Preliminary study on applicability of water saving irrigation to paddy fields in eastern Taiwan[1]

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Abstract

This study is to explore alternate wetting and drying (AWD) irrigation in rice paddy fields, we hope to promote appropriate water management and easy for farmers to applicate, saving irrigation water and keep rice yield at the same time. Results showed there were no significant differences of rice yield as well as rice quality between AWD irrigation and conventional irrigation (CI). Less water used under AWD irrigation than under CI both in first and second crop seasons, 15-30% water was saved. Irrigation frequencies were also less under AWD irrigation. Although there were no significant differences of rice yield between these two irrigation ways, water used was less under AWD irrigation than CI, so water productivity was higher under AWD irrigation. Less water was used per unit area without affecting rice yield in AWD irrigation. However, regional precipitation should be considered on applying AWD irrigation to find out the optimum irrigation mode. Since agricultural water supply was affected by distribution and frequency of precipitation as the global climate change, to be the major water user, irrigation of rice paddy field will be an important issue in the topic of water usage predicament in the future.

Keywords: alternate wetting and drying, yield, rice quality, water productivity, paddy fields

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