

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
WASHINGTON, DC 20549

FORM 8-K

**CURRENT REPORT
Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

Date of Report (Date of earliest event reported) September 11, 2023

YIELD10 BIOSCIENCE, INC.
(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction of Incorporation)

001-33133
(Commission File Number)

04-3158289
(IRS Employer Identification No.)

19 Presidential Way, Woburn, Massachusetts
(Address of Principal Executive Offices)

01801
(Zip Code)

(617) 583-1700
(Registrant's Telephone Number, Including Area Code)

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c)).

Title of each class
Common Stock

Securities registered pursuant to Section 12(b) of the Act:
Trading Symbol(s)
YTEN

Name of each exchange on which registered
The Nasdaq Capital Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 8.01 Other Events.

Attached hereto as Exhibit 99.1 and incorporated herein by reference is an updated corporate presentation of Yield10 Bioscience, Inc.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No.	Description
99.1 104	Investor Presentation Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

YIELD10 BIOSCIENCE, INC.

September 11, 2023

By:

/s/ Oliver P. Peoples

Oliver P. Peoples

President & Chief Executive Officer



Yield10 Bioscience, Inc.

www.yield10bio.com

NasdaqCM: YTEN

25th Annual H. C. Wainwright Global Investment Conference

Recorded on Sept. 6, 2023

Sept. 11-13, 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, 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, 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.

An Agricultural Bioscience Company

Yield10 Strengths

- ✓ Deep intellectual property portfolio
- ✓ Experienced leadership and BOD
- ✓ Leveraging partnerships in key markets

Focused on the Oilseed Camelina

Using genetics to maximize value of Camelina

- ✓ Improved agronomy for large acreages
- ✓ Low CI value feedstock for biofuels
- ✓ High value Omega-3 oils



Current business goal

Establish and demonstrate the value chain from Y10 seed to commercial offtake of grain products

Value Chain	Seed Production	Grower Contracts	Grain/Oil Offtake	Crush/refining
Status	✓	✓	✓	underway

- ✓ Y10 seed supply and production contracts established with growers
- ✓ First Offtake Agreement established for grain (oil, meal)
- ✓ Progressing additional announced and confidential partnership discussions



Camelina grain harvest and delivery to customer - Alberta, July 2023



Yield10 Platform Crop - Camelina

Mission: Transition Camelina from a niche crop to > 30 million acres

- Promising oilseed crop
 - Uses same farming, storage and processing assets
- Both spring and winter varieties
 - Winter varieties, potential use as winter cover crop
- Platform crop for high value seed products

June 2023, Camelina Crop Insurance¹



USDA Helps Agricultural Producers Meet Demand for Camelina

SPOKANE, Wash., June 30, 2023 - The U.S. Department of Agriculture (USDA) announced today that it will expand insurance for camelina in direct response to the anticipated increase in demand for the crop for biodiesel production.

Estimated opportunity for ~44 million acres of oilseed cover crops in the US and Canada

>\$12 billion feedstock oil
(@ 1400lb/acre, 40% oil and \$0.50/lb oil)



Greenhouse Camelina



Camelina field plots at flowering



Commercial scale winter Camelina growth

¹ <https://biodieselmagazine.com/articles/2518791/usda-expands-crop-insurance-for-camelina>

What are the Markets for Camelina Meal and Oil?



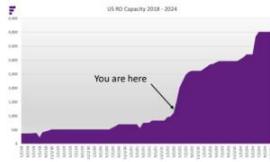
- **Oil Markets – biofuel feedstock**
 - Approved for RINs biofuels producer credits
 - Very low-carbon index feedstock oil for biofuels (CI ~20-25)¹
 - Clean oil requiring less refining before biofuels production²
 - Fatty acid profile well-suited for renewable diesel
 - Lower Hydrogen use than Canola
- **Protein Meal Markets**
 - Approved for use in animal feed³
 - 43-45% protein content in meal – above Canola meal
 - 12-14% fiber in meal

1. For crop rotations with no indirect land use change (e.g., fallow or cover cropping). Based on Sustainable Oils approved CI pathways in California's LCFS program
2. Compared to soybean or Canola, based on third-party ASTM tests of Yield10's Camelina oil
3. 10% blend of feed in poultry, egg-laying hens, swine, cattle (FDA, AAFCO, CFIA approved)



Biofuels Market: Sustainable Aviation Fuel (SAF) and Renewable Diesel (RD)

