Yield10 Bioscience, Inc.
www.yield10bio.com
NASDAQ: YTEN

First Quarter 2023
Financial Results and Business Highlights

May 10, 2023

Sustainable Growth Starts with a Seed
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, 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, 2022 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.
Advancing the Yield10 Business

Momentum driven by recent accomplishments

Goal: Establish commercial business targeting the biofuel feedstock market

• **Commercial launch underway**
  
  *Expecting first product revenue in 2023 from fall 2022 and spring 2023 contracts*
  
  – Spring grower contracting completed
  
  – Outreach to growers underway for contract planting winter Camelina in fall of 2023
  
  – Activities underway supporting Camelina regulatory filings, variety registrations and branding

• **Engaging with potential supply chain partners supporting capital-light business model**
  
  – Marathon Petroleum Corporation: non-binding Letter of Intent (“LOI”) for investment and partnership for Camelina in biofuel
  
  – Mitsubishi Corporation: Memorandum of Understanding (“MOU”) for partnership for supply, offtake, and marketing of Camelina as a feedstock oil for biofuel
  
  – American Airlines: MOU for collaboration to develop value chain for Camelina in SAF
  
  – Crusher/Biorefiner: Signed agreement for offtake of Camelina grain in key target growing region demonstrating supply chain from YTEN to grower to crush and refining customer
Yield10: Camelina Biofuel Feedstock Oil Focus

CO₂ → Seed Product → Biofuel Feedstock Oil

Tailwinds for increased vegetable oil production for decarbonizing biofuels

Sequestered Carbon
EU agrees to decarbonize air travel with the ‘world’s largest green fuels mandate for aviation’

Gene-edited crops clear CFIA’s regulatory bar
Agency guidance puts gene editing on level of conventional breeding

Gene-edited crops clear CFIA’s regulatory bar - AGCanada - AGCanada
Oilseed Cover Crop Development Approaches

Building a Differentiated Position in Oilseed Cover Crops

Germplasm Development/Breeding

• Low barrier to entry (lead time)
• Accessing public germplasm
• Traditional crossing of diverse genetics
• Accelerated approaches using molecular technologies

Stacked Gene Traits

• Weed control and soil residue tolerance
• Drive Camelina productivity (gal. oil/acre)
  • 50-60 gal/acre >>>> 100 gal/acre
• Leverage advanced trait tools:
  • HT, GRAIN, genome editing, trait stacks
• Leverage improved regulatory environment in US and Canada
• Leverage closed loop production in US and Canada in non-export crop

CoverCress

Nuseed Carinata

Sustainable Oils

Yield10 Bioscience Oilseeds LLC

Vision Bioenergy
Yield10 is Harnessing the Potential of Camelina for Biofuel Feedstocks

**Grower adoption – Weed control**

- Developed and field-tested herbicide tolerant lines for broadleaf weed control
- Field trials of next generation stacked herbicide tolerance lines (broadleaf weed control & soil residue tolerance) in spring 2023

**Grower adoption & business success – Revenue** – increased harvest value for biofuel feedstocks

- Gene edited E3902 Camelina has ~5% increase in oil in multiple years of field trials
- Additional testing of C3007 edited lines that have shown increased seed yield in the field - in progress
- GRAIN modeling has identified additional genes to increase yield and oil content
- Improved protein meal value: Gene editing targets have been identified

**Grower adoption & business success – Partnerships across the biofuel value chain**

- Discussions with potential partners in progress
Establishing the Camelina Biofuel Value Chain

Vision for the Business

• Gain leadership position for Camelina as a low-carbon feedstock oil
• Contract with growers for large scale production
• Build a network of alliances for contract offtake for biofuels and feed

Development Highlights and Milestones

• Marathon Petroleum LOI to produce Camelina for feedstock oil offtake
• Mitsubishi Corp MOU for feedstock oil supply for biofuel
• American Airlines MOU to develop value chain for Camelina in SAF
• Signed offtake agreement with privately owned crusher/biorefiner in a target growing region providing a customer for Camelina grain
• Engaged with additional players in biofuels supply chain
• Progressing early commercialization
Early Commercial Camelina Varieties

Value-Advantaged Spring and Winter Camelina Available under Grower Contract

**E3902 (Spring Gene-Edited)**

- E3902 is a triple gene-edited spring Camelina
  - C3008a & b/C3009: Lighter seed coat
  - Consistent 5% increase in oil content
  - USDA-APHIS non-regulated¹
  - Recently designated non-regulated in Chile²

**WDH2 (Winter Cold Tolerant)**

- Cold hardy winter Camelina variety
  - Adapted to very cold winter conditions in the Canadian prairies
  - Secured growers for contracted Camelina grain production
  - Seed production underway
  - Available for winter 2023/2024 grower contracts

**WDH3 (Winter Short Cycle)**

- Early maturing winter Camelina variety
  - Adapted to winter growing conditions in the US
  - Matures ~1 week earlier than industry leading winter lines
  - Seed production underway
  - Available for winter 2023/2024 grower contracts

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¹USDA-APHIS’s Biotechnology Regulatory Services (BRS) confirmed that the use of CRISPR genome-edited traits C3008a, C3008b, and C3009 in Camelina plant lines does not meet the definition of a regulated article under 7 CFR Part 340 regulations.

