



“Evolutionary Technologies

Improving Human Health”

Management team and advisors possess the necessary experience to build and monetize the IP portfolio:

- **Commercialization** – Over 44 successful biotech products
- **Innovation** – Many firsts including the worlds first DNA vaccine
- **Research** – Scientific leaders in microorganism research
- **Production** – Managed complex fermentation systems
- **Regulatory** – euGMP injectable vaccine facilities and licensing
- **M&A** – Cobequid Life Sciences acquisition by Novartis and ongoing capital market participation



Gerri Greenham, CEO and Director Mr. Greenham has been active in the biotech industry since 1983 when he organized the acquisition of Connaught Laboratories' biotech division to create Cobequid Life Sciences Inc. (TSE: KQR). Cobequid was subsequently purchased by Novartis Animal Health Inc. ("Novartis") in 2000. Since that time, he has been involved in private investments as well as sitting on boards of directors and advisory boards of various public and private companies.

Dr. Maryam Khodadadi, Biology, Research Lead Dr. Khodadadi is a McGill University graduate, in Food Science and Agricultural Chemistry and conducted postdoctoral research at McGill prior to joining Solarvest (PEI) Inc.'s research and development group. Dr. Khodadadi has acquired expertise in the innovation and the synthesis of functional food ingredients and nutraceuticals, using "green" biotechnological approaches. Her research work has been based on a multidisciplinary approach combining food chemistry and enzyme technology for synthesizing and characterizing specialty lipids as well as bioactive carbohydrates from yeast cells. Her work has been aimed at the investigation of the synergistic actions of selected biocatalysts to develop novel bioprocesses for the synthesis of structurally well-defined bioactive molecules, with unique functional properties.

Garth Greenham, COO, Garth has an extensive record with both private and publicly-traded health care companies. He started his career with Johnson & Johnson (J&J) where he served 15 years, mostly with McNeil Pharmaceutical, in numerous Operational Management positions. Subsequently, he joined Cobequid Life Sciences (KQB) and served as Director of Sales, Marketing & Operations for nine years, growing the company into a global leader in the field of aquaculture animal vaccines. After the sale of KQB, Garth served as President of the Global Aquaculture Division at Novartis Inc.

Michael McDougall, Team Engineering Lead, Mr. McDougall earned his Bachelor of Science from the University of Prince Edward Island as well as his Engineering Degree in Biological Engineering from Dalhousie University. Michael McDougall is a highly qualified leader for Solarvest PEI Inc.'s new ventures.

Dr. Michael Horne Dr. Horne taught genetics at the University level and became well known internationally as a vaccine scientist before undertaking formal business training and moving into industry. He has worked in a science direction role in a number of well known companies, most recently as Research Director in Novartis Animal Health. His has expertise in formal project management of scientific teams and a significant track record in bringing licensed pharmaceutical products to market.



- To be a disruptive supplier in the USD \$27 billion global Omega-3 market



OMEGA PRODUCTS

- Improving human health by developing of a variety of therapeutic proteins using a proven expression platform



HIGH VALUE PROTEINS

- Creating additional high value compounds by applying the Company's patented algae-based technology

CLEAN ENERGY



- **Built using the “Bio Factory” model to jointly advance research and product development**
- Significant federal funding available and already utilized for product research
- Numerous applications for core algae technology with the potential to produce multiple products
- Proprietary technologies primarily produce health products
- Proven ability to generate high value bioactive therapeutic proteins and active ingredients for the pharma, nutraceutical and food supplements sectors
- Developing Therapeutic Proteins to address new high value markets (Antioxidants, Bone Morphogenetic Protein, Cannabinoids)



- Established operations comprise a highly efficient “**Bio Factory**”
- FDA Certification for Organic Omega-3
- **First orders received** for both DHA and EPA Omega-3 products
- Announced global breakthrough in protein production technology with the formation of bone morphogenetic protein (BMP), a high value complex compound used in orthopedic surgery to accelerate/enhance bone growth
- Utilized government funding to advance research specifically related to product development for high value market segments
- **68 patents filed and granted**



