Yield10 Bioscience, Inc.

NasdaqCM: **YTEN**

LD Micro Invitational XI

www.yield10bio.com

Crop Innovations For Sustainable Food Security

June 9, 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, 2020 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**

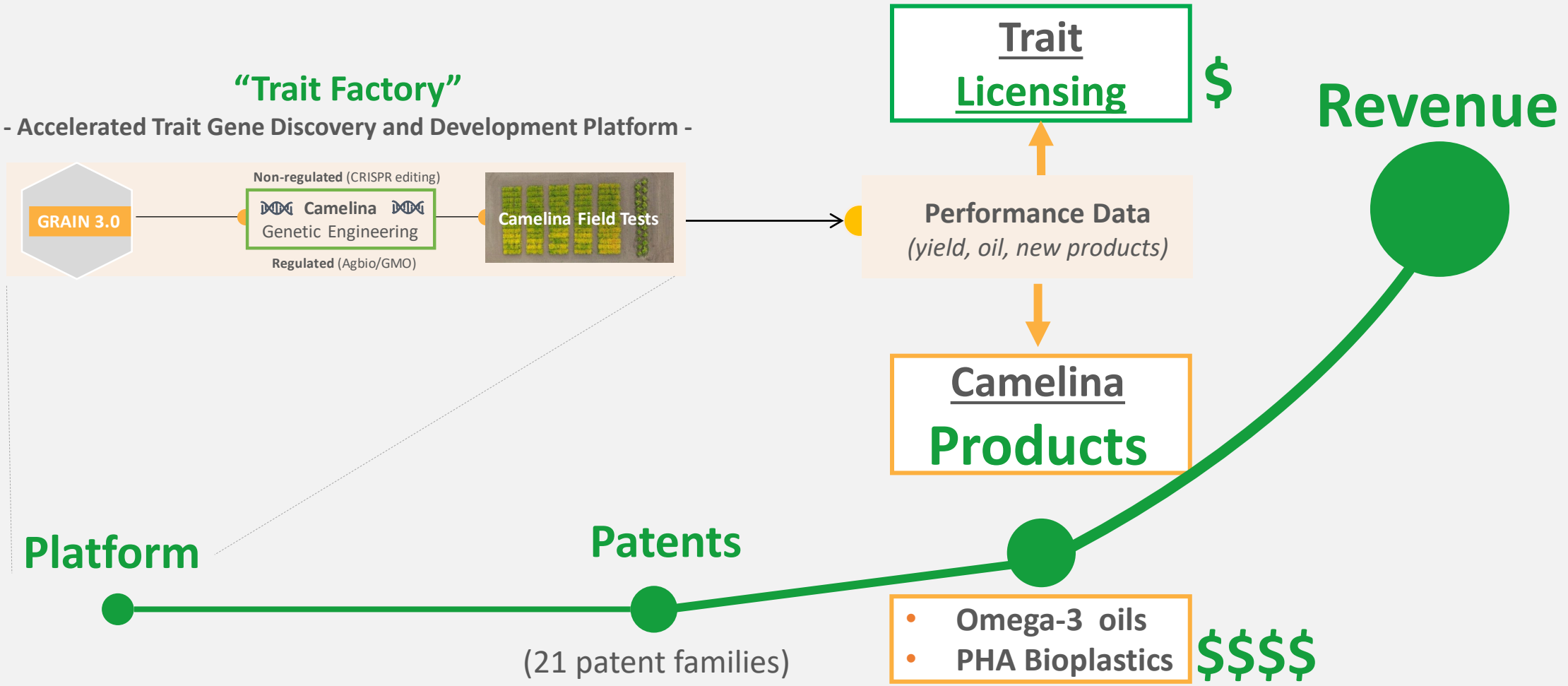
Advancing the Yield10 Business

Key Accomplishments

- ✓ **Reported proof-of-concept milestone for producing PHA bioplastic in field grown Camelina**
- ✓ **Engaged leading U.S. seed company to perform seed scale-up of E3902, Doubled Haploid, and Disease Resistant Elite Camelina lines**
- ✓ **Began planting for spring 2021 field trial program in US and Canada evaluating seed yield and oil content traits in Camelina; Field trials and seed scale-up will be conducted with two PHA Camelina lines**
- ✓ **First U.S. patent granted to Rothamsted Research for co-producing DHA+EPA omega-3 oil in Camelina**
- ✓ **USDA-APHIS confirmed additional CRISPR edited C3007 Camelina lines are exempt from regulation under 7 CFR part 340. Clearance obtained under the new regulatory framework of the SECURE Rule; First U.S. patent granted on C3007**
- ✓ **Strengthened the balance sheet to extend cash runway to achieve value building milestones**
  - ✓ Ended Q1 2021 with $22.7 million in cash, cash equivalents and investments, including,
    - Raised $12.0 million, net proceeds, in public offering of common stock at $12.25
    - Raised $3.9 million in warrant exercises at $8.00

