



Yield10 Bioscience, Inc.

www.yield10bio.com

NASDAQ: YTEN

ABLC 2023 Presentation

Oliver Peoples, Ph.D., CEO

March 23, 2023

Sustainable Growth Starts with a Seed



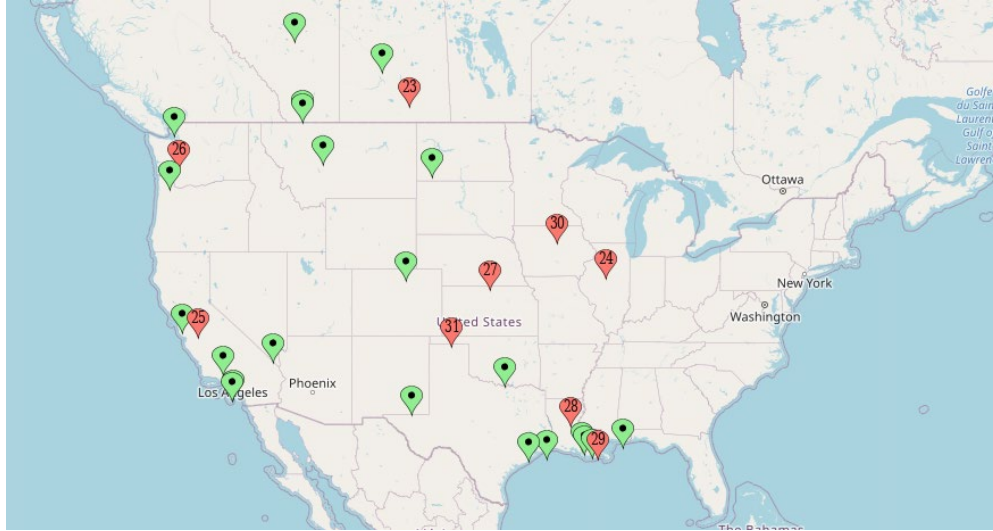
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The statements made by Yield10 Bioscience, Inc. (the “Company,” “we,” “our” or “us”) herein regarding the Company and its business may be forward-looking in nature and are made pursuant to the safe harbor provisions of the Private Securities Litigation 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.

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Expansion of Biofuels Facilities in North America

Growth in Feedstock Oil Demand¹



- 6 billion gallons of new capacity for recently funded RD projects in the US²
- **3 billion gallons of additional feedstock demand by end of 2024**
 - **Half** of soybean oil production in the US
- Additional decarbonization programs for biofuels potentially coming online in Japan and elsewhere to further increase demand

Where Will Additional Feedstock Come From?

- Tallow and UCO markets already thin
- US from net exporter to import of soybean oil in last several years
- Soybean acres growing by several percent year-over-year, but not enough suitable production acres to meet demand increase

