

Abstract

Rapeseeds a Rich Source of Polyunsaturated Fatty Acids [†]

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In human diet, polyunsaturated fatty acids (PUFA), have an essential role in optimal brain functions and stroke prevention, specially, omega-3 fatty acids, e.g., 9,12,15-linolenic acid (ALA, 18:3), 5,8,11,14,17-eicosapentaenoic acid (EPA, 20:5), and 4,7,10,13,16,19-docosahexaenoic acid (DHA, 22:6). The rich sources in this type of acids are vegetable seeds like rapeseed, hemp, flax, camelina, and ocean fish oils.

Global rapeseed production has had a sustained growth over the last years. Rapeseed is primarily grown for meal and its oil, which can be further processed.

In this context, due to their rich content in polyunsaturated fatty acids (PUFA), rapeseed oils can be transformed in their alkyl esters by transesterification, through one or two stages.

PUFA have been prepared by extraction of triglycerides from seeds, followed by transesterification with ethanol over basic catalysts and purification. A few homogeneous and heterogeneous catalysts will be tested.

The analysis of polyunsaturated fatty acid ethyl esters was performed using GC-MS/MS TRIPLE QUAD (Agilent 7890 A).

Fatty acid ethyl esters have been synthesized in order to be enriched in PUFA by molecular distillation.

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