

High linoleic soybean oil now available for product trials

New University of Guelph soybean variety produces superior oil for industrial applications

High linoleic (C18:2) soybean oil from a new Canadian soybean variety under development at the University of Guelph is now available in limited quantities for industrial product development trials.

The oil is extracted from a new soybean variety, OAC 13-55C-HL, co-developed at the University of Guelph by Dr. Istvan Rajcan and the late Dr. Gary Ablett. It is now being investigated for its potential in industrial material applications like paints, coatings, polyols and epoxies, and other products where oilseed oils could be used.

Benefits of the oil for industrial applications

The oil has a fatty acid profile that is approximately 33 per cent higher in linoleic acid than commodity soybean oil; all other fatty acid levels, including saturates, are lower. It also has a 12 per cent increase in double bonds compared to commodity soybean oil – and the more double bonds, the more reactive the oil, which should allow for improvements in production efficiency and material synthesis.

Comparison of fatty acids, percent		
Major fatty acids	Commodity soybean, typical	High linoleic soybean oil sample average
C16 palmitic	11	3.7
C18 stearic	4	2.7
C18:1n9 oleic	23	18.8
C18:2 linoleic	51	67.9
C18:3n3 alpha-linolenic	7	4.4

Soybean oil's double bonds enable advanced chemistry, and its long carbon chains provide for other properties such as increased water resistance, a desirable attribute in paints and coatings. The oil and fatty acids can be modified for use in low Volatile Organic Compound (VOC) coatings or be synthesized and converted into products such as polyols and epoxies.

Soy 20/20 is assisting the University of Guelph, which owns both the oil and the soybean variety, with distribution of small samples of the oil to companies interested in product development applications. The potential this new high linoleic oil offers for soy or oilseed-based industrial applications is promising. With soybean usage in paints and coatings being on the rise, this new oil has the potential to be a better feedstock for existing uses as well as in the development of new materials.

For more information or to obtain an oil sample:

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Soy 20/20 is supported by Growing Forward 2, a federal-provincial-territorial initiative, and by Grain Farmers of Ontario.