Tropentag, September 18-21, 2016, Vienna, Austria

"Solidarity in a competing world — fair use of resources"

Intensification of Smallholder Livestock Production through Utilisation of Crop Residues for Livestock Feed in Tanzania

Ben Lukuyu[1], Gregory Sikumba[1], Job Kihara[2], Mateete Bekunda[3]

[1] *International Livestock Research Institute (ILRI), ASSP, Kenya*
[2] *International Center for Tropical Agriculture (CIAT), Tropical Soil Biology and Fertility (TSBF), Kenya*
[3] *International Institute of Tropical Agriculture (IITA), Tanzania*

Abstract

Poor feed utilisation and seasonal feed availability are considered contributory factors leading to less-than-optimal livestock productivity on smallholder farms in Babati, Tanzania. Cereal and legume crop residues, such as dry or green maize stover and bean haulms, are commonly fed to livestock but are also of low quality and they are poorly used by farmers. Improving the efficiency with which the crop residues can be used as animal feed appears the first step towards solving critical feed shortage. Studies on maize crop residue uses and trade-offs on smallholder crop-livestock farmers have proven on an economic perspective that it is logical to prioritise its use for feed over soil fertility management . A study was conducted to assess availability of types, quantity and quality of crop residues and other feed resources for livestock on farms. The study aimed to understand how cereal and legume crop residues are harvested, stored, processed and used in different farms. It also aimed to identity gaps in managing crop residues in intensified systems and factors that may affect adoption. Post-harvest forage processing technologies such as feed choppers offer potential to enhance use of crop residues for livestock feeding. This not only reduces feed wastage but also enhances feed intake and quality . It also has potential to improve quantity and quality of manure. Following the study a feed chopping technology to enhance utilisation was introduced to farmers. The findings showed that the average household tropical livestock unit (TLU) is 3.8 (se = 0.15). Crop residues are the major contributor to livestock diet in the dry season. The most dominant cereal crop residues are maize stover (57 %) and rice straw (20 %) while the most common legumes straws are pigeon pea (4 %); bean (12 %), groundnut (5 %) and cowpea (2 %) haulms. On average the maize stover yield on farms is 9.3 t ha^{-1} (se = 0.28). There is a lot of feed waste on farms due to chopping by using a machete. Yield of maize stover from a hectare of land can sustain one TLU of livestock for 247 days.

Keywords: Cereal and legume crop residues, crop livestock systems, livestock feed, maize stover

Contact Address: Ben Lukuyu, International Livestock Research Institute (ILRI), Animal Sciences for Sustainable Productivity Program, PO Box 30709, 00100 Nairobi, Kenya, e-mail: b.lukuyu@cgiar.org