Specific Spikelet Fertility as an Indicator of Cold Tolerance Identification at Booting Stage in Rice [PDF]

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摘 要：By using the parents, Kunmingxiaobaigu, a landrace variety with cold tolerance from Yunnan, China, and Towada, a cold-sensitive variety bred in Japan, as well as their F8 and F9 RIL progenies as test materials, cold tolerance of rice at the booting stage in 2002 and 2003 under four different altitudes (environments), and the correlationship between spikelet fertility and specific spikelet fertility (spikelet fertility of nine spikelets from the 3rd to the 5th spikelets of three primary branches at the top of each panicle) of single plant were analyzed. The data revealed a significant correlationship between spikelet fertility and specific spikelet fertility with the range from 0.7364 to 0.9011. However, under the cold stress environments, the correlation coefficients were higher than those without cold stress. On the other hand, the panicle exsertion was correlated to both spikelet fertility and specific spikelet fertility. Moreover, the heredity analysis suggested that specific spikelet fertility could replace spikelet fertility as an identification indicator, while panicle exsertion could be used as a partial indicator of cold tolerance identification at the booting stage in rice.

关键词：rice (Oryza sativa); spikelet fertility; cold tolerance; indicator of identification

Rice Science. 2006, 13(3): 211-217

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