

Studies on the relation of rice-dryland crop rotation patterns with its productivity in paddy field¹

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summary

To study the effect of rice-dryland crops rotation on crop yield, weed and soil property in the converted paddy field, four cropping patterns:(1)rice-rice(ck) (2)peanut-rice (3)rice-soybean (4)maize-soybean were experimented with RCBD in three replications. The experiment have been carried out for five years since 1986. Major agronomic traits, yield and yield components were measured on each crop seasonally; soil analysis and weeds investigation were taken before and after each crop season.The results from last five years are summarized as follows:

1. In rice-cpland crop rotation pattern, soil pH and available K₂O increased, but the decreased organic matter with low phosphate was found.
2. Plots planted with rice were free from weeds, but more weeds were observed as the rice was substituted by dryland crop. Especially in those plots planted with two consequent dryland crops.
3. Rice yield was stable in rice-soybean pattern but high rice yield was found in peanut-rice pattern, compared with rice-rice pattern. The yield of soybean was higher in rice-soybean than in maize-soybean pattern.
4. The Highest net income per hectare was obtained from the pattern of peanut-rice while the lowest net income was observed from rice-rice(cK) pattern during the tested period.

(Key words: Paddy field, Rotation system, Crop productivity, Soil property, Upland)

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