Effects of location and time of storage on the nutritional quality of grain legume fodder in northern Ghana

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Objectives

- To evaluate dry matter loss and nutritional quality of different grain legume fodders stored in different locations.
- To evaluate the packing types of legume fodder.
- To determine farmers' and sheep's preference for grain legume fodder type.

Background

- Feed scarcity and high cost of feed, especially during the dry season are major challenges to ruminant production in West Africa.
- Legume fodder residues are a major source of feed for ruminants.
- However, little is known about storage systems of these fodders to maintain their quality over a longer period time.

Conclusions

- Protecting legume fodder during storage in sacks minimizes dry matter and nutritional losses.
- Room storage is promising to be the best location as fodder store.
- Cowpea fodder was ranked higher by farmers as feed resource for their animals than groundnut and soybean fodder.

Societal Impact

- To reduce scarcity and cost of animal feed for more than 550,000 crop-livestock farmers targeted by the N2Africa Project.

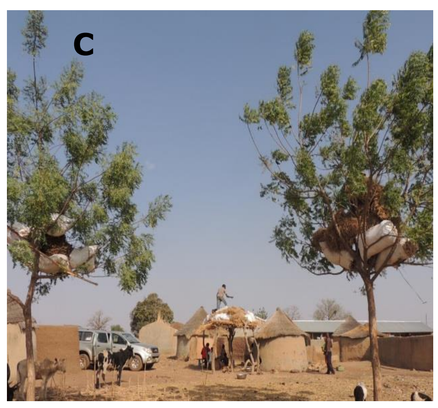
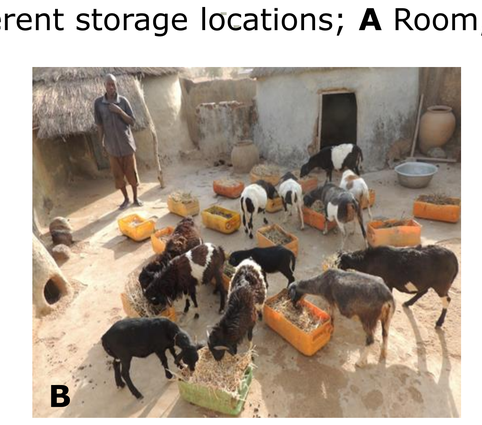


Photo 1. Fodder in sacks or tied with rope at different storage locations; **A** Room, **B** Rooftop and **C** Tree fork



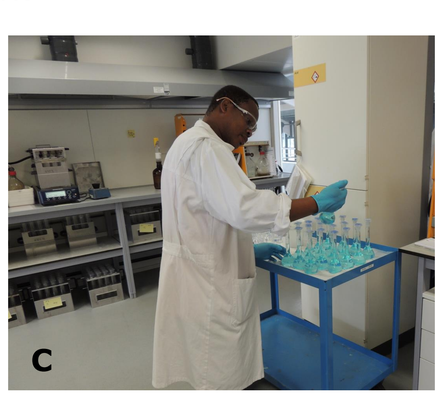


Photo 2: Evaluation of sampled stored fodder by; **A** Farmers, **B** Sheep and **C** Laboratory chemical analysis

