Comparision of Major Agricultural and Physicochemical Characteristics of Korean Aromatic Rice

Jun Hyeon Cho1*, Ji Yoon Lee1, Woo Duck Seo1, Su Min Jo1, Young Ho Kwon1, So Myeong Lee1, Ju Won Kang1, Tae Heon Kim1, Sais Beul Lee1, Jong Hee Lee1, Dong Soo Park1, You Chun Song1, Jong Min Ko1

1NICS(National Institute of Crop Science), RDA, 20th Jeompiljaero, Milyang, 50424, Korea

[Introduction]
The aromatic rices are diversely demanded based on the regional characteristics such as the shape of rice grains and amylose content as well as the scent characteristics according to the basmati and jasmine.
The purpose of this study is to provide more information for farmers and consumers by classifying fragrance components along with major agricultural and physicochemical characteristics of flavored resources.

[Materials and Methods]
Plant materials
Including 16 varieties of Korean aromatic rice such as Aranghyangchal, a total of 18 varieties including typical basmati and jasmine lines were used.

Variety characteristics
1) Physicochemical Properties: Amylose and protein content, alkali digestion value and gelatinization properties were studied.
2) Brown rice characteristics: Pigment and grain shape(length, width and L/w ratio) of brown rice were analyzed.

Aroma classification
1) DNA analysis: BADH2 gene marker related to flavor components was tested.
2) Sensory test (for foreigners): classification of fragrance series through the cooking characteristics of brown rice and white rice were tried.

[Results and Discussion]
Beside the basmati family Bukkyeong2012-2 had a high amylose content of 26.1%, most of variety showed a narrow range of amylose content as 16.6 ~ 18.8% except for glutinous rices such as Aranghyangchal. The protein and alkali digestion value were 5.9 ~ 8.9% and 4 ~ 6, respectively. Eight cultivars (50%) of korean aromatic rice were classified as black rice containing anthocyanin as a functional components. The grain shape of domestic varieties was classified into short-type or semi-long grain type as L/w ratio of 1.7 ~ 2.4. In the BADH2 marker test, seven varieties (43.7%) showed the same polymorphism as those of the basmati and jasmine families. In addition, review of fragrance characteristics according to basmati and jasmine by the sensory test will be discussed later.

[Acknowledgement]
본 연구는 FTA대응경쟁력향상기술개발 사업(과제번호: PJ01164701)의 지원에 의해 이루어진 결과로 이에 감사드립니다.

*Corresponding author: Tel. +82-55-350-1169, E-mail, hy4779@korea.kr