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Farmers’ and academia’s views”

Suitability of improved forage varieties for dairy cattle in Kenyan semi-humid and semi-arid agroecological zones

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Abstract

Feed is a major component accounting to over 60% of the cost of milk production. The dairy feed sub-sector in Kenya faces challenges such as high cost of production, lack of quality forage seeds, lack of feeding data, poor feed storage facilities, small landholdings and lack of investment potential. The average milk yield of intensive feeding systems in Kenya is about 8 kg/cow/day, which despite additional concentrate supplementation, is still below the potential daily milk yield of up to 10 litres from cattle fed on well managed quality forages alone. This study aimed to assess the potential of newly introduced improved forage varieties grown under different agroecological farmer-managed conditions, to meet the nutrient needs of cows.

Four groups of forages; tropical grasses (*Brachiaria* and *Panicum*), tropical legumes (desmodium and lablab), temperate grasses and forages (chicory, oats and rye grass) and one temperate legume (lucerne) were assessed in four locations in two agroecological zones (AEZ). Farmer-managed plots of 50m² were made for each forage type on four farms (one from each location). The biomass yield was estimated from 1 m² of each, while a representative sample of the harvested material was analysed for nutritive value.

Results from the first cuts show that tropical grasses took four months longer to establish compared to other forages in the semi-humid AEZ. Nevertheless, once established, the biomass of tropical grasses at one cut, was significantly higher than the other forages. Protein and Metabolizable Energy content of temperate grasses and forages was high and NDF content relatively low and comparable to that of lucerne. For the tropical grasses these were respectively lower (below 20% and 50% respectively) and NDF higher (above 50%).

Temperate grasses and forages thrived better in the semi-humid AEZ while tropical forages performed better in the semi-arid AEZ under irrigation. The performance of all legumes was poor though slightly better in the lower altitude semi-arid AEZ with irrigation and a higher soil pH. An economic analysis of the costs and benefits of growing each forage in each of the agroecological zones is ongoing and final results for these trials will also be available.

Keywords: Grasses, Kenya, legumes, metabolisable energy, Neutral Detergent Fiber (NDF)