



Yield10 Bioscience, Inc.

NasdaqCM: YTEN

Fourth Quarter and FY 2020 Financial Results
and Business Highlights

www.yield10bio.com

Crop Innovations For Sustainable Food Security

March 16, 2021



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**

Key Accomplishments

- ✓ Diversified and strengthened the Board by adding Ag industry veteran Sherri Brown, Ph.D.
- ✓ **Strengthened the balance sheet to extend cash runway to achieve value building milestones**
 - ✓ Raised \$5.3 million, net proceeds, in public offering and private placement of common stock at \$4.25 (Aug. 2020)
 - ✓ Ended FY 2020 with \$9.7 million in cash, cash equivalents and short-term investments
 - ✓ Raised \$12.0 million, net proceeds, in public offering of common stock at \$12.25 (Jan. 2021)
 - ✓ Raised \$3.9 million in warrant exercises at \$8.00 (early 2021)
- ✓ Engaged first major Ag player in South America by signing research license with GDM for soybean
- ✓ **Advanced Camelina business plan by signing a collaboration agreement with Rothamsted Research (UK) for development of DHA+EPA omega-3 oil technology aimed at sustainable aquaculture feed**
- ✓ Obtained positive response to “Am I regulated?” letter from USDA-APHIS for CRISPR C3007 in Camelina and CRISPR C3007 in canola
- ✓ **Reported proof-of-concept milestone for producing PHA bioplastic in field grown Camelina**

Camelina: An Emerging Large Acreage Crop for North America

Camelina is an excellent cover crop - establishes rapidly - can set seed in 90-100 days

- Potential rotation crop with wheat, pulses and canola
- Potential relay or cover crop – reduce nutrient runoff – restore soil carbon
 - Increases farm productivity and revenue through double cropping



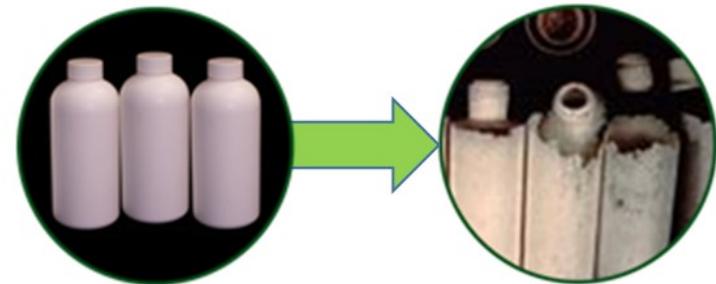
Camelina Oil Markets Today

- Premium vegetable oil rich in ALA (omega-3 FA)
- Fish oil supplement for aquaculture
- Low carbon index oil for renewable diesel

Proprietary Camelina Products In Development

- Camelina is readily genetically re-programmed
 - Produce vegan fish oil (DHA+EPA omega-3 oils)
 - Produce PHA bioplastics

Renewable Biodegradable Plastics



Market Opportunity for Camelina Products

\$4.2 Billion Annual Revenue Potential For Oil, Meal and PHA Bioplastic by 2030

Addressable Market

\$200 billion¹

PHA
2.0 – 4.0 million acres
@ \$500 >>> \$900 product revenue per acre

2030 Revenue Potential

\$1 Billion > \$3.6 Billion
(PHA, oil and meal)

\$8 billion²

Omega-3
0.3 – 0.7 million acres
@ \$600 >>> \$900 product revenue per acre

\$180 Million > \$630 Million
~16% of fish oil (2030)
(Omega-3 oil & meal)

Elite
0.5 – 2.0 million acres
@ \$300 >>> \$500 revenue product per acre
(Replace with oil and meal from value added varieties)

\$150 Million - \$1 Billion³
(Oil & meal)

2021

2030

¹ Assuming ~25% of plastics production, 50% of plastics used in single use packaging

² Estimates of market opportunity are based on industry sources as well as management's analysis, financial estimates and timelines for market introduction and adoption

³ Oil and meal for this market will be supplied from PHA Camelina in the future
>>> Technology Improvements, yield and oil/or PHA seed content

