Quality characteristics of Tteokbokki (Rice Cake) depending on cultivars and particle sizes of dry-milling rice flour

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Abstract

This study was examined to establish a conditions for producing Tteokbokki using dry-milling rice flour which can save manpower and labor time. Since the cost of producing rice flour milled in a wet condition is 500 to 700 won/kg, which is more than twice as much as that of 300 won wheat flour, it is necessary to directly make rice flour from raw rice. The dry-milling rice flour used in the experiment was produced by Air mill (Nara machinery co. ltd., Tokyo, Japan) from 5 rice cultivars (Samkwang, Dasan-1, Boramchan, Seolgaeng, Hanareum-2), which were cultivated in A-san in 2015 year. Their particle sizes were 50, 100 and 150 μm for each cultivar, respectively. A control was a wet-milled rice flour milled with a roll mill after the rice was soaked in water for 4 hours. The moisture content of dry-milling rice flour based on cultivars was 11 ~ 12%, and added water up to 50 ~ 55% of dry-milling rice flour weight. The RVA characteristic of peak viscosity was the highest in Dasan-1 and Hanareum-2, the lowest in Seolgaeng. The setback value used as an indicator of aging was the highest in Dasan-1, therefore Dasan-1 was expected to be quick solidification, resulting in the low tendency of sensory evaluation. The damaged starch was high in Dasan-1 and Boramchan (p<0.05) compared to others. The Hunter color L were no significant among cultivars and b value increased in all cultivars of dry-milling rice flour compared with control. The hardness of dry-milling rice flour was higher than that of the control, especially Dasan-1 and Hanareum-2 were the highest. Based on the sensory evaluation, the best cultivars were Boramchan, Hanareum-2 and Samkwang. The overall preference of dry-milling rice flour was good in particle size of 50~100um.

Keywords: Dry-milling rice flour, Cultivars, Particle size, Tteokbokki

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