



Yield10 Bioscience, Inc.

NasdaqCM: YTEN

Investor Presentation

www.yield10bio.com

Crop Innovations For Sustainable Food Security

December 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**

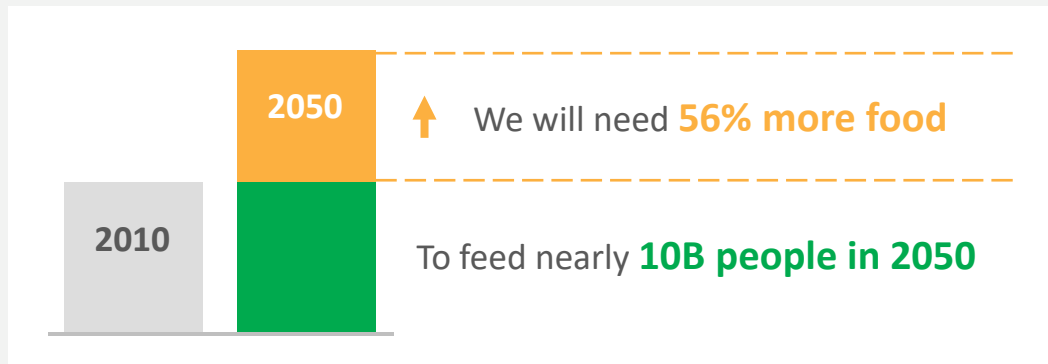
Yield10: A Compelling Market Opportunity

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

Food Output Needs to Double by 2050 to Meet Population Growth

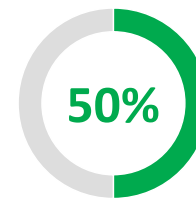
Population is expected to hit almost 10B by 2050

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**

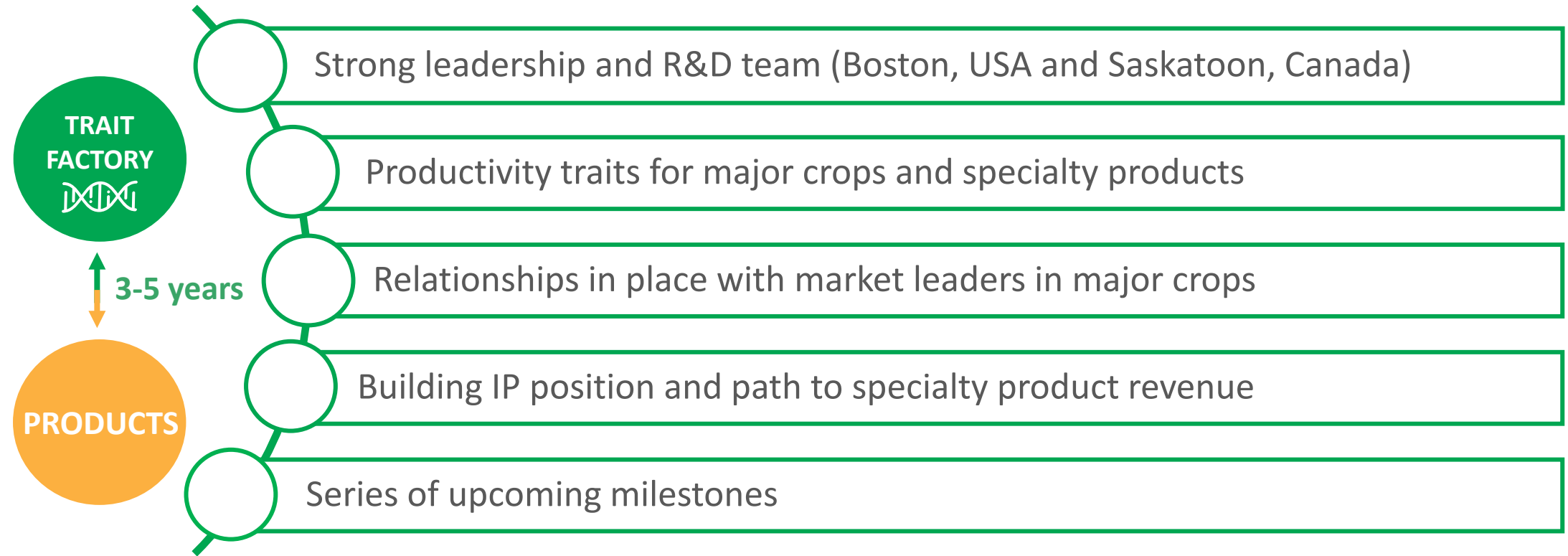
Health and Wellness.....improved **nutrition profile**

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

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

Yield10 Bioscience (Nasdaq: YTEN)

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.

