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Production of value added products from cereal by-products

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Abstract

Various cereal milling by-productssuch as wheat (bran, germ and shorts), rice (bran, germ and husk) and corn (bran, germ and germ meal) (wheat, rice and corn) were investigated for proximate composition, functional characteristics and certain anti-nutritional factors to assess their potentiality as source of protein, fat and dietary fiber sources. The major findings of this study are as follows: crude protein ranged from 10.45- 29.90%, fat 3.90 -47.53%, total dietary fiber20.20-41.13%, bulk density 0.25-0.79 g/ml, water absorption 122.71-510.02 g/100g, fat absorption 89.51-235.12 g/100g and free fatty acids 6.75-19.94%. Significant variations were observed with regard to color of different cereal milling by-products. The presence of anti-nutritional factors in cereal milling by-products is one of the major factors for limiting their nutritional and food quality such as Phytic, trypsin inhibitor, oxalates which restrict direct utilization of some cereal milling by-products in diet. The study has been made to assess the presence of anti-nutritional components in different cereal milling by-products. All cereal milling by-products had a wide range of phytic acid (3354.48-4005.05 mg/100g). High oxalate content was observed in rice husk (0.478%)and minimum value was observed incorn germ (0.313 %). Trypsin inhibitor activity was ranged from 30.73 to 174.37 TIU/g.

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