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Utilization and Construction of Biological Information of Double Haploid Population to Advance Molecular Breeding of Rice

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[Introduction]

Rice is one of the world's top three crops that 34 % of the world's population uses as a staple food. However, data analysis and construction on rice are still insufficient. In order to protect and share these rice variety data, As the research policy was converted to data-based research, the importance of data management increased. and this data can be used by researchers. In order to establish the sharing of genetic data on rice, this study reports the results by registering the data in Station-B using the agricultural characteristics and plant type of Cheongcheong/Nagdong double haploid (CNDH) and Samgang/Nagdong double haploid (SNDH)

[Materials and Methods]

CNDH population obtained by cross-breeding Cheongcheong (Indica) and Nagdong (Japonica) through anther culture and SNDH population constructed by anther culture of F₁ obtained by cross-breeding Samgang (Indica) and Nagdong (Japonica). After the rice heading stage in 2021, agronomic character (culm length, panicle length, number of tillers, yield) and plant type, panicle were investigated in experimental field of Kyungpook National University in Gunwi. Accordingly, I organized the data in Excel and CNDH and SNDH population data were registered in Station-B based on NCBI.

[Results and Discussion]

The average of CNDH culm length is 66.1 ± 3.1 cm, panicle length is 18.9 ± 2.5 cm, number of tillers is 10.7 ± 1.5 , moisture is 16.2 %, weight is 587.4 g, and yield is 398.0 kg/10a. The average of SNDH culm length is 69.0 ± 4.5 cm, panicle length is 19.4 ± 2.6 cm, number of tillers is 11.2 ± 2.5 , yield is 492.0 kg/10a. The agronomic character and the plant type, panicle of CNDH and SNDH were summarized in the order of agronomic character and plant type. The organized agronomic character and plant type were registered by a bio-data engineer in the Station-B. Through this, by sharing the genetic resource data of rice, it became available to anyone, Industrial use of genetic resources will increase and is expected to be useful in researching rice molecular breeding.

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