The Yield10 - Trait Factory and Business Model

Translating Crop Science Innovation to Sustainable Revenue Growth



Note: The regulatory path for CRISPR genome-edited *traits continues to evolve.*

Yield10 | BIOSCIENCE

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
  - **Increase farm productivity and revenue through <u>double cropping</u>** (>30 million acres of potential)

Elite Camelina - Oil Markets Today

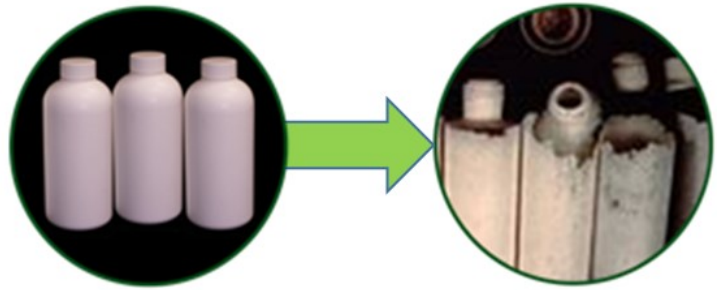
- Premium vegetable oil rich in ALA (omega-3 FA)
- Fish oil supplement for aquaculture
- **Low carbon index oil for renewable diesel**

Proprietary Camelina Products In Development

Camelina is readily genetically re-programed

- Produce vegan fish oil (DHA+EPA omega-3 oils)
- Produce PHA bioplastics

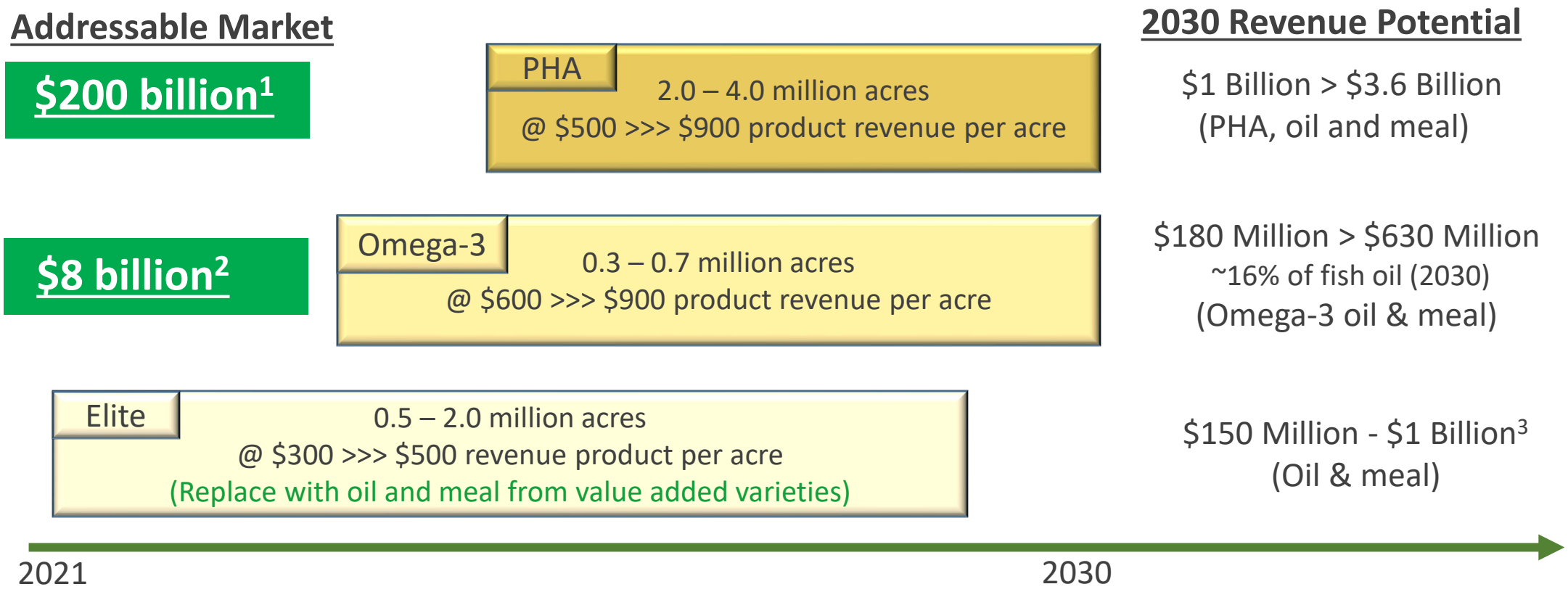
<u>Renewable Biodegradable Plastics</u>



Yield10 | BIOSCIENCE

Market Opportunity for Camelina Products

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



Yield10 enables increased farm revenue

[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 | BIOSCIENCE

Elite Camelina: Early Commercial Activities

- Strategic Goal(s)
  - Establish the Camelina products business
  - Develop elite varieties for deployment of omega-3 and PHA traits
- Key hires
  - Seed Operations, Regulatory Affairs and Business Development
