

F.27. MIXING AND PASTING BEHAVIOR OF WHEAT DOUGH WITH SALT AND SALT SUBSTITUTE ANALYZED BY MIXOLAB DEVICE

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Abstract. Nowadays the sodium reduction in bakery products is of a high interest due to the fact that the World Health Organization (WHO) recommends a daily sodium consumption of a maximum of 2 g/day sodium equivalent to 5 g/day of sodium chloride, a consumption that is much higher today. Due to the fact that bread is one of the main sources of salt in the world many countries are trying to reduce the sodium content from populations consumption by reducing it from bread products. In bakery products, sodium chloride is a raw material that influences all the stages of the technological process for bread-making. Sodium chloride replacement with other types of salts should be carefully analyzed since it impact on bread technological characteristics is significant. The aim of this study was to analyze the impact of a salt (SS) with a less sodium content < 100 mg which contains KCl and rice flour and to compare its effect with NaCl addition in wheat flour. The salt with a less sodium content was produced by NuTek Natural Ingredients with a commercial name SFL 100 RF G3 for a healthier nutrition balance with the same functionality as regular salt. To analyze the impact of SS and NaCl in different additions levels (0, 0.4, 0.8, 1.2 and 1.6%) in wheat flour on dough behaviour during mixing and pasting a Mixolab device was used. The following parameters were recorded according to ICC No. 173 standard method: water absorption (WA), dough development time (DDT), dough stability (ST) and torques during mixing and heating C1-C5. According to the data obtained water absorption value have been reduced for both types of salt used in dough recipe with 2.96% for NaCl and 1.57% for SS. The dough stability increased with 77.2% for NaCl and 27.2% for SS whereas dough development time had increased with 61.7% for NaCl and 9.87% for SS which indicates that dough become stronger as both types of salts are added in dough recipe. Mixolab torques during heating C2 and C3 had decreased for both types of salt addition in wheat flour whereas the C4 and C5 increased. According to the data obtained both types of salts had a similar effect on dough behaviour during mixing and heating which indicates that from technological point of view SS salt may successfully replace NaCl in bread-making.

Keywords: Mixolab, sodium chloride, potassium chloride, dough rheological behavior.

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