



## **BACKGROUNDER**

September 21, 2009

### **2009 BCIC Commercialization of Agricultural Technologies (CAT) Competition Expression of Interest Voucher Recipient Projects**

#### **AgriForest Biotech Ltd.**

##### **Photoautotrophic Micro-propagation for Commercial Production of Agricultural and Horticultural Crops**

AgriForest Biotech Ltd.'s main objective is to establish a photoautotrophic micro-propagation facility with optimized environmental and in-vitro conditions for the large-scale production of several new commercially important plant varieties for the agriculture and horticulture industries. The commercial application of this technology can produce hundred of thousand of clones of new plant varieties within a year at a significantly lower cost than conventional tissue culture micro-propagation.

#### **Babe's Honey Farm**

##### **Vancouver Island Honeybee Colony Health and Honey Production Monitoring Project**

Babe's Honey Farm is proposing to develop a science based and reproducible standard of operating practices to make British Columbia a world leader in apiculture. A comprehensive data acquisition and management system using state-of-the-art loggers and software will be developed that will track all aspects of honeybee husbandry. The data will provide a scientific basis for making better management decisions and provide credible data that can be used to both monitor honeybee health and evaluate the factors that may impacting it.

#### **Bakerview EcoDairy Ltd.**

##### **Comprehensive Anaerobic Digester & Nutrient Management System**

Bakerview EcoDairy Ltd.'s objective is to create cost-effective sustainable anaerobic digester systems for conversion of dairy manure to by-products such as biogas, heat, bedding, and fertilizer. The anaerobic digester will be located on the Bakerview EcoDairy located in Abbotsford and will showcase innovative and sustainable farming practices to the public.

#### **Daiya Foods**

##### **Manufacturing of a Non-Dairy Vegan "Cheese", From Natural Agricultural Plant Ingredients**

Daiya Foods has been conducting research and development of a new soft style technology platform which has the potential of creating non-dairy cheese hybrids that can substitute for almost every popular variety of dairy-based equivalents. Daiya Foods has achieved very promising results in bench top testing and would like to complete the R&D bench top tests and scale up the process at its facility in Abbotsford.

**EcoFert Incorporation****Developing Liquid Organic Fertilizers with High N, P, K Using Organic Waste from Hotels and Restaurants**

EcoFert Incorporation plans to use organic wastes from BC hotels and restaurants to solve the problem a non-availability of organic nutrients for organic growers by turning organic wastes to liquid organic fertilizers through microbial fermentation which can deliver necessary macro and micro nutrients in sufficient quantities. The adoption of this organic fertilizer will directly increase the crop productivity and encourage organic farming which would lower the production and market costs.

**Enhanced Environmental Systems Inc.****MicroAir Technology**

Enhanced Environmental Systems Inc. has developed a proprietary “semi-closed roof” greenhouse system which delivers energy reductions, reduces water usage, mitigates crop contamination, and potentially increases crop production. Other uses of this technology are not limited to commercial greenhouses and could include the heating and cooling of other large agricultural buildings such as commercial poultry, turkey and hog operations.

**EnvirEau Technologies****Bacterial and Fungal Protection for Food Products Using Natural Minerals**

EnvirEau Technologies utilizes minute amounts of natural minerals as aquo ions of the mineral in a hydrophilic formulation which will protect agricultural crops pre- and post-harvest from bacterial and fungal infection without the use of synthetic pesticides.

**Enviro-Quest Technologies Inc.****Co-digestion of Glycerol : Supporting the Economic Sustainability of Biofuels**

Enviro-Quest Technologies Inc. proposes to develop methods for mixing crude glycerol, a by-product of biodiesel, into the anaerobic digestion process to increase methane yields based on waste streams that are available in British Columbia. Laboratory and pilot plant studies will evaluate the use of waste glycerol as co-substrate in anaerobic digestion of manure/sewage in particular.

**EnWave Corporation****Mid-Sized nutraREV Dehydration Technology**

EnWave Corporation’s signature Radiant Energy Vacuum (REV) microwave technology has been incorporated into nutraREVTM which is designed for use in the food industry to replace freeze drying for the dehydration of fruits, vegetables, herbs, seafood, meats and low-fat snack foods. This technology dehydrates foods more quickly and less expensively than conventional methods of dehydration. EnWave intends to build a new version of this technology which suites the production requirements of small and medium sized food processing companies.

**FCC Fresh Concept Canada Ltd****Controlled Atmosphere Ocean Freight Exports of Fresh BC Blueberries**

FCC would like to apply technological advances in controlled atmosphere storage containers to ocean freight transportation of BC Blueberries. By storing and transporting fruit crops under different

atmospheric and temperature regimes the shelf life and time to market can be extended with minimal adverse effects on taste or marketability. The ability to extend shelf life and to transport crops during this period opens new market opportunities for BC growers.

## **HeriO**

### **Integrated Autopoetic and Controlled Organic Greenhouse Production**

HeriO has created a greenhouse production system that integrates high-tech hydroponics with organic production resulting in reduced fertilizer and irrigation use. This innovative system is a more sustainable option for the organic greenhouse industry due to its lower costs, zero waste, and more predictive production. A half acre pilot-scale production system is currently being designed and tested in Langley.