- **Commercial product is ready for mass economic production**
- Successful trials conducted using industrial (55,000 litre) bioreactors
- Organic contract manufacturer sourced
- Domestic production capacity possible “in house”
 - ✓ Existing research and test facilities in Summerville
 - ✓ Strategy is to build the order book so that a Canadian facility improves the economics of North and South American supply
- Established **50% Gross Margin Model** designed to operate with contract manufacturers for wholesale supply



First and only **FDA Approved, Organic** Omega-3 (DHA and EPA) that is **highly bioavailable, organic, sustainable, vegan and non-GMO**

Patent published and applied for in all meaningful international Omega-3 markets, **including Europe, USA, Canada, Japan, China and Australia**

Solarvest's algal-derived Organic Omega-3 is a long chain molecule which is more valuable as it can readily be absorbed by the human body (bioavailable)

- Current options (plant and vegetable) are short chain ALA with <10% absorption

Marine supply sources are not **sustainable** (GOED Analysis)

- Bio factory model allows the Company to produce 5 tonnes of organic Omega-3 in a within 5 days, using an organic medium as an input

Organic Omega-3 is **differentiated** on the basis of **of its supply and processing**

- No solvents required to extract oil – unlike other marine-sourced Omega-3
- No heavy metals nor toxins generally found in ocean sourced products of competitors



Competitive Advantages for Omega-3:

- FDA approved
- Totally **sustainable** production
- First and only **Organic** Omega-3 (DHA & EPA)
- The most valuable/**bioavailable** forms of Omega 3
- No solvent residues
 - ✓ Hexane and acetone are typically used to extract oil from fish and krill
 - ✓ Free from toxins found in fish from the ocean (mercury, PCBs and dioxins)
- Non-GMO product
- **Patented**
- Vegan/ Vegetarian



- Commercial product is ready for mass economic production
- Heart health - Helps maintain cardiovascular health
- Helps support cognitive health and brain functions
- **Demonstrates anti-inflammatory properties** according to clinical studies (American Journal of Clinical Nutrition – October 2012)
- **Beneficial to child development** – Prenatal and pediatric health – Omega-3 increases duration of gestation, birth weight and length of newborns (American Journal of Clinical Nutrition - April 2013)
- Human Immune system – Indicates that **Omega-3 may enhance the body's ability to clear amyloid plaque**, a hallmark of Alzheimer's Disease (Journal of Alzheimer's Disease - February 5, 2013)
- Low Omega-3 levels are linked to higher suicide risk in US Military Officers (Journal of Clinical Psychiatry - 2011)



- 42.7% of Canadians are at high risk for developing heart disease due to low Omega-3 consumption*
- 78% of the Canadian children studied are Omega-3 (EPA &DHA) deficient**
- 17% of Americans take Omega 3 Supplements on a regular basis (2011 Study)
- 8% of American consumers seek high Omega 3 Foods – natural or enhanced
- 18% of Americans look for organic ingredients***
- Consumers prepared to pay 24% premium for organic based products
- Omega-3 enhanced products command premium pricing in marketplace (eggs, milk)

* Statistics Canada – 2016 <http://www.statcan.gc.ca/daily-quotidien/151118/dq151118d-eng.htm>

** University of Guelph study - Published in the Journal of Clinical Nutrition

***Nutrition Business Journal – Survey 11/2014111



- 2016 statistics indicate Omega-3 constitutes the world's largest nutraceutical product by sales, at USD \$27 billion
- Glaxo Smith Klein (GSK) sells over \$1 billion (USD) of LOVAZA, a pharmaceutical grade Omega-3
- Company's premium product is priced to directly compete with krill oil, which is not thought to be sustainable
- Market review indicates continued robust annual growth for Omega-3 products



Significant premiums paid for acquisitions in the Omega-3 by the Dutch multinational DSM (DSMN.AS)

- Active in the fields of health, nutrition and materials
- World's largest vitamins maker
- Market Capitalization is 11.8 billion EUR
- Annual revenue was reported at 7.92 billion EUR (2016)

Acquisitions:

