

## EFFECT OF BARLEY FLOUR AND SOME OF THEIR FUNCTIONAL INGREDIENTS ON QUALITY OF PAN BREAD

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(Received: Apr 19, 2006)

**ABSTRACT:** *Pan bread was produced by replacement part of wheat flour (72% extraction) with either ungerminated, germinated barley flour (at 10, 20, and 30%), B-glucan or arabinoxylans (at 2.5, 5 and 7.5%). Chemical composition for raw materials and produced pan bread, extraction of B-glucan and arabinoxylans as well as rheological properties of dough and sensory characteristics were studied. The results showed that, germination of barley increased fat and crude fiber contents and reduced protein, B-glucan and arabinoxylans contents. Rheological characteristics indicated that, addition of all types of barley flour and its extractions at all levels increased water absorption, arrival time and dough weakening and reduced dough development, dough stability and mixing tolerance index compared with the control. While, extensograph results showed that, reduction of dough energy, dough resistance to extension, increase dough extensibility and ratio number compared with the control. Addition of barley extractions and different types of barley flour to wheat flour improved the color and weight of produced bread and the protein, fat, ash, crude fiber, B-glucan and arabinoxylans contents were higher than the control. From sensory evaluation results, pan bread sample contained 20% hullless barley flour was appeared to control result followed by bread sample contained 20% covered germinated barley flour while, the 5% arabinoxylans bread sample was the best among the samples.*

**Key words:** *wheat flour, barley flour, B-glucan, arabinoxylans, germination and pan bread.*

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