B.C. innovators working to save food and bees

VANCOUVER – Local organizations are partnering with the federal and provincial governments to develop innovative ways to save pollinators and combat food waste in British Columbia.

While honeybees play a key role in agriculture, various diseases and pests have threatened Canada’s honeybee population in recent decades. In a previous project, the University of British Columbia (UBC) developed a tool to identify and breed bees with enhanced resistance to disease. Building upon its earlier work, UBC has initiated a new project to develop a probiotic treatment to control disease. The practical knowledge from this research will give beekeepers better tools to treat and monitor hive health, strengthening the honeybee population further.

This project is just one of a number of research projects that UBC is partnering with the federal and provincial governments on, to help farmers, growers, producers and processors become more competitive.

Another project by Vancouver-based network FoodMesh will help reduce the amount of useable food making its way to the landfill each year.

FoodMesh matches demand and supply more efficiently to reduce food wasted along the supply chain. The network consists of investors, businesses, growers, processors and charity organizations working with the shared goal of reducing the amount of usable food ending up in landfills each year. This social enterprise will better connect B.C. producers to new economic prospects by including access to animal feed and new markets for unsold food products.

The UBC and FoodMesh projects highlight a small sample of the 20 innovative ideas that B.C.-based organizations are working on to build a more sustainable future, with nearly $1.5 million in funding from the Canada-British Columbia Agri-Innovation Program under the Canadian Agricultural Partnership. The partnership is a five-year federal-provincial-territorial agreement that includes $2 billion in cost-shared strategic initiatives delivered by the provinces and territories, and $1 billion for federal programs and services through March 2023.

Quotes:

Lawrence MacAulay, federal Minister of Agriculture and Agri-Food —

“Our government is proud to invest in solutions that will help producers in British Columbia address agriculture’s challenges. These innovative projects will strengthen the sector and reflect our commitment to advance innovation in agriculture while creating good middle-class jobs for Canadians.”

Lana Popham, B.C.’s Minister of Agriculture —
“It’s always amazing, but never surprising, to see the innovative work that organizations are doing to create a more sustainable future. The work that UBC and FoodMesh are doing reflects the spirit of the Canada-B.C. agri-innovation program to ‘enhance competitiveness, sustainability, productivity and resiliency.’”

Leonard Foster, professor, University of British Columbia —

“This funding has helped us to take made-in-B.C. research findings and help industry apply them in a remarkably short timeframe. By fostering closer links between UBC researchers and bee breeders, this opportunity has also led to additional research projects.”

Jessica Regan, CEO, FoodMesh —

“We are delighted to be working with the Canadian Agricultural Partnership in this exciting endeavour to help streamline how food businesses recover food. Our pilot project is designed to help grocery retailers safely divert their perishables to higher end uses such as local charities and farmers. In three months, we have successfully diverted over 35,000 kilograms of edible food, helping create 21,000 meals and access to quality animal feed for hobby farmers. The future impact of this work will help reduce needless wasted food, feed more and save money for farmers and food businesses.”

Quick Facts:

- Honeybee crop pollination contributes to the production of $470 million to the B.C. economy ($250 million in field crops and $220 million in greenhouse crops), and over $2 billion across Canada.
- It is estimated that 40% of food in Canada is never eaten, costing Canadians approximately $31 billion a year.

Learn More:

To read the May 22, 2018, news release announcing funding, visit: https://news.gov.bc.ca/releases/2018AGRI0032-000974

For more information on the Canada-BC Agri-Innovation Program, visit: https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/programs/canada-bc-agri-innovation

For more information on how to apply to the Canada-BC Agri-Innovation Program, visit: www.lafbc.ca/funding-opportunities/innovation/

For more information on the Canadian Agricultural Partnership, visit: www.agr.gc.ca/eng/about-us/key-departmental-initiatives/canadian-agricultural-partnership/?id=1461767369849

For more information on research at UBC, visit: https://research.ubc.ca/

For more information on FoodMesh, visit: https://foodmesh.ca/

A backgrounder follows.
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B.C. projects receiving funding in 2018

The following projects received Canada-British Columbia Agri-Innovation funding in 2018, under the Canadian Agricultural Partnership:

**Advanced Intelligent Systems:** $159,200 to develop an autonomous ground vehicle that can perform manual labour in the nursery sector.

**Commissary Connect:** $95,625 to develop a supply chain module within its technology to streamline the procurement, logistics and financial transactions simplifying these processes for small-scale farmers, primary producers and processors.

**Cowichan Green Community Society:** $26,343 to fund a pilot project by Cowichan Green Community, True Grain Bakery and Small Block Brewery to utilize recovered bread and process it into beer.

**Craft Metrics Inc.:** $15,000 for two products that will aid small craft and farm-based producers. The first device monitors and assists with the in-bottle pasteurization of cider or other beverages. The second is a system that monitors the fermentation of beer, wine, cider or mead.

**Earth’s Own Food Co. Inc.:** $12,614 to adapt and optimize a process for grinding nuts into smaller particle sizes that can be used to develop new products and improve existing nut-based products on the market.

**FCOM Services Co. Ltd.:** $10,000 to research using sound as a pest management strategy to protect vineyards, crop and fruit fields.

**Nova-BioRubber Green Technologies:** $77,000 to develop a safe and renewable plant-based biorubber.

**NovoBind Livestock Therapeutics:** $68,291 to develop barn-scale animal studies for their safety and efficacy (results) testing, develop protocols for the incorporation of the product into feed, and pilot sample production and purification processes.

**Rich Naturals Inc.:** $74,250 to finalize construction and test a prototype of a closed-loop low-temperature dryer.

**Seabreeze Farm:** $18,732 to examine the effectiveness of a new product, MicroNOX, as a more cost-effective option of hydrogen sulfide removal from biogas.

**TechMist Spray Solutions Inc.:** $169,210 to develop and improve the effectiveness monitoring, data analysis and treatment cycles that control pathogens in greenhouses.
The Mesh Exchange: $45,000 to develop a food recovery network that would connect B.C.’s primary producers to new economic opportunities by increasing access to free animal feed and new markets for unsold food products.

Trident Processes Inc.: $149,545 to evaluate equipment that could take manure (or partially dried manure) to a higher solid content level to economically produce a high-value, precision fertilizer.

University of British Columbia: $30,655 to conduct whole genome sequencing on wine yeast that would aid wineries carrying out spontaneous fermentations and contribute to wine product differentiation by terroir.

University of British Columbia: $40,000 to use a microwave-enhanced advanced oxidation process for the treatment of dairy manure and fat, oil and grease to optimize this feedstock for anaerobic digestion.

University of British Columbia: $62,500 to research the connection between microbiomes (microorganisms living together in one habitat) and hive treatments that beekeepers use, and their impacts on bee health.

University of British Columbia: $75,000 to develop and demonstrate a manure treatment technology for the dairy industry using a process developed by UBC called radio frequency-oxidation process.

University of British Columbia: $90,000 to research a triple vaccination treatment to better treat salmonella and campylobacter in chickens.

Valid Manufacturing: $204,000 to design, engineer and manufacture a prototype dewatering centrifuge tailored to the financial and environmental needs of the B.C. dairy industry.

West Coast Wild Foods: $67,345 to commercialize an organic pest control, germ reduction and drying system that can help reduce the presence of pests’ eggs in wild mushrooms. The drying capability of the system will also improve the drying process, without adding extra time.
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