

REMOVAL OF BITTER TASTE FROM LINSEED OIL OBTAINED BY COLD PRESSING

Goal of the project

Removal of the bitter taste in unrefined cold pressed linseed oil, to make it more appealing for human consumption.

Short description of the project

Linseed oil has been used for a very long time as basis in oil paint and for linoleum fabrication, based on its short drying time and ability to form an uniform film. These qualities originate from the high content in unsaturated fatty acids, mostly α -linolenic acid (omega-3) and linoleic acid (omega-6) together with oleic acid. The high content in unsaturated fatty acids and the high percent of omega-3 and omega-6 made linseed oil very attractive for the human food industry, as well. However, there are some drawbacks concerning its utilization for human consumption, like as the susceptibility to oxidation during the extraction process and the unpleasant bitter taste that begins to develop after only a few days.

The most commonly used extraction method of linseed oil designated for human consumption is cold pressing, which leads to less oxidation.

As bitter taste develops far too early to be attributed to fatty acid oxidation, the main objective of the project is identification and removal of the components responsible for this deficiency. The implemented method must be in concordance with organic production regulations.

Project implemented by

Faculty of Industrial Chemistry and Environmental Engineering,
Department of Organic Chemistry and Engineering of Natural
Organic Compounds

Implementation period

01.08.2014 – 31.07.2015



Main activities

1. Evaluation of linseed oils from obtained by cold pressing of different cultivars, to determine the most convenient one for the production of good quality organic cold pressed linseed oil for human consumption;
2. Gas-chromatographic analysis for determination of the fatty acid profile;
3. HPLC and HPLC-MS analysis for identification of the compounds responsible for the bitter taste.
4. Influence of different factors on the oxidation of the oil;
5. Removal of the bitter taste by procedures compatible with the organic production regulations.

Applicability and transferability of the results

The results of this project will be used to develop a process for the organic production of cold pressed linseed oil, with improved marketability than the presently commercialized product.

Research Centre

Research Centre in Organic, Macromolecular and Natural Compounds
Chemistry and Engineering

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Research team

Eng. Claudiu MARCU
Asist. Prof. Cristina PAUL, PhD
Eng. Anamaria TODEA
Prof. Francisc PETER, PhD

Contact information

Prof. Francisc PETER, PhD
Faculty of Chemistry and Environmental Engineering
Address: C. Telbisz No. 6, RO300001 Timisoara
Phone: (+40) 256 404 216
Mobile: (+40) 745 637 530
E-mail: francisc.peter@upt.ro
Web: www.chim.upt.ro