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Impact of Korean Malting Barley Varieties on Malt Quality

Young-Mi Yoon[1]*, Jin-Cheon Park[1], JaeBuhm Chun[2], Yang-Kil Kim[1], Hyeun-Cheol Cheo[1], Chang-Hyun Lee[1], Seul-Gi Park[1], Tae-Il Park[1]

[1]National Institute of Crop Science, RDA, Wanju 55365, Republic of Korea
[2]Department of Digital Agriculture, RDA, Jeonju, 54875, Republic of Korea

[Abstract]
Barley has been used for the production of malt in the brewing industry. Malting is the process of preparing barley through partial germination. Malt extract is the most important quality parameter for malt quality. The grain and malt quality parameters of ten Korean malting barley varieties were studied. Malts was prepared using Phoeix automated micro malting system(Phoenix Bio, Australia). Quality analysis of Barley and malt was determined according to European brewery convention(EBC, 1998) and American society of brewing chemists(ASBC, 1997) method. And the hordeins of barley and malt were extracted with 50% isopropyl alcohol(IPA, 2-propanol) of 1% dithiothreitol(DTT). The analysis of hordeins was carried out by ultra-performance liquid chromatography(UPLC). The mean values of 1000-grains weight, assortment rate, protein content, starch content, beta-glucan content, husk rate, germination energy, germination capacity and water sensitivity of grain were 45.8g, 86.8%, 11.9%, 58.0%, 3.8%, 14.0%, 96.2%, 97.2%, 10.0%, respectively. The mean values of protein content, friability, diastatic power, extract, soluble protein, Kolbach index, beta-glucan of malt and wort were 11.3%, 87.6%, 201WK(Windish Kolbach), 79.3%, 4.6%, 41%, 85mg/L, respectively. UPLC analysis of grain and malt hordeins revealed that the amount of hordeins significantly degraded during malting. Also, we could successfully be used to compare hordein polypeptide patterns with malt quality.

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*Corresponding author: E-mail. mi3710@korea.kr Tel. +82-63-238-5227