



Yield10 Bioscience, Inc.

NasdaqCM: YTEN

H.C. Wainwright Investor Presentation

www.yield10bio.com

Crop Innovations For Sustainable Food Security

September 14, 2020



Safe Harbor Statement*

The statements made by Yield10 Bioscience, Inc. (the “Company,” “we,” “our” or “us”) herein regarding the Company and its business may be forward-looking in nature and are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements describe the Company’s future plans, projections, strategies and expectations, including statements regarding future results of operations and financial position, business strategy, prospective products and technologies, expectations related to research and development activities, timing for receiving and reporting results of field tests and likelihood of success, and objectives of the Company for the future, and are based on certain assumptions and involve a number of risks and uncertainties, many of which are beyond the control of the Company, including, but not limited to, the risks detailed in the Company’s Annual Report on Form 10-K for the year ended December 31, 2019 and other reports filed by the Company with the Securities and Exchange Commission (the “SEC”). Forward-looking statements include all statements which are not historical facts and can generally be identified by terms such as anticipates, believes, could, estimates, intends, may, plans, projects, should, will, would, or the negative of those terms and similar expressions.

Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and may be beyond the Company’s control, you should not rely on these statements as predictions of future events. Actual results could differ materially from those projected due to our history of losses, lack of market acceptance of our products and technologies, the complexity of technology development and relevant regulatory processes, market competition, changes in the local and national economies, and various other factors. All forward-looking statements contained herein speak only as of the date hereof, and the Company undertakes no obligation to update any forward-looking statements, whether to reflect new information, events or circumstances after the date hereof or otherwise, except as may be required by law.

***Under the Private Securities Litigation Reform Act of 1995**

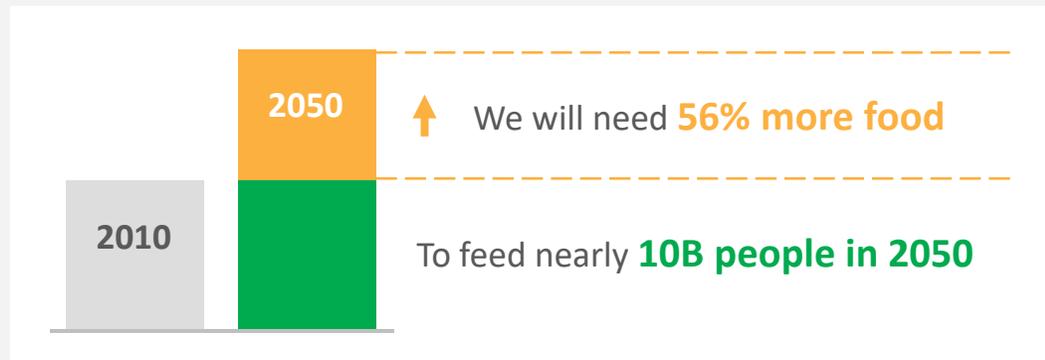
Yield10: A Compelling Market Opportunity

Crop Productivity (Yield) is the Key to Sustainable Food Security

Food Output Needs to Double by 2050 to Meet Population Growth

Population is expected to hit almost 10B by 2050

How do we feed 10 billion people ...



... without using more land ...