Yield10 – Trait Licensing Opportunities

Patented traits to increase major crop production with less land and inputs

\$1 – 3 billion

- ◆ Milestones and royalties based on a share of the trait value add
- ◆ Research license Agreements with Ag majors to create option value on >400 million acres

Crop/Trait	Company	Agreement	2019	2020	2021	2022	2023	
Soybean/C3003 Soybean/C3004		Research License Collaboration		→			→	
Soybean Multiple traits		Research License Collaboration		→				
Sorghum Multiple traits		Research License Collaboration		→				
Potato Multiple Traits		Research License Collaboration		→				

- Yield10 elected to defer further trait development work in canola and corn in order to focus resources on its Camelina products business and plans to seek partners for its traits in these crops

- **Achieved proof-of-concept milestone for producing PHA in field grown Camelina plants**
 - Engineered Camelina lines produced up to 6% PHA in seed
 - Selected 2 PHA Camelina lines for scale up in 2021, plan to extract PHA for product prototyping
 - R&D ongoing to increase PHA yield in seed
- **Conducted seed scale up for CRISPR E3902 Camelina (US mid-west, California)**
 - Scale up of E3902 to produce field grown seed is advancing; Seed produced in summer 2020 planted in CA contra season; Oil content increase consistent with prior tests; planning additional scale up in US in Spring 2021
- **Planning and development of agronomic trait stack for elite Camelina germplasm**
 - Development underway to add herbicide tolerance and disease resistance to enable large acreage
 - Scaling up doubled haploid lines, winter type lines and beginning development of hybrid Camelina
 - Building Camelina germplasm collection through internal development as well as in-licensing

- **Collected agronomic and other performance data on C3004 and C3007 events in Camelina**
 - Strong evidence showing C3004 increases photosynthesis in Camelina
 - Majority of Camelina C3004 lines had higher yields than controls but interpretation of results complicated by variability within trials
 - Field tested combinations of edits to BADC in 2020 field tests; new combinations of C007 edits recently achieved
 - Additional testing planned for C3004 (seed yield) and C3007 (oil content) events in 2021
- **U. S. Patents granted for C3003 and C3007**
 - US Patent #10,865,422 issued December 15, 2020 for C3003
 - US Patent #10,883,113 issued January 5, 2021 for C3007

2021 R&D Priorities for Trait Development

Update on R&D Activities

- Permitting under way in the US and Canada for 2021 Field Trials
 - Scale up of E3902 and PHA Camelina lines
 - Ongoing testing of germplasm and novel yield and oil traits
- Develop advanced commercial Camelina varieties
 - Herbicide tolerance, disease resistance, yield, oil content
 - Platform varieties for nutritional oils and PHA traits
 - Develop commercial events for PHA Camelina
- Support development of omega-3 Camelina at Rothamsted
 - Expect to provide business development update in Q1 call
- Support partners evaluating traits in other commercial crops – identify partners for our traits in canola and corn
- Continue discovery of novel yield and oil content traits identified using the GRAIN platform