- Scaling seed production
  - Multi-acre seed scale-up of E3902, DH12 and Disease resistant lines
  - Engaging contractor(s) for seed scale-up in fall/winter 2021 for 2022 planting
- Technology development
- Business Development
  - Outreach to growers, crushers and oil/meal end users
    - **Renewable diesel companies**
    - **Salmon feed/farming players in North and South America**

Elite Camelina - Renewable Diesel Tailwind?

Low Carbon Index Oil for Renewable Diesel Fuel

Tailwind:

- LCFS- low carbon fuels - renewable diesel fuel
- 5.5 billion gallons of new or potential capacity in the US[1]
  - ~ 45 billion lbs vegetable oil feedstock

Result:

- Vegetable oil supply/demand disconnect →
- Near term opportunity?
- Medium-term: FOOD vs FUEL challenge?

- Phillips 66
- GCE/ExxonMobil
- Diamond Green
- Holly Frontier Corp
- Grün Fuels
- Marathon Petroleum
- Next Renewable Fuels
- REG
- Ryze Renewables

Solution: Increase oil/ acre:

- Traits for increasing seed yield or oil content
  - C3003, C3004, E3902, C3007, C3020
- Double cropping Camelina with soybean

Soy @ 3000 lbs/acre	= **540 lbs of oil**
+ Camelina @ 1400 /bs/acre	= 600 lbs of oil
	= 1140 lbs of oil

- Camelina has high technology upside

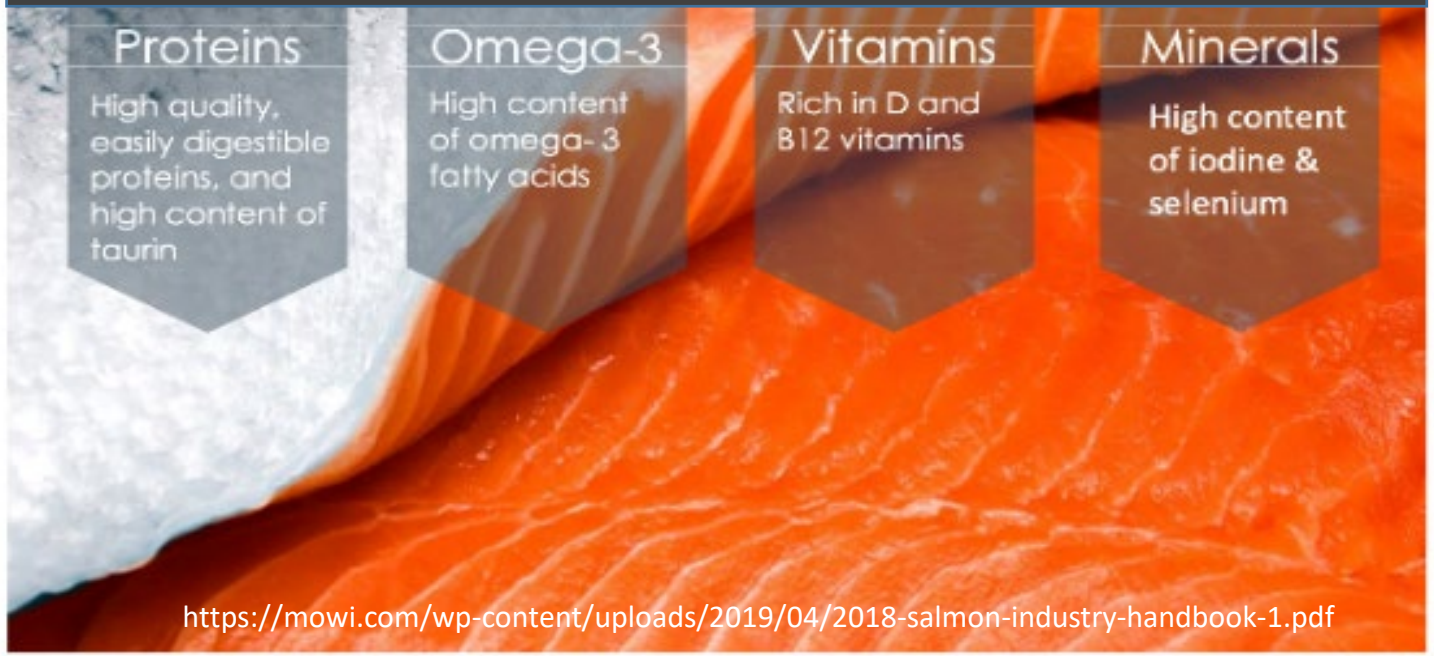
1. http://www.biodieselmagazine.com/articles/2517318/renewable-diesels-rising-tide

