



MEDIA RELEASE

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Australian scientific collaboration set to break world's reliance on fish for long chain omega-3

A pioneering Australian research alliance is leading the international race to break the world's reliance on fish stocks for its supply of the vital dietary nutrient, long chain omega-3.

Today (Tuesday 12 April) three Australian organisations announced a \$50 million dollar research collaboration which will use leading edge gene technology to develop and commercialise vegetable oil which will contain the same high quality, DHA (docosahexaenoic acid) rich long chain omega-3 that traditionally comes from fish.

This collaboration brings together Nuseed (a wholly owned subsidiary of Nufarm Ltd), the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Australian Grains Research and Development Corporation (GRDC).

Already as part of the project, CSIRO scientists have made a significant breakthrough by enabling canola plants to generate long chain omega-3 oils that contain DHA, something that up until now has only been found in beneficial quantities in ocean-based algae and the fish that eat it. Some land-based plants, like flaxseed, can produce short-chain omega-3 oils, but are unable to produce the more beneficial long chain omega-3 oils containing DHA.

The three parties have signed two major agreements to develop and market plant made 'DHA-rich' long chain omega-3 oils, utilising world leading gene technology. The first agreement is a multi-year collaborative research project to achieve a series of development milestones and complete a broad range of studies. The second agreement is a global exclusive commercial license to Nuseed for existing and co-developed long chain omega-3 intellectual property.

DHA and EPA (eicosapentaenoic acid) long chain omega-3s are fatty acids which have well-documented roles in heart and brain health, child and infant development, treating inflammation and other health functions. The awareness of their health benefits and inclusion in diets – either as supplements or used to fortify processed foods – has grown exponentially over the last decade.

The Global Organisation for EPA/DHA (GOED) currently value the total long chain omega-3 market at \$US 18.6billion.

The primary source of these long chain omega-3s is fish, and as demand continues to grow faster than can be sustainably supplied from wild fish stocks, the race is on to find potential new sources which can satisfy burgeoning consumer demand. This is why the long chain Omega-3 Oil Research Collaboration has been created.

The CSIRO and Nuseed, with the financial support of the GRDC, have come together to undertake the research and trials to develop the highest quality of long chain DHA omega-3 in oilseed plants at levels equal to or better than fish oil.

The CSIRO has long led the way in research aimed at developing plants, through the transfer of genes from one plant (microalgae) to another (canola), which can produce the omega-3 fatty acids typically found in fish oil. The first phase of the project is to assess milestones, obtain regulatory approval, and launch a canola based product in Australia. The new collaboration aims to be trialling elite canola lines as early as 2013 and have seeds commercially available by 2016.

Dr Bruce Lee, Director of the CSIRO's Food Futures Flagship said, "We are excited about the potential of this partnership. Our scientists have shown that it is possible to produce the same quality long chain omega-3 oils as that found in fish, and at a level that is commercially viable. By being able to produce long chain omega-3 oils in canola we are developing a nutrient that is important for human health in a sustainable plant resource."

"CSIRO has had a long history of ground breaking research in omega-3 nutrition and plant genetics, providing the scientific basis to develop plants containing long-chain omega-3 polyunsaturated fatty acids typically found in fish oils, such as EPA and DHA. Now we are much closer to seeing the results of this important research turned into a product that is available to consumers and industry," said Dr Lee.

The GRDC provided financial support to assist in the development of the technology to make the production of the special canola possible and Nuseed has joined to support the next stage of development, regulatory approval and global commercialisation.

Nuseed's General Manager of Global Seeds, Brent Zacharias said, "As an emerging global seed and traits company we are in a strong position to collaborate with CSIRO and GRDC to achieve the research milestones and deliver a high quality product to the world market."

GRDC Managing Director John Harvey said, "Plant-based omega-3 oil production is a sustainable, long-term solution to the growing demand for omega-3 oils. This alternative long-chain omega-3 canola oil will provide Australian growers with an exciting new variety for domestic and international grain markets."

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About the Omega-3 Oil Research Collaboration

This collaboration brings together three of Australia's leading organisations in grain research. The CSIRO through its Food Futures National Research Flagship providing investment, the research science behind omega-3s and developing transgenic omega-3 canola; Grains Research and Development Corporation (GDRC) providing investment; and Nuseed providing investment and development, including regulatory and breeding expertise to the collaboration.

Company background information

CSIRO

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) is Australia's national science agency and one of the largest and most diverse research agencies in the world. CSIRO applies its world-leading scientific knowledge to create jobs, national wealth, a healthy and sustainable environment and improved living standards for all Australians. CSIRO is enhancing Australia's food production systems through an integrated 'farm-to-fork' approach. CSIRO is delivering science to enable increased productivity and efficiencies at the farm level, improving the quality and yield of Australian crops, developing innovative food processing technologies, creating new value-added foods, and developing the nation's livestock, aquaculture and fishery industries. www.csiro.au

Nuseed

Nuseed, a wholly owned subsidiary company of Nufarm is a global seed company committed to the breeding and production of high performance planting seed including canola, sunflower, grain and forage sorghum. Nuseed is committed to the development of elite seed products that drive value both on the farm and through the agrifood chain. Nuseed is a member company of the Global Organization for EPA and DHA Omega-3 (GOED).

www.nuseed.com

GRDC

The Grains Research and Development Corporation (GRDC) is one of the world's leading grains research, development and extension (RD&E) organisations. GRDC invests in RD&E to provide growers with vital information, knowledge and resources to support effective competition by Australian grain growers in global grain markets, through enhanced profitability and sustainability.

The GRDC's investment in farming practices, plant varieties, and new products has helped position Australia's growers as the best in the world. www.grdc.com.au