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The Change of Arabinoxylan, Phytic Acid and Vitamin E Contents Whole Wheat Flour depends on the Millig Rate Milling Rate in the Korean Wheat Cultivar 'Saekuemkang'

Go Eun Lee[1]*, Kyeong-Hoon Kim[1], Jinhee Park[1], Kyeong-Min Kim[1], Chang-Hyun Choi[1], Mina Kim[1], Myoung Hui Lee[1], Chon-Sik Kang[1], Jiyoung Shon[1], Jong-Min Ko[1]

[1]Wheat Research Team, National Institute of Crop Science, Rural Development Administration, Wanju, 55365, Korea

[Abstract]

Whole wheat is rich in dietary fiber and contains various biological activity substances such as arabinoxylan, phytic acid and phenolic compounds. However, excessive fiber contents of whole wheat has a negative effect on dough formation, making it difficult to process. In this study, we tried to improve the usability of whole wheat by suggesting an appropriate degree of purification of whole wheat from 'Saekeumkang', a domestic wheat cultivar containing protein and gluten suitable for noodle production. The contents of arabinoxylan, phytic acid, and vitamin E were measured in the polishing rate range of 5-20% of whole wheat flour. As the milling ratio increased, the flour properties improved. The arabinoxylan and phytic acid content of whole wheat were 67.95 mg/g and 0.87 mg/g, but when milled at 20%, arabinoxylan and phytic acid were 60% and 80% of whole wheat, respectively. And as the milling ratio increased, the vitamin E content tended to decrease (whole wheat: 4.063 mg/100 g, 20% milled: 2.96 mg/100 g), However, the vitamin E composition ratio did not change. On the other hand, α -tocopherol showed the greatest than other vitamin E isomers. Therefore, further studies needed to optimize milling rate to improve the final product while maintaining the approximate nutritional and functional value of the whole wheat.

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*Corresponding author: E-mail. lgeo124@korea.kr Tel. 063-238-5452