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On-Farm evaluation of the effects of the system of rice intensification (SRI) on rice growth and yield in rainfed lowland rice of southern Cambodia

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Abstract

In recent years, adoption of the System of Rice Intensification (SRI) is spreading in most Asian countries, and more recently in Cambodia is one of the Asian countries with high adoptions of SRI. We conducted on-farm experiment to investigate the effects of SRI on rice growth and yield in the farmers' fields in rainfed region of southern Cambodia. The study was undertaken in rainfed lowland fields of Popel commune (11° 04' 67" N, 104° 40' 79" E) of Tram Kak District in Takeo Province during the wet seasons in 2012, 2013, and 2015. A total of 32 on-farm experiments were conducted during the wet seasons for three years of 2012 (11 fields), 2013 (8 fields), and 2015 (13 fields). Across the three years of study, SRI produced significantly greater plant biomass and grain yield than Non-SRI. The yield increase was mostly ascribed for the increased number of grains per land area, which was due to the increased number of spikelets per panicle rather than the number of panicles per land area. With no significant difference between SRI and Non-SRI with respect to seedling age, the greater number of grains per panicle was accounted for by the reduced planting density and increased amount of manure application in SRI than Non-SRI fields. It was found that the greater manure application has increased soil nitrogen content in SRI and Non-SRI fields. While SRI did not increase the number of panicles per land area, it did increase the number of panicles per hill.

Key words: SRI, Non-SRI, Rainfed lowland rice, Cambodia

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