

Yield10 Bioscience, Inc.

(NasdaqCM:YTEN)

Fourth Quarter and FY 2019 Financial Results and Business Highlights

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

March 19, 2020



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, 2018 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



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



Key Recent Accomplishments

Corporate and R&D Milestones			Completed
•	Initiate early development program in corn to evaluate novel traits	Jan 2019	\checkmark
•	Exclusive worldwide license with University of Missouri for tech to boost oil content	May 2019	\checkmark
•	New patent application filed on high level PHA production in the oilseed Camelina	July 2019	\checkmark
•	Expand research license with Bayer for evaluation of a novel C3004 yield trait in soybean	Aug 2019	\checkmark
•	Expand trait research licensing to a market leader in an additional crop— Simplot/Potato	Oct 2019	\checkmark
•	Identified and began development of 8 new yield/oil content traits	2019	\checkmark
•	Raised \$12.8 M total in net proceeds in equity offerings	2019	\checkmark
•	Named Ag industry veteran Sherri Brown, Ph.D. to the Board of Directors	Q1 2020	\checkmark
•	Complete analysis of data from 2019 field tests	Q1 2020	\checkmark
•	Begin permitting for 2020 Field Tests	Q1 2020	✓
	1	Yar Yield	IO BIOSCIEI

Business Strategy – Products and Path to Revenue

The "Trait Factory" leverages 28 years of Technology investment/achievements

"GRAIN" ¹	"TRAIT FACTORY" "GRAIN" ¹ Gene discovery – Camelina genetic engineering, "Fast Field Testing"				
Business Area	Path to Market & Revenue Model	Products	Partners		
"GRAIN"	Funded R&D agreements Milestone payments License revenue	Trait gene discovery Product optimization	future future future future future		
Performance Traits	Multi-year field trials in canola, soybean, corn Licensing to Ag majors	Seed yield (genes)	Forage Bayer Corpscience future		
		Oil content (genes)	[future] [future]		
Camelina Products	Value chain partners Field trials, product	Nutritional oils (near-term)	_future		
	development Seed and/or product sales	PHA biomaterials (mid-term)	[future] [future]		



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:				
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.

 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 – Partner Activities

Working with Ag Majors to maximize addressable acreage for performance traits

Partner	Crop/Trait	Agreement	2018	2019	2020	2021
Bayer CropScience	Soybean/C3003 Soybean/C3004	Research License Collaboration				
Forage Genetics	Forage Sorghum Multiple traits	Research License Collaboration				
Corn Seed Co,	Corn Multiple Traits	Fee For Service				
Simplot	Potato Multiple Traits	Research License				

- Yield10 uses trait field data from Camelina to execute research License Agreements with seed companies
 - Seed companies deploy Yield10 traits with their resources and at their cost in target crops
- Yield10 to focus internal resources on trait discovery and Camelina development
- We are currently progressing in corn and canola at our cost but plan to identify partners



Traits in development in Camelina and canola

Summary of 2019 Field Test results

- Continue to be encouraged by activity of traits under evaluation
- Utilize data to drive further development and partnership discussions

Camelina with CRISPR triple edit: C3008a, C3008b and C3009 (US)

- Best line (E3902) produced 11.8% increase in oil/individual seed, 8.7% increase in individual seed weight, and 4.7% increase in seed oil content as percentage of bulk seed weight
- Best line exhibited good agronomics and no significant change in oil composition

Camelina with C3004 (Canada)

- Five lines demonstrated statistically significant increases in photosynthetic parameters including effective quantum yield (conversion of light into chemical energy)
- In-field observations showed indications of increased seed yield in C3004 plants vs. wildtype
- Collection of robust seed yield data complicated by variability in plots

Canola with C3003 (Canada)

