



Yield10 Bioscience, Inc.

(NasdaqCM:YTEN)

First Quarter 2020 Financial Results and Business Highlights

Yield10 is an agricultural bioscience company developing crop innovations to improve crop yields and enhance sustainable global food security.

May 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 Bioscience (Nasdaq: YTEN)

An Agricultural Bioscience Company developing crop innovations to improve crop yields and address sustainable global 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

Recent Accomplishments - 2020

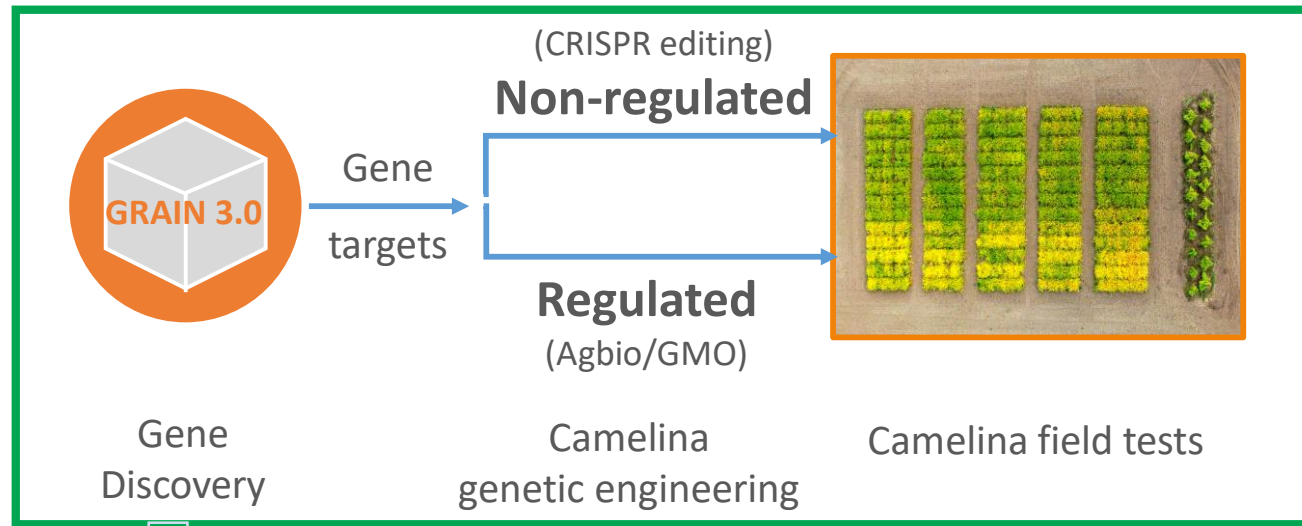
- ✓ Diversified and strengthened the Board by adding Ag industry veteran Sherri Brown, Ph.D. to the Board of Directors
- ✓ Completed Phase 1 of trait development program in corn
- ✓ Contracted Seed Co to begin executing Phase 2 development (e.g. creating hybrids, seed bulk-up, and field testing) of several yield traits in corn hybrids
- ✓ Reported results of 2019 field tests in Camelina and canola
- ✓ Obtained positive response to “Am I regulated?” letter from USDA-APHIS for CRISPR C3007 in Camelina
- ✓ Completed permitting for 2020 field testing program and shipped seed to all field test sites
- ✓ Advanced Camelina business plan

Update on facilities and operations during COVID-19 pandemic

- Woburn, MA: Remote work began March 24 and continues as COVID infections persist in Massachusetts. Ability to work on site including the lab is very limited. Pivot to work in Camelina is planned once its deemed safe to work onsite.
- US Cares Act: Application accepted to Payroll Protection Program. Received \$333K in funding to support payroll in second quarter.
- Saskatoon, SK: Labs remain accessible on limited schedule with staggered work times. Greenhouses remain open. Province has communicated plans to reopen over several weeks as new COVID cases have dropped off.
- R&D team focused on permitting and seed harvest to enable planned field tests and this effort remains on track and is now subject to weather and field conditions for planting.
- Access to field test study sites is limited due to travel restrictions so we are relying on video conferencing and local consultants to monitor field prep and planting.

The Yield10 Trait Factory and Business Strategy/Model

The “Trait Factory”



Seed Company Collaborations

Business Strategy/Model

Trait Licensing revenue

- Option value on >400 million acres
- Corn, soybean, canola and others

Research licenses
With Ag majors

Camelina Performance Data

- Increased seed yield
- Increased oil content

Camelina
varieties

Product revenue

- Nutritional oils/Protein meal
- Longer term-PHA biomaterials

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 and 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

2020 Field Testing Plan for Camelina and Canola

Planting to begin in Q2 pending suitable weather conditions

Objective: Generate multi-site field data to identify commercial quality lines and data to drive commercial and partnership discussions

Field Tests in Camelina (US/Canada)

- C3004 seed yield trait
- CRISPR edited C3007 oil content trait
- PHA biomaterial trait (C3014/C3015)
- Seed bulk up of CRISPR triple edit oil content trait (line E3902) for larger scale trials in 2021 – potential first variety

Field Tests in Canola (Canada)