Omega-3 Camelina

Mission:

Establish Camelina as the gold standard sustainable vegan aquafeed source for salmon farming

Salmon: a healthy nutritious source of protein and essential nutrients



https://mowi.com/wp-content/uploads/2019/04/2018-salmon-industry-handbook-1.pdf

ROTHAMSTED RESEARCH

Yield10 BIOSCIENCE

Omega-3 Camelina

Omega-3 Camelina Technology is at a High Readiness Level

2030 potential: 0.3 – 0.7 million acres
@ $600 >>> $900 product revenue per acre

EPA and DHA Omega'3s are essential for human health and wellness

- Primary source of omega-3s in human diets is fish
- Fish farming now provides > 50% of all seafood and >75% of the salmon
- Growing demand for omega-3s for aquafeed and nutraceuticals

Best in class vegan fish oil replacement ROTHAMSTED RESEARCH

- ~20% EPA+DHA fatty acid in the oil exceeds northern hemisphere fish oil
- Multiple years of field trials and aquaculture feed studies
- Human clinical studies demonstrate the equivalence of omega-3 from Camelina as a dietary source of EPA and DHA in humans (*British Journal of Nutrition*)

Feeding study: Scotland

Update on Omega-3 (DHA+EPA) Oil in Camelina

Developing the commercialization strategy

- Near term focus on South America for salmon feed market in Chile
- Establishing business and commercial development support now in Chile and Argentina
- Regulatory activities for the lead omega-3 (DHA+EPA) Camelina line and path to commercialization for oil and meal in South America
- Outreach to prospective commercial partners

ROTHAMSTED RESEARCH

  - US Patent issued for co-producing DHA+EPA in Camelina in Q1 2021
  - Developing technology improvements targeting >50% increase in EPA+DHA in the oil
  - Seed scale-up of lead omega-3 Camelina planned for 2021, pending lifting of COVID restrictions in UK
  - Presentation and poster at the 2021 American Oil Chemists' Society (AOCS) Annual Meeting
    - Prof Napier "Camelina (DHA+EPA) as a sustainable, environmentally friendly source of omega-3 oils for use in novel foods" 5/13/21 5:50-6:10 CDT
    - Prof West "Camelina seed oil is an effective dietary source of EPA and DHA for humans" poster session

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	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					

- Yield10 plans to seek partners for its traits in canola and corn
- Seeing higher interest in GRAIN platform driven by interest in multi-gene pathways identified using metabolic modeling

Note: The start and duration of each research agreement is indicated by the green arrows

Technology: Camelina Traits in Development

Camelina Platform	Technology	Trait	Value Add
Elite	**Input Traits**	• Herbicide tolerance • Disease resistance	• Farm cost and convenience • Farm revenue, yield protection

Elite	**Performance Traits**	• Seed yield
		  • **(C3003/3004)**
		• Oil content
		  • **(E3902, C3007, C3020)**
			• Farm revenue
			• Oil/meal COGs
			• Lower oil carbon intensity score

Omega-3 & PHA	**New Product Traits**	• Omega-3 oils • PHA Bioplastic	• Farm revenue • Market diversification • Low-cost sustainable solutions

2021 R&D Priorities

- Multi-acre seed scale-up of E3902, DH12 and disease resistant lines
- Engaging contractor(s) for seed scale-up in Fall/Winter 2021
- Began planting multi-site 2021 Field Trials in U.S. and Canada
  - Elite germplasm, yield and oil traits
  - Seed scale-up of 2 best PHA Camelina lines
- 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 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 with the GRAIN platform

Camelina Field Test US 2020

50 Acres Camelina Montana 2020

Yield10 FY 2020 Summary Financial Results[1]

