

Novel breads of non-wheat flours

Aleksandra Torbica, Miona Belović, Jelena Tomić

Abstract

The aim of this study was to provide new approach in creating gluten-containing and gluten-free breads without additives by combining thermal and hydrothermal pretreatments of flours (rye, oat, sorghum and millet).

The applied methodology included determinations of chemical composition of flours and breads, water absorption index, empirical and fundamental rheological measurements, and scanning electron microscopy, differential scanning calorimetry, colour, textural and sensory evaluations of breads.

Novel rye, oat, sorghum and millet breads based on the blend of heat treated and extruded corresponding flours in ratio 70:30 were produced by conventional breadmaking process. All breads were characterized by increased fibre content and had appearance similar to common wheat bread. Gluten-free breads were harder, less elastic with more granular structure due to higher degree of starch crystallinity. Mixolab curves indicated on many possible ways for further breads optimisation.