

Article Abstract

Title:	Sustainability of maize-based cropping systems in rural areas of Zimbabwe: an assessment of the residual soil fertility effects of grain legumes on maize (<i>Zea mays</i> [L.]) under field conditions
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Abstract:	The residual soil fertility benefits of the preceding legumes to the following maize crop were demonstrated in the study. Incorporating stover of Bambara nut, cowpea, groundnut dry bean and soyabean gave higher maize yields compared to plots where the stover was removed. Total maize dry matter yield increases of 1.30 tha ⁻¹ to 5.19 ha ⁻¹ were recorded following legume stover incorporation compared to stover removal. Even removal of stover of these same legumes gave significant maize yield increases compared to those from the maize after maize or after fallow plots. The total maize dry matter yield was greater after legumes with stover removed (ranging from 4.41 to 9.91 tha ⁻¹) than after maize (2.16 to 2.26 tha ⁻¹) or one season fallow (1.57 to 1.84 tha ⁻¹). So farmers who keep livestock can still remove legume residues as fodder to supplement grazing in the dry winter period and still benefit from improved maize yields.
Keywords:	Legume crops, residual soil fertility, maize-based cropping systems, sustainability, smallholder rural farmers, Zimbabwe.