

Prokchol Ousap 2012: The Effects of Organic Rice Farming on Insect and Spider Species Diversity and Community Livelihood. Master of Science (Sustainable Land Use and Natural Resource Management), Major Field: Sustainable Land Use and Natural Resource Management, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Panapa Saksoong, Ph.D. 166 pages.

Chemical rice farming has been practicing over half a century and the effects become worsen to both biodiversity in rice paddy ecosystem and the farmer's livelihood. Thus the purpose of this research was to investigate the effects of organic rice culturing on insect and spider species diversity, and on the livelihood of organic farmers in comparison with those of the chemical farmers especially in terms of cost-reduction and general incomes. The focus area was at Ban Lum Bua, Muang district, Suphanburi province where three rice cultures; namely the organic (OR), the cost-reduction (CR) and the chemical (CHEM) rice cultures were practicing. Data collections viz., information documents, insect samplings via belt transect, field observations, and interviewing were performed during 2007-2010. The results were analyzed by quantitative and qualitative approaches.

The outcome indicated that OR consisted of the species diversities of natural enemies much higher than those of the CHEM especially spiders; the most important predators and existed throughout the growing session. From a total of 2,045 samples; 8 families, 16 genera and 23 species of spiders were identified. Species richness in the OR, on an average, was almost 2.5 times of that of the CHEM whereas the evenness of the two culturing appeared similar i.e., 0.67 in the OR and 0.69 in the CHEM, due to the prominence of certain spider groups (Tetragnathidae and Araneidae). Both OR and CR farmers were better off as regards the economic issue since they fetched the profits of 8,437.88 and 8,220.19 ฿/rai respectively in 2009 on-season growing while the CHEM received an average of less than half, 4,145.84 ฿/rai. Both OR and RC farmers seemed to understand the paddy ecosystem and were satisfied with their self reliance, job security, social culture and the environmental friendly conditions. The potential of OR to sustain the house hold income was further verified by the analyses of 2008-2010 paddy accounts of the only two full- time (model) farmers. The rice production cost was even lower to only 2,037.75 ฿/rai which yielded 0.7715 tons/rai and profited 5,201.13 ฿/rai on an average. Therefore, OR and CR rice productions had very high economical potential.

It can be seen from this work that OR and CR growing in the irrigated area among the CHEM fields can be actually done. This helps recovering species diversity directly and possibly increases biodiversity in the ecosystem. The extension of such culturing is also possible in regarding profit if right information is distributed including an appropriate guideline. Networks at different levels should also be promoted to strengthen the power in OR growing.

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Thesis Advisor's signature