

Effect of blending sorghum flour on dough rheology of wheat bread

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■ **ABSTRACT** : The present investigation was carried out to study the changes in rheological qualities of the composite flour. Wheat flour was mixed by sorghum flour at 5, 10, 15, 20 and 25 %. The rheological studies viz., farinographic, extensographic and amylographic characteristics were studied. The study revealed that the water absorption of flour was found to be increased (67.70 to 73.40 %) with a higher percentage of sorghum flour substitution. An increase in sorghum flour proportion resulted in increase in the extension of dough development time from 2.80 to 3.40 min. On the basis of evaluation of dough energy the quality of dough at the 5, 10 and 15 % addition of sorghum flour was demonstrated to be average while it was weaker at higher levels of addition of sorghum flour. Incorporation of sorghum flour decreased the extensibility of the dough's by 45, 57 and 48 % for proving time 30, 60 and 90 min, respectively. The resistance to extension (BU) was found to decreased 7.2 % for proving time 30 min while it increased to 27 and 32 % for proving time 60 and 90 min, respectively. The ratio number and ratio number (max.) were increased to 100, 240 and 288 % and 78, 209 and 218 % for proving time 30, 60 and 90 min, respectively. The beginning of gelatinization was increased 3.36 % as proportion of sorghum flour increased, while gelatinization temperature and gelatinization maximum (AU) decreased 3 and 29 %, respectively as proportion of sorghum flour increased in the supplemented flour. The overall results indicated the positive response of sorghum flour substitution to wheat *maida* up to 15 per cent level because of its low gluten content in formulation of high fiber and low moisture containing bread without affecting their overall quality.

■ **KEY WORDS** : Maida, Rheology, Bread, Gelatinization, Sorghum flour

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