Renewable Diesel (RD) Targets



6 billion gallons of new capacity for funded RD projects in the US

Sustainable Aviation Fuel (SAF) Targets (billions gal/yr)

Region	2030	2050
US	3.0	35
EU	~0.5	13.85
Japan	~0.5	6

But still major near and long-term feedstock risk for biofuels producers

- ? Secure feedstock oil supply
- ? Food vs. Fuel concerns end biofuel incentives for food crop oils
- ? Lowest Carbon Index (CI) score – driving interest in winter oilseed cover crops



Value-advantaged spring and winter Camelina enable launch

- **Establish production AND the value chain**
 - Advanced varieties – cold tolerant, early maturing, higher oil
 - Partnering with growers
 - Offtake Agreements for grain/oil – enables a capital light strategy
 - Minimize working capital for grain inventory

E3902 (Spring Gene-Edited)



E3902 is a triple gene-edited spring Camelina

WDH2 (Winter Cold Tolerant)



Cold hardy winter Camelina variety

WDH3 (Winter Short Cycle)



Early maturing winter Camelina variety

Establishing Production – Grain Production and Offtake

- Winter Camelina (WDH2) planted in the Fall of 2022
- **Established the value chain** by partnering with private crusher/biorefiner ✓



Winter Camelina June 2023



Winter Camelina Grain Harvest – July 2023



Camelina Grain Delivered to Biofuel Facility
July 2023

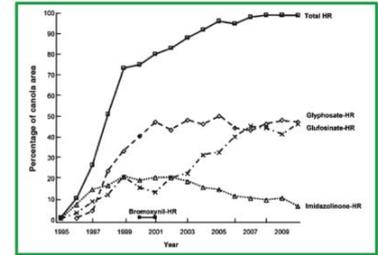
- Spring 2023 grower contracting completed Q2 ✓
- Winter 2023/2024 grower contracts to be completed Q3



Commercial Launch - Technology vision based on the HT revolution for canola and soybean

- **Herbicide package to fit crop rotations**
 - ✓ Weed control + tolerance to soil herbicide residues
- **Winter cover crop**
 - ✓ New crop rotation options increase grower revenue, soil health/carbon, reduced nutrient runoff
- **Increase harvest value**
 - ✓ Lower CI (carbon intensity) oil from winter cropping– higher value feedstock oil
 - ✓ Seed yield and seed oil content – future higher value seed products (omega-3 oil)
 - ✓ Improved protein meal value - **Food and fuel**
- **Own or control 21 patents or applications pending**
 - ✓ (HT, seed yield, seed oil etc.)

History of HT Canola Adoption



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.

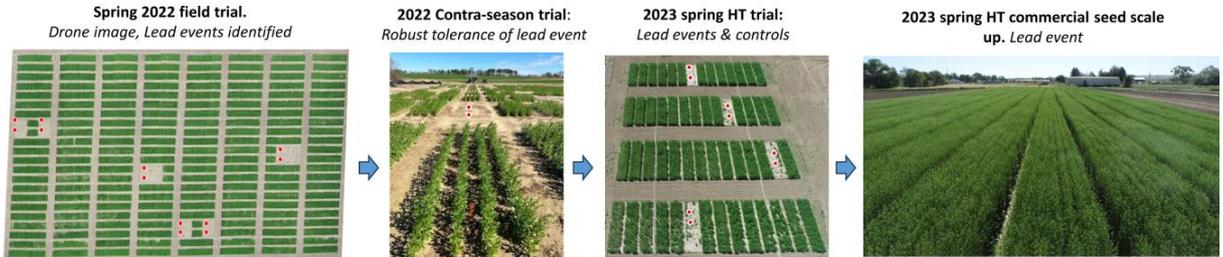
Progress on Herbicide Trait for Robust Weed Control

Herbicide Tolerance for weed control

- Provide state of the art broadleaf weed control for growers
 - Increase yield by reducing weed pressure
 - Enable growers to leverage HT Camelina to manage their crop rotations

Anticipated Timeline and Milestones for HT Camelina Development

	2022	2023	2024	2025
HT Trait Development	Trait Validation Field trials			
Regulatory	RSR USDA-APHIS (est.)			
	EPA label amendment (est.)			
	Self determination, meal			
	FDA, voluntary submission, meal			
Commercial	Seed scale up			
	Commercial launch (targeting ~5,000 ac)			