Camelina Field Test US 2020

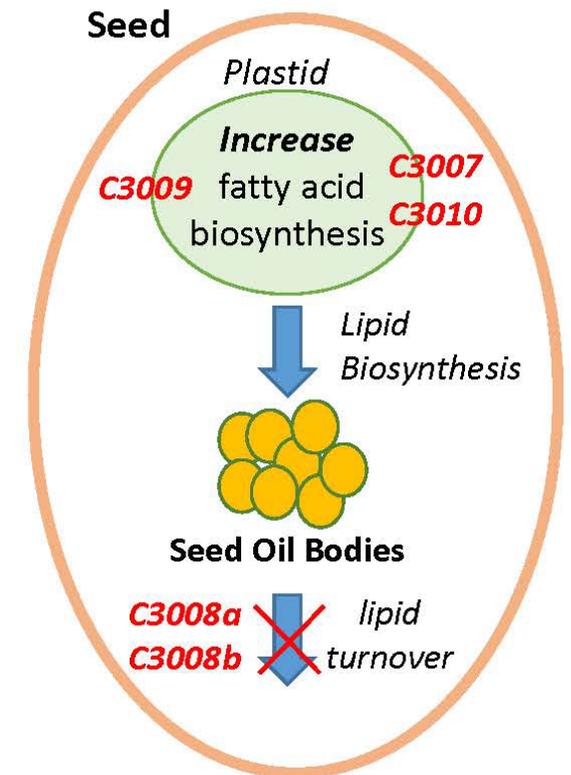


50 Acres Camelina Montana 2020



High Oil Camelina: CRISPR Edited E3902 Program Status

- E3902 event selected following 2019 field testing
- Commercial quality event based on triple CRISPR edit of C3008a, C3008b and C3009 for higher oil content
- USDA-APHIS does not consider E3902 lines to be regulated pursuant to 7 CFR part 340*
- Field grown plants demonstrate higher seed oil content
- Working to secure location for scale up in 2021
- Plan to extract oil to produce material for sampling and other business development activities
- Oil suitable for use as a fish oil supplement in aquafeed, nutritional oil and renewable diesel feedstock; meal suitable for animal feed
 - Requires consultation with FDA on feed use of oil and meal



PHA Development Program Status

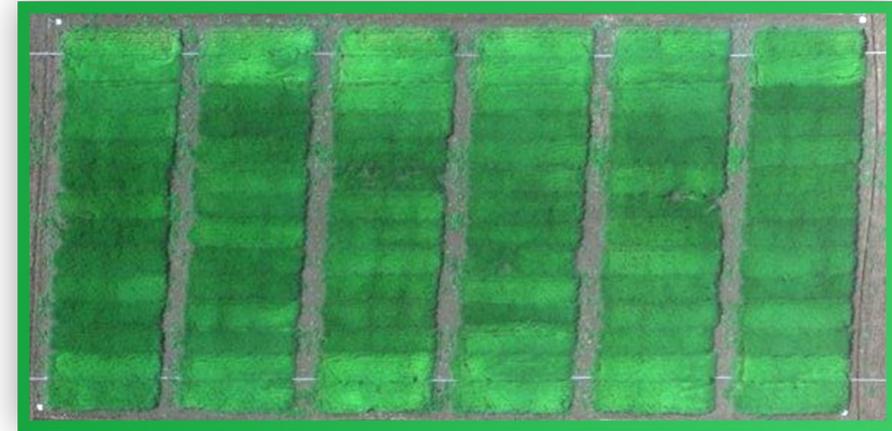
Addressable Market

\$200 billion¹

2030 Potential Revenue

PHA	2.0 – 4.0 million acres
@ \$500 >>> \$900 product revenue per acre	

- Developed new technology solution to produce PHA in Camelina, patent application in 2019
- Conducted field tests of PHA Camelina in 2020 season
- Reported proof-of-concept milestone for producing PHA in field grown Camelina in January 2021
- Selected two PHA Camelina lines for further scale up in 2021, pending issuance of permits in the U.S.
 - Further seed scale up
 - Seed processing and product prototyping, sampling and other business development activities
- Elite PHA line development ongoing
 - Goal systematically increase PHA seed content to increase harvest value



Drone photo of PHA Camelina plants at U.S. Field Test Site



Sample resin pellets produced by Metabolix

11 ¹ ~25% of plastics production, 50% of plastics used in single use packaging.

Yield10 FY 2020 Summary Financial Results¹

Investment ongoing to generate proof points and achieve key strategic objectives

Operating Results	Q4 2020	Q4 2019	Full Year 2020	Full Year 2019
Revenue	\$0.2 million	\$0.1 million	\$0.8 million	\$0.8 million
R&D Expense	\$1.4 million	\$1.2 million	\$5.3 million	\$4.8 million
G&A Expense	\$1.4 million	\$1.4 million	\$5.0 million	\$4.6 million
Loss from Operations	\$2.6 million	\$2.4 million	\$9.6 million	\$8.6 million
Net Loss	\$2.6 million	\$6.8 million	\$10.2 million	\$13.0 million

