

Advancing Innovation and Commercialization in Saskatchewan: Water management



Ag-West Bio



Ag-West Bio

Saskatchewan's bio economy catalyst

- § Provincial bioscience industry association
- § Established in 1989 (not-for-profit corporation)
- § Saskatchewan Ministry of Agriculture primary funder
- § 10 full-time staff
- § Member-based (around 100 members)
- § A catalyst for growing Saskatchewan's bioscience economy



Ag-West Bio

Our goal is to help move research to market and to grow bio business in the province.

We achieve this by:

- § Supporting business
- § Developing new opportunities
- § Creating connections
- § Building our bio community (cluster)

Activities include:

- § Commercialization fund
- § Conferences
- § Networking events
- § Communications



Collaboration

Ag-West Bio works closely with the cluster to build on strengths

Organizations key to the cluster include:

- § University of Saskatchewan
- § Agriculture and Agri-Food Canada
- § National Research Council
- § Innovation Place
- § The Saskatchewan Food Industry Development Centre
- § Saskatchewan Polytechnic
- § POS Bio-Sciences
- § The Canadian Light Source
- § Saskatchewan Research Council
- § VIDO-InterVac
- § University of Regina
- § Genome Prairie
- § Innovation Saskatchewan
- § Ag-West Bio

Ag-West Bio's Strategic Pillars for building Saskatchewan's bioeconomy:

**business
development**



**technology
commercialization**



We help start-up and early-stage companies develop business plans and secure financing

- § Pathfinding
- § Workshops and Seminars
- § Commercialization Fund provides early-stage capital to innovation
- § Works with the Raj Manek Foundation to place entrepreneurs with mentors
- § Provides an industry perspective to government regulations



Commercialization Fund

Technology commercialization is at the heart of Ag-West Bio's mandate

\$9.97 million invested to date; \$13.02 million managed; 60 companies

Seed capital for early stage or expanding companies

- § Promising technologies
- § Initiatives that demonstrate a clear pathway to commercialization
- § Not a good fit for traditional bank capital resources
- § Flexible and patient risk capital
- § Ranges from \$20,000 to \$300,000

Ag-West Bio financed companies:



AGRISOMA
Agrisoma Biosciences Inc.



Biooriginal
Innovative EFA Solutions
Biooriginal Food & Science Corp.

Bio-ID-Diagnostic Inc.
Bio-Id Diagnostics Inc.



MCN
BIOPRODUCTS INC.
MCN Bioproducts Inc.

MicroBio
RhizoGen
MicroBio RhizoGen



Guardian
biotechnologies
Guardian Biotechnologies Inc.

MUSTARD PRODUCTS
MPT
& TECHNOLOGIES
MPT Mustard Products & Technologies Inc.



phenomenome
discoveries
Phenomenome Discoveries Inc.



Prairie Plant
Systems Inc.
Prairie Plant Systems Inc.



QUANTUM
GENETICS
Quantum Genetics Canada Inc.



THE SASKATOON
COLOSTRUM CO. LTD.
Saskatoon Colostrum Company Ltd.



nvisorate
Northern Vigor Berries Inc.
Northern Vigor Berries Inc.

Key criteria for investing in technology companies:

- q Benefit to Saskatchewan
- q Bio-science / new opportunities / diversity
- q Commercial viability (*we can help identify*)

- q Economically feasible path to commercialization (*we help establish*)
- q Likelihood of raising needed capital
- q Degree “de-risked”
- q Is technology proven?
- q Start-up capital or angel investment raised so far
- q Management track record
- q Strong market input/signals

Proteus Waters



Raw Sewage



**Modular Treatment
Plant (in a box)**




**Clean, Recovered
Water for Irrigation**



Proteus Waters

§ Replace legacy based solutions (bacterial lagoons) with innovative, alternative solutions

Why Proteus?

- § Diversity / alternative system / stronger focus on:
WATER RECOVERY
 - § Specialize in membrane technology (to be first in Saskatchewan, yet proven in Europe and elsewhere with performance guarantees)
 - § MBR solutions:
 - high effluent quality
 - effluent can be reused
 - small footprint
 - low lifecycle cost, and good ECONOMICS
 - reliable, low crashing
 - ease of operation (automated)
 - recover/recycle water (lessen demands on potable water)
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An example:

§ Land to be acquired from Agriculture Equipment Dealership (Industrial Park adjacent to Saskatoon)



§ Three dealerships connect permanently to the Plant (like City Sewer), this revenue makes project break even and only uses 15% capacity of the plant

Plant location

Example (*continued*)



- § Plant will also accept septic hauling trucks (2nd revenue stream)
- § Approx. 20,000 loads go to Saskatoon WWTP/yr, project can re-direct 3,000 loads/yr (haulers may save 15% drop off cost, no line-ups, closer distance, no residential traffic or lights)

Dealership Benefits

Dealership Problems	Immediate Benefits
Dealership spends \$50,000/year on septic hauling	Will save them > 20%
Rising cost of septic hauling	Cost is not dependent on fuel and labour
Managing a business with septic tanks (fills too fast, not full but still paying for hauling, smell, health risk)	Eliminates need for septic tanks

Septic Hauler Benefits

Dealership Problems	Immediate Benefits
Haulers spend \$50,000-100,00/year on drop off fees	Save them 15-20%
Rising cost of fuel, maintenance and lack of time to carry high number of loads	Cost will not increase due to fuel and labour and is closer and has no line ups
Do not have to drive through traffic and lights into the city	Save time, stress and additional driving

Other Benefits

- § Lessen complaints: city of Saskatoon gets complaints due to Septic Trucks travelling through city (health problems if any leaks, smelly, aesthetics, etc) and there is no alternative
- § Lessen Road Damage: wear and tear on residential roads from heavy industrial trucks
- § Need to be proactive: septic traffic is growing
- § Sustainability: reuse of the clean water at the locations of drop off (recycled back into the washbays, irrigation, etc.)
- § Analysis of water to be re-used for added benefits (precision farming)
- § Scalable and economical

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Ag-West Bio Inc.



Contact:
Brad Bly
*Director of
Commercialization*
Brad.bly@agwest.sk.ca
306-668-2665

