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Soil fertility management practices and yield of nutrient dense crops in refugee settlements in Uganda

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Abstract

There are currently over 120 million refugees globally with Uganda as a leading host country due to its open-door policy. Though substantial investment has been made in refugee food provision, nutrition security remains a pressing challenge for the majority. Cultivation of nutrient dense crops such Orange Fresh Sweet potatoes (OFSP), Iron Rich Beans (IRB) and green leafy vegetables (GLV) has been promoted in refugee settlements to enhance nutrition security. This study aimed to investigate the influence of soil fertility management (SFM) practices on yield of nutrient dense crops in refugee settlements in Southwestern Uganda. A cross-sectional survey was employed to collect sociodemographic and production data from a sample of 171 refugees across two case study refugee settlements (i.e. Rwamwanja RS and Kikuube RS). Descriptive statistics and logistic regression were performed using JASP software. Results showed that 64 % of refugees in Kibuube RS had stayed for less than 5 years while the majority in Rwamwanja RS (57 %) had stayed between 5 to 10 years. Generally, most refugees (85 %) perceived their soils as having declined in fertility, with 82.5 % of the refugees adopting at least one SFM practice majorly through the utilisation of crop residues. Logistic regression results indicated that location of the refugee settlement was a significant predictor for adoption of SFM practices (Wald=4.23, OR=3.022, $p = 0.04$), with refugees in Rwamwanja RS three times more likely to adopt SFM practices than those in Kikuube RS. Productivities for IRB, GLV, and OFSP were 540 kg ha^{-1}, 277,1 kg ha^{-1}, and 186 kg ha^{-1}, respectively. Overall, the productivities of the nutrient dense crops were far below reported potential yields probably due to the cultivation on nutrient depleted soils. These results are essential to inform strategies to narrow the huge existing yield gap of nutrient dense crops in refugee settlements amidst the diminishing donor support to refugees. Implementation of affordable soil fertility management practices in refugee farming systems will be necessary to ensure sustainable food production and nutrition security in refugee communities.

Keywords: Nutrient dense crops, nutrition security, refugees

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