



Yield10 Bioscience Reports Promising Seed Yield Results for Novel Yield Trait C3004 in Growth Chamber Studies in Camelina

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--Fast-Tracking Deployment of C3004 Trait into Canola and Soybean

WOBURN, Mass., Sept. 05, 2018 (GLOBE NEWSWIRE) -- Yield10 Bioscience, Inc. (Nasdaq:YTEN), a Company developing new technologies to create step-change improvements in crop yield to enhance global food security, today announced promising results for its novel yield trait C3004 in growth chamber studies conducted using its Camelina platform. Camelina plant lines containing C3004 grew vigorously, and the best lines produced increases in seed yield in a range of 26% to 65% as compared to control plants. Yield10 plans to conduct field tests of the C3004 trait in Camelina as part of its 2019 Field Test program in Canada. In addition, Yield10 is fast tracking deployment of the C3004 trait into canola and soybean to determine if the trait produces similar effects on plant vigor and seed yield in major oilseed crops.

 [Yield10 Bioscience C3004 Yield Trait in Camelina Produces Increased Seed Yield](#)

Novel yield trait C3004 deployed in Camelina (right) shows increased seed yield and branching as compared to control plant (left).

“Our early research results with C3004 in Camelina including plant growth and vigor, branching and seed yield, though preliminary, are very encouraging,” said Kristi Snell, Ph.D., Chief Science Officer of Yield10 Bioscience. “These initial seed yield data for C3004 suggest we can harness the metabolic machinery of plants to drive robust increases in seed yield in Camelina. The next step is to determine if the effects of C3004 on plant vigor and seed yield can be successfully achieved in Camelina under field conditions and translated into canola, soybean and other commercial crops.”

Background on C3004 and Results

Yield10's C3004 yield trait was identified as a gene that was overexpressed in Camelina plants engineered to express C3003, a trait based on a gene found in algae. While the role of C3004 is currently not well understood, it may have an effect on carbon partitioning in plants and, under certain conditions, its effect may potentially be additive with C3003, which impacts photorespiration. Yield10 is researching the combination of C3003 and C3004 in Camelina.

Yield10 constructed C3004 to increase expression of the gene and tested it in Camelina. Stable plant lines were produced and yield studies were performed in a controlled environment growth chamber. Yield10 reported that increased expression of C3004 in Camelina resulted in a significant increase in plant growth and vigor, increased seed yield, and in some cases increased individual seed weight. In six Camelina plant lines containing C3004, average seed yield (grams/plant) increased by 26% to 65% over control plants. Tertiary branching was measured in a subset of plants, and the increase in seed yield was accompanied by an increase in tertiary branching.

Summary of Preliminary Results for Expression of C3004 in Camelina

Camelina Line	% Increase in Seed Yield
wild-type control	---
OY03 (C3004 ⁺)	26%
OY04 (C3004 ⁺)	41%
OY12 (C3004 ⁺)	52%*
OY15 (C3004 ⁺)	65%*
OY16 (C3004 ⁺)	46%
OY17 (C3004 ⁺)	53%*

*statistically significant, Student's t-test p<0.05. Data average 3-4 plants per line.

Yield10 outlined a series of next steps in the Company's research with C3004 including,

- Test C3004 in Camelina in 2019 field tests
- Test C3004 in combination with C3003 in Camelina
- Fast-track deployment of the Camelina C3004 gene trait alone and in combination with C3003 in canola and soybean
- Develop a strategy with C3004 to enable a path to non-regulated yield traits under current USDA-APHIS rules
- Identify additional opportunities for collaboration in oilseeds and other commercial crops

"Our metabolic engineering approach allows us to look at the challenge of increasing seed yield differently, as we focus on the capture, fixation and deposition of carbon from the air to seed," said Oliver Peoples, Ph.D., President and Chief Executive Officer of Yield10. "Yield10's early research which introduced a very complex metabolic pathway into Camelina illustrates to us that a doubling of seed yield or other similar high producing outcomes for crop performance can be achieved, at least experimentally, in plants. The results we are generating as we study the effects of C3003 and C3004 are increasing our confidence that we can convert our unique scientific approach and insights into the successful development of step-change yield improvements in major crops."

AboutYield10 Bioscience

Yield10 Bioscience, Inc. is focused on developing new technologies to achieve step-change improvements in crop yield to enhance global food security. Yield10 has an extensive track record of innovation based around optimizing the flow of carbon in living systems. Yield10 is leveraging its technology platforms and unique knowledge base to design precise alterations to gene activity and the flow of carbon in plants to produce higher yields with lower inputs of land, water or fertilizer. Yield10 is advancing several yield traits it has developed in crops such as Camelina, canola, soybean and rice. Yield10 is headquartered in Woburn, MA and has an Oilseeds Center of Excellence in Saskatoon, Canada.

For more information about the Company, please visit www.yield10bio.com.

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Safe Harbor for Forward-Looking Statements

This press release contains forward-looking statements which are made pursuant to the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. The forward-looking statements in this release do not constitute guarantees of future performance. Investors are cautioned that statements in this press release which are not strictly historical, including, without limitation, those relating to the timing for conduct of field tests of the C3004 trait in Camelina, the ability to replicate data from growth chamber studies in field tests, the ability to translate the positive effects observed in the testing of C3004 in Camelina to other crops, the potential to develop a non-regulated version of C3004, and the ability to secure new collaborations or licenses, constitute forward-looking statements. Such forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from those anticipated, including the risks and uncertainties detailed in Yield10 Bioscience's filings with the Securities and Exchange Commission. Yield10 assumes no obligation to update any forward-looking information contained in this press release or with respect to the matters described herein.

Contacts:

Yield10 Bioscience:

Lynne H. Brum, (617) 682-4693, LBrum@yield10bio.com

Investor Relations:

Amato and Partners, LLC

admin@amatoandpartners.com

Media Inquiries:

Eric Fischgrund

Fischtank Marketing and PR

eric@fischtankpr.com

A photo accompanying this announcement is available at <http://www.globenewswire.com/NewsRoom/AttachmentNg/7d89e842-787b-455c-8456-c5566c44bf10>

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