



INVESTOR PRESENTATION
JULY 2020

STRICTLY CONFIDENTIAL



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Introduction to BioHarvest

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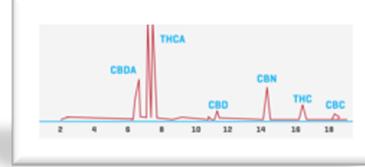
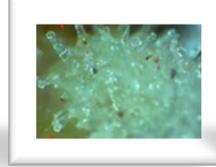
BioHarvest - Executive Summary

First and only fully validated industrial scale plant cell technology platform for the production of plant metabolites

- Capable of producing the plant's active ingredients without growing the plant itself
 - Requires a fraction of the conventional farming resources (land/water/energy) and can be implemented anywhere
- Successfully developed industrial scale, GMP and ISO certified production processes for various plants, and has commercially produced and distributed finished product
- Biofarming technology platform serves as the backbone, and can be used for almost any herbal API or other plant based ingredient application, including cosmetics, pharma, and plant based proteins.
- Groundbreaking R&D progress with Cannabis
 - First company to successfully grow Cannabis cells (in suspension / liquid-media), and produce six distinct cannabinoid molecules - THCA, THC, CBDA, CBD, CBN, CBC - identical to the cannabinoids produced by the plant.
 - No other research group has been able to grow Cannabis plant cells in suspension (liquid media) in bioreactors
 - Low-cost, GMP and ISO certified, consistent source of full spectrum Cannabis at industrial scale with all parameters that are key to the Pharma and CPG industries



Key Milestones



- Achieved industrial scale plant cell growth and commercial GMP production of VINIA® (proprietary / patented red grape based Resveratrol product)
- Clinical research validating high bioavailability and efficacy for VINIA;
- Expression of complex secondary metabolite compounds and process scale-up for other plant cells including pomegranate, olives and blueberries
- Induced Cannabis cells to grow on both solid media and in suspension (liquid media), and successfully produced Cannabis trichomes
- First company to stably grow Cannabis cells (in suspension), and produce six distinct cannabinoid molecules - THCA, THC, CBDA, CBD, CBN, CBC – with an identical cannabinoids profile to that of the source plant
- Scale-up process for growing Cannabis cells in medium and large industrial bioreactors
- Develop drying process for Cannabis cells
- Establish production / manufacturing partnerships.
- Resume VINIA® Sales in Israel

2014-2016 2017 2018 2019 2020 2021

- Established a dedicated Cannabis R&D program and obtained a Cannabis R&D license from the Israeli Ministry of Health
- Fully installed a certified R&D Lab for Cannabis
- Performed comprehensive screening of Cannabis strains and plant material.



- First company to produce cannabis cells in small bioreactors
- Obtained Israeli Ministry of Health approval to install and grow Cannabis cells in 20 medium and large scale bioreactors



- Convert current 2-Ton/Year production facility (in Israel) to Cannabis
- Develop, install and commission 5-10 Ton Cannabis capacity in North America
- Commence VINIA® Sales in North America & install & commission a 20-Ton industrial-scale facility for VINA® in Israel

Current Executive Team has extensive experience in Operating & growing Companies based on world class disruptive R&D platforms



Dr. Zaki Rakib Co-Founder, President and Chairman of the Board
Dr. Rakib is a serial entrepreneur and seasoned executive. He brings extensive experience in multiple industries. Prior to BioHarvest, Dr. Rakib co-founded Terayon Communication Systems, led the company from inception as its CEO, and managed its growth from \$2M to \$380M in revenue. Terayon reached a \$7B market capitalization in 2000 and was later on acquired by Motorola. Prior to that, Mr. Rakib was a director of engineering at Cadence design systems which acquired Helios S/W where he served as CTO. Dr. Zaki Rakib holds a Ph.D. in Mechanical Engineering from Ben Gurion University and a Ph.D. in Applied Mathematics from Tel Aviv University. Dr. Zaki has extensive access to a league of unique entrepreneurs and high net wealth individuals who are constantly looking to identify the next unicorn.



