

Sterility differences by low temperature on near flowering stages in rice

Sang-Bok Lee^{1*}, Ung-Jo Hyun², Ji-Ung Jeong³ and Yeol-Kyu Seong¹

¹Chuncheon sub-station, National institute of crop science, Chuncheon, 24219, Korea

²National institute of crop science, Suweon 16429, Korea

³National institute of crop science, Wanju 55365, Korea

[Introduction]

The Chuncheon Substation of National Institute of Crop Science has researched to identify and evaluate cold tolerant germplasm of rice and select cold tolerant breeding materials with the basic studies on physiology and genetics of rice cold tolerant injury. As results, the station contributed to develop cold tolerant varieties and establish cultural practices for reducing cold injuries.

In 1980, year of cold injury, the cold damage was the most serious and the yield loss was 34% of average year yield. In 1993 of cold damage year, the yield loss showed only 9% by the varietal improvement of cold tolerant in rice.

The cold damages with sterility of panicle studied by cold temperature near flowering date with days differences.

[Materials and Methods]

Three rice varieties (Odae, Dasan, Samgwang) planted 1/5000a wagner pot. Rice panicle was treated at 17°C green house for 3, 5 and 7 days, on the panicle of 2~3 days before flowering, just flowering and one day after flowering. Another rice panicle was treated at 17°C green house for 3 days on 1, 2, 3 and 4 hours after flowering. Seed fertilization ratio of panicle counted 50 days after flowering.

[Results and Discussions]

Varietal differences shows on sterility ratio of each treatment. The longer cold treatment duration shows the more sterile ratio. Cold temperature of just flowering date shows the higher sterility compare to the 1 or 2 days before or after heading.

Cold treatment for 3 days on 1 to 4 hours after flowering shows no differences on sterile raio of the panicle

*Corresponding author: Tel. +82-33-254-6328, E-mail. sabolee@korea.kr