

The influence of stabilized rice bran on rheological properties of wheat flour dough

■ J.K.SANGLE*, A.R. SAWATE, B.M. PATIL AND R.B. KSHIRSAGAR

Department of Food Engineering, College of Food Technology, Vasanttrao Naik Marathwada Krishi Vidhyapeeth, PARBHANI (M.S.) INDIA

Email: sanglejagdish@gmail.com

*Author for Correspondence

■ Research chronicle : Received : 30.01.2017; Revised : 04.05.2017; Accepted : 17.05.2017

SUMMARY :

The impact of adding 5 per cent to 20 per cent stabilized rice bran to wheat flour on the rheological behaviour of the dough was investigated using Farinograph, Extensograph and Amylograph. The parameters determined were water absorption or percentage of water required to yield dough consistency of 500 BU (Brabender Units), dough development time (DDT, time to reach maximum consistency in minutes), stability time (dough consistency remains at 500 BU), mixing tolerance index (MTI, consistency difference between height at peak and that 5 min later, BU). Results from the farinograph analysis showed that addition of rice bran to wheat flour had a marginal effect on the water absorption of flour, water absorption increased with increased addition of rice bran. The dough development time and dough stability increased with increased addition rice bran flour. The development time in dough containing 5, 10, 15 and 20 per cent rice bran increased to 5.7, 7, 6.5 and 6.2 min, respectively in comparison with the control wheat flour dough 6 min. As the proving time of wheat flour dough increased, the energy required for the extension gets decreased. Also, energy required for the extension gets decreased with increased addition of rice bran flour. As the proving time of wheat flour dough increased, the resistance to extension (BU) gets decreased. Also, resistance to extension (BU) gets decreased with increased addition of rice bran flour. As the proving time of wheat flour dough increased, the extensibility (mm) gets decreased. Also, extensibility gets decreased with increased addition of rice bran flour. The amylogram parameters give information about the viscosity generated by the gelatinization of starch. In the case of the control wheat flour used in this study, the maximum gelatinization value was very high (1622 AU). The addition of rice bran reduced it slightly, although not significantly from functional point of view.

KEY WORDS : Rheology, Stabilized rice bran, Farinograph, Extensograph, Amylograph

How to cite this paper : Sangle, J.K., Sawate, A.R., Patil, B.M. and Kshirsagar, R.B. (2017). The influence of stabilized rice bran on rheological properties of wheat flour dough. *Internat. J. Proc. & Post Harvest Technol.*, 8 (1) : 10-17. DOI: 10.15740/HAS/IJPPHT/8.1/10-17.