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Major Agronomic Traits of a Newly Bred Colored Rice, ‘Dahongmi’

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[Introduction]

In Korea, domestic rice production in 2019 was 3.74MT, and rice consumption per capita was 59.2kg, and the structural problem of rice surplus and consumption decline has been the major issue of Korea’s rice breeding. Also the rapid increase of single-person households and health interest prompted the development of functional rice cultivars to meet the growing demands of convenient rice foods markets. ‘Dahongmi’ a high-yielding red-colored pericarped rice was developed at National Institute of Crop Science in 2019 to provide rice materials for processed rice foods in the home meal replacement (HMR) market.

[Materials and Methods]

In 2007, a cross was made between two parental varieties, 'Junam' and 'Jeogjinju', which are the representative high yielding, disease resistant variety and colored rice respectively. An elite line, SR31754-52-1-3, has been designated and released as ‘Dahongmi’, which demonstrated characteristically high yielding and disease resistant as a colored rice with prominent grain quality in the local adaptability test.

[Results and Discussion]

‘Dahongmi’ is an medium-maturing cultivar that has recommended to grow in the central part of Korea. It proved to be the most highest yielder as a colored rice with 5.96 ton/ha, 21% up ‘Jeogjinju’, a standard check cultivar for colored rice, implying that it can reduce cost in the making of processed foods. Especially, it has multiple resistance to the problematic biotic stresses including leaf blast, bacterial blight, and rice stripe virus. Compared to the other specialty rices, it demonstrated to have higher lodging tolerance. The antioxidant contents were quite high level with 420 mgGallic acid/100g in total polyphenol, and 44 mgCatechin/100g in total flavonoid. These trait improvement in the colored rice is expected to increase the value-added and activate the health functional food market in Korea.

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