Commercial Opportunity – Cover Crops for Biofuels

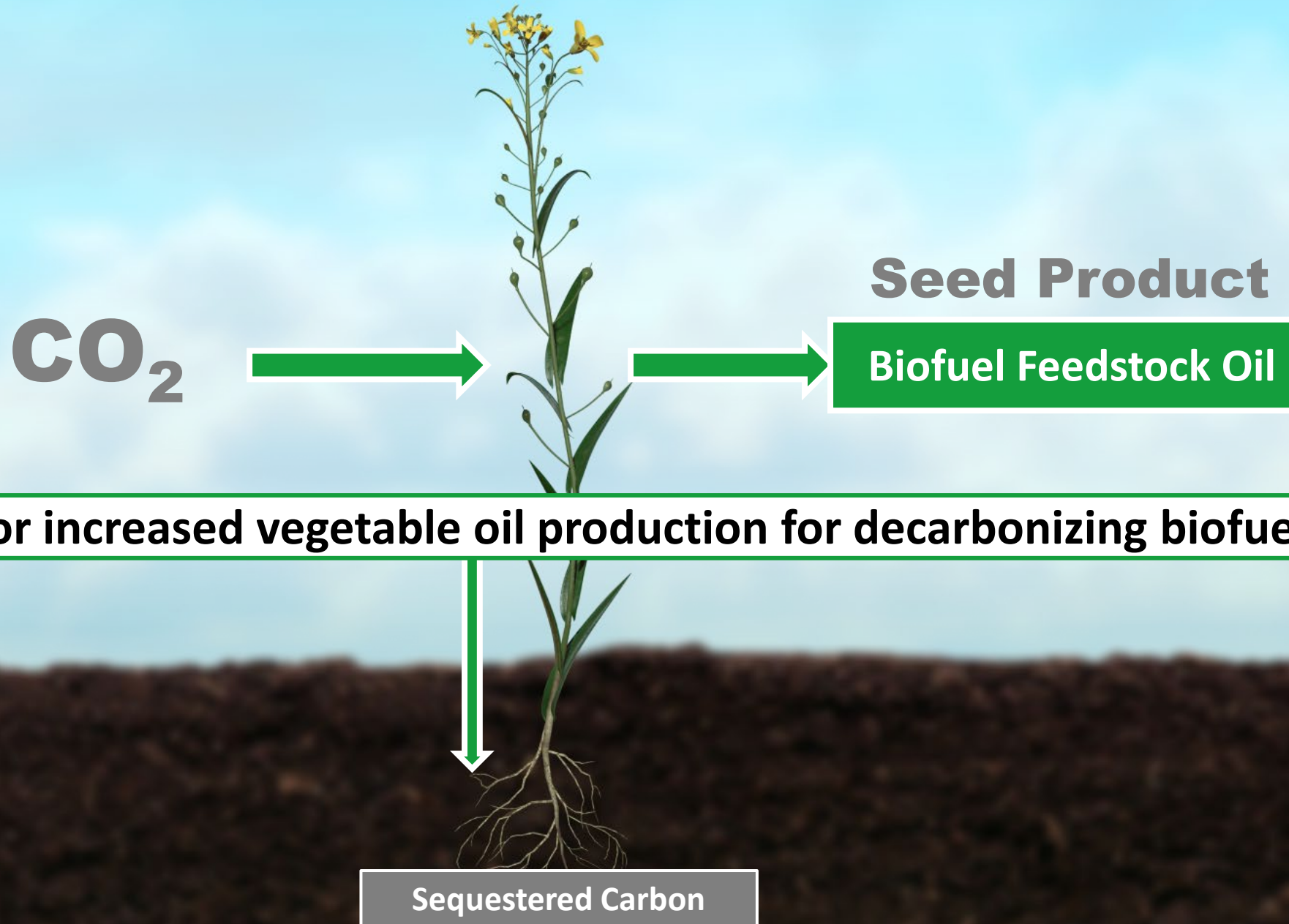
OIL — 25 Feb 2013 | 09:50 UTC — Houston

EPA approves use of camelina oil as biodiesel feedstock under RFS


Long-Term Opportunity for 45 Million Acres of cover crops in the US and Canada to fill feedstock supply-demand gap

1. 10 new biofuels facilities in US/Canada announced in last ~9 months. , chart is not exhaustive
2. <http://www.biodieselmagazine.com/articles/2517318/renewable-diesels-rising-tide>

Yield10: Camelina Biofuel Feedstock Oil Focus



Yield10 Platform Crop - Camelina

- Promising oilseed crop
 - Uses same farming, storage and processing assets as other oilseed e.g. canola
 - Seed oil levels ~ 40% of seed weight, protein meal ~55% of seed weight, >40% protein
- Both spring and winter varieties
 - Winter varieties, potential use as cover crop for corn and soybean acres
 - Leading in input and performance traits
- Excellent platform crop for novel high value seed products - value proposition for farmer 



