

Effect of dietary fibre supplements in the form of pomace from oil production on the structure of gluten proteins, rheological properties of bread dough and bread quality

The growing consumer awareness about healthy food and the impact of health-promoting substances on human health forces the introduction of health-promoting food products onto the market. The oil pomaces obtained during oil production from various types of oilseeds (flax, sesame, pumpkin etc.) can be regarded as a source of not only dietary fibre, but also of valuable unsaturated fatty acids, antioxidants and macro- and micronutrients. In addition, the use of the pomaces is part of the European Union policy on the management of waste from food production. Wheat bread is a basic element of the European diet and for this reason can be considered as a suitable carrier of valuable and necessary for the human body health-promoting substances.

The aim of the proposed research will be to study the impact of five selected pomaces after oil production added to dough and bread in the amount of 3%, 6% and 9% on the structure of gluten, rheological and thermal properties of bread dough and quality of bread. Changes in gluten structure will be determined using infrared spectroscopy and UV-VIS spectroscopy. The rheological properties of bread dough will be determined using a farinograph and extensograph. Whereas the quality of bread crumb texture will be determined using a colorimeter and a testing machine.

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Candidate profile:

- Graduate in natural sciences (physics, chemistry, food technology and related).
- Knowledge of English on the communicative level.
- Knowledge of MS Office and Statistica.
- Knowledge of spectroscopic techniques (infrared spectroscopy, UV-VIS spectroscopy) and/ or chromatographic techniques - welcome.