



Yield10 Bioscience Announces Collaboration with Rothamsted Research to Develop Advanced Technology for Producing Omega-3 Nutritional Oils in Camelina

November 12, 2020

WOBURN, Mass. and HARPENDEN, U.K., Nov. 12, 2020 (GLOBE NEWSWIRE) -- Yield10 Bioscience, Inc. (Nasdaq:YTEN), an agricultural bioscience company, today announced it has signed a collaboration agreement with UK-based Rothamsted Research to support Rothamsted's Flagship Program to develop omega-3 oils in *Camelina sativa*. The technology developed by Rothamsted could enable the sustainable, plant-based production of omega-3 (DHA+EPA) nutritional oils that closely mimic the composition of southern hemisphere fish oil, an important ingredient in aquaculture feed. Omega-3 oils are also essential for human nutrition and have demonstrated benefits in heart health.

Rothamsted Research is a world-leading nonprofit research center based in Harpenden, UK that focuses on strategic agricultural science to the benefit of farmers and society worldwide. Over the last decade, the team led by Professor Johnathan Napier, Ph.D., Science Director, has demonstrated the production of DHA+EPA oils in *Camelina* seed. In addition, Prof. Napier's team has carried out multi-year field trials and multiple feeding studies using the DHA+EPA *Camelina* oil in different fish species including salmon. Under the agreement, Yield10 will provide support to Prof. Napier's ongoing research including further DHA+EPA trait improvement, field testing and nutritional studies. As part of the agreement, Yield10 has an exclusive two-year option to sign a global, exclusive or non-exclusive license agreement to the omega-3 technology.

"Yield10 shares our vision for developing *Camelina* as a commercial crop for omega-3 oils based on a land-based route to production," said Professor Angela Karp, Rothamsted director and chief executive officer. "Successful commercialization of this technology could have significant benefits, offering sustainable production of an oil essential for nutrition and wellness to consumers, as well as providing crop diversification to growers. Yield10 has described numerous innovations for improving the performance of *Camelina* and has demonstrated commitment and leadership in the development of *Camelina* as a new commercial crop. We look forward to advancing our mission of improving sustainable agriculture working with the Yield10 team."

"Yield10 is developing *Camelina* as a platform crop for the production of nutritional oils and PHA biomaterials and we believe there is significant market opportunity for omega-3 oils produced in *Camelina* and the technology developed by Professor Napier and his team at Rothamsted is highly complementary to our development efforts in *Camelina*," said Oliver Peoples, Ph.D., president and chief executive officer of Yield10 Bioscience. "The Rothamsted team has successfully illustrated the key steps in a potential path for commercial development for the technology including stably deploying the DHA+EPA omega-3 oil pathway in *Camelina*, conducting field tests at scale in the UK and Canada, and publishing feeding studies to demonstrate the nutritional properties of the oil. Under this collaboration, we will have the opportunity to further assess the omega-3 oil technology and ongoing progress by Rothamsted while Yield10 continues to focus on developing elite varieties of *Camelina* and establishing a strategic business plan to identify opportunities for commercial development for this high value oil."

About Prof. Napier and Research Related to Producing Omega-3 oils in Camelina

[Prof. Napier](#) is an internationally recognized leading pioneer in plant biotechnology and an advocate for the power of GM plants to deliver benefits for the public good. He has made key discoveries in understanding the biosynthesis of omega-3 long chain polyunsaturated fatty acids (omega-3 fish oils) in transgenic plants.

Selected Recent Publications

Napier, J.A., Haslam, R.P., Olsen, R.E., Tocher, D.R., and Betancor, M.B. 2020. [Agriculture can help aquaculture become greener](#). *Nature Food* 1, 680-683 (2020).

