

DEVELOPMENT OF A HEALTHIER BREAD RECIPE: IMPACT OF FLOUR TYPE AND FERMENTATION ON BREAD QUALITY IN KOSOVO

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Abstract

Bread is a fundamental part of the daily diet in Kosovo, with white bread being one of the most consumed products. Given its high carbohydrate content, regular consumption may impact public health, necessitating the development of healthier alternatives. This study aimed to create a nutritionally improved bread recipe by using both market-purchased and self-milled wheat and rye flours. Two fermentation methods were compared: one involving 30- and 50-minute rest intervals, and another with a 20+40-minute combination. Water absorption of the flours was measured using a Promylograph.

Bread quality was assessed through multiple parameters: weight was determined using a precision scale, volume through the seed displacement method with amaranth seeds, and porosity and color were evaluated visually. Significant differences in weight and porosity were observed between the different bread samples ($p < 0.05$). The comparison between bread made from imported and local flours revealed significant variations in volume ($p < 0.05$) but no differences in other attributes ($p > 0.05$). Additionally, variations in porosity were detected between the two fermentation processes ($p < 0.05$), highlighting the role of fermentation in influencing bread texture.

The new formulation resulted in a bread with favorable sensory characteristics, including texture and taste, while introducing healthier ingredients. These findings suggest that incorporating locally milled flours and optimizing fermentation processes can lead to bread with enhanced quality, offering a viable alternative to conventional white bread commonly consumed in Kosovo.

Keywords: healthier bread, bread quality, wheat flour, rye flour, fermentation.