Balance Sheet

- Net operating cash usage of \$2.3 M for fourth quarter, \$8.7 M for FY 2020
- \$9.7 M in cash, cash equivalents and short-term investments at year end 2020
- Raised additional \$12.0 M in net proceeds in public offering completed in Q1 2021
- Captured additional \$3.9 M based on exercises of \$8.00 warrants in Q1 2021
- Estimate total net cash usage of approx. \$10.0 M to \$11.0 M for FY 2021
- No debt on balance sheet

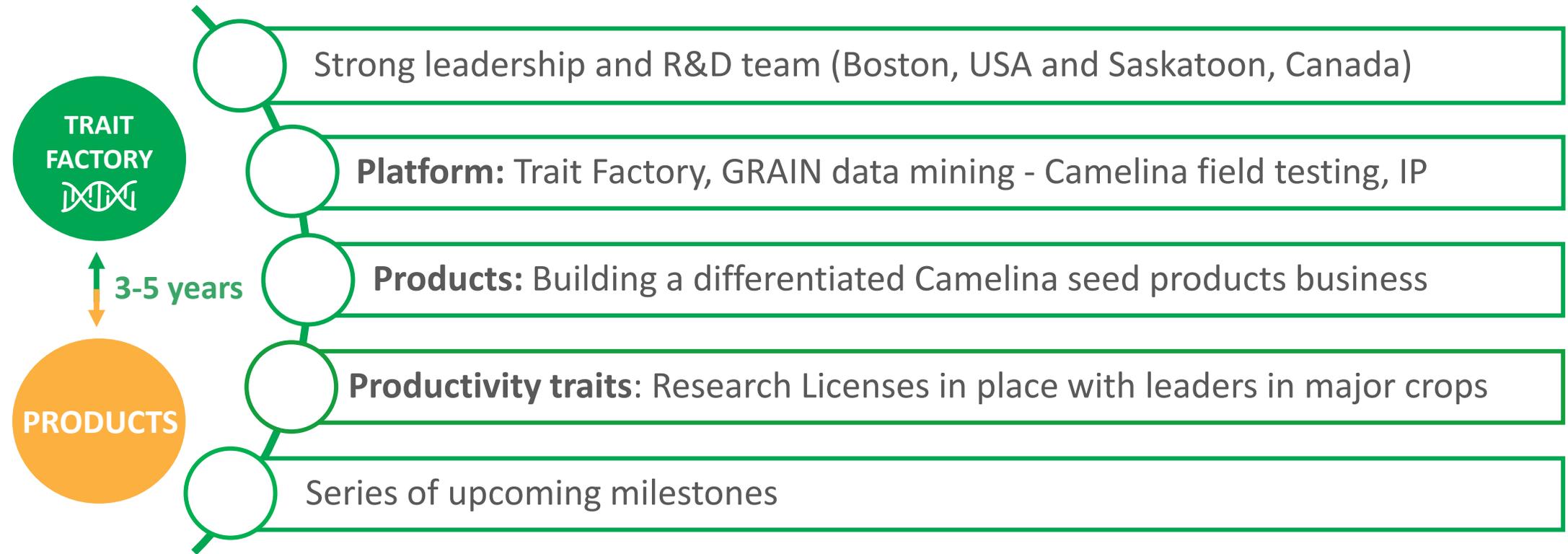
Upcoming Milestones

Yield10 is on track to achieve key milestones in 2021 and beyond

Corporate and R&D Milestones	Period	Completed
Complete permitting for 2021 field tests & scale up (yield, oil content, E3902, PHA)	Q1 2021	
Build elite Camelina germplasm collection	2021 – 2022	
Progress the business plan for Camelina products	2021 – 2022	
Advance the commercial launch plan for Camelina DHA+EPA omega-3 oils	2021– 2022	
Broaden capabilities in regulatory affairs, seed operations and business development	2021 – 2022	
Secure strategic industry collaborations to address market opportunities	2021 – 2022	
Secure revenue based on commercial trait licenses	2021 – 2023	
Expand intellectual property portfolio	2021 – 2023+	

Yield10 Bioscience (Nasdaq: YTEN)

An Agricultural Bioscience Company -
Developing genetic innovations in crops for sustainable food security



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



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