Dr. Yochi Hagay Co-Founder & CTO
Dr. Hagay has led the development and implementation of BioHarvest's technology platform since inception. Prior to founding BioHarvest, Dr. Hagay worked in various leadership positions at BTG corporation which was acquired by FERRING Pharmaceuticals. Dr. Hagay has over 20 years of relevant experience, leading substantial research and development programs in both pharma and biotech. More specifically, Dr. Hagay has knowledge in genetic engineering, molecular biology, tissue culture, monoclonal antibodies and clinical trials. Dr. Hagay is the author and co-author of several peer reviewed -published scientific papers. Dr. Hagay holds a Ph.D. in biotechnology from the Hebrew University, Israel.



Ilan Sobel CEO
Ilan Sobel, brings to the Company extensive experience in General Management, International Sales and Marketing, Manufacturing and Operations. For the past 6 years, Ilan served as Chief Operating Officer and transitioned to Chief Commercial Officer of Weissbeberger for the last 2 years. In this capacity, Ilan played a major leadership role in building a disruptive BIG Data, IOT & Software Company servicing major Beverage players which was recently purchased by Anheuser Busch InBev. Previously, Ilan served an 18 year stint as an International Employee of The Coca-Cola Company, where he played a pivotal role in key senior leadership positions generating significant revenue and profit growth and improving brand health trends across diverse global markets including the United States, China, Hong Kong, Taiwan, Thailand, Singapore, Malaysia, Vietnam, the Philippines and South Africa. Ilan brings to BioHarvest Sciences a wealth of hands-on experience, business acumen and leadership expertise in building large-scale businesses and billion-dollar brands, including a very strong ability to access C level executives at top Fast-Moving Consumer Goods Companies & National Retailers



Dr. Malkit Azachi VP R&D
Dr. Azachi brings nearly 20 years of experience in biochemistry, genetic engineering, tissue culture, molecular biology, and clinical & pre-clinical trials. Prior to BioHarvest, Dr. Azachi served as technology Director at HealOrLtd, a Biopharmaceutical company developing topical therapeutics. Prior to that, Dr. Azachi lead product development at the research and development department of ColbarLifeScience, a Johnson & Johnson Company. Before that Dr. Azachi lead cartilage regeneration product and bone substitute development for Prochon Biotech; and immunotherapy related development for Omrix Biopharmaceuticals -acquired by Johnson & Johnson. Dr. Azachi holds a Ph.D. in microbiology from the Hebrew University of Jerusalem and a Post-Doc in Molecular Biology of the cell from Weizmann Institute of Science.

Current Executive Team has extensive experience in Operating & growing Companies based on world class disruptive R & D platforms



Michal Sapir VP of Regulatory Affairs

Michal joined BioHarvest in 2010 and brings 30 years of experience in medical device , pharma and biotechnology industries. She is responsible for the regulatory pathways & strategy for the Company, registration of Company products (food and dietary supplement), the communication with the regulatory authorities and establishment of the Company QA Systems. Before joining BioHarvest Michal served as the Director of Project Management in ColBar LifeScience Ltd., Johnson & Johnson Company (2001-2010). As part of the ColBar management team, she led complex projects in medical device development and planning and managing annual multidisciplinary work plans. Prior to that Michal gained broad experience in clinical and animal studies; she served as Affiliate Quality Coordinator & Senior Clinical Research Administrator in Eli Lilly (1995-2000). Earlier in her career she gained experience in Pharmacological and Toxicological animal studies at the Biological Research Company (1987-1995) Michal holds a Master of Science in biochemistry from Bar Ilan University



Eitan Popper Head of Advisory Board

Mr. Popper was the co-founder and President of MedReleaf Corp., which was acquired in 2018 for \$2.5 billion USD, in what is considered the largest Cannabis industry exit to date. Prior to its acquisition, MedReleaf was one of the largest and most reputable vertically integrated medical Cannabis producers in the world. Mr. Popper brings over 15 years of international partnerships, entrepreneurial ventures, disruptive industry, large-scale project development, engineering and investment experience. Mr. Popper holds a B.Sc. in Civil Engineering from the UIA in Mexico, a M.Sc. in Environmental Fluid Mechanics from Stanford University, and an MBA from the Recanati School of Business at Tel Aviv University.



