local products such as farmers markets, craft breweries and wineries, as well as stores and restaurants within a 100mi/160km of their location. Since its launch in May 2014, Soil Mate has grown to operate in every province in Canada and each state in the US.

AGRIFOOD INFORMATION MANAGEMENT TOOLS

Agrifood, which includes agriculture and food and beverage processing, is increasingly an information-intensive industry. Many agrifood professionals, such as B.C. farmers, are integrating information management tools into their day-to-day activities with the aid of computer and mobile devices to track their operational activities. The integration of productivity software or applications, such as **Farm At Hand** and **ICICLE** by **Burton Software***, are expected to grow dramatically. Armed with an efficient information management system, smaller scale food processing and agriculture companies may increase their competitiveness and enable the companies to have access to new market in shorter time.

WIRELESS CROP MONITORING

A crop monitoring system ensures quicker response times to adverse factors and conditions, better quality control of the produce and a lower labour costs. A crop monitoring system is also a large scale example of how an agriculture Internet of



Things (IoT) – where everyday objects have network connectivity which allows them to send and receive data – can lead to innovative improvements to farming operations. **Ecoation*** is one of two Vancouver-based companies that have successfully developed innovative pest management technologies and mobile sensory system that combine biochemistry, big data analytics and wireless networks to automatically detect and manage a range of common and costly agricultural pests without the use of chemical pesticides. **Semios** has surpassed commercialization stage and its technology is already used in over 10,000 acres of orchards in the US, Canada and the EU, including 3 of the top largest farms in the US.

PRECISION AGRICULTURE USING UNMANNED AERIAL VEHICLES (DRONES)

Within a decade, the global demand of drones is expected to exceed \$30 billion. The Association for Unmanned Vehicle Systems International predicts that 80% of the commercial market for drones will involve agricultural uses. Drones have the potential to help farmers capture highly accurate images of their field, covering up hundreds of hectares/acres in a single flight. In B.C., drones are used by farmers as a tool to extend their vision to capture important information. Drones can highlight which areas of crop need closer examination and it has the capability to monitor animals' health in pastures and feedlots. Dr. John Church and his team from **Thompson River University*** have built three drones that are equipped with infrared thermography cameras that can detect sick cattle by reading their body temperatures. In Surrey, a start-up company called **Artemis Technology** is also developing agricultural drones that can collect aerial images to gather data analytics using image recognition software to help farmers predict growth patterns, detect diseases and reduce the required treatments necessary for crops.

FOOD AND NUTRACEUTICAL QUALITY AND SAFETY

Opportunities for B.C.-based agrifood businesses are evolving rapidly in local and global markets. Consumers at home and internationally want healthy food from trusted and sustainable sources and the quality and safety of B.C. products are attractive to many, including the fast-growing economies of the Asia Pacific. **Mazza** has developed a clean extraction technology that can acquire 100% of beneficial plant ingredients that are free from any residual solvents and incorporate them into a wide range of functional foods, dietary supplements and beauty products.

FOOD SECURITY AND ENVIRONMENTAL SUSTAINABILITY

B.C.'s greenhouse sector is highly innovative and interested in sustainable production in new locations. **BW Global** is working with local greenhouse growers to build environmentally sustainable greenhouses that can withstand harsh environmental conditions while offering complete carbon dioxide retention for higher yields.

SUSTAINABLE FISHERIES MANAGEMENT

B.C. is recognized worldwide for its safe, high quality and sustainable seafood products. A collaborative approach between industry and government has put British Columbia's seafood sector at the forefront of new conservation practices that help to ensure the long-term vitality of our resources. For more than three decades, **Archipelago Marine Research** has helped commercial fisheries, coastal communities, and industry regulators to implement sustainable practices through the use of the latest monitoring technology that can accurately account for all catch. This helps fisheries verify quotas, eliminate waste, and use selective fishing practices while minimizing disruption to marine habitats throughout North America, Europe, Asia Pacific and beyond.

AGRICULTURE TECHNOLOGY INQUIRIES

To get more information about B.C. Agritech and B.C. Agritech companies visit: www2.gov.bc.ca/gov/content/industry/agriculture-seafood/programs/entrepreneurship-and-commercialization

To get information about the Canada-BC Agri-Innovation Program, connect with us at: www2.gov.bc.ca/gov/content/industry/agriculture-seafood/programs/innovation

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