

**PC-1**

## Comparison of Milling and Flour Quality Characteristics of Foreign Wheat and Korean Wheat

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### [Abstract]

This study was investigated to compare the milling and physicochemical characteristics of six Korean wheat cultivars (Keumkang, KK; Jokyoung, JK; Goso, GS; Joongmo2008, JM; Baekgang, BK ; Saekeumkang, SKK) and five foreign wheat classes (Australian standard white wheat, ASW; Australian hard, AH; US northern spring, NS; US hard red winter, HRW; Soft wheat, SW). Korea and foreign wheat grains were milled using a Buhler MLU-202. Flour moisture, ash, protein, gluten, sedimentation, particle size, solvent retention capacity (SRC) and dough properties of flour were analyzed. Results showed that the hard wheats had a greater total flour yield and reduction fraction yield than the soft wheats regardless of the country. However, there were in the milling characteristics between the US and Korean soft wheats. GS, a soft wheat in Korea, had the lowest flour yield (59.6%) and the highest bran fraction yield (21.4%). The particle sizes of flour by milling fraction were B1>B2>B3 for the largest, and the R1<R2<R3 for the smallest. Particle size, ash, protein contents and the values of lactic acid SRC showed highly correlated with flour yield. The gluten-performance-index (GPI) is the ratio of the lactic acid SRC value to the sum of sodium carbonate and sucrose SRC values, and it has been used as a quality indicator for overall performance potential of flour. GPI values differed depending on the wheat variety or class, JM (0.82) was the highest value, and SKK (0.56) and SW (0.59) were low. The curve pattern of the Mixolab result also gives a quality indication of the flour sample. JM and NS flour had similar pattern at water absorption and gluten strength parameters and BK and HRW had similar viscosity patterns. These results will enable further study for blending Korean wheat cultivar to improve the flour quality.

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