We need to prevent agriculture from expanding



We currently use **~50%** of the world's vegetated land for agriculture

To save an area of forests nearly **2X** the size of India

Fidelity Agricultural Productivity Fund (FARMX), April 2020

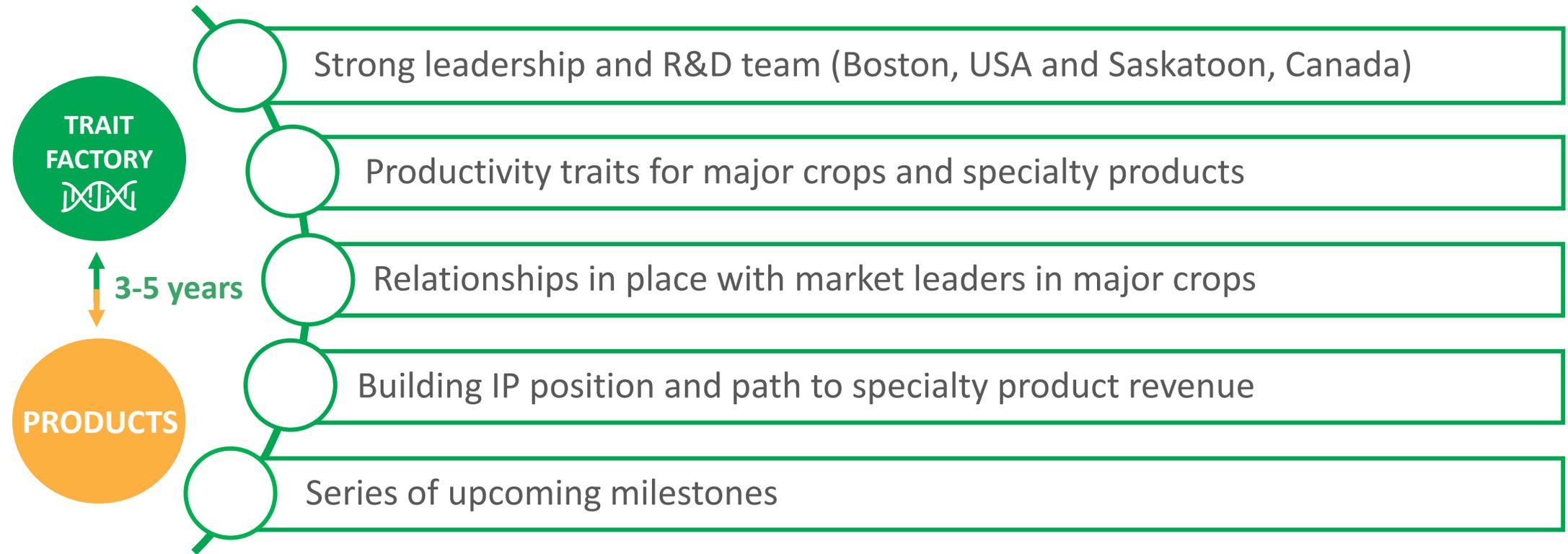
Global Food Security.....increasing overall demand and **protein consumption**

Health and Wellness.....improved **nutrition profile**

Aquaculture.....an increasingly important **protein source and essential omega-3's**

Sustainable Growth Metrics.....value chain security and **climate change impact**

An Agricultural Bioscience Company - Developing crop innovations for sustainable food security



“The impacts of climate change on land will raise food prices and risk widespread food instability, but there are solutions,” says latest UN IPCC Report Aug 2019

Leadership Team

Oliver Peoples, Ph.D.
President & CEO, Director

Dr. Peoples is a pioneer of the field of metabolic engineering, the forerunner of synthetic biology, which began at MIT in the mid 1980's and an experienced entrepreneur and biotechnology executive with over 35 years of experience in science and technology innovation, intellectual property development, partnerships and commercialization.

Kristi Snell, Ph.D.
CSO & VP Research

Dr. Snell brings over 20 years of experience and industry recognized expertise in metabolic engineering of plants and microbes for the production of novel products and increased plant yield. Following her post-doctoral research at MIT, Dr. Snell joined Metabolix in 1997 to lead the plant science research program.