- **Martek Biosciences Corp. (2010)**
 - ✓ U.S. baby food ingredients maker
 - ✓ Acquired for \$1.1 billion (USD)
- **Ocean Nutrition Canada (2012)**
 - ✓ Nova Scotia Fish oil producer
 - ✓ Acquired for \$540 million (CAD)



- Concentrate on **House Branded Products** for **Large Retailers**
- Focus on **supplying consumer nutraceutical** opportunities (as a white label supplier)
 - ✓ Bulk product sales to **organic food processors**
 - ✓ Supplying **large retailers** for house branded products, drug chains, specialty shops and supermarkets
 - ✓ Enhancement or **food additive** as a health benefit (baked goods, dairy, eggs, health bars, smoothies)

- Organic Brands – Continued Growth

- ✓ White Wave - Horizon, Earthbound
- ✓ Campbell Soup Company - Plum & Bolthouse
- ✓ Hain Celestial Group - Arrowhead Mills, Earth's Best
- ✓ Amy's Kitchen
- ✓ Danone - Stonyfield
- ✓ Natures Path
- ✓ General Mills - Cascadian Farm, Larabar
- ✓ Neman's Own



Patented “Algal Expression Platform” can produce (express) high value proteins currently used for human medicine

- Devoid of any known human pathogens
- Comparatively inexpensive to produce algae
 - ✓ Also able to use low cost inputs (ingredients) able to feed the growth of bioactive proteins on the algae platform
- Able to produce consistent, high yield concentrations of final products
- Versatility provides the ability to produce multiple complex products
 - ✓ Demonstrated the ability to produce **complex therapeutic proteins**
 - ✓ Another application includes the sequestration of carbon dioxide (CO₂)
- Able to control the production environment
- Replicable process allows expedited product development



A Global First - FDA Approved & Patented Organic Omega-3

- No other fish, krill or algae products currently on the US \$27 billion dollar Omega-3 market are organic.

Premium Organic Omega-3 Product Segments and Supply Chain Opportunities:

- **Organic Meal – Referred to as Algae Flour**

- ✓ Processed Food Supplement
- ✓ Human Nutraceutical
- ✓ Infant & Baby Food
- ✓ Children's Supplement