Market Opportunity

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Cannabis at the Forefront of Alternative Therapies

Emergence of Cannabis and major cannabinoids (THC & CBD) into the mainstream has ignited an influx of innovation, capital and soaring valuations, while stirring the pot of social change

- ✓ Global Cannabis sales reached **\$9.5 billion in 2017** and are projected to surpass **\$65 billion** in **2024**
 - ✓ North American market alone is expected to surpass **\$50 billion** in sales by **2024**, with a **25-37% CAGR**, based on conservative estimates
- ✓ Legalization is quickly spreading
 - > **90%** of Americans support legalizing Cannabis for medical purposes
 - 33 US states** have fully legalized medical Cannabis
 - > **30 countries** have implemented medical Cannabis laws
- ✓ 95% of the US population lives in states with some access to medical Cannabis

“Sound scientific research to investigate ingredients derived from marijuana can lead to important therapies. This new treatment provides new options for patients. Because of this careful, scientific and evidence - based evaluation by the FDA, health care providers can rely on having a quality product that delivers a consistent, uniform dose of an effective medication that is able to deliver a predictable treatment to patients.”

- Statement By Former FDA Commissioner, Scott Gottlieb, MD

Current Cannabis Industry Constraints and Inefficiencies

- Capital Intensive (High Capex)
- Labor Intensive (High Opex)
- In some cases Production is Seasonal and Weather Dependent
- Product **Quality** and **Consistency Challenges**
- Production is Susceptible to Contamination (i.e. Pesticides, Heavy Metals, Fungi)
- Production Processes and / or Products are **Not Proprietary** or **Patent Protected**
- Impractical for Minor Cannabinoids
- Substantial Environmental Footprint

Big Pharma Watching from the Sidelines

- Big Pharma is yet to participate in a meaningful way, mainly deterred by regulatory and IP protection concerns
- Only one player has actively participated - GW Pharmaceuticals (not big pharma)
 - Market cap: \$3.1B
 - Launched first FDA approved Cannabinoid drug in November 2018
 - Epidiolex® (Cannabidiol / CBD)
 - Rapid growth within 6 months of launch; \$102M net sales in H1 2019
 - 12,000+ patients have received Epidiolex prescriptions since launch
 - Favorable payor coverage in commercial, Medicare and Medicaid

Demand has been validated reinforcing the potential of the total addressable market



BioHarvest Company Overview

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Disruptive Technology - Bridging the Gap