Recent Accomplishments - 2020

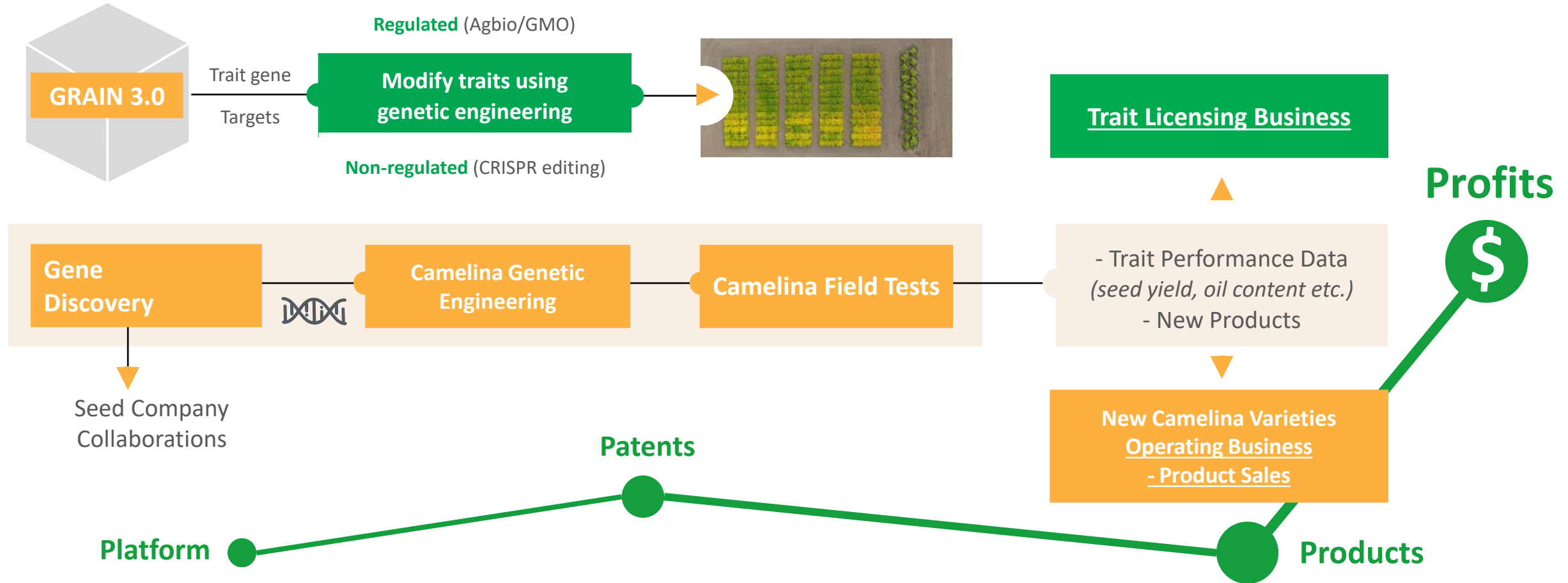
- ◆ Raised \$5.7 million, gross proceeds, in public offering and concurrent private placement of common stock

- ◆ Completed harvest for 2020 field testing program to evaluate a series of novel traits in Camelina and canola
 - ◆ Data analysis in progress Q4 –collecting agronomic and/or performance data proof points as well as seed for larger trials in 2021
- ◆ Progressing traits in corn and canola – plan to seek a Research License Partner

- ◆ 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; Harvest complete
 - ◆ Planted field test of double haploid winter Camelina varieties for the 2020/2021 season
 - ◆ Signed Collaboration agreement with Rothamsted Research for development of DHA+EPA omega-3 oil technology

The Yield10 - Trait Factory and Business Model

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



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



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



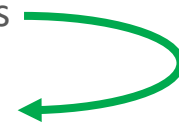
- ◆ Launch case nutritional oils and protein meal for feed
 - ◆ (2021/2022-) – Establish the business and generate revenue



- ◆ Growth case – High value specialty oil product – Omega-3 (DHA+EPA)
 - ◆ (2022/2023-) – Grow revenue and margins



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



Market Opportunity: Sustainably produce omega-3 nutritional oils for aquaculture

- Rothamsted is a world-leading non-profit research center in the UK
- World leading late-stage research program for producing omega-3 (DHA+EPA) oils sustainably in *Camelina sativa* championed by Prof. Johnathan Napier, Ph.D.
- Signed exclusive Collaboration and 2-year option to commercial license of technology
- Support ongoing research at Rothamsted and internal development of elite *Camelina* germplasm as the foundation for future commercial lines
- Advance program to commercial readiness as a drop-in replacement for fish oil
- Develop a strategic business plan with the initial focus on S. America