Charles Haaser
VP, Finance & CAO

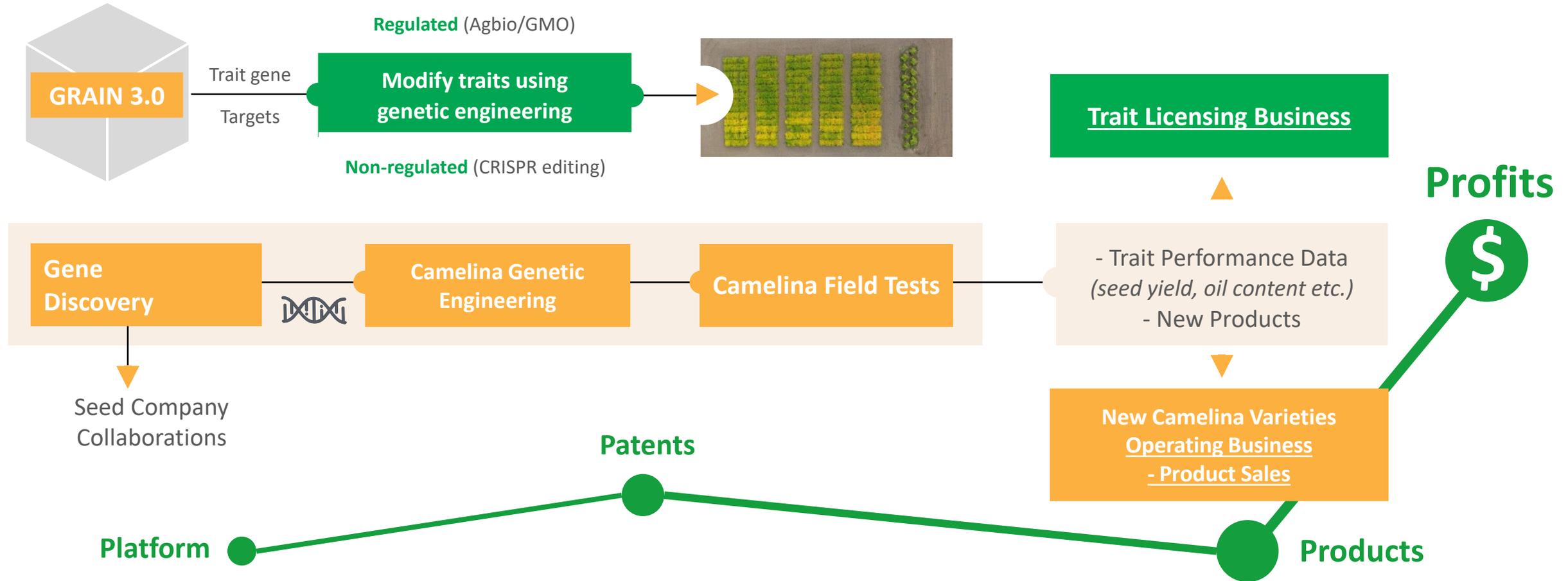
Charles joined the Company in 2008 as corporate controller and was named chief accounting officer in 2014. He has over 30 years of senior accounting management and executive experience with public technology-based companies. His strong professional background includes technical accounting, SEC financial reporting, Sarbanes-Oxley and tax compliance.

Lynne Brum
VP, Planning & Communications

Lynne joined the Company in 2011 as vice president of marketing and corporate communications, bringing over 25 years experience in the life science industry including roles in corporate communications, investor relations, financial planning and corporate development.

The Yield10 - Trait Factory and Business Model

“Trait Factory”: Accelerated Trait Gene Discovery and Development Platform



Patented traits to increase food production with less land and inputs



- ◆ Research license Agreements with Ag majors to create option value on >400 million
- ◆ Milestones and royalties based on a share of the trait value add
 - ◆ Major crops - corn, soybean, canola, sorghum, potato
 - ◆ Increase harvest yield/acre/unit input
 - ◆ Increase edible oil yield/acre/unit input

Camelina oilseed – targeting a high growth/margin sustainable products business



- ◆ Launch case nutritional oils and protein meal for feed
 - ◆ (2021/2022-) – Establish the business and generate revenue



- ◆ Growth case – High value specialty oil product – TBA
 - ◆ (2022/2023-) – Grow revenue and margins



- ◆ Future case – PHA Biomaterials
 - ◆ (2024/2026-) – Commercialize based on cash flow from oils business



Yield10: Rich Pipeline of Trait Genes in Development

Many opportunities exist for licensing and/or partnerships

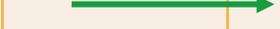
Traits	Target Crops	Potential Acres (N. America)	Annual Revenue Potential
Seed yield			
C3003, C3004, C3011	Canola, soybean ¹ , corn, potato	200 million	\$1-3 billion
Seed and biomass yield: gene regulator traits			
C4000 series	Camelina, corn, sorghum	140 million	TBD
Oil content – focus on genome editing targets			
C3007 - C3010, C3012	Camelina, canola, soybean	120 million	\$100-200 million ²
Products			
Nutritional Oils	Camelina	10 million	TBD
PHA Biomaterial	Camelina	20-30 million	> \$10 Billion

1. An additional 130 million acres of soybean potential in S. America.

2. Based on a trait value calculated as 10-20% of the value of a 10% increase in oil content and the oil value from the 2017 soybean crush in the US to produce \$7.15 billion of soybean oil and the 2017 Canadian canola crush to produce \$3.08 billion of canola oil.
United Soybean Board statistics and Canola Council Statistics