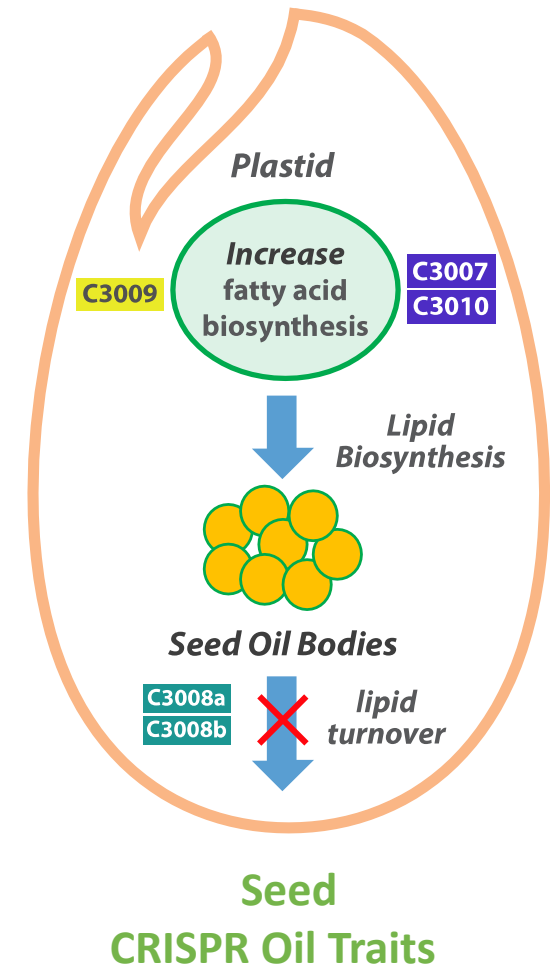
- C3004 seed yield trait
- Seed bulk up of 14 commercial quality C3003 lines
- Generate data to drive partnership discussions



Control + C3004

Update on additional research and development activities

- Execute 2020 field trials
- Progress traits in our Camelina pipeline
- Support Bayer (soybean), Simplot (potato) and Forage Genetics (forage sorghum) in evaluation of performance traits, support corn program contractor
- Define the product profile and develop advanced commercial Camelina varieties
 - Herbicide tolerance, disease resistance, etc.
 - Develop commercial events for PHA Camelina



Yield10 Camelina Platform – Product Targets

Continuing the development of the business plan for Camelina

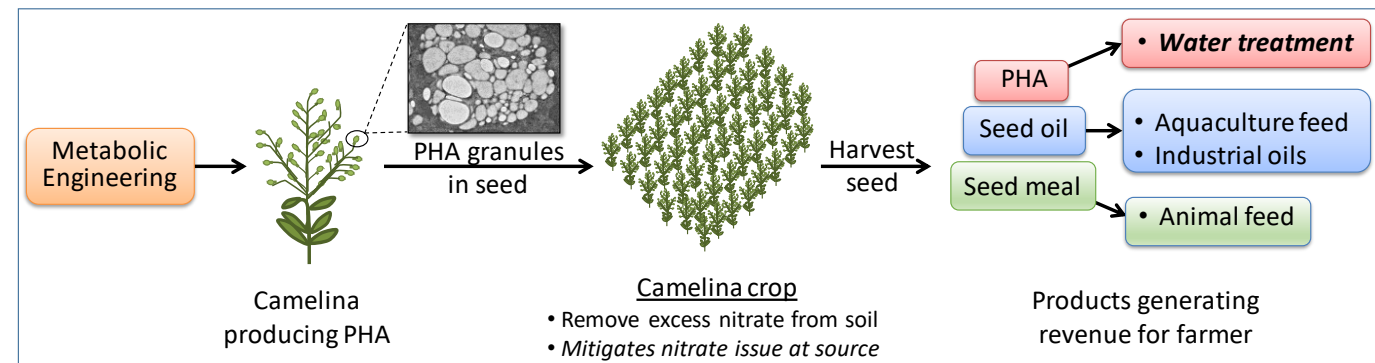
Near Term: Nutritional oils

- 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
- Camelina oil is a better fish oil substitute in aquaculture feed than soybean oil
- Residual protein meal is approved for use in some feed applications in N. America



Longer Term: PHA Biomaterials

- Yield10 re-programmed Camelina to produce PHA biomaterials as a third seed product
- First field test planned for 2020
- Low cost scalable source of PHA biomaterials
- Large acreage and volume opportunities
- Potential for downstream offtake partners



Yield10 First Quarter 2020 Summary Financial Results¹

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

| Operating Results | First Quarter 2020 | First Quarter 2019 |
|----------------------|--------------------|--------------------|
| Revenue | \$0.2 million | \$0.1 million |
| R&D Expense | \$1.5 million | \$1.2 million |
| G&A Expense | \$1.4 million | \$1.2 million |
| Loss from Operations | \$2.7 million | \$2.3 million |
| Net Loss | \$3.6 million | \$2.3 million |

Balance Sheet

- \$9.8 M in cash, cash equivalents and short-term investments at end of first quarter 2020
- Net operating cash usage of \$2.3 M for first quarter 2020
- Estimate total net cash usage of approx. \$9.0 to \$9.5 M for FY 2020
- Cares Act PPP loan of \$333 K obtained in Q2; No other debt on balance sheet
- Follow up on processing error on certain warrant exercises completed in February 2020

2020 Milestones

| 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 | ✓ |
| • File all permits in US and Canada for 2020 Field Tests | Q1 2020 | ✓ |
| • Complete permitting and logistics in US and Canada for 2020 Field Tests | Q1/Q2 2020 | ✓ |
| • Confirm USDA-APHIS considers C3007 Camelina as not 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 | Q4 2020 | |
| • Progress the business plan for Camelina products | 2020 - 2021 | |
| • Secure strategic industry collaborations | 2020 - 2021 | |
| • Advance corn program traits to field testing readiness | 2020 - 2021 | |



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