• Collection of robust seed yield data complicated by variability in plots





2019 C3003 Canola Field Tests



R&D Update and Plans for 2020 Trait Development

Update on additional research and development activities

- Identified and evaluated 8 new traits to increase seed yield and/or oil content in Camelina using GRAIN Platform
- Permitting underway for 2020 Field Test program
 - Camelina: C3004, CRISPR C3007, CRISPR E3902 (triple edit), PHA biomaterials
 - Camelina seed bulk up of CRISPR E3902 for larger scale 2021 trials
 - Canola seed bulk up: C3004, C3003 commercial quality events
- "Am I regulated" submission for C3007 pending for US testing in 2020
- Deployment of CRISPR C3007 traits progressing in canola
- Corn transformations completed in Q1 2020; secured new fee for service relationship to produce stable lines, generate hybrid lines and conduct field tests
- Supporting Simplot with performance traits for potato
- Bayer (soybean) and Forage Genetics (forage sorghum) making solid progress evaluating traits
- Responding to interest in GRAIN platform collaborations by Ag companies for discovery of new traits (yield, compositional)



Yield10 BIOSCIENCE

Yield10 Camelina Platform

Camelina as a Crop

- Growers looking for new crop options
- Short growing cycle, Pacific North West into Canada, future cover crop
- Reasonable agronomics for current market opportunities
- High technology upside (herbicide tolerance, yield, oil, products)
- Readily reprogrammed using editing or traditional GMO



• Readily segregated from commodity crops making it attractive for production of novel products

Yield10 Trait Targets and Proof Points

- Using Camelina as our Fast Field-Testing system has generated multiple proof points of the potential to enhance Camelina (C3003, C3004, C3006, C3007-C3010 etc.)
- Commercial focus initially on developing new traits to increase seed yield, seed size and increase oil content
- In the future, create varieties of Camelina sativa with stacked yield/product traits and input traits
- Participate along the value chain
 - Initial focus on nutritional oils,
 - Longer term high upside potential in PHA biomaterials



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 healthy effects,¹ 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: Camelina PHA Biomaterials

- Yield10 re-programmed Camelina to produce PHA biomaterials as a third seed product
- First field test in 2020

11

- Low cost scalable source of PHA biomaterials
- Large acreage and volume opportunities
- Potential for downstream offtake partners







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

Operating Results	Fourth Quarter 2019	Full Year 2019
Revenue	\$0.1 million	\$0.8 million
R&D Expense	\$1.2 million	\$4.8 million
G&A Expense	\$1.4 million	\$4.6 million
Loss from Operations	\$2.4 million	\$8.6 million
Net Loss	\$6.8 million	\$13.0 million

Balance Sheet

- \$11.1 M in cash, cash equivalents and short-term investments at year end 2019
- Net operating cash usage of \$3.2 M for fourth quarter, \$8.7 M for FY 2019
- Captured additional \$1.6 M in Q1 2020 based on recent warrant exercises
- Estimate total net cash usage of approx. \$9.0 to \$9.5 M for FY 2020
- No debt on balance sheet
- 12 ¹Net loss includes \$13 million non-cash loss for the valuation of warrants issued in Nov. 2019, partially offset by a \$9.5 million non-cash gain for change in fair value at year end 2019. Guidance current as of date of conference call on March 19, 2020. Press release available at www.yield10bio.com



2020 Milestones

Corporate and R&D Milestones			Completed
٠	Named Ag industry veteran Sherri Brown, Ph.D. to the Board of Directors	Q1 2020	\checkmark
•	Complete analysis of data from 2019 Field Tests	Q1 2020	\checkmark
•	Begin permitting in US and Canada for 2020 Field Tests	Q1 2020	✓
•	Complete permitting in US and Canada for 2020 Field Tests	Q1/Q2 2020	
•	Confirm USDA-APHIS does not consider C3007 to be regulated per 7 CRF part 340	Q2 2020	
•	Further develop the business plan for the Camelina Platform for specialty products	2020	
•	Advance corn program traits to field testing readiness	2020	
•	Progress new trait leads from GRAIN into Camelina for testing	2020	
•	Complete the 2020 Field Tests (harvest)	2020	
•	Secure revenue generating R&D collaborations	2020	
•	Build our intellectual property portfolio	2020	
•	Communicate our scientific innovations	2020	
1	3	Yield	10 BIOSCIE



Yield10 Bioscience, Inc.

(NasdaqCM:YTEN)

Fourth Quarter and FY 2019 Financial Results and Business Highlights

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

March 19, 2020