²E3902 is not under the scope of the Chilean Biotechnology Crops resolution No. 1523 of 2001 Regarding GMOs.
Program Scope-US/Canada

• **Agronomy Trials (winter Camelina) (blue pins)**
  - Developing standardized protocols to achieve best germination, stand establishment and yields
  - Planting alongside winter wheat to assess winter hardiness

• **Demonstration Fields (winter Camelina) (blue pins)**
  - Suitable for hosting grower events

• **Herbicide tolerance (yellow pins)**
  - Lead spring herbicide tolerant lines re-tested for over-the-top weed control; seed scale-up performed
Spring 2023 Field Testing Program

13 Field Test Locations in the US and Canada

Program Scope-US/Canada-Spring Camelina

- **Herbicide tolerance**
  - Lead spring herbicide tolerant lines re-tested for over-the-top weed control in multi-site trials; seed scale-up
- **Stacked herbicide tolerance**
  - Event testing for tolerance to broadleaf over-the-top spray and Group 2 soil residues in stacked spring herbicide tolerant lines
- **Performance traits (seed yield, oil yield)**
  - Further tests of C3004, C3007
- **Agronomy Trials**
  - Developing standardized protocols to achieve best germination, stand establishment and yields

Yellow pins: regulated field trials
Green pins: unregulated field trials
## Development Path: HT Camelina for the Biofuel Market

**Focus on elite HT Camelina to drive grower adoption and access to large acreage**

<table>
<thead>
<tr>
<th>Major Development Milestones</th>
<th>Spring HT E3902&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Winter HT Camelina&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generate HT events</td>
<td>complete</td>
<td>in progress</td>
</tr>
<tr>
<td>Selection of lead, back-up lines</td>
<td>complete</td>
<td>planned 2024</td>
</tr>
<tr>
<td>Seed scale-up of commercial variety</td>
<td>in progress</td>
<td>planned 2024</td>
</tr>
<tr>
<td>USDA-APHIS clearance for HT trait&lt;sup&gt;3&lt;/sup&gt;</td>
<td>RSR filed</td>
<td>RSR filed</td>
</tr>
<tr>
<td>EPA herbicide label amendment&lt;sup&gt;4&lt;/sup&gt;</td>
<td>amendment filed</td>
<td>amendment filed</td>
</tr>
<tr>
<td>Clearance to sell meal as feed</td>
<td>Field trials for sampling and data collection in progress</td>
<td>planned</td>
</tr>
<tr>
<td>- self-determination process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- FDA voluntary submission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anticipated first US commercial launch&lt;sup&gt;5&lt;/sup&gt;</td>
<td>2025</td>
<td>2026/2027</td>
</tr>
</tbody>
</table>

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<sup>1</sup> Triple genome-edited Spring Camelina variety, RSR cleared in 2018

<sup>2</sup> Yield10 has 2 primary winter Camelina varieties, WDH2, WDH3; timelines are provided for most advanced commercial line

<sup>3</sup> Yield10 has submitted RSR packages for tolerance to an over-the-top broadleaf herbicide and 2 Group 2 soil residual chemistries

<sup>4</sup> A chemical manufacturer has submitted label amendments for Camelina for its over-the-top herbicide product

<sup>5</sup> Yield10 estimates based on assumptions on timing of seed production, completion of RSR and EPA labeling processes as well as utilization of the self-determination process to allow the sale of meal from HT Camelina into animal feed market
Over-the-top Broad Leaf Weed Control for Camelina

Yield10 is developing elite Camelina containing a robust weed control package for farmers

- Filed USDA-APHIS Regulatory Status Review (RSR)
- Filed label amendment with EPA
- Spring research field trial – robust herbicide tolerance
- Contra-season trial: robust herbicide tolerance of lead event
- Permitting complete and planting underway

2022

2023

2023 Spring Season Field Work
- 3rd field trial of lead commercial Camelina lines
- Product development trials
- Sample collection for compositional analysis
- Seed scale-up

Red dots: control plots that died with herbicide application

Note: Development path for spring E3902 Camelina germplasm with HT trait
Goal: Stacked Herbicide Trait for Robust Weed Control

Expand land and acreage available for growing Camelina
Combine over-the-top broadleaf herbicide tolerance with soil residual tolerance (“Stacked HT”)

