Tropentag, September 9-11, 2020, virtual conference

"Food and nutrition security and its resilience to global crises"

Integrating Livestock into Agricultural Systems for Increased Livestock Productivity: Evidence from Smallholder Dairy Farmers in Babati District, Tanzania

Ben Lukuyu[1], Kevin Maina[2], Leonard Marwa[3], Alphonce Haule[4], Mateete Bekunda[5]

[1] *International Livestock Research Institute (ILRI), Feeds and Forages Program, Uganda*
[2] *International Livestock Research Institute (ILRI), Kenya*
[3] *Tanzania Livestock Research Institute (TALIRI), Tanzania*
[4] *Babati District Council, Livestock and Fisheries, Tanzania*
[5] *International Institute of Tropical Agriculture (IITA), Tanzania*

Abstract

Smallholder farming system is characterised by production of forage and fodder in sub-optimal levels integrated with other aspects of agricultural production. By growing and utilising greater quantities of locally produced high quality forages, livestock production costs can be reduced without compromising productivity, thus increasing on-farm sustainability. Introducing improved forages into small-scale mixed farming systems would reduce the competition for land by utilising the same land for both crop and forage production. Smallholder farmers in Babati District keep an average of 3–4 heads of cattle per household. A feed assessment (FEAST) survey conducted in 2015 identified the availability of adequate feeds in terms of quantity and quality as one of the factors constraining smallholder dairy production. The current study tested the impact of feeding improved Napier grass and maize stover supplemented with bean haulms at different levels on milk yield under smallholder conditions. Using field trial experimentation, the study considered 2 genotypes (local and improved cattle) and 2 basal rations of Napier grass and maize stover supplemented with bean haulms at different levels (100, 80, 70 & 60 %). Using farms as experimental units and lactating cows as replicates, a total of 24 cows in early lactation were selected from two villages (Hysum & Bermi). Data was collected for 45 days with 7-day adjustment. Results from a regression analysis indicate that Napier grass supplemented at 70:30 & 60:40 levels yielded significantly higher milk output compared to other levels (100, & 80:20). Similarly, average increase in milk production was significant for Maize stover ration only at levels of 80:20 and 60:40. Other factors that significantly influenced increased milk production were frequency of feeding, water intake and the person feeding the animal (man). Feed supplementation with crop residues at different levels yields to increased milk productivity. However, this is not achievable in isolation. Therefore, there is an opportunity to promote improved forages and integration of crop residues in dairy production. There is need to upscale the technology and promote good dairy/livestock production practices for improved livestock productivity.

Keywords: Crop residues, feed supplementation, livestock productivity, sustainability

Contact Address: Kevin Maina, International Livestock Research Institute (ILRI), P. O. Box 30709-00100, Nairobi, Kenya, e-mail: mainakevin.km@gmail.com