

Selection of the Korean rice cultivars having adaptable heading characters in tropical regions

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[Introduction]

Japonica rice is recognized as the premium rice compared to Indica rice in tropical region especially in Philippines. Therefore development of adaptive Japonica rice variety in tropical region has been actively conducting to increase income of local farmers in the tropical regions. Here we tried to investigate the basic vegetative phase and temperature sensitivity during sensitive phase among Korean major cultivars to recommend the Korean rice cultivar which shows the suitable heading characters in tropical region then help to develop adaptive rice cultivars in tropical region.

[Materials and Methods]

We used the 37 kinds of Korean varieties (*Oryza sativa* sp. *Japonica*) as materials. After sterilizing and equalizing the degree of germination, three seed was sowed in 1/5000a wagner pot in phyto-tron. To confirm basic vegetative phase (BVP), each material was cultivated in high temperature (mean temperature - 28°C, ±4°C) and short day length (12 h) condition. After checking the days from sowing to heading in each material, we deducted 30 days as reproductive growth stage to calculate BVP. And then we tried to investigate the sensitivity of flowering on temperature during reproductive stage. After sowed and cultivated under high temperature and short day length condition, each pot was moved to three condition(mean temperature - 22, 24, 26°C, ±4°C, light 12hours) two days before reaching BVP.

[Results and Discussions]

Based on the results of BVP and heading sensitivity on temperature condition, we could select and suggest the suitable rice cultivar which showing stable heading habit. Among 37 Korean rice cultivars, Joun showed the most stable heading habit. The BVP of Joun was 33 days. If low temperatures of 22, 24 and 26°C occur for one day on reproductive stage, the heading of the Joun is delayed 1.5, 1 and 0.5 days, respectively. Manho, Joan and Cheonga also showed stable heading habit. These cultivars showed delayed heading by low temperature for less than two days. The BVP was 27, 29 and 27 in Manho, Joan and Cheonga, respectively. Therefore, we could suggest Joun, Manho, Joan and Cheonga as the suitable rice cultivar which could show good growth in short day length and high temperature condition with stable heading date under low temperature.

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