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PaperTitle **Effect of Finger Millet Level of Substitution, Vital Wheat Gluten and Enzyme Lipopan F on the Rheological Properties of Wheat-finger Millet Compopsit**

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ABSTRACT

Finger millet, a drought-resistant cereal, is one of the staple crops in the semi-arid tropics of Africa and Asia (Murty and Kumar, 1995). It is believed that substituting a proportion of wheat flour with finger millet flour would reduce the cost of bread because, in South Africa, wheat is imported at a premium. The objective of this work was to produce a wheat-finger millet composite flour which is suitable for bread making.

Blends containing 10%, 20% and 30% of finger millet flour were used to substitute wheat flour. Vital wheat gluten and enzyme lipopan F were added to the wheat-finger millet composite flour containing 20% of finger millet flour and their effect on rheological properties of doughs were investigated using farinograph and mixograph.

Water absorption was not significantly affected by finger millet levels of substitution. As finger millet level of substitution increased, dough development time and dough stability decreased. Day and coworkers (2006) noted positive effects of vital wheat gluten when it was added in dough, while Qi Si and Drost-Lustenberger (2002) reported lipases to improve dough stability. In this study, an increase in dough development time and dough stability was noticed with addition of vital wheat gluten and enzyme lipopan F. Vital wheat gluten and enzyme lipopan F decreased dough stability but increased with enzyme lipopan F alone. The mixing tolerance index increased with an increase in finger millet level of substitution but decreased with the addition of vital wheat gluten, enzyme lipopan F and a combination of vital wheat gluten with enzyme lipopan F.

Addition of enzyme lipopan F and a combination of 0.3% gluten and 0.002% lipopan F at 20% substitution of wheat flour with finger millet flour seems to improve dough rheological characteristics. This results in dough which is suitable for breadmaking.