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Tillering and Yield of Rice Cultivars under a Water Storage-Type Deep-Irrigation Regime

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Abstract: This study aimed to clarify the effects of water storage-type deep irrigation (WSDI) on the yields of various rice cultivars used in the Tohoku district of Japan. We compared a WSDI plot (DP) with a standard irrigation plot (SP) with regard to the growth, yield, and yield components of the rice cultivars grown in these plots during 4 years (2002–2005) in Sendai, Japan. In 2003, which had a cool summer, the yields in DP were considerably higher than those in SP, thus confirming that WSDI mitigated the cool summer-induced damage to rice. The yields in DP were not lower than those in SP during the other 3 years (normal climatic years), indicating that various cultivars could adapt to WSDI. Although high-yielding rice plants cultivated by well-experienced farmers under deep-water irrigation regimes have large panicles, the spikelet number per panicle and the yield in DP were not higher than those in SP. Based on the results of the comparison between the cultivation system of WSDI and that of high-yielding deep-water irrigation regimes practiced by such farmers, we speculated that to achieve a higher yield under WSDI, other cultivation techniques need to be incorporated into WSDI.

Keywords: [High-yielding cultivation technique](#), [Mitigation of cool summer-induced damage](#), [Rice cultivars](#), [Tillering](#), [Water management](#), [Water storage-type deep irrigation](#), [Yield and yield components](#)

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