

2nd Global Summit on

Plant Science

October 06-08, 2016 London, UK



Harrie Van Erp

Rothamsted Research, UK

Restructuring vegetable fats for better infant nutrition

For diverse reasons, there is a growing demand for infant formula. Traditionally infant formula is produced using vegetable oils, which have a different TAG structure than human milk fat. This causes digestive problems in infants. In plant oils, 16:0 is at the sn-1 and sn-3 position of the glycerol backbone, but in human milk fat, the majority (70%) of 16:0 is at the sn-2 position. In the infant's intestine, a pancreatic lipase hydrolyses 16:0 from the sn-1 and sn-3 positions leading to the formation of calcium soaps. This causes constipation and reduced uptake of nutrients and Ca^{2+} . In recent years, several companies have addressed this problem by using chemical technologies to change the TAG structure of plant oils. However, producing a human milk fat substitute in plants is cheaper and better for the environment. We are using a synthetic biology approach to rationally redesign seed lipid metabolism in order to produce vegetable oils with a similar composition and structure as human milk fat. In my presentation, I will present data showing the progress we made in the engineering of a human milk fat substitute in crop plants.

Biography

Harrie Van Erp has completed his PhD from Michigan State University and Post-doctoral studies from Washington State University. He is currently a Research Scientist at Rothamsted Research where he's involved in research focused on "Tailoring plant lipid metabolism for nutritional and industrial purposes".

harrie.van-erp@rothamsted.ac.uk