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Investigations on Rice-Fish Culture in Myanmar

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Abstract

Rice producing countries have an enormous potential to expand their aquaculture production by combining rice and fish culture. A field experiment of four month duration was carried at the Moe By Research Centre, Phe Kohn, Shan state, Myanmar, to optimise the stocking density of hybrid catfish (*Clarias batrachus* × *Clarias gariepinus*) in single and in polyculture with Nile tilapia (*Oreochromis niloticus*). The experiment was laid out in a randomised complete block design with 2 replicates per treatment and rice monoculture as control. The treatment groups included rice cultivation with 100 catfish (R100), 200 catfish (R200) or 100 catfish (catfish initial weight: 17.4 g) and 100 Nile tilapia (R100 100). The experimental plots (n=8) had a size of 400 square metres and were fertilised only once during the experimental period using mineral fertilisers. Supplementary feed for the fish was not provided.

The combination of 100 catfish hybrids with traditional rice culture (R100) resulted in the highest rice yield (4.1 t ha⁻¹) followed by rice monoculture (3.6 t ha⁻¹), whereas in the R200 and R100 100 group the rice harvest weights were significantly lower (2.5 t ha⁻¹ and 2.1 t ha⁻¹). The mean fish weight (only catfish) was highest in R100 100 (106 g) while R100 and R200 showed average estimates of 102 and 82 g respectively. The net income generated from both rice and fish culture was highest in R100 (374 US Dollar ha⁻¹) and lowest in the R100 100 group (189 US Dollar ha⁻¹). In conclusion, rice-fish culture influences the net income in relation to the stocking density and species farmed. In the present study a stocking density of 100 catfish hybrids per plot was found optimal to maximise the net income from rice-fish culture.

Keywords: Catfish hybrids, net income, Nile tilapia, rice-fish culture