Han, L., Usher, S. L., Sandgrind, S., Hassall, K. L., Sayanova, O. V., Michaelson, L. V., Haslam, R. P. and Napier, J. A. 2020. [High level accumulation of EPA and DHA in field-grown transgenic Camelina - a multi-territory evaluation of TAG accumulation and heterogeneity](#). *Plant Biotechnol J.* 2020;10.1111/pbi.13385. doi:10.1111/pbi.13385

West, A. L., Miles, E.A., Lillycrop K. A., Han, L., Sayanova, O. V., Napier, J. A. and Calder, P. C. 2019. [Postprandial incorporation of EPA and DHA from transgenic Camelina sativa oil into blood lipids is equivalent to that from fish oil in healthy humans](#). *Br J Nutr.* 2019;121(11):1235-1246. doi:10.1017/S0007114519000825

Betancor, M. B., Li, K., Sprague, M., Bardal, T., Sayanova, O. V., Usher, S., Han, L., Måsøval, K., Torrissen, O., Napier, J. A., Tocher, D. R. and Olsen, R. E. 2017. [An oil containing EPA and DHA from transgenic Camelina sativa to replace marine fish oil in feeds for Atlantic salmon \(Salmo salar L.\): Effects on intestinal transcriptome, histology, tissue fatty acid profiles and plasma biochemistry](#). *PLoS One.* 2017;12(4):e0175415. Published 2017 Apr 12. doi:10.1371/journal.pone.0175415

Usher, S., Han, L., Haslam, R.P., Michaelson, L. V., Sturtevant, D., Aziz, M., Chapman, K. D., Sayanova, O. V. and Napier, J. A. 2017. [Tailoring seed oil composition in the real world: optimising omega-3 long chain polyunsaturated fatty acid accumulation in transgenic Camelina sativa](#). *Scientific Reports* 7 (1), 6570 (2017).

About Rothamsted Research

Rothamsted Research is the longest-running agricultural research institute in the world. We work from gene to field with a proud history of ground-breaking discoveries, from crop treatment to crop protection, from statistical interpretation to soils management. In 1843, our founders were the

pioneers of modern agriculture, and we are known for our imaginative science and our collaborative influence on fresh thinking and farming practices. Through independent science and innovation, Rothamsted has made significant contributions to improving agri-food systems in the UK and internationally. In terms of the institute's economic contribution, the cumulative impact of our work in the UK was calculated to exceed £3000 million a year in 2015¹. Rothamsted Research is strategically funded by the Biotechnology and Biological Sciences Research Council (BBSRC), with additional support from other national and international funding streams, and from industry. It is also supported by the Lawes Agricultural Trust (LAT).

For more information, visit the [Rothamsted website](#) or follow on Twitter [@Rothamsted](#)

¹[Rothamsted Research and the Value of Excellence: A synthesis of the available evidence. by Séan Rickard \(Oct 2015\)](#)

About Yield10 Bioscience

Yield10 Bioscience, Inc. is an agricultural bioscience company developing crop innovations for sustainable global food security. The Company uses its "Trait Factory" including the "GRAIN" big data mining trait gene discovery tool as well as the Camelina oilseed "Fast Field Testing" system to develop high value seed traits for the agriculture and food industries. As a path toward commercialization of novel traits, Yield10 is pursuing a partnering approach with major agricultural companies to drive new traits into development for canola, soybean, corn, and other commercial crops. The Company is also developing improved Camelina varieties as a platform crop for the production and commercialization of nutritional oils, proteins, and PHA biomaterials. The Company's expertise in oilseed crops also extends into canola, where it is currently field-testing novel yield traits to generate data to drive additional licensing opportunities. 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, or follow the Company on [Twitter](#), [Facebook](#) and [LinkedIn](#).

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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, whether the technology developed by Rothamsted could enable the sustainable, plant-based production of omega-3 nutritional oils that closely mimic the composition of southern hemisphere fish oil, the fact that Yield10 researchers will collaborate with Prof. Napier and his team on advancing the development of Camelina modified to produce omega-3 nutritional oils, whether successful commercialization of this technology could have benefits, offering sustainable production of an oil essential for nutrition and wellness to consumers, as well as providing crop diversification to growers, and whether there is significant market opportunity for omega-3 oils produced in Camelina, 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.

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