Red dots in photos, control plots where plants died with herbicide application

Stacked HT for Weed Control and Soil Residue Tolerance

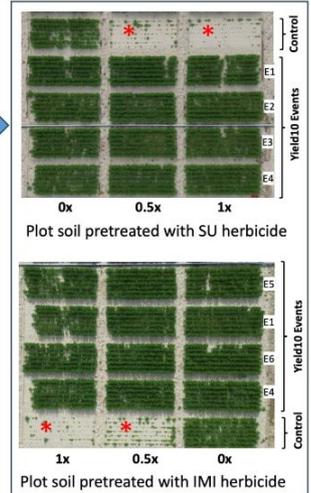
“Stacked HT” - Combine over-the-top broadleaf herbicide tolerance Group 2 herbicide soil residue tolerance

- Enables growers to use land previously treated with Group 2 herbicides
 - Expands acreage available for growing Camelina
- Increase revenue by increasing production acres and yield
- **Spring 2023 – demonstrated tolerance to both broad leaf herbicide application and Group 2 soil residues in field in spring Camelina**



Development path for spring E3902 Camelina germplasm with stacked HT trait

Filed USDA-APHIS Regulatory Status Review (RSR) ✓



* Control Camelina plots are significantly compromised with presence of SU and IMIs in soil based on stand counts.

Yield10 - Omega-3 Oil Opportunity - Status

EPA and DHA Omega-3 oils are essential for human health and wellness

- Fish oil is the primary source of EPA and DHA Omega-3s in the human diet
- Minimum levels of EPA and DHA are required in salmon diets for health and productivity
 - EPA8 Camelina line – up to 29% EPA in oil, target pharma/nutraceutical markets
 - DHA1 Camelina line - ~ 10% EPA + 10% DHA, drop-in fish oil replacement
- Yield10 believes it can leverage the operating foundation established for biofuels for production of omega-3 oils

Yield10's Camelina Omega-3 vs Fish Oil and Competitors

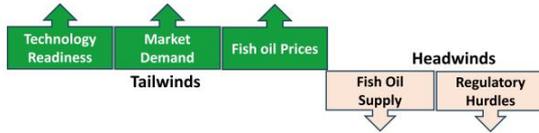
Comparison Point	Fish Oil	Yield10's Camelina Omega-3	Competitors' Canola Omega-3	Competitors' Algae Omega-3
Cost	\$\$	\$	\$	\$\$\$\$
EPA/DHA Levels *	✓	~9% EPA, 11% DHA	EPA or DHA	~3-4x more expensive
Ability to Meet Demand	✗ Overfishing	✓ Crops are Scalable	✓ Crops are Scalable	✗ High CapEx
Sustainability	✗ Overfishing	✓	✓	✗ Higher CO2 Emissions
Crop Segregation Risks	✓	Not a Food Crop	✗ Significant Risks	✓

>>>> 2016-2021 UK, Canada, US	2017-2020 Published Studies	Q4, 2020 -2022	2023 - >>>>>
Multi year, multi acre field tests ✓	Product validation in aquafeed & human trials "Camelina DHA 1 oil effectively replaces fish oil" ✓	<ul style="list-style-type: none"> Yield10 secures commercial rights Funds RRES R&D program Assists with patent prosecution 	<ul style="list-style-type: none"> July 2023, Yield10 files RSR for regulatory approval of EPA 8 line with USDA-APHIS ✓ EPA8 line planted at acre-scale to produce planting seed and oil samples RSR for DHA 1 Camelina line in preparation Planning scale up of EPA8 and DHA1 Camelina lines Developing detailed business plan to enable commercial launch Timeline for anticipated commercial launch in development



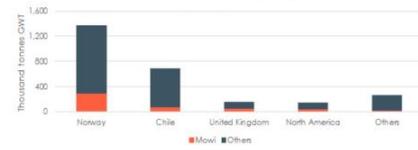
1. <https://academic.oup.com/ajcn/article/114/4/1447/6301120>

Drivers for new sources of omega-3 oils

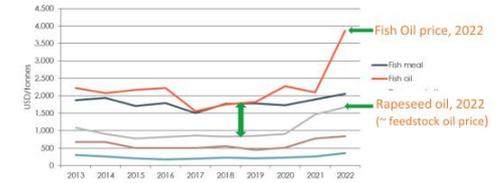


- First Camelina omega-3 line ready to scale
 - Pipeline of higher value omega 3 lines in development
- Growing market demand
- Fish oil supply under increasing pressure
 - Peru cancels 2023 anchovy harvest¹
 - Peru produces around 20% of global fish oil²
- Reduced regulatory hurdles
 - Norway approves use of GMO omega-3 oil³ from Nuseed
 - Yield 10 files for Camelina omega-3 line regulatory approval in the US