Trait Progression in Major Crops

Working with Ag Majors to maximize addressable acreage for performance traits

Crop/Trait	Company	Agreement	2019	2020	2021	2022
Soybean/C3003 Soybean/C3004	 Bayer CropScience	Research License Collaboration	 			
Soybean Multiple traits	 GDM	Research License Collaboration				
Sorghum Multiple traits	 Forage Genetics International	Research License Collaboration				
Potato Multiple Traits	 Simplot	Research License Collaboration				
Canola/C3003 Canola/C3004	 Yield10 BIOSCIENCE	Internal Program	 			
Corn /Multiple Traits	 Yield10 BIOSCIENCE	Fee for Service	 			

- ◆ Working with global leaders in major crops in key geographies
- ◆ Currently progressing Yield10 traits in corn and canola but plan to identify partners

Note: Arrows are indicative of the term of the non-exclusive research license agreements

Camelina Oilseed – Sustainable Products Business

Camelina is a traditional niche crop in N. Europe used for vegetable oil and margarine

- ◆ Short growing season
 - ◆ Expands land available
 - ◆ Potential for a second crop as a winter cover crop
- ◆ Camelina is a low input cost crop with excellent drought tolerance and pest and disease resistance
- ◆ It has a distinctly low carbon footprint
- ◆ Accelerating new variety development with biotech and new breeding technologies like genome editing
- ◆ Yield10 performance and product traits are now in hand



Yield10 Camelina Platform – Product Targets

Continuing the development of the business plan for Camelina

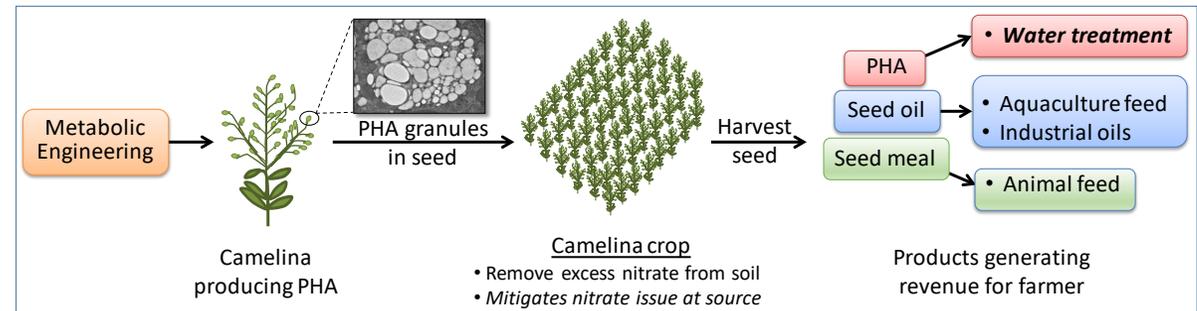
Near Term: Nutritional oils – developing business launch case

- ◆ High in omega-3 fatty acids (ALA-the healthy kind), reported to have heart health benefits¹, GRAS in the US and approved for salmon feed in Canada
 - ◆ Healthy edible oil for human nutrition – salad dressings, frying etc.
 - ◆ Fish oil supplement in aquaculture feed for salmon
 - ◆ Protein meal is approved for use in some feed applications in N. America
- ◆ High value specialty oil - TBA



Medium Term: PHA Biomaterials – in early development

- ◆ Yield10 re-programmed Camelina to produce PHA biomaterials as a third seed product
 - ◆ First field test of Gen 1 PHA lines underway in 2020
 - ◆ Goal - low cost scalable source of PHA biomaterials
 - ◆ Feed additive, water treatment, bioplastics
- ◆ Current Focus
 - ◆ Commercial variety development
 - ◆ Sourcing non-dilutive funding
 - ◆ Identifying potential offtake partners



Camelina: Sequential Launch of the Products Business

2017/2020 – Developing advanced Camelina traits and germplasm

- ◆ Lead traits - higher yield and oil content – ongoing field trials – data Q4, 2020
- ◆ Agronomic and product traits (oils, PHAs) in development

2020/2021 – Launch general Camelina business

- ◆ Value chain - contract farming, toll crushing, offtake agreements for oil and meal
- ◆ Target markets: Premium edible oil, aquaculture feed and animal feed

2022/2023 – Launch Specialty oils business - TBA

2024-2026 – Launch PHA biomaterials business

- ◆ Technology focus
 - ◆ Scaling current lines for PHA production for product prototyping and sampling
 - ◆ Commercial PHA Camelina line development
- ◆ Business focus on securing non-dilutive financing - grants and commercial partners
 - ◆ Plastics, bioplastics, packaging and consumer products companies

