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Title of Entry	: Substitution of Inorganic Fertilizer with Bioorganic Fertilizer on Rice Cultivation under System of Rice Intensification (SRI) Method
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Abstract	: Substitution of Inorganic Fertilizer with Bio-organic Fertilizer on Rice Cultivation under System of Rice Intensification (SRI) Method Riko Riyanto*, Iswandi Anas, Suwarno Soil Science and Land Resources Departement, Faculty of Agriculture, Bogor Agricultural University, Bogor, Indonesia ABSTRACT High dosage of inorganic fertilizers application without organic matter addition to the rice field has caused soil degradation, decreasing in yield, increase of pests and diseases and environmental pollution. This research aim was to evaluate the effect of inorganic fertilizer partly substitution with bio-organic fertilizer on rice

growth and yield. The study was set up according to a randomized block design with one factor. The treatments were P1 (100% NPK), P2 (50% NPK), P3 (50% NPK + 150 kg Bioorganic fertilizer (BOF)) and P4 (50% NPK + 300 kg BOF). The treatments have four replications. The results showed that the number of tillers/hill, panicle length, number of filled grain and dry grain weight in the treatment of 50% NPK + 300 kg BOF was not significantly different from 100% NPK. Both treatments were significantly more than treatments of 50% NPK. The number of productive tillers/hill in the 50% NPK + 300 kg BOF treatment was significantly higher than 100% NPK. The filled grain weight and total grain weight (harvest yield) from 50% NPK + 300 kg BOF treatment was significantly higher than 50% NPK, but not insignificant compared to 100% NPK. The results showed that 50% NPK only was not enough to meet the nutrient needs of plants. Growth and yield increase occurred when 50% NPK + 300 kg BOF. This means that 50% NPK can be substituted by 300 kg of BOF. The results showed that a reduction of 50% dosage of NPK fertilizer substituted with 300 kg/ha of organic fertilizer increased grain production. The addition of bio-organic fertilizer increased microbial population and activity in the soil. Azotobacter and Trichoderma populations at 50% NPK + 150 kg BOF and 50% NPK + 300 kg BOF treatment were significantly higher than NPK treatment alone. Keywords: Bio-organic fertilizer, Sustainable management practices, System of Rice Intensification

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