Yield10 Bioscience, Inc.

www.yield10bio.com

NASDAQ: **YTEN**

Camelina for Low-Carbon Biofuels Feedstock Oil

ABLC Conference, Washington DC

March 16th, 2022

Sustainable Growth Starts with a Seed

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.

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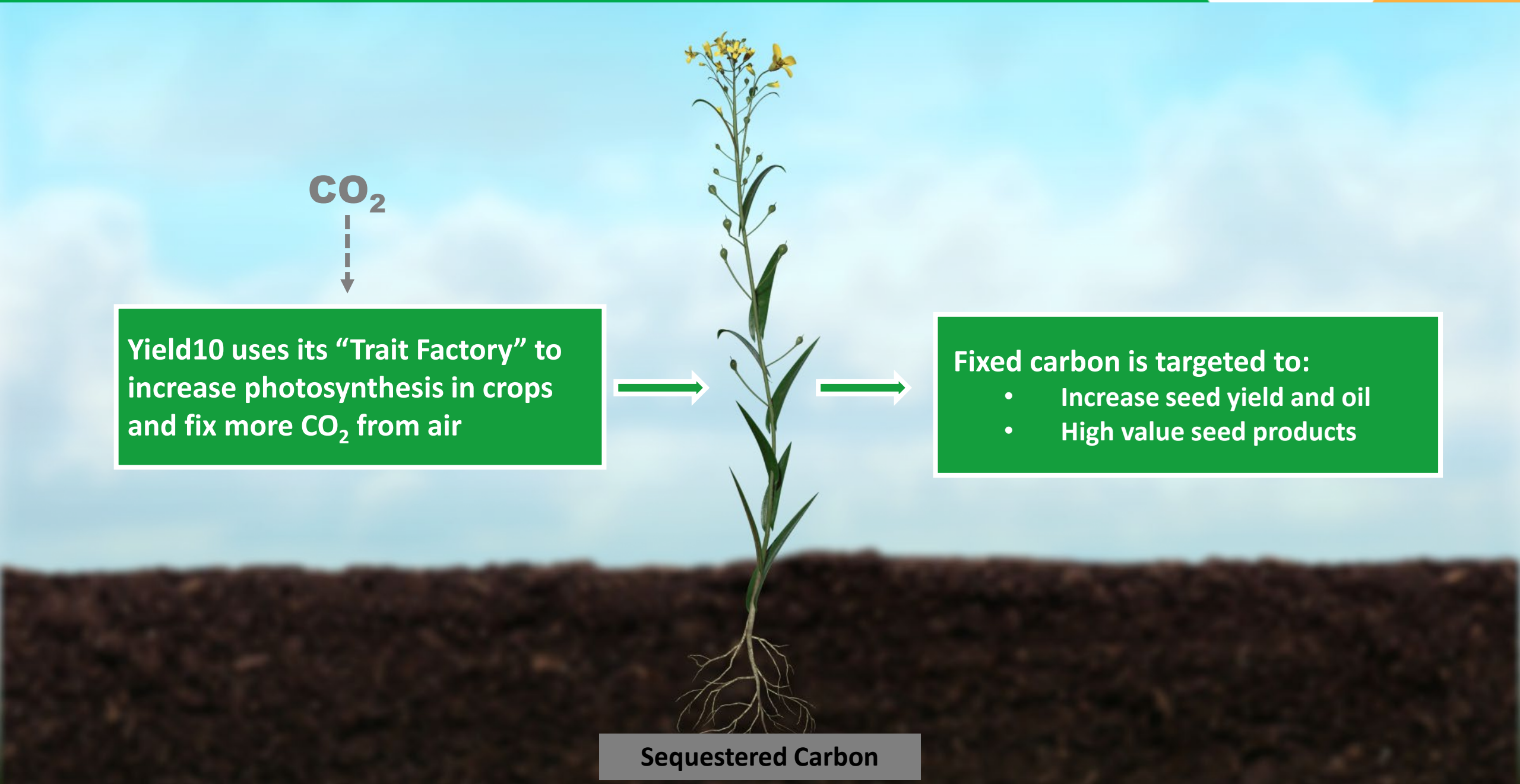
*Under the Private Securities Litigation Reform Act of 1995

Yield10's Crop Innovation Platform



How - Yield10's Trait Factory and Business Models

From Crop Science to Low Carbon Intensity (CI) Biofuels Feedstock Oil

Technology Platform - "Trait Factory"[1]

Camelina Renewable Seed Products

1. **Feedstock Oil (Biofuel)**
2. **PHA Bioplastics**

Yield10: Biofuels Commercial Development Plan

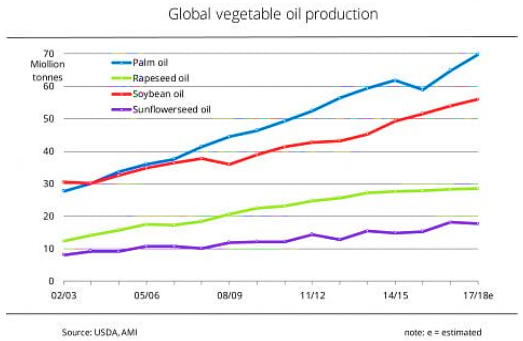
- Now: Launching Camelina as low CI biofuels feedstock crop
- Long-term: PHA Camelina
  - High-value PHA bioplastics to significantly expand acreage
  - Biofuel feedstock oil – potentially negative CI[2]

1. 21 Patent Families Pending
2. CI reduction is based on Yield10's internal estimates of carbon savings versus the production of either petroleum plastics or bioplastics from bio-fermentation See Yield10's white paper *"Biofuels and Bioplastics Commercial Development Plan"* for additional details.