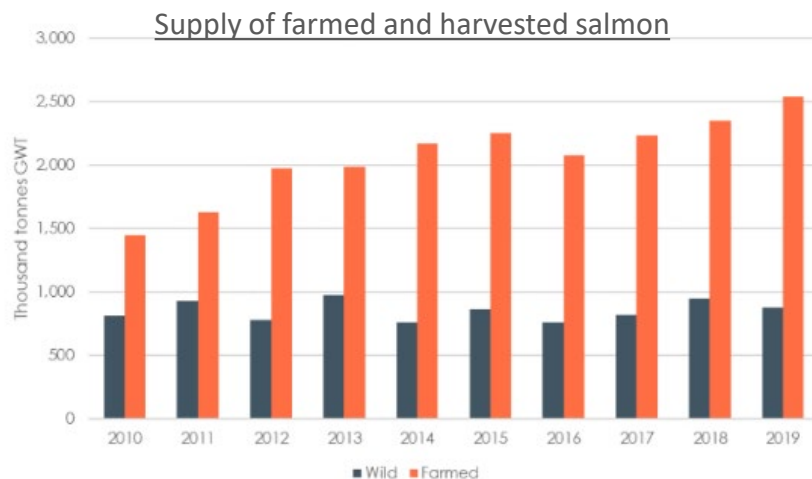
Agriculture can help aquaculture become greener

Johnathan A. **Napier**¹✉, Richard P. **Haslam**¹, Rolf-Erik **Olsen**², Douglas R. **Tocher**³ and
Mónica B. **Betancor**³

Farmed Salmon – A Major Sustainable Protein Source ?

Is salmon the protein of the future¹

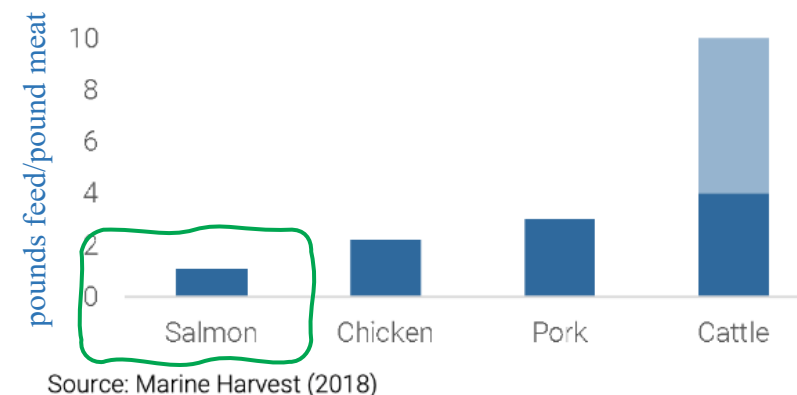
- Currently 2% of global protein consumption
- Key source of Omega-3s (DHA, EPA, ALA)
- Good feed conversion efficiency
- Aquaculture feed is transitioning from harvested fish to plant based sources of nutrients
- Increasing global demand for Omega-3 fatty acids
- Fish oil supply vs. growing demand disconnect