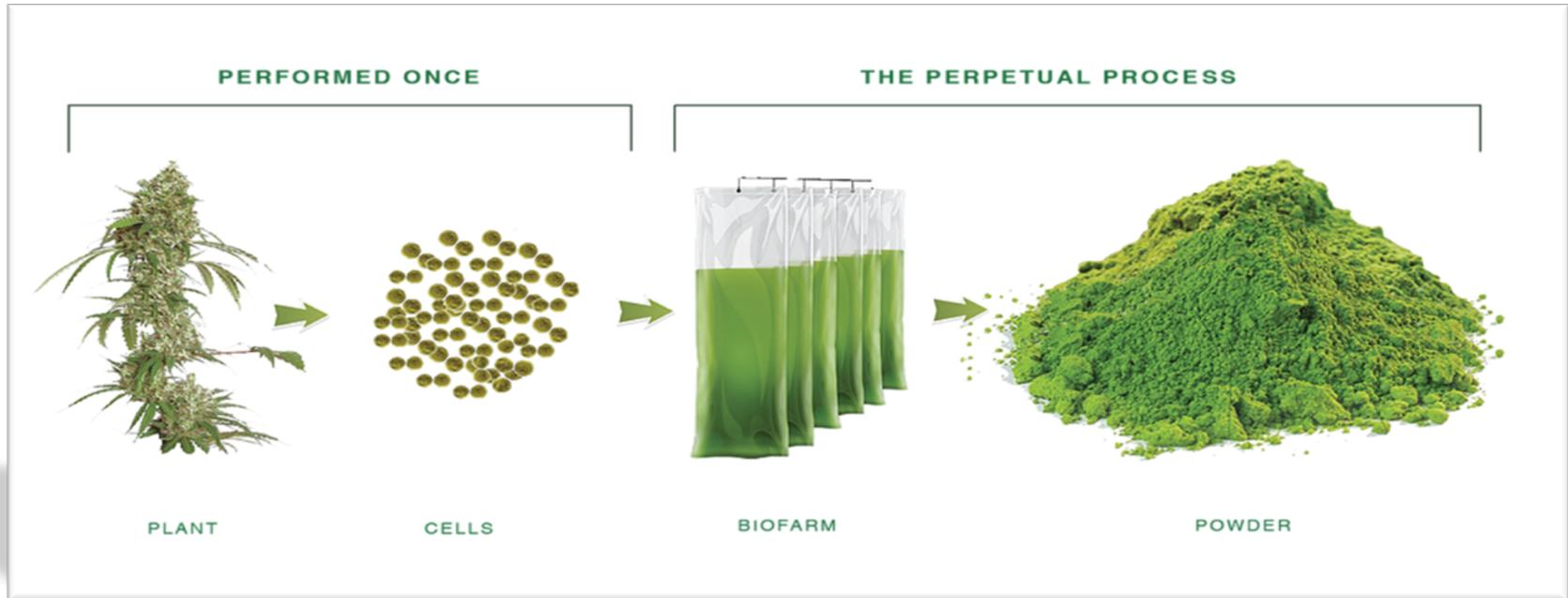
BioHarvest's technology platform represents an **efficient, proprietary, and IP protected means to produce plant based compounds** including **whole spectrum Cannabis, cannabinoids or Cannabis derivatives**, which could have profound implications for the Cannabis industry, disrupt the supply chain, reduce cost, and most importantly – **bridge the gap between the current / traditional Cannabis market, big pharma and CPG**

- Continuous and Repeatable, Capital Efficient, and Scalable Technology
- Orders-of-Magnitude Reduction in Resource and Footprint Requirements
- Production of Minor Cannabinoids Is Just as Feasible as the Production of Major Cannabinoids
- Superior Finished Product Purity and Quality Control
- Production Processes and Finished Product are Proprietary and can be Patent Protected
- Process Control Capabilities on Par with Pharma-standard Quality Assurance Protocols
- Environmental Sustainability

Assets / Strengths

- ✓ Robust Technology Platform with Numerous Applications
- ✓ Scientifically Validated Claims + Track Record (VINIA)
- ✓ Successful Plant Metabolite Elicitation
- ✓ Proprietary and Patent Protected IP
- ✓ Scaled-up, GMP and ISO Certified Production Process
- ✓ Commercial / Cost Efficient Production and Sales of Existing Products
- ✓ Unique and Disruptive R&D Milestones with Cannabis Cells