Feedstock Supply Challenges in Biofuels

Pressures on Vegetable Oil Supply

- Steady growth in vegetable oil usage – price pressures[1]
- ***5 billion gallons*** of new demand for RD projects in the US[2]



Challenges for Oil Companies

- "***Owning the Well***" – How to secure supply for renewable diesel facility investments?
- ***Carbon Index*** – lower CI renewable diesel feedstock
- ***Food vs Fuel*** – how to procure vegetable oil supply without competing with food resources

- Where does the additional 5 billion gallons of feedstock come from?
  - Add 60 million acres of soybean?
- Limited acres opens opportunities for new oilseed crops
  - Use acres currently not productive with soybean and canola
  - Re-use acres through oilseed cover cropping

Developing Camelina as, high yield, low carbon-index and high revenue crop for biofuel feedstock

1. https://www.biofuelsdigest.com/bdigest/2018/02/25/vegetable-oil-production-projected-to-reach-a-new-high/
2. http://www.biodieselmagazine.com/articles/2517318/renewable-diesels-rising-tide

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Camelina: Commercial Opportunity in Relay Cropping

How do we fulfill increased vegetable oil demand given limited farmland?

- Spring Camelina - rotation crop with wheat, pulses and Canola
  5-10 million acres of potential (PNW and elsewhere)

- Relay cover cropping Winter Camelina to increase harvestable oil/acre
  30-50 million acres of potential (Midwest and elsewhere)

Camelina Relay Cropping with Soybean

Soy @ 3000 lbs/acre, 20% oil	= 600 lbs. of oil
+ Camelina @ 1500 lbs/acre, 40% oil	= 600 lbs. of oil
	= 1200 lbs. of oil

Photo: Russ Gesch, USDA Soil Conservation Research Lab
https://tinyurl.com/ucfduzcz

Establishing Camelina as a Replenishable Reserve

Vision for Winter Camelina

- Enable the highest seed product value/acre
  - **Highest farmer returns** – securing acres ***"owning the well"***
- Winter cover crop – soil health, carbon, and sustainability benefits
- Increases production of oil and protein meal (***"food and fuel"***)
- Developing elite herbicide tolerant Camelina varieties – what farmers want!
- Value-added PHA bioplastic trait – zero waste biodegradable packaging
  - Higher value crop, potential to allocate carbon allocation - savings from petroleum plastics to feedstock oil? – ***Negative CI feedstock***[1]

1. CI reduction is based on Yield10's internal estimates of carbon savings versus the production of either petroleum plastics or bioplastics from bio-fermentation See Yield10's white paper *"Biofuels and Bioplastics Commercial Development Plan"* for additional details.

Yield10 : Establishing the Camelina Value Chain

Elite Camelina Variety Development- Contract Farming → **Logistics/ Crushing** → **RD or SAF Production**

Development Highlights and Milestones

- Building the commercial team
- Engaging with biofuels supply chain players for oil offtake
- Building relationships with contract growers in the U.S. and Canada
- Progressing pipeline of ‘elite’ Camelina varieties (herbicide tolerance) and PHA traits
- Progressing regulatory path for new varieties

Value Chain Players

ADM
Cargill
LouisDreyfus
BUNGE
RICHARDSON
VITERRA THE AGRICULTURE NETWORK

Customers/Market Pull

ExxonMobil
bp
MARATHON
PHILLIPS 66
Chevron
NESTE
world energy
GRÖN FUELS, LLC
UPM
DIAMOND GREEN DIESEL
Global clean energy
NEXT Renewable Fuels, Inc.
REG

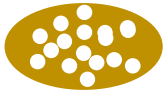
PHA Camelina for Major Acreage and Potentially Negative CI[1]

PHA: A new value-added seed product

Increase Photosynthesis to Capture more Carbon (CO_2) from the Air

CO_2

Reprogram Camelina with genes from a PHA microbe, optimize PHA using GRAIN



PHA microbe

Target Carbon to PHA Bioplastic in Seed

Seed Processing

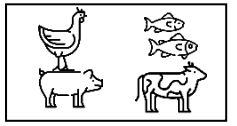
Feedstock Oils

+

PHA Bioplastics

+

Protein



2020	2021	2022	2023 ---
Field tests 6% PHA in seed Best lines selected	Seed scale up of best lines	Acre scale	Pilot scale production Product prototyping →
	2nd gen line development: increase seed Bioplastic >10-20% →		
Develop and execute the regulatory strategy →			
Business development (value chain partners) →			

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Summary

- Yield10 is scaling up current lines of spring and winter Camelina with proprietary genetics to produce a low CI biofuels feedstock oil

- Leading trait pipeline of input and performance traits
  - Herbicide tolerant lines of spring and winter Camelina
  - Improved oil and yield traits
  - Deep capability in genome-editing to optimize oil for RD

- Elite PHA Camelina lines in development - may offer much higher revenue and capture acreage, while potentially producing a negative CI feedstock oil

- See Yield10's white paper *"Biofuels and Bioplastics Commercial Development Plan"* for additional details.

Contacts:

- **Business Development – Nicholas Renegar (nrenegar@yield10bio.com)**
- **Investor and Media Relations – Lynne Brum (lbrum@yield10bio.com)**

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