

OPTIMIZATION OF PRODUCTION OF BREAD ENRICHED WITH PEARL MILLET BASED COMPOSITE FLOUR

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ABSTRACT

The optimal design of response surface methodology (Design Expert Version 10) was used, to study the effect of the level of inclusion of pearl millet based composite flour, mixing time and proofing time, on the weight and volume of bread made from composite flour. The study revealed all the parameters studied were significant in producing high quality and nutritionally enriched bread. The feasibility of partially replacing wheat flour with pearl millet based composite flour in bread making was evaluated in several formulations, aiming to find a formulation for the production of wheat bread with better nutritional quality and consumer acceptance. The composite flour comprising of pearl millet (85%), kidney beans (10%), tiger nut (5%) and xanthan gum is used. The study found out the combinations of the parameters; level of composite flour inclusion; 20%, proofing time: 90 minutes and mixing time: 4 minutes were the optimal conditions for the productions of high quality bread enriched with pearl millet based composite flour.

KEYWORDS: Pearl Millet Based Composite Flour, Proofing Time, Mixing Time & Response Surface Methodology