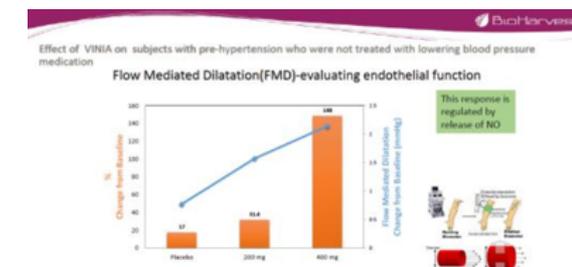
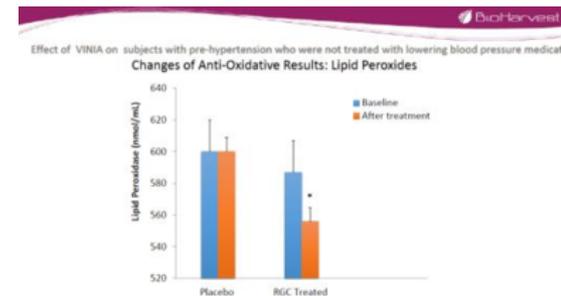
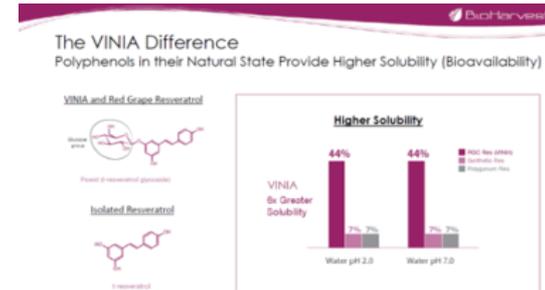
The Process



[Click here for technology / process description video](#)

Scientific Validation

- ✓ BioHarvest's technology platform and products have been scientifically validated as **safe**, **efficacious**, and **highly bioavailable**.
- ✓ VINIA - BioHarvest's red grape Resveratrol product - has **undergone in-vitro studies, pre-clinical trials, and clinical trials** that support structural and functional claims, and is Generally Recognized As Safe (**GRAS**) in compliance with the FDA.
- ✓ A total of **8 Scientific Studies** were performed with VINIA and **3 peer reviewed Scientific papers** have been published.

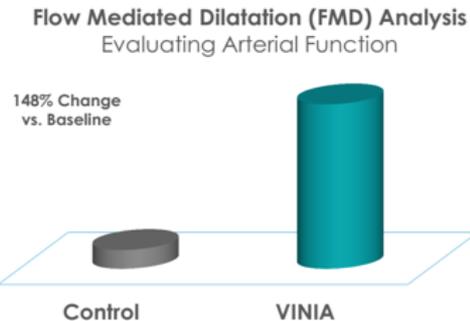


About VINIA

Promotes Heart Health through **Natural Vasodilation**
Improving Blood Circulation and Flexibility of Arteries



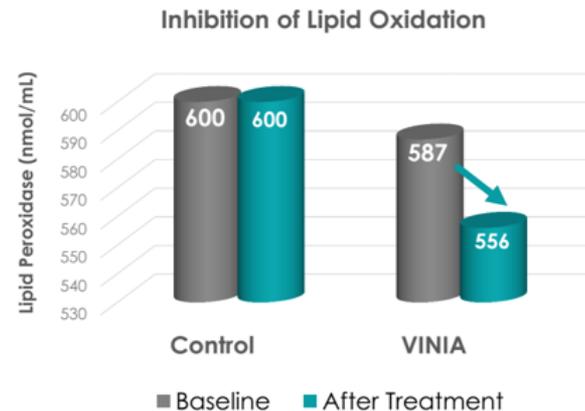
*p = 0.013 Vaisman et al, 2015, Int J Food Sci Nutr.



Promotes Heart Health through **Anti-Oxidant Activity**
Inhibits Oxidation of Blood Lipids, Including LDL Cholesterol



*P <0.05 Vaisman et al, 2014, Int J Food Sci Nutr.



Successful Plant Metabolite Elicitation

Metabolite Elicitation = Increased Concentration

- Orders of magnitude increase of the relevant compound / active ingredient concentration.
- 100x increase of the concentration of Resveratrol, when compared to the concentration in nature.
- Elimination of sugar

One capsule / sachet of VINIA contains the equivalent quantity of Resveratrol contained in 1,000 grapes, without any sugar.