Methods

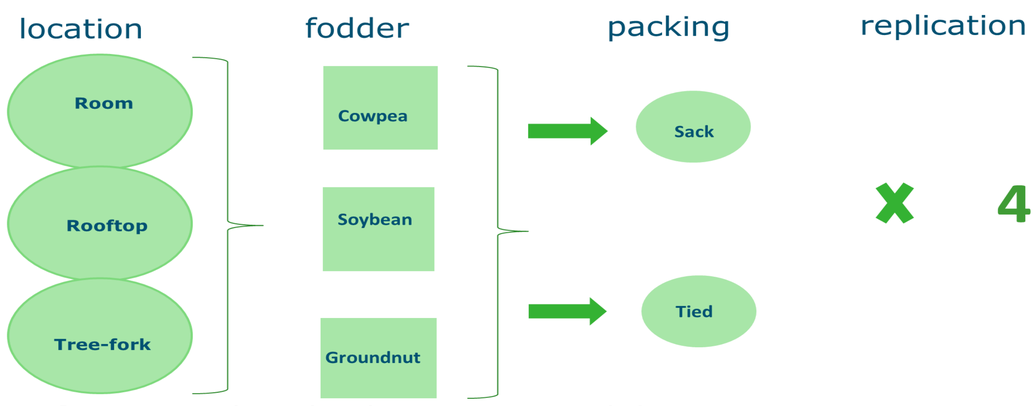
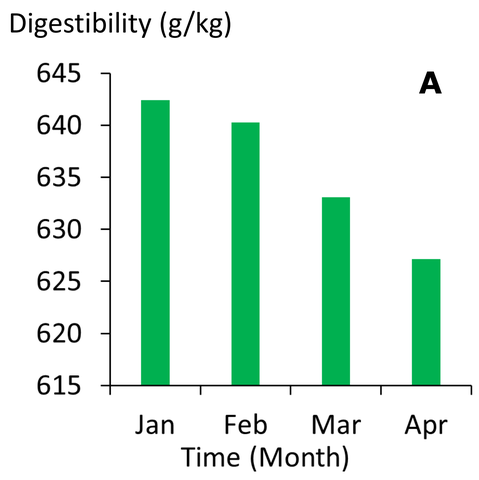


Figure 1:Split-split plot experimental design

Results

- Sack storage lowered (13%) dry matter loss compared to those tied with rope (32%).
- Crude protein content and in-vitro dry matter digestibility decreased with increasing storage period (Fig 2).
- Intake of cowpea and groundnut haulm were higher than soybean (Fig 3).
- Storage location and fodder types had no significant effect on dry matter loss.



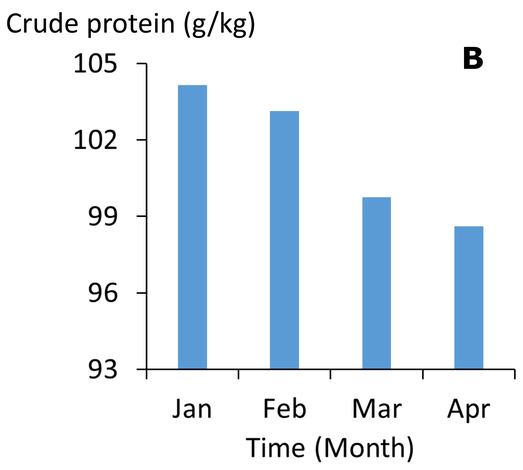


Figure 2: Effect of time on in-vitro dry matter digestibility (**A**) crude and on protein content (**B**), of stored grain legume fodder

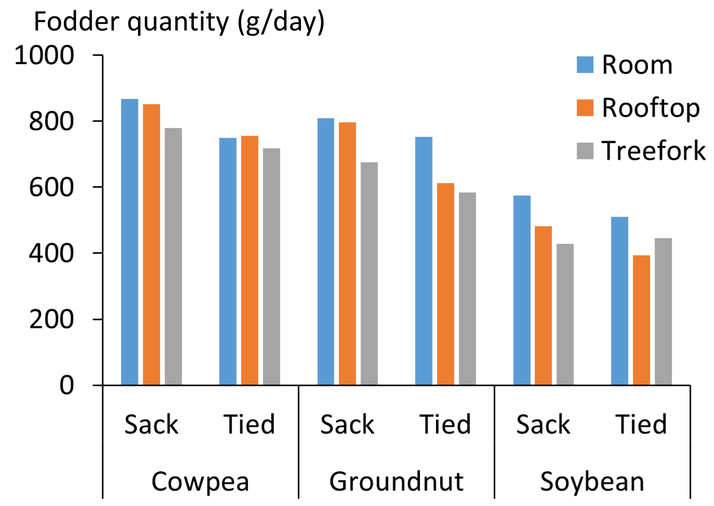


Figure 3: Effect of storage location, legume fodder and storage type on quantity of total fodder consumed by 12 matured sheep in 14 hours

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