Farmed Atlantic Salmon Harvest Volume, 2022



Aquafeed Raw Material Market



1. <https://www.intrafish.com/fisheries/peru-cancels-all-important-first-anchovy-fishing-season/2-1-1464552>
 2. <https://www.seafoodsource.com/news/supply-trade/global-fishmeal-production-up-30-percent-in-2023-iffc-finds/#:~:text=%E2%80%9CThis%20announcement%20is%20of%20strategic,fishmeal%20and%20fish%20oil%20production.%E2%80%9D>
 3. <https://www.seafoodsource.com/news/aquaculture/aquaterra-s-omega-3-oil-gets-norwegian-approval-for-use-in-aquafeed>



Investment ongoing to achieve key strategic objectives

Operating Results	Q2 2023	Q2 2022	6-months 2023	6-months 2022
Revenue	—	\$ 0.1 million	\$ 0.1 million	\$ 0.25 million
R&D Expense	\$ 2.0 million	\$ 2.0 million	\$ 4.2 million	\$ 3.8 million
G&A Expense	\$ 1.7 million	\$ 1.5 million	\$ 3.2 million	\$ 3.4 million
Net Loss	\$ 3.7 million	\$ 3.4 million	\$ 7.5 million	\$ 6.8 million

Balance Sheet

- \$2.3 M in cash and cash equivalents at the end of second quarter
- Net operating cash usage of \$3.1 M for the second quarter of 2023
- Priced \$3.7 million public offering of units consisting of common shares and one warrant
- Estimate total net cash usage of approx. \$12.5 M to \$13 M for FY 2023
- Expect to book product revenue from harvest of Camelina grain in second half 2023

¹ Current as of date of conference call on August 14, 2023. Press release, including financial tables, available at www.yield10bio.com.

On Track to Achieve Key Milestones in 2023 and Beyond

Corporate, Commercial and R&D Milestones	Period
Expand commercial activities targeting the Biofuel market <ul style="list-style-type: none"> - Generate first product revenue in 2023 from fall 2022/spring 2023 grower contracts - Advance partnership discussions with Mitsubishi and Marathon Petroleum - Obtain regulatory clearance for herbicide tolerant Camelina - Form additional partnerships and/or sign offtake agreement(s) across the biofuel value chain 	2023 <i>Ongoing</i> <i>Ongoing</i> <i>Ongoing</i> <i>Ongoing</i>
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 <ul style="list-style-type: none"> - Expand grower contracts for winter Camelina and offtake of grain to crushers/refiner - Build seed inventory to ramp up contracted acres of spring and winter Camelina 	2023 <i>Ongoing</i> <i>Ongoing</i>
Continue to build industry leading, differentiated Camelina varieties <ul style="list-style-type: none"> - Generate data and seed inventory to support launch of HT and stacked HT Camelina - Plant spring Camelina field trials, including HT, yield, and omega-3 traits - Demonstrate stacked HT tolerant Camelina in field trials 	2023 <i>Ongoing</i> <i>Completed in Q2</i> <i>Completed in Q3</i>
Progress technology and commercial development activities, to address other key market opportunities <ul style="list-style-type: none"> - File RSR for trait regulatory approval and complete business plan for launch of Omega-3 oils - Progress PHA bioplastic trait optimization 	2023 <i>Ongoing</i> <i>Ongoing</i>
Expand intellectual property portfolio	2023+

Yield10 Investment Highlights

An Agricultural Bioscience Company

LEADERSHIP

- Strong leadership and R&D team
(Boston, USA and Saskatoon, Canada)
- Experienced Board of Directors

COMMERCIAL VISION

- 30 million acres of Camelina
- Camelina grain contracting
- Revenue from seed product
offtake agreements



Focused on the Oilseed Camelina

MARKET FOCUS

- **BIOFUEL FEEDSTOCK OIL**
 - Next – Omega-3 oils
 - Future – PHA Bioplastics

TECHNOLOGY FOCUS

Goals to Increase revenue and margins

- Increase production acres
- Increased harvest value
- Next - higher value omega-3 oil

EXECUTION FOCUS

- Grower contracts
- Grain/oil Offtake Agreements
- Technology and regulatory approvals





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