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Food Security and Traditional Farming Systems: A Case Study of Homegardens in Southwestern Uganda

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Abstract

Homegardens are small-scale traditional farming systems, designed primarily to meet household food and nutrition security needs and for occasional product sales. Ugandan farmers manage their homegardens as diverse intercropped banana plantations under constant harvest but few data are available on food plant diversity of these gardens and their contribution to food and nutrition security; this study aims to fill that gap. In three regions of southwestern Uganda, 102 households with homegardens were randomly selected. Plant inventories of gardens (mean size 0.18 hectares) were followed by multiple-pass 24-hour recalls (n=601), the HFIAS food insecurity questionnaires (n=102), and anthropometric measurements (n=231). A total of 250 plant species were identified in the surveyed gardens with a mean richness of 24 species per garden (range 10–54) and a mean Shannon diversity index of 1.32 (range 0.12–2.74). 97 % of all individual plants and 50 % of all species were grown for food; correspondingly 90 % of foods cited in 24-hour recalls were sourced from homegardens. Household hunger score had a mean of 4.9 (range 0–16). Stunting rates of children <5 years were also high (44 %), while no child was wasted. Body mass index (BMI) data of adults >20 years revealed 16 % underweight and 17 % overweight/obese. Household dietary diversity was intermediate with a mean of 7.1 (range 3–11) out of a maximum possible value of 12. A weak but significant negative correlation was found between total plant species richness and household hunger score ($r=-0.262$; $p = 0.008$), therefore higher plant species richness was related to less hunger. However, anthropometric measurements such as BMI of adults and stunting of children <5 years did not correlate with total plant species richness. Multivariate regression analyses are on-going to identify additional socio-economic factors influencing dietary diversity and household hunger scores and results will be presented at the conference. Homegardens are the primary source of food in the southwest of Uganda, they offer a diverse range of products and contribute much to food and nutrition security of farmer families. However, future interventions could address low dietary diversity and high stunting rates by promoting the integration of specific micronutrient-rich crops in the homegardens.

Keywords: Body mass index, dietary diversity, household hunger scale, plant species diversity, stunting