NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

SEMINAR

Wed, 26 Oct 2016 | 2pm | DBS Conference Room 1

Hosted by A/P Sanjay Swarup

Designer Plant Oils Through Metabolic Engineering



By **Surinder Singh**

Group Leader, Plant Oil Engineering
CSIRO, Canberra

My talk will focus on the use of Metabolic Engineering for the development of two new GM oilseed crops for Australian and Global broad acre farming. One of the crop is canola that contains long chain omega3 fatty acids normally found in fish. We have engineered the canola crop with algal genes such that the canola oils contains similar levels of DHA as fish oil. This oil can be used in aquaculture, food, supplements as well pharma applications. The other crop is Safflower engineered to contain super high levels of monounsaturated levels of oleic acid in its oil (SHO). The SHO oil is targeted to the industrial market and the oil will have industrial applications in the lubricant and biopolymer market. Finally, I will also describe our efforts to engineer seed oil like levels in leaves.

Professional Biography

Surinder Singh obtained his BSc in Biological Sciences, from Guru Nanak University, India in 1976; his MSc in Plant Physiology and Biochemistry from the GB Pant University Pantnagar, India in 1980 and his PhD in Plant Physiology and Biochemistry from the University of Adelaide in 1985. He was a PDF Research Fellow at the Australian Institute of Nuclear Science and Energy, University of Queensland and the Molecular Oncology Laboratory, Queensland Institute of Medical Research (QIMR) from 1987-89, and a NH&MRC Research Officer at the Molecular Oncology Laboratory, QIMR from 1989-1991. He joined CSIRO Agriculture and Food in 1991 where he is the Group Leader of the Plant Oil Engineering Group. He has published more than 120 research papers and was named in the top 20 translational researchers for 2014 by Nature Biotechnology.

Artwork by Ann Nee, DBS, NUS