VINIA™ is already **proven** and over the next 12-18 months, we will commence scaling the VINIA™ business in Israel and North America

- The VINIA™ marketing concept is **simple** for the consumer to **understand** as it is based on the well-known **French Paradox**, focused on **the benefit of drinking red wine** to improve cardio-vascular health, despite very high fatty diets.
- Consumers quickly understand the power of VINIA™ when referencing the benefits of wine. One capsule of VINIA™ and its super rich concentration of resveratrol polyphenols is equivalent to **drinking one bottle of Red Wine per day with 0% Alcohol, NO Calories and ZERO Sugar**
- 2020's **focus** is to continue to drive **Israel** sales from a **B2C** perspective to the next level as we **build additional e-commerce capability** and add **B2B** focus in USA on the US\$24 Billion Nutraceutical Food and Beverage Ingredients Market growing at a CAGR of 7%* and where Food and Beverage Companies are under increasing pressure to bring new innovation to the market. (*Markets and Markets Research Report)
- In 2021, we will continue to drive our **B2C** business as we focus on the **USA** which represents 30% of the Dietary Supplement Market valued at USD\$ 125 Billion, growing at a CAGR of 8%** (**Grand View Research Report, Feb 2020)



Intellectual Property

Robust Patent Portfolio

- Over 17 patents filed to date
- 11 patents already granted in 5 different jurisdictions

Process
Scaled Up Technology
Product Composition
Treatment of Diseases / Applications

Granted Patents



4 Patents



2 Patents



2 Patents



2 Patents



1 Patent

(19) **United States**
(12) **Patent Application Publication**
Eshdat et al.

(54) COMPOSITION FOR MUCOSALLY DELIVERING FRUIT CELL CULTURES AND/OR PREPARATIONS DERIVED THEREFROM AND METHODS OF USING SAME. (50)

(56) Invt

Com
NAT
112:
Akn

(12) **United States**
Hagay et al.

(21) Appl
(22) PCT
(86) PCT

(54) **PROCESS FOR THE LAR PRODUCTION OF FRUIT TREATMENT OF DISEASES CELLS**

(71) Applicant: **BIO HARVEST**

(72) Inventors: **Yoheved Hagay, Abargel, Rishon Azachi, Rehovot Ashdod (IL); Riv (IL)**

(73) Assignee: **BIO HARVEST LTD., Rehovot (IL)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 15 days.

(21) Appl. No.: **14/655,052**

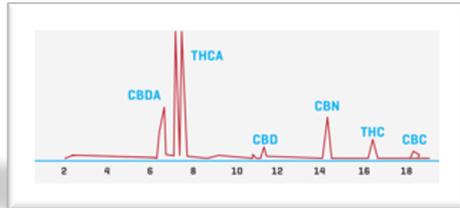
(22) PCT Filed: **Dec. 24, 2013**

(86) PCT No.: **PCT/IL2013/051052**

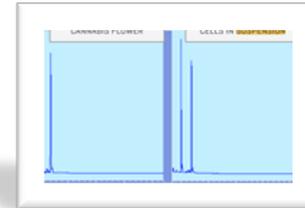


Groundbreaking Cannabis R&D Progress

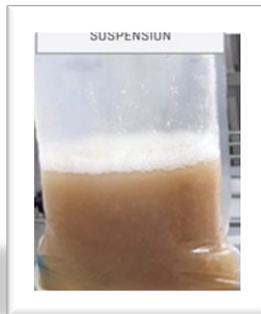
1. Six distinct Cannabinoids (THCA, THC, CBDA, CBD, CBN, CBC) produced by Cannabis cells through BioHarvest's technology.



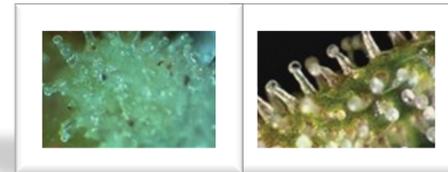
3. Cannabinoid profile produced by Cannabis grown in suspension (liquid media) - identical to the profile of the source Cannabis plant.



