

**P 32. THE EFFECT OF WHOLEMEAL SOURDOUGH ON THE QUALITY OF SHORT
DOUGH BISCUITS**

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ABSTRACT: Sourdough fermentation has been also used in the production of several bakery products like cake, cracker, and pizza. Some physical quality losses such as decreasing the spread ratio and increasing the thickness and hardness value have been observed in the production of wholemeal flour (WMF) biscuits. The aim of this study is to reduce some physical quality losses of WMF biscuits by using WMF sourdough fermentation. WMF biscuits with the substitution level of 10%, 15%, 25%, 35%, and 50% wheat flour were produced and compared with WMF sourdough biscuits containing same WMF ratio. Spread ratio of the biscuits decreased, while the wholemeal flour ratio increased in the formulation ($p<0.05$). The hardness value of WMF sourdough biscuits were not significantly different than control biscuits (0% WMF) while the addition of wholemeal flour increased the hardness values WMF biscuits ($p<0.05$). The brightness L^* value of the wholemeal flour biscuits decreases when adding 25% wholemeal flour, while a^* value (redness) increased ($p<0.05$). The control biscuits and WMF sourdough biscuits containing 15% WMF showed the highest general acceptability scores according to the sensory analysis. The lowest scores were obtained with the increasing level WMF in the WMF sourdough biscuits. Reduction the hardness value and raise in the sensory scores were observed when the 15% WMF ratio were achieved by WMF sourdough fermentation. It was concluded that sourdough fermentation could be used to reduce the hardness of whole wheat flour biscuits in this study.

Keywords: Biscuit, wholemeal flour, sourdough fermentation