Greenhouse grown Camelina



Camelina field plots at flowering



Large scale winter Camelina growth

Winter 2022/2023 Field Testing Program

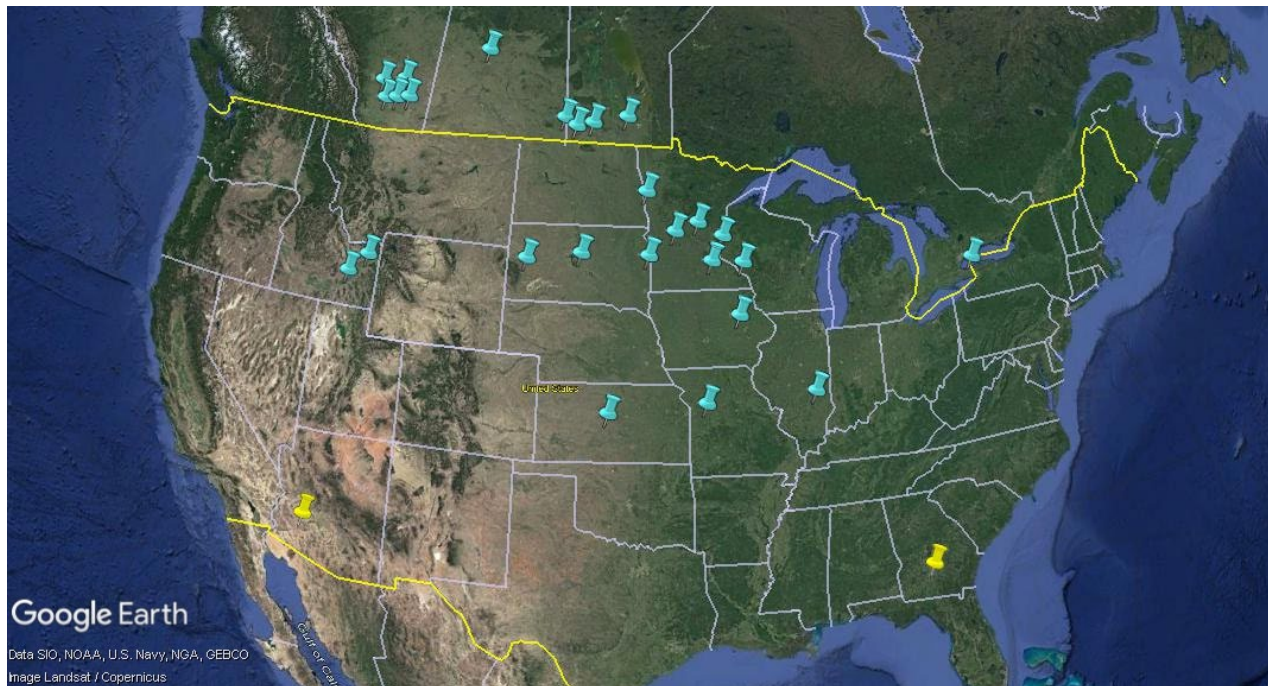
Generating Data Set to Support Farming Best Practices with Camelina



WDH3: Idaho (10/27)



Variety trial: Saskatchewan (10/15)



