

Utilisation of the biomass of trees and shrubs as organic fertiliser source: Experiences from Holetta Agricultural Research Center (Abstract)

Berhane Kidane¹ and Asgelil Dibabe²

¹ Holetta Agricultural Research Center, EIAR, P.O.Box 2003, Addis Abeba, Ethiopia.
Email: berhanekid19@yahoo.com

² Ethiopian Institute of Agricultural Research, P.O.Box 2003, Addis Abeba, Ethiopia.

Abstract

Soil fertility decline, mainly due to soil erosion is a major challenge in the Central Highlands of Ethiopia. Cognizent of the soil fertility depletion problem, strip plantings of *Sesbania sesban* and different grasses were established on sloppy lands in the highlands of the Dendi district, West Shewa Zone, in the Oromia region of Ethiopia. The objective of the study was to evaluate the effect of pruned biomass and barrier hedges of *S. sesban* and other herbaceous plants on soil fertility and crop grain yield. The result showed that the application of 10t biomass ha⁻¹ on a dry weight basis in the main cropping seasons of 1998 and 1999 increased the grain and straw yield of wheat as compared to the control plots. However, in 1997 the application of 15t ha⁻¹ provided the highest crop and straw yield, followed by the application of 10t biomass ha⁻¹. During a participatory evaluation of the experiment, farmers realised the importance of contour hedges for minimizing the speed of water and thereby controlling the loss of fertile soils. On the other hand, farmers mentioned the challenges associated with contour hedges. The first and most frequent one was free livestock grazing, which affects early survival and the promotion of this technology. Moreover, farmers indicated the difficulties of narrow inter-contour hedges for oxen plowing. A minimum of 8m inter-contour hedges was suggested by farmers for future implementation.