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Growth, Yield and Land Use Efficiency of Corn and Legumes Grown under Intercropping Systems

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Abstract: A field experiment was conducted at the experimental farm of Khon Kaen University in 2001. The objectives of this study were to investigate growth, yield and yield components of corn, peanut, soybean and mungbean under intercropping and single cropping, as well as to assess the land use efficiency. Yield and yield components of corn was unaffected by intercropping system. In legume crops; peanut, soybean and mungbean, intercropping systems reduced the leaf area and top dry weight per plant as compared with single cropping. Grain yield of peanut, soybean and mungbean was reduced by 28%, 39% and 51%, respectively, as compared with single cropping. The pod number per plant was the most affected by intercropping among the yield components. However, corn-legume intercropping increased land use efficiency by 48% to 66% depending on legume species. Corn-peanut intercropping gave the highest land use efficiency. The effects of light penetration and nutrient competition are discussed.

Keywords: Area time equivalent ratio, Chlorophyll concentration, Corn, Intercropping, Land equivalent ratio, Mungbean, Nutrient competition, Peanut, Shading, Soybean

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