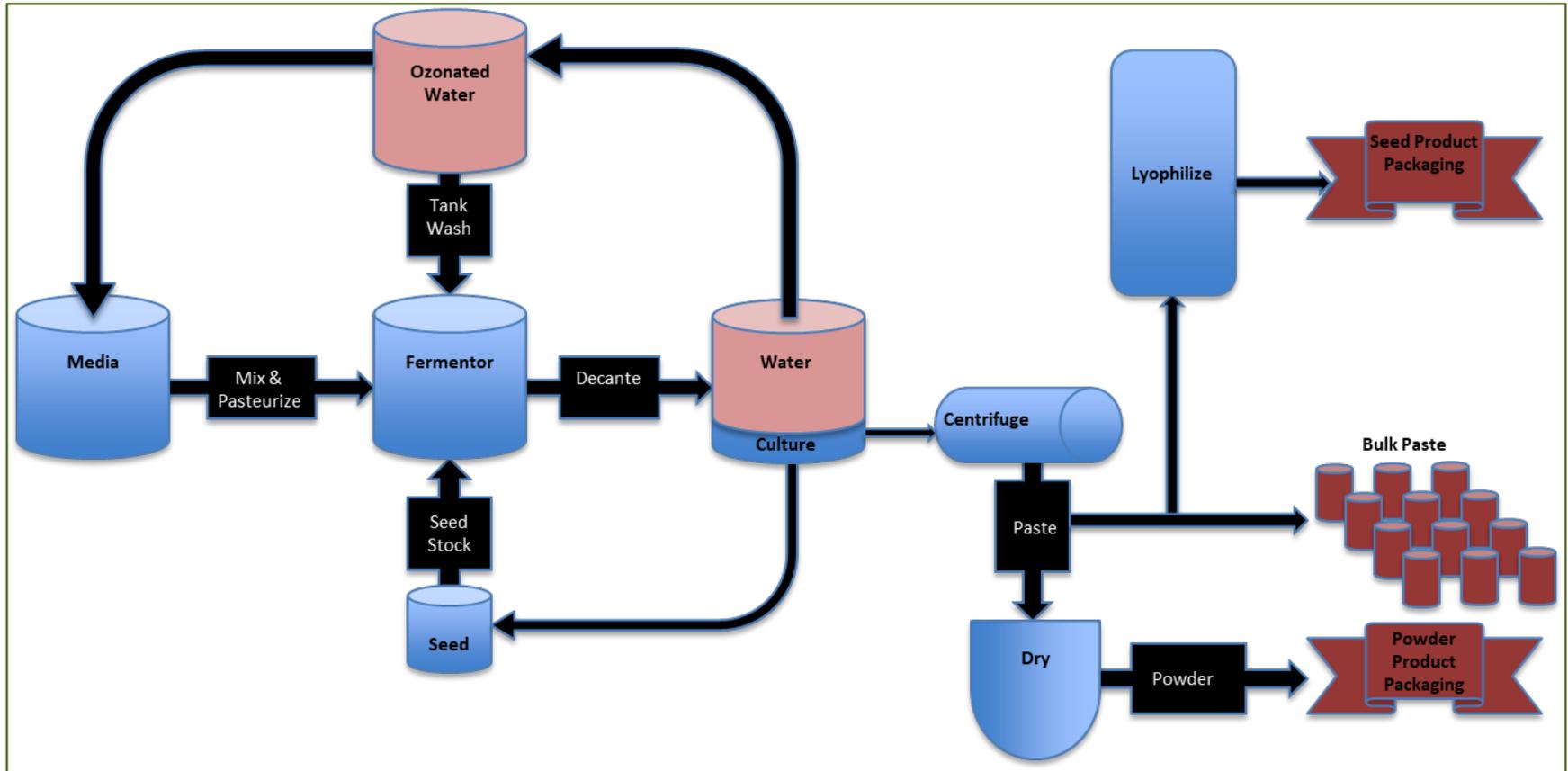
- **Algae Oil**

- ✓ Human Nutraceutical
- ✓ Beverage Supplement

- **Pharmaceutical Grade Oil**

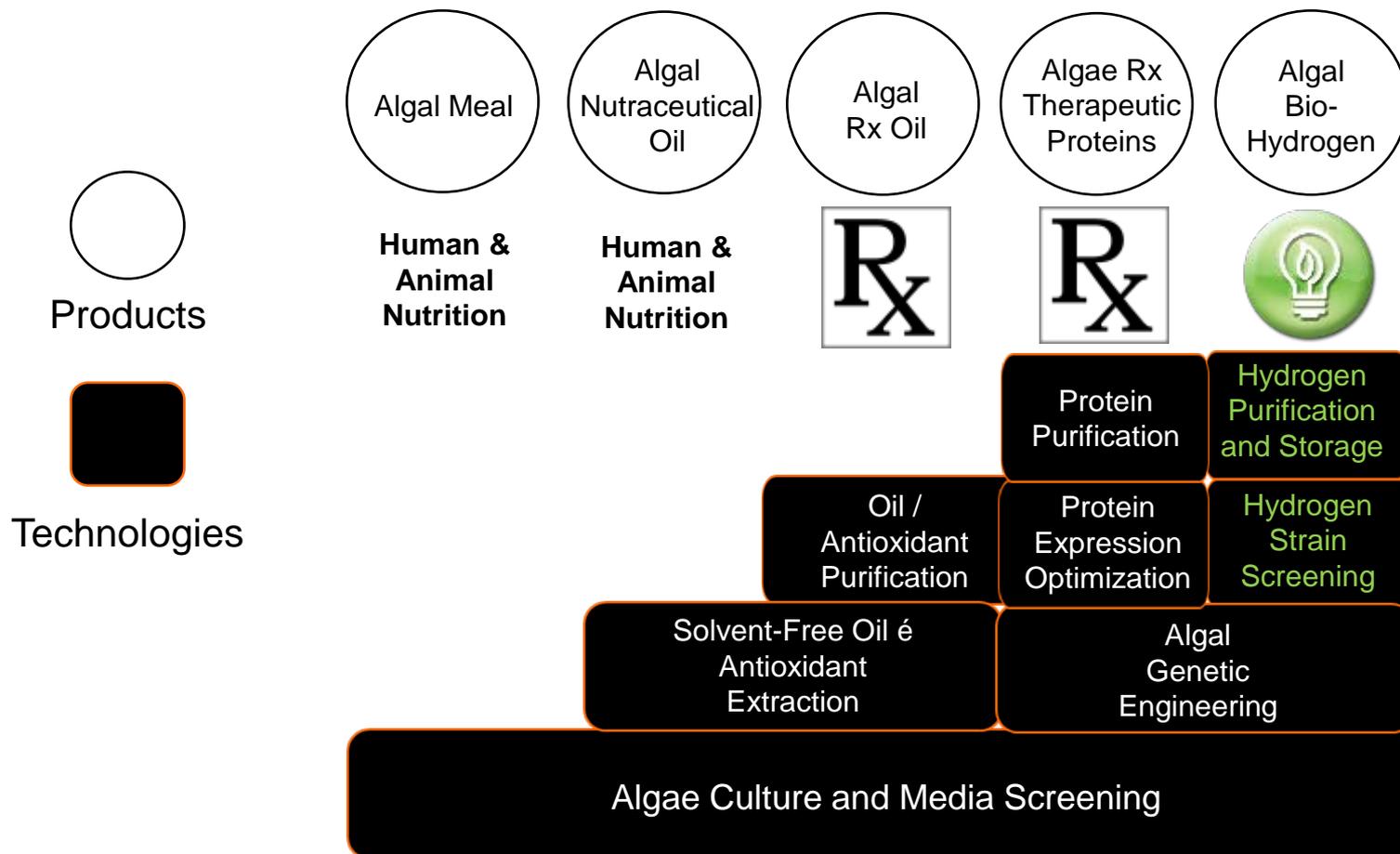
- ✓ Active Ingredient
- ✓ Carrier for bioactive products











The Solarvest portfolio of 68 patents that have been filed and granted include:

Methods of Producing Algal Cell Cultures & Biomass, Lipid Compounds & Compositions, and Related Products

- Production of algae biomass without using chemicals – Organic Omega 3

System, Method, and Device for the Expression or Repression of Proteins

- Method for controlling the expression of chloroplast - induce the production of hydrogen gas and/or the expression of therapeutic proteins

Transgenic Algae for Delivering Antigens to An Animal

- Animal vaccine patent – A method for feeding transgenic algae with an expressed antigen to provoke an immune response

Dental Composition and Method

- Method for suppressing plaque formation on canine (and other animal) teeth

Method of Making Microalgae-based Animal Foodstuff Supplements

- Trace metal binding system that effectively delivers chromium, cobalt, copper, iron, manganese, molybdenum, selenium and zinc to animals

Methods & Uses of a Modified Cecropin to Treat Endoparasitic and Bacterial Infections

- Antimicrobial protein (AMP) expression for the treatment of malaria





- Multiple near term revenue opportunities
- Intellectual Property is patented and versatile
- Large and growing markets for Omega-3 products and Therapeutic Proteins
- Sustainability and “green-nature” appeals to a large consumer segment
- Multiple therapeutic protein opportunities in high value markets
- Potential to “spin out” or “dividend out” opportunities to fund separately
- Research collaborations in place
- Risk mitigated by successful Omega-3 research and product development
- Highly economic bio factory business model able to use low cost algal inputs to produce safer pharmaceutical products than derived by other methods
- Management possess a successful documented track record of converting R&D projects to saleable products



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Questions?

Garth Greenham, COO
garth.greenham@solarvest.ca
invest@solarvest.ca
Direct: 647-204-4095

Alex Mackay, Corporate Finance
alex.mackay@solarvest.ca
invest@solarvest.ca
Direct: 416-989-1067