2020 Field Testing Program for Camelina and Canola

Planting completed in Q2 – Harvest Q3/Q4

Non-Regulated Field Tests in Camelina (US)

- ✓ CRISPR edited C3007 oil content trait
- ✓ Seed bulk up of CRISPR triple edit oil content trait (line E3902) for larger scale trials in 2021 – potential first variety

Regulated Field Tests in Camelina (US/Canada)

- ◆ C3004 seed yield trait*
- ◆ PHA Biomaterials product trait

Regulated Field Tests in Canola (Canada)

- ◆ C3004 seed yield trait
- ◆ Seed bulk up of 14 commercial quality C3003 lines
- ◆ Generate data to drive partnership discussions

✓ Positive USDA- APHIS response to “Am I Regulated Letter – non-regulated

* Potential to be deployed as a non-regulated trait in Camelina

Camelina, US 2020 Field Test



Canola, Canadian 2020 Field Test



Camelina: Sequential Launch of the Products Business

Begin establishing the capabilities and value chain for Camelina products

- ◆ Grower contracts
- ◆ Toll crushing
- ◆ Oil and protein meal samples for customers

Progress Camelina trait pipeline

Define the product profile and develop advanced commercial Camelina varieties

- ◆ Herbicide tolerance, disease resistance, etc.
- ◆ Develop commercial events for PHA Camelina

50 Acres Camelina Montana 2020



Winter Camelina Field Test 2019/2020



Yield10 is investing in the generation of proof points and the achievement of key strategic objectives

Operating Results	Second Quarter 2020	Second Quarter 2019
Revenue	\$0.2 million	\$0.3 million
R&D Expense	\$1.2 million	\$1.2 million
G&A Expense	\$1.2 million	\$1.0 million
Net Loss	\$1.8 million	\$1.9 million

Balance Sheet and Key Financial Data

- ◆ \$8.5 M in cash, cash equivalents and short-term investments at end of second quarter 2020
- ◆ Raised \$5.7 million in gross proceeds from offering closed on August 26, 2020
- ◆ No debt on balance sheet
- ◆ Net operating cash usage of \$2.0 M for second quarter 2020, \$4.3 M for six months
- ◆ Updating estimate total net cash usage to approx. \$8.5 M to \$9.0 M for FY 2020

Recent Accomplishments - 2020

- ◆ Raised \$5.7 million, gross proceeds, in public offering of common stock and concurrent private placement
 - ◆ Signed research agreement with GDM for evaluation of traits in elite soybean varieties
-
- ◆ Completed planting for 2020 field testing program to evaluate a series of novel traits in Camelina and canola
 - ◆ Progressing on track at sites in the US and Canada
 - ◆ Harvesting Q3/Q4 –collecting agronomic and/or performance data proof points as well as seed for larger trials in 2021
 - ◆ Confirmed non-regulated status with USDA-APHIS for CRISPR genome-edited C3007 trait in Camelina sativa
 - ◆ Confirmed non-regulated status with USDA-APHIS for CRISPR genome-edited C3007 trait in canola
-
- ◆ Advanced the Camelina business plan
 - ◆ Contracted 50 acres of wild-type Camelina in Montana as first step to sample oil and meal and to develop commercial business relationships
 - ◆ Developing proprietary double haploid varieties for winter and spring planting to increase the acreage potential of the crop
 - ◆ Executed field test of double haploid winter Camelina varieties in 2019/2020 season

2020 Milestones

Yield10 is on track to achieve key milestones in 2020 and beyond

Corporate and R&D Milestones	Period	Completed
Named Ag industry veteran Sherri Brown, Ph.D. to the Board of Directors	Q1 2020	✓
Complete analysis of data from 2019 Field Tests	Q1 2020	✓
Complete permitting and logistics in US and Canada for 2020 Field Tests	Q1/Q2 2020	✓
Confirm USDA-APHIS does not consider C3007 Camelina regulated per 7 CFR part 340	Q1/Q2 2020	✓
Complete planting of all field tests in US and Canada	Q2 2020	✓
Complete the 2020 Field Tests (harvest) and begin reporting data	Q3/Q4 2020	
Progress the business plan for Camelina products	2020 – 2021	
Secure strategic industry collaborations	2020 - 2021	
Secure revenue based on commercial trait licenses	2021 - 2022	
Advance corn program traits to field testing readiness	2020 - 2021	



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