21st International Conference on

# Food Technology & Processing

October 04-06, 2018 | London, UK

## Modelling of extraction parameters of flaxseed oleoresins

**Busra Sahin** and **Seda Ozgen**
Cankiri Karatekin University, Turkey

In recent years, people have started to take into account of not only the ingredients of the food they consume but also its benefits to human health. Flaxseed which traces its origin back to Mesopotamia since 5000 BC, has been gaining popularity, due to the reports on its health benefits and disease preventive properties. Flaxseed is known to contain a variety of constituents. Flaxseed is an important plant source containing beneficial compounds for health besides being rich in α-linolenic acid and good quality protein, flaxseed has potential as a natural source of phytochemicals such as flavonoids, lignans and phenolic acids. Flaxseed is the richest source of phenolic compounds. Extraction time, temperature and sample/solvent ratio were tested and optimized as a parameter by using response surface methodology. In this context, Response Surface Methodology (RSM) was used to optimize the extraction system and variable parameters were optimized. The optimization process was repeated in both drying methods. Extraction was carried out in a temperature controlled shaking water bath and the solvents were removed in rotary evaporator. The design variable points were set at 30, 40 and 50°C for temperature, 10, 20 and 30 minutes for time 1:10, 1:30 and 1:50 for plant material-solvent ratio. The effects of these variable parameters on extraction yield, total extractable carotenoid amount and antiradical activity were investigated. 40°C, 20 min and 1:50 plant material-solvent ratio showed the best performance. The results were evaluated together with 3D graphics and the best extraction conditions were determined. Thus, extraction conditions were found mathematically and it is provided that the parameters studied can be estimated by regression models depending on the changing factor level.

### Recent Publications:

1. Piva G S, Weschenfelder T A, Franceschi E, Cansian R L, Paroul N and Steffens C (2018) Extraction and modelling of flaxseed (*Linum usitatissimum*) oil using subcritical propane. Food Chemistry 228:50-56.

2. HuiGuyang K and Shaojun T (2018) Extraction of flaxseed proteins and the main antinutritional factors. Journal of Food Safety and Quality 9(6):1440-1444.

3. Zhang Z, Liu Y and Che L (2017) Effects of different drying methods on the extraction rate and qualities of oils from demucilaged flaxseed. Drying Technology an International Journal 36(13):1642-1652.

4. Draganescu D, Dodi G, Stoica I and Popa M I (2017) Hydrolysis studies of flaxseed extract by high performance liquid chromatography. Cellulose Chemistry and Technology 51:9-10.

5. Nikhil G K, Jayaranjan R K and Rekha S S (2017) Extraction of flaxseed oil: a comparative study of three-phase partitioning and supercritical carbon dioxide using response surface methodology. Food and Bioprocess Technology 10(5):940-948.

### Biography

Busra Sahin had her major in Food Engineering at Konya Selcuk University where she studied the components of mother's milk. After her graduation she attended College of Agriculture and Life Sciences at Cankiri Karatekin University in 2016. In the meantime she worked as a Food Engineer at the local dormitory (hall of residence) dining hall for 2 years. She then moved to London in April 2018 and she is currently working on microencapsulation of ginger and flaxseed as part of her Master's degree studies.

busra1894@hotmail.com

Journal of Food Processing & Technology
ISSN: 2157-7110

Food Technology 2018
October 04-06, 2018

Volume 9

Page 50