3.2 A healthy product

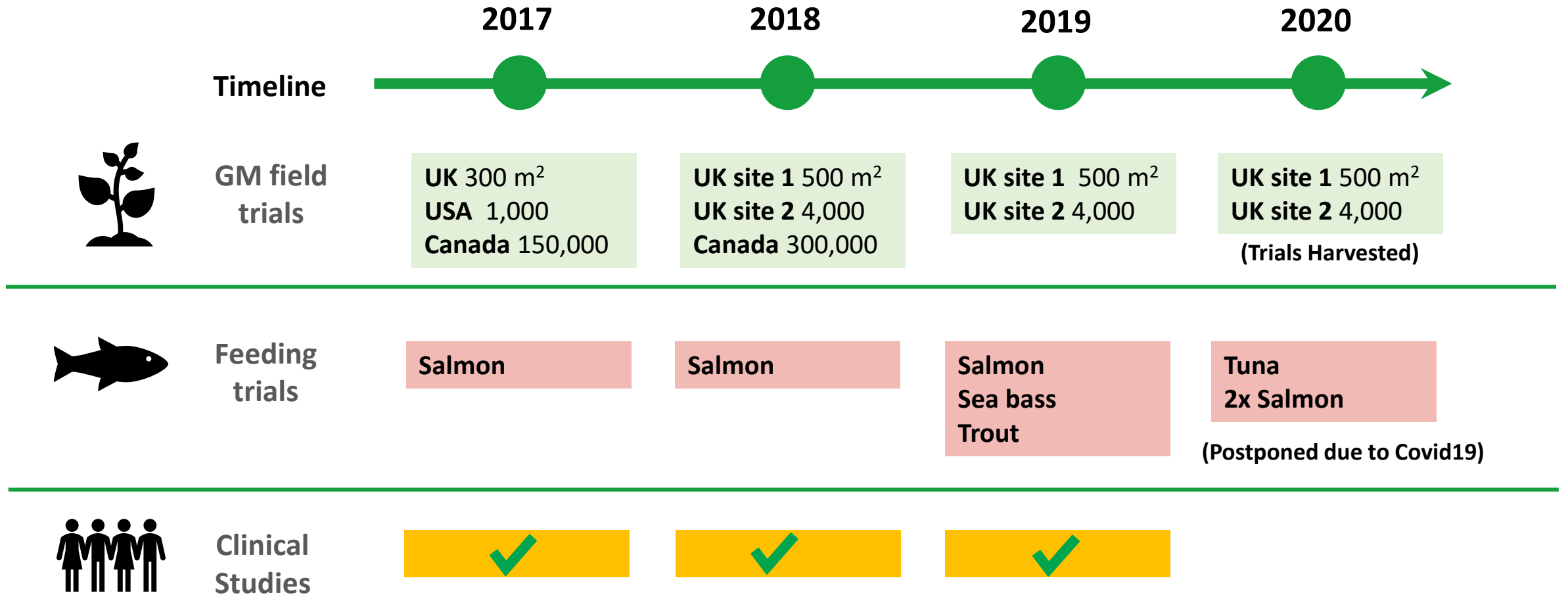


Feed Conversion Ratios Across Protein Sources (kg)



¹ <http://blackcranecap.com/wp-content/uploads/2019/05/Blackcrane-Capital-Salmon-Commentary-May-2019-vF.pdf>
<https://ml-eu.globenewswire.com/Resource/Download/8e26b7fd-ae8d-4743-a188-b71a6233bb71>

Rothamsted Omega-3 Camelina Program is at a High Technology-Readiness Level



Note: 4000 m² = 1 acre

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
Harvestable Oil / acre – 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 based on a plan to identify partners

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

2020 R&D Priorities for Trait Development

Update on R&D Activities

- Completed all 2020 field trials; evaluate data and report results in Q4 2020 through early Q1 2021
- Progress traits in our Camelina pipeline
- Develop advanced commercial Camelina varieties
 - Yield, oil content, herbicide tolerance, disease resistance
 - Platform varieties for nutritional oils and PHA traits
 - Develop commercial events for PHA Camelina
- Progress traits in canola and corn – identify partners
- Support partners evaluating traits in other crops
 - Bayer (soybean)
 - GDM (soybean)
 - Simplot (potato)
 - Forage Genetics (forage sorghum)

Camelina Field Test US 2020



50 Acres Camelina Montana 2020



Yield10 Third Quarter 2020 Summary Financial Results¹

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

Operating Results	Third Quarter 2020	Third Quarter 2019
Revenue	\$0.2 million	\$0.2 million
R&D Expense	\$1.3 million	\$1.2 million
G&A Expense	\$1.1 million	\$1.0 million
Net Loss	\$2.2 million	\$2.0 million

Balance Sheet and Key Financial Data

- ◆ \$11.8 M in cash, cash equivalents and short-term investments at end of third quarter 2020
- ◆ Includes \$5.3 million in net proceeds from offering closed on August 26, 2020
- ◆ No debt on balance sheet
- ◆ Net operating cash usage of \$2.1 M for third quarter 2020, \$6.3 M for nine months
- ◆ On track to meet total net cash usage metric of approx. \$8.5 M to \$9.0 M for FY 2020

Upcoming Milestones

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

Corporate and R&D Milestones	Period	Completed
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 harvesting of all field tests in US and Canada	Q3 2020	✓
Begin reporting data from 2020 field tests	Q4 2020/Q1 2021	
Progress the business plan for Camelina products	2020 – 2021	
Develop commercial launch plan for Camelina DHA+EPA omega-3 oils	2020– 2022	
Secure strategic industry collaborations	2020 – 2021	
Secure revenue based on commercial trait licenses	2021 – 2022	
Develop partners for traits in canola and corn	2020 – 2021	
Expand intellectual property portfolio	2020 – 2022+	



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