Isolated stacked events and conducted greenhouse herbicide tolerance tests

Filed USDA-APHIS Regulatory Status Review (RSR)

2022

Isolated stacked events and conducted greenhouse herbicide tolerance tests

2023

Permitting complete and planting underway

2023 Spring Season Field Work
• First field trials to enable selection of lead and back-up stacked HT spring Camelina for commercialization

Next steps 2H23-1H2024
• Contra Season Field Work
  • Herbicide tolerance trials
  • Seed scale-up

• Spring Season Field Work
  • Product development trials
  • Seed scale-up

Note: Development path for spring E3902 Camelina germplasm with stacked HT trait
Yield10 Q1 2023 Summary Financial Results

Investment ongoing to achieve key strategic objectives

<table>
<thead>
<tr>
<th>Operating Results</th>
<th>Q1 2023</th>
<th>Q1 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$0.1 million</td>
<td>$0.1 million</td>
</tr>
<tr>
<td>R&amp;D Expense</td>
<td>$2.2 million</td>
<td>$1.8 million</td>
</tr>
<tr>
<td>G&amp;A Expense</td>
<td>$1.7 million</td>
<td>$1.7 million</td>
</tr>
<tr>
<td>Net Loss</td>
<td>$3.8 million</td>
<td>$3.3 million</td>
</tr>
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Balance Sheet

- $1.8 M in cash and cash equivalents at the end of first quarter
- $1.0 M Convertible Note associated with LOI with Marathon Petroleum signed on April 28
- $2.7 M net proceeds in a Registered Direct offering completed on May 5
- Net operating cash usage of $2.7 M for the first quarter of 2023
- Estimate total net cash usage of approx. $12.5 M to $13 M\(^1\) for FY 2023, versus previous guidance of $13 M to $14 M
- Expect to book product revenue from harvest of Camelina grain in Q4-2023

\(^1\)Current as of date of conference call on May 10, 2023. Press release, including financial tables, available at www.yield10bio.com
## Corporate, Commercial and R&D Milestones

<table>
<thead>
<tr>
<th>Activity</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expand commercial activities targeting the Biofuel market</strong></td>
<td>2023</td>
</tr>
<tr>
<td>- Form partnerships and/or sign offtake agreement(s) across the biofuel value chain</td>
<td>Ongoing</td>
</tr>
<tr>
<td>- Advance discussions under MOUs with Mitsubishi and American Airlines; LOI with Marathon Petroleum</td>
<td>Ongoing</td>
</tr>
<tr>
<td>- Obtain regulatory clearance for herbicide tolerance traits deployed in Camelina</td>
<td>Ongoing</td>
</tr>
<tr>
<td>- Build commercial organization and capabilities consistent with capital light business model</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Execute on grower engagement program ensuring rapid offtake of Camelina grain; engage growers in 2023 production contract program, hold field events and build visibility for the benefits of growing Camelina</strong></td>
<td>2023</td>
</tr>
<tr>
<td>- Engage growers to plant Camelina under contract and deliver grain to specified crushers</td>
<td>Ongoing</td>
</tr>
<tr>
<td>- Build seed inventory to ramp up contracted acres of spring and winter Camelina</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Continue to build industry leading, differentiated Elite Camelina varieties</strong></td>
<td>2023</td>
</tr>
<tr>
<td>- Generate field data and seed inventory to support launch of HT and stacked HT spring and winter Camelina</td>
<td>Ongoing</td>
</tr>
<tr>
<td>- Plant spring Camelina field trials, including HT, yield, and omega-3 traits</td>
<td>Q2</td>
</tr>
<tr>
<td>- Generate field data from 2022/2023 winter and 2023 spring field trial programs</td>
<td>H2 2023</td>
</tr>
<tr>
<td><strong>Continue technology and commercial development activities, including seeking revenue generating industry collaborations to address other key market opportunities</strong></td>
<td>2023</td>
</tr>
<tr>
<td>- Omega-3 oils, PHA bioplastics and trait licensing</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Expand intellectual property portfolio</strong></td>
<td>2023+</td>
</tr>
</tbody>
</table>
Yield10 (Nasdaq:YTEN) Investment Highlights

An Agricultural Bioscience Company

LEADERSHIP
Strong leadership and R&D team (Boston, USA and Saskatoon, Canada)

VISION
Strategic business vision aligned with decarbonization, climate change, food security and the circular economy

MARKET FOCUS
Biofuel feedstock oil
>6 billion gallons of demand by 2030

TECHNOLOGY FOCUS
Differentiated technology platform
Strong trait pipeline
Advanced spring and winter Camelina varieties

EXECUTION FOCUS
Herbicide tolerant Camelina
Certified seed scale up
Grower contracts
Commercial launch for biofuels

PARTNERING FOCUS
Pursuing value chain partners to secure offtake agreements for biofuels
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