Investment ongoing to generate proof points and achieve key strategic objectives

Operating Results	Q1 2021	Q1 2020
Revenue	**$0.2 million**	$0.2 million
R&D Expense	**$1.3 million**	$1.5 million
G&A Expense	**$1.4 million**	$1.4 million
Loss from Operations	**$2.6 million**	$2.7 million
Net Loss	**$2.6 million**	$3.6 million

Balance Sheet

- Net operating cash usage of $2.6 M for first quarter
- $22.7 M in cash, cash equivalents and investments at end of Q1 2021
  - Raised $12.0 M in net proceeds in public offering completed in Q1
  - Captured additional $3.9 M based on exercises of $8.00 warrants in Q1
- Estimate total net cash usage of approx. $10.0 M to $11.0 M for FY 2021
- No debt on balance sheet

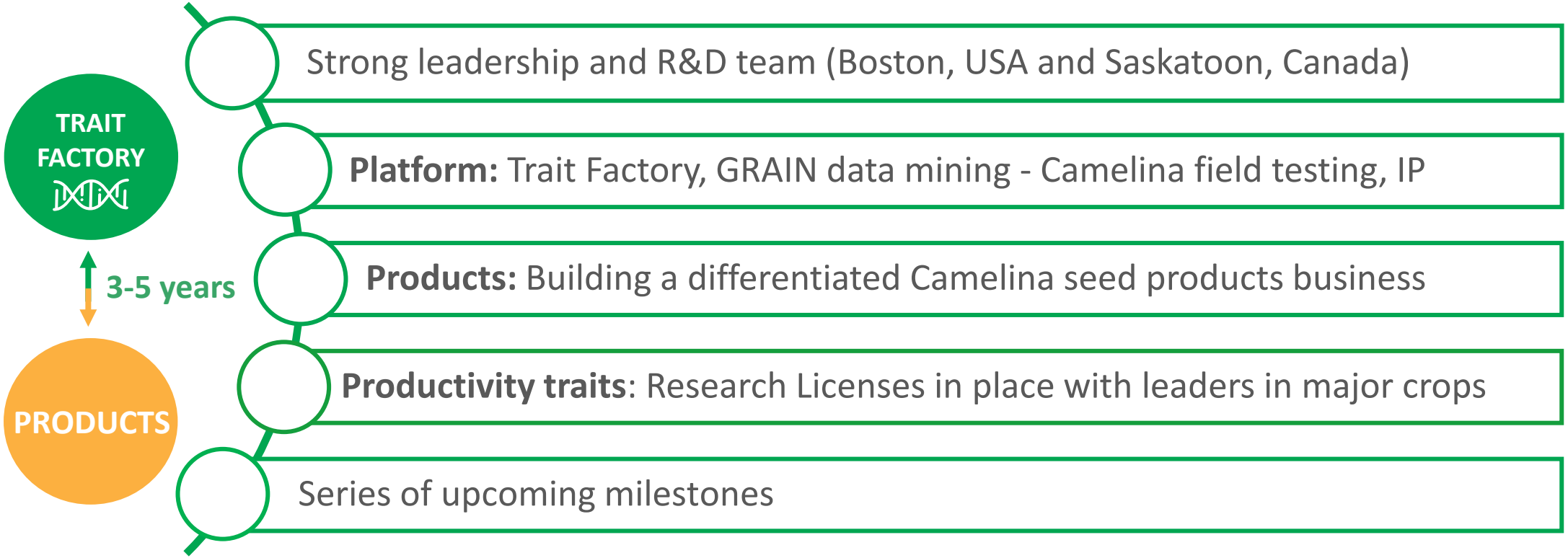
[1] Guidance current as of date of conference call on May 11, 2021.
Press release including financial tables available at www.yield10bio.com

Upcoming Milestones

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

Corporate and R&D Milestones	Period
Execute 2021 Field Testing and seed scale-up program *-Complete permitting and begin planting for field tests & seed scale-up*	**2021** ✓ *Q1-2 2021*
Build elite Camelina germplasm collection	**2021 – 2022**
Progress the business plan for Camelina products *-Access year-round seed scale-up in U.S.* *-Obtain permits to transfer lines to So. America*	**2021 – 2022** ✓ *Q2 2021* *Q2-Q3 2021*
Advance the commercial launch plan for Camelina DHA+EPA omega-3 oils *-Engaged seed service provider and business development support for SA*	**2021– 2022** ✓ *Q1-Q2 2021*
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 *-U.S. patents recently granted on C3003, C3007 and omega-3*	**2021 – 2023+** ✓ *Q1 2021*

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

Yield10 Bioscience, Inc.

NasdaqCM: **YTEN**

LD Micro Invitational XI

www.yield10bio.com

Crop Innovations For Sustainable Food Security

June 9, 2021