## **Innovative Foods Systems**

### **Novel Antimicrobial Products for Modified Atmosphere Packaged Fruits, Vegetable, Flowers**

Innovative Food Systems intends to provide a complete novel system for the sanitation, preservation, and maintenance of food products that will be ripe, ready-to-eat, and in a food safe configuration. The sanitation technologies will be synergistic to the developing modified atmosphere box and lid technologies recently patented. The production processes of the greenhouse, orchard and field crop industries will be enhanced to provide sanitized fresh produce.

## **Lignol Innovations Ltd**

### **Biobased Pre Biotic Animal Feed Additives, Alternative to Antibiotics**

Lignol Innovations Ltd will use a biorefinery extract (bioproduct) to develop a pre-biotic type feed additive with the capability to replace or mitigate the use of sub-therapeutic doses of antibiotics in food (poultry, pigs, beef, dairy cattle) and companion animals. The use of this product, a very pure lignin, as an animal feed additive would improve animal health, reduce costs, and reduce the dependency of farmers on the low dose applications of antibiotics as growth promoters, a practice which is already banned in many European countries as well as coming under regulatory scrutiny in North America, because of concern over the downstream development of antibiotic resistance in humans.

## **L.W. Truscott Farms**

### **Cherise Cherry/Fruit Juice/Jam-Fabrication of Juice Steam Extractor**

L.W. Truscott Farms intends to utilize culled fruit waste and other natural healthy ingredients to create food products that are a source of anthocyanins and anti-oxidants as well as other market value-added products. Twenty percent of their own crop is currently being thrown away as culls and useable fruit. The utilization of culled fruit would reduce waste, create jobs in Creston, and provide financial stability.

## **Metrilink Technology Corporation**

### **Feed Bin Level Measurement and Security System**

Metrilink's system provides a means of using mesh communications networks to convey accurate feed level measurement information in a regular and timely basis from feed bins to the farmer or directly to the feed distributor. This will solve three distinct problems: running out of feed at a bad time, inefficient use of delivery trucks, and biosecurity. Metrilink intends to commercialize the product during 2009 with worldwide marketing to be placed by the end of 2009.

**MONSystems Inc.**  
**MilkMON**

MONSystems Inc. is creating a unique web-based enterprise-reporting system that provides online information on all monitored areas on the farm. MilkMON would be the first complete multi-location management and monitoring system offering both hardware and software in a single integrated solution to come to market. It can be used on farms to enhance the safety and quality of milk by constantly monitoring temperatures, humidity and equipment in each stage of production.

**Mountain View Wasabi Inc.**  
**Commercialization of BC Grown Wasabi Micropropagated Plants and Wasabi Products**

Mountain View Wasabi Inc. has developed a method of using plant tissue culture technology to produce large numbers of disease-free wasabi plants in a short amount of time. Their objective is to commercialize wasabi plants to growers so they can establish their field or greenhouse productions by supplying year-round disease-free transplants that do not require heavy pesticides applications to compromise environmental sustainability.

**Paramount Agri-Research Inc.**  
**The Production of Horticulture Fertilizers and Soil Conditioners from Agricultural and Industrial Waste**

Paramount Agri-support intends to convert biomass into charcoal (biochar) by burning it under oxygen free conditions to incorporate into a growth medium where it will improve water and nutrient retention, and promote the growth of beneficial soil microflora. They intend to use biochar and various microbes to design a series of novel products that will be targeted towards greenhouse growers or residential markets that service turf and home gardens.

**Sungard Building Product**  
**Agricultural Biomass and Waste, Densification, Dewatering, Compaction, Reduction and Reallocation**

Sungard Building Products has developed an innovative device and process that permits the densification, compaction, reduction, dewatering and reuse of a wide range of agricultural wastes, including animal manures, straws, grasses, chaffs and stover into usable products suitable as clean burning fuels for existing and new combustion, heating and energy systems.

**SupraRnD**  
**Development of Environmentally Benign, Yet Efficient, Extraction and Fraction Strategies for Biomass**

SupraRnD has developed a device that effectively scales up highly efficient lab extraction methods. It is designed so that no solvent is consumed or released during the extraction and that no solvent residues end up in the final product. This approach provides a simple way to increase economic profitability from a given agricultural product as well as non-traditional agricultural by-products that contain valuable chemical products that are not yet economically exploited.

**University of British Columbia Okanagan  
Biotechnology Resources for Improving Water Use**

Researchers at UBC will be introducing new drought-tolerant rootstock genotypes to the wine industry and providing a novel molecular-level portable kit for early drought stress detection. With these innovations both water use efficiency and irrigation management practices will be improved with respect to both the timing and quantity of water used for grapevine berry production for wine making in British Columbia.

**West Coast Aquaponics  
Integrated Aquaculture and Hydroponic Vegetable Farm**

West Coast Aquaponics' technology exploits the symbiotic relationship between fish and plants in a closed system to produce a high value protein, and high quality vegetables or herbs close to or within urban areas. The system will consume less water than traditional aquaculture systems and methods of growing vegetables or herbs in soil, and will also be pesticide, hormone and chemical free.