

Abstract

Wheat bran is a rich source of dietary fiber, vitamins and minerals. But due to a combination of limited use antinutritional the name of "phytic acid". In this research, effects of fermentation (yeast species *Saccharomyces cerevisiae* PTCC 5052), also sizing bran (in different meshes S2, S1 and S3 respectively 100-200, 200-300 and 300- 400 mm) in different percentages bran (5, 10 and 15% by weight) on the values of pH, TTA, phytic acid, protein, ash, fat, soluble and insoluble dietary fiber, bran and water content in the dough volume and sensory characteristics were evaluated in bread and Taftoon Sistani. The results showed that fermented bran reduces the amount of pH, reduce the amount of phytic acid and moisture, also increase amounts of TTA, protein, ash, fat percentage, the percentage of soluble dietary fiber levels were statistically significant ($P < 0.05$). But the percentage of insoluble dietary fiber showed significant effect ($P > 0.05$). The results showed the effect of sizing amounts of phytic acid, protein, ash, fat insoluble dietary fiber with reduced particle size reduction. Fermented in the bran particle samples with mesh S2 had the greatest impact on increasing volume. Also adding bran at 10%, showed the greatest impact on increasing volume. The sensory evaluation showed that the addition of bran bread samples had no significant effect on overall acceptability ($P > 0.05$). While in the bread samples F1S2 (at 10 and 15 percent) was to reduce staling.

Keywords: wheat bran, phytic acid, bread, fermented



University of Zabol
Graduate school
Faculty of Agriculture
Department of Food Science and Technology

**The Thesis Submitted for the Degree of M.Sc (in the field of
Food Science and Technology)**

The use of fermented wheat bran in formulation of some types of high fiber bread

Supervisors:
Dr. M. A. Najafi

Advisors:
MSc.T. Hadadi

By:
S. Rezaie

September 2016