Program Scope-US/Canada

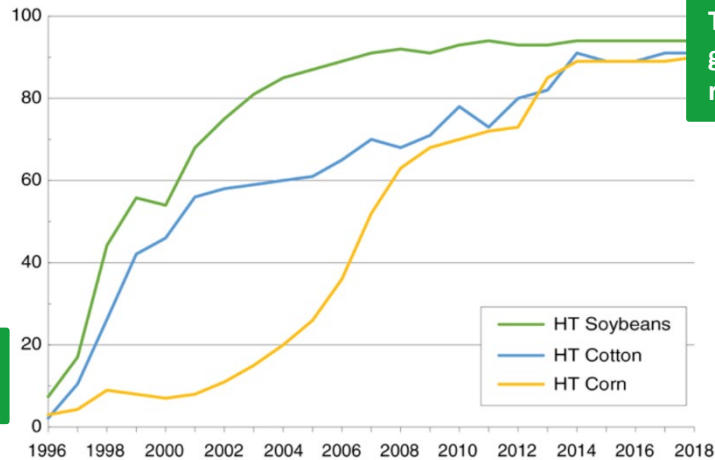
- **Agronomy Trials (winter Camelina)**
 - Developing standardized protocols to achieve best germination, stand establishment and yields
 - Planting alongside winter wheat to assess winter hardiness
- **Demonstration Fields (winter Camelina)**
 - Suitable for hosting grower events
- **Herbicide tolerance (yellow pins)**
 - Lead **spring** herbicide tolerant lines re-tested for over-the-top weed control in contra-season and seed scale-up in southern US

Impact of Early Gene Traits on the Seed Industry

In case you missed it . . .

Adoption rates for herbicide-tolerant (HT) soybeans, cotton, and corn in the United States, 1996–2018

Percentage of planted acreage

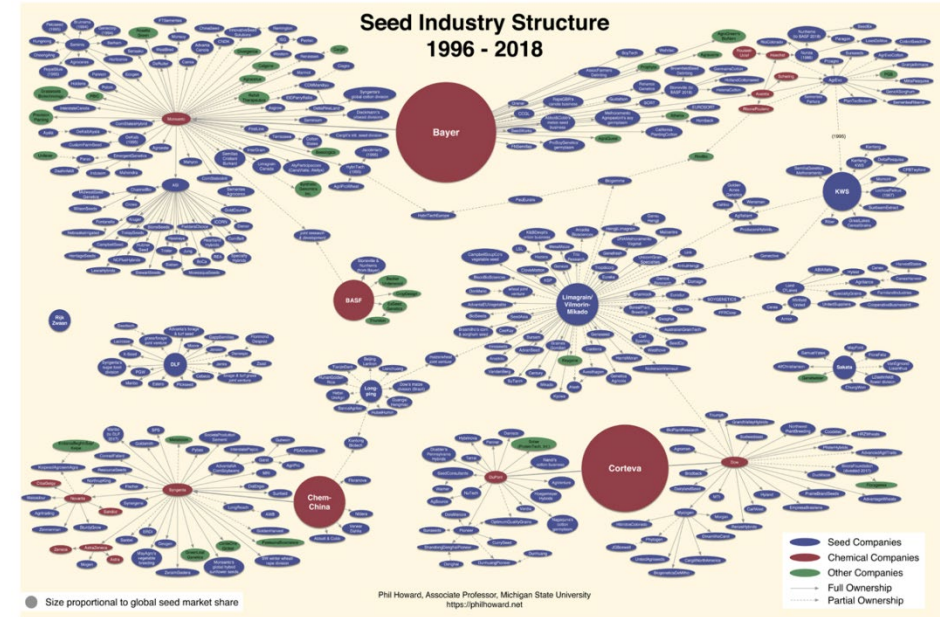


Source: USDA, Economic Research Service, *Adoption of Genetically Engineered Crops in the U.S.*

Single gene traits
HT, insect resistance

Trait stacks, 2-3 HT
genes, several insect
resistance genes

BY KRISTINA KIKI HUBBARD • JANUARY 11, 2019



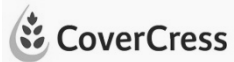
- Seed company's spent decades developing their proprietary **germplasm** through breeding
- Herbicide tolerant varieties **increased grower revenue** leading to rapid adoption
- Value shift to gene traits, M&A of technology developers by Ag Chem's to secure intellectual property
- Ag chemical Co's consolidated the seed sector (the big 6)-- today 3-4 major players
 - Bayer, Corteva, Syngenta, BASF