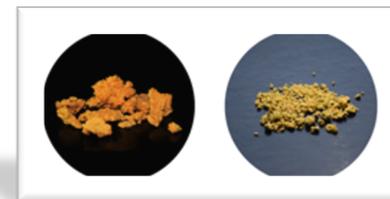
2. First Company to have successfully grown Cannabis cells containing Cannabinoids – using small scale bioreactors.



4. Cannabis trichomes produced by cells grown compared to plant trichomes.



5. Dry Cannabis cells powder (finished product) produced by BioHarvest's technology.



Competitive Advantage

	BioHarvest's Biofarming 	Conventional Farming 		
		Indoor	Greenhouse	Outdoor
Land Requirement	Low (0.5 sq.ft per kg-year)	High (5 sq.ft per kg-year)	High (20 sq.ft per kg-year)	High (<30 sq.ft per kg-year)
Production Cost	Low (\$200 per kg)	High (\$1,500 per kg)	High (\$1,000 per kg)	Low (\$200 per kg)
Capital Requirements	Low (\$250 per kg-year)	High (\$2,500 per kg-year)	High (\$600 per kg-year)	Low
Labor Requirements	Low	High	High	High
Quality / Contamination	High / Contaminant-Free Aseptic & fully controlled environment	Low / Susceptible to contamination (fungi, pesticides, heavy metals)	Low / Susceptible to contamination (fungi, pesticides, heavy metals)	Low / Susceptible to contamination (fungi, pesticides, heavy metals)
Consistency	High Identical to source plant cells and repeatable on every batch	Low Consistency High Variability	Low Consistency High Variability	Low Consistency High Variability
Sustainability	Yes Low energy requirement Low water requirement Low land requirement	No High energy requirement High water requirement High land requirement	No High energy requirement High water requirement High land requirement	No Low energy requirement High water requirement High land requirement
IP Protection	Yes Process & Product are patentable	No	No	No

What's Next...

Cannabis Short & Medium Term Goals

- Scale-up process for growing Cannabis cells in medium and large bioreactors – H1&H2 2020
- Submit “Cannabis product dossier” to the Israeli Ministry of Health – H2 2020
- Convert current 2-Ton/Year production facility to Cannabis – H2 2020
- First sales of Cannabis cells in Israel – H1 2021
- Establish strategic production partnerships in North America - H2 2020
- Develop first 20-Ton/Year production facility in North America – H2 2021



Investment Highlights

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Investment Highlights

Experienced Management Team

Serial Entrepreneur combined with experienced Global Business Operator with proven track record of successfully building and / or exiting businesses, coupled with deep scientific leadership team

Strong Industry Tailwinds

Emergence of Cannabis and major cannabinoids (THC & CBD) into the mainstream has ignited an influx of innovation, capital and soaring valuations. In addition, growing global consumer demand for products with functional health and wellness benefits from a B2B and B2C perspective make the market readier than ever for VINIA®.

Disruptive Technology Platform

Efficient and IP protected production of plant-based compounds including cannabinoids or Cannabis derivatives, could have profound implications for the Cannabis industry, disrupt the supply chain, reduce cost, and most importantly – bridge the gap between the current / traditional Cannabis market, big pharma and CPG. In addition, application of platform to Super Fruits provides uniquely differentiated ingredients for the Food and Beverage Industry to leverage.

Disruptive Smart Mover

First mover advantage. No other group has been able to grow Cannabis plant cells in liquid media in bioreactors. In addition, no other group has the capability to concentrate active ingredients in fruits and plants.

Defensible IP

A strong, protected technology offer at the heart of the solution that has the potential to disrupt the status quo today in 2 major Industries

Liquidity

The Company is now listed on the CSE as BioHarvest Sciences Inc (BHSC)



THANK YOU

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