

Evaluation of the feed quality of six dual purpose pearl millet varieties and growth performance of sheep fed their residues in Niger

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Introduction

- Pearl millet (*Pennisetum glaucum*) is a staple food popularly cultivated by small farmers in Niger. The stover are also used as feeds for livestock (small ruminant) as basal diet, especially during the cold dry season.
- ICRISAT has developed many dual-purpose millet varieties that aim to increase feeds for livestock while providing grain as food to farmers. But the nutritional quality of Stover of these varieties for livestock are not known.
- This research aims to assess the quality of residues of the dual-purpose varieties and their effect on feed intake and live weight changes of young sheep.



Picture 2. Feeding experiment of sheep fed with stover of different millet varieties

Methods

- Sites:** ICRISAT research station at Sadore-Niger.
- Materia:** 6 varieties (5 dual purpose varieties and 1 local variety).
- Animals:** 36 male sheep (~27.1 ± 1.9 kg) randomly allotted to six treatments defined by type of millet variety.
- Method:** Feeding with combined treatments of Stover residues as basal feed and cowpea hay (600g/animal/day) as supplement
- Measurements:** Periodical weighing of animal, quantification of feed offered/refusal, excreted feces, feed and fecal sampling during 90 days.

Results

- Differences were observed between varieties for: (i) Increase of live weight of sheep and; (ii) digestibility of Stover of different varieties.

Table 1. Increase of liveweight and fecal composition of sheeps fed by stover of 6 millet varieties (5 dual-purpose and 1 local varieties) during 90 days

Parameter	Local variety (T0)	Chakti (T1)	ICMV 167005 (T2)	ICMV 167006 (T3)	ICMH 167111 (T4)	ICMV 167002 (T5)	P value
ADWG (g)	72.9±7.9 ^b	56.4±6.5 ^b	92.9±6.0 ^a	73.6±11.7 ^{ab}	62.2±9.4 ^b	70.6±6.5 ^b	<.001
Fecal Nitrogen (%)	2.06±0.03	2.03±0.03	1.94±0.03	1.87±0.03	1.92±0.04	1.85±0.02	<.001
Fecal Phosphorus (%)	0.36±0.02	0.43±0.03	0.37±0.02	0.44±0.03	0.39±0.03	0.66±0.05	<.001

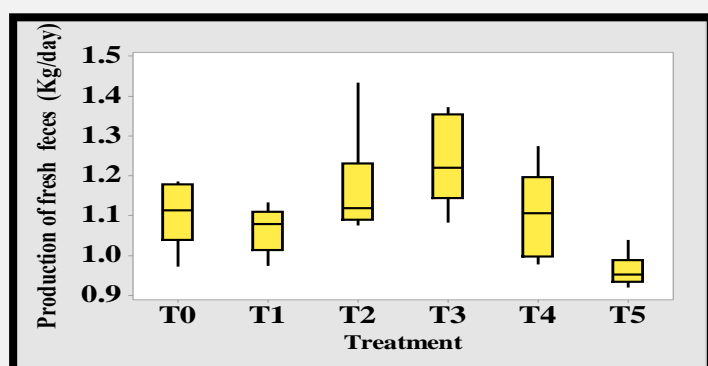


Figure 1. Feces production by sheep fed stover from different pearl millet varieties

Conclusion

- The stover of the dual-purpose varieties of millet are of better quality compared with the local variety.
- The dual-purpose varieties of millet ICMV 167005 and ICMV167006 can be recommended as the best dual purpose millet. The two dual-purpose millet varieties could be recommended in cropping systems as option to improving the crop-livestock farming system popularly used by small farmers in Niger .