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



Vision Bioenergy
Oilseeds LLC

Stacked Gene Traits

- Performance differentiation
- Potential for step change improvements
- Leverage new tools like genome editing
- Leverage closed loop production in US/Canada in non-export crop
- Leverage improved regulatory environment in US



Camelina Based Biofuel Feedstocks

The Potential of the Camelina Crop for Biofuel Feedstocks is Driven by:

- **Grower adoption – Weed control** and seamless integration into crop rotations
- **Grower adoption – Revenue** - increasing the harvest value for biofuel feedstocks
 - Camelina grain (seed) yield per acre, oil as a percent of seed weight (oil/acre)
 - Carbon intensity (CI) score of the oil (carbon score as a trait target?)
 - Improved protein meal value
- **Grower adoption – Technology** – pipeline of Camelina lines and proprietary gene traits
 - Priority 1: HT Camelina to enable seamless integration into grower crop rotations
 - Priority 2: Seed yield and seed oil content to increase the harvest value for biofuels
 - Priority 3: Meal quality traits to improve meal value in fee
- **Grower adoption – Partnerships across the biofuel value chain**




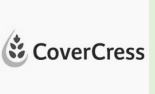
















Portfolio of Camelina Traits in Development

Trait	Camelina Phenotype	Trait Source	Comments
HT 1	Broadleaf weed control	Known gene	YTEN patent pending on HT Camelina
HT 1 plus Group 2 HT	Broadleaf weed control plus Group 2 herbicide soil residues	Known gene	YTEN patent pending on HT Camelina
HT 1 plus HPPD HT	Broadleaf weed control plus HPPD soil residues	Proprietary HPPD ¹ trait	Recently added to enable rotations in corn/soy belt
E3902	Increased seed oil	Yield10	PCT/US2020/043063
C3004	Increased vigor and seed yield	Yield10	PCT/US19/49281
C3007	Increased seed oil Increased seed yield	U. Missouri ² Yield10	Issued US 10,883,113 PCT/US2021/045717
C3020	Increased seed oil	Yield10	PCT/US2020/032696
C3019, C3021, C3022	TBD-in testing	Yield10	PCT/US2020/032696
C3006	Increased seed yield and oil	Yield10	PCT/US2016/026767
C3026	TBD-in testing	Yield10	PCT/US2021/018743
Yield trait stack	Increased seed oil	Yield10	Patent in preparation

¹ Exclusive option to novel HPPD trait

² Exclusive License from U. Missouri for use in increasing oil content in crops

Oilseed to Biofuel Value Chain Partnerships

Company	Ownership	Oilseed	Crush Partner	Refinery Partner	Biofuel Offtake
	Subsidiary of NuFarm (Australia)	Carinata			
	Majority owned by Bayer	Pennycress		 ¹  ¹	
	Owned by GCEH, Exxon has the right to acquire 	Camelina (Spring)			
	Public Co.	Camelina (Spring and Winter)	Confidential	Confidential	
Vision Bioenergy	S&W Seed (minority) Shell (majority) 	Camelina			
	Public Co.	Canola		 	

Note 1, The acquisition of REG by Chevron is ongoing

Advancing the Yield10 Business

Goal: Establish commercial business targeting the biofuel feedstock market

- **Building commercial capabilities**

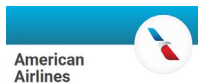
- Expecting first product revenue in 2023
- Building seed inventory for supply under grain production contracts
- Increasing production - outreach to growers underway for contract planting in spring and fall of 2023
- Activities underway supporting Camelina regulatory filings, variety registrations and branding



Seed scale-up of spring E3902 HT Camelina, Feb. 2023

- **Engaging potential supply chain partners supporting capital-light business model**

- Crusher/Biorefiner: Signed agreement for offtake of Camelina grain in key target growing region demonstrating supply chain from YTEN → grower → crush and refining
- Mitsubishi Corp: MOU for partnership for supply, offtake, and marketing of Camelina oil
- American Airlines: MOU for collaboration to develop value chain for Camelina in SAF





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