

Soil Nutrient Management Implications of Growing Food Crops within the Coffee Gardens

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Abstract : Interplanting food crops in coffee gardens has increased in recent years. The purpose of this study was to quantify the nutrient management implications of growing food crops within the coffee garden and to investigate the sustainability of this practice through field surveys in two accessible sites (Asaro and Bena) and two remote sites (Marawaka and Baira), in Eastern Highlands Province of Papua New Guinea. Coffee gardens were selected at each site and surveys were conducted to assess the status of intercropping in each of the smallholder coffee gardens. Food crops in the coffee gardens were sampled for nutrient analysis. Survey results indicate intercropping as a common practice in coffee gardens and entailed mixed cropping of food crops in an irregular pattern and spacing. More than 40% of the farmers used 40-60% of their total coffee garden area for intercropping. In remote sites, more than 50% of the coffee garden areas closest to the house were intercropped with food crops compared to 40% of inaccessible sites. In both remote and accessible sites, the most common intercropped food crops were 90% banana (*Musa spp*) varieties and 50% sugarcane (*Saccharum spp*). Nutrient analysis of the by-products and residuals of some common intercrops shows the potential to replenish the coffee plant's deficient nutrients like Potassium, Magnesium, Phosphorus, Boron and Zinc. Intercropping of coffee gardens is increasing due to land pressure, marketing opportunities, food security and labor supply

Keywords : by-products, coffee, crops, intercropping, nutrients, soil

Conference Title : ICAACS 2023 : International Conference on Agriculture, Agronomy and Crop Sciences

Conference Location : Sydney, Australia

Conference Dates : August 24-25, 2023