

Quality and processing potential of goats produced by smallholder farmers in Malawi

Muyila, S.¹ & Chigwa, F.¹

¹Bunda College of Agriculture, P. O. Box 219, Lilongwe, Malawi

Corresponding author: sdmuyila@hotmail.com

Abstract

This research will evaluate carcass quality and processing potential of goat meat produced by smallholder farmers in Malawi. The farmers will keep local Malawi goat and Norwegian goats under three management systems (intensive, extensive and semi-intensive). The carcasses from these goats will be analyzed for gross and chemical composition. They will also be processed to various products and organoleptic tests conducted to evaluate preferences. Profitability of commercial goat production at smallholder level will also be evaluated.

Key words: goat, carcass, preference, processing, quality

Résumé

Cette recherche permettra d'évaluer la qualité des carcasses et le potentiel de transformation de la viande de chèvre produite par les petits fermiers du Malawi. Les éleveurs vont garder des chèvres locales du Malawi et de chèvres norvégiens sous trois systèmes de gestion (intensive, extensive et semi-intensive). Les carcasses de ces chèvres seront analysées pour la composition brute et chimique. Ils seront également traitées à divers produits et des tests organoleptiques réalisés pour évaluer les préférences. La rentabilité de la production commerciale de la chèvre au niveau des petits exploitants seront également évalués.

Mots clés: la chèvre, la carcasse, la préférence, le traitement, la qualité

Background

Malawi does not produce enough meat to meet its domestic demand hence it imports 0.05% of the small ruminant meat it consumes (FAO, 2005). The gap between domestic supply and demand of red meat may expand to 22% by 2017 (Banda, 2008). Goats have many great attributes and are the most kept ruminants in Malawi. Goat numbers have been increasing steadily. However there is still limited supply of goat meat on the formal market and meat processors have attributed it to poor quality goats produced by farmers. Studies on goat fattening under different systems have been conducted and these

concentrated on evaluating carcass chemical composition and physical characteristics. No study has been conducted in Malawi to evaluate goat meat processing potential and its acceptability to the consumers as such processors have continued to look at the goats carcasses to be of inferior quality. This study will evaluate potential of producing high quality meat by smallholder farmers that can be processed to various products. This will be done in collaboration with the meat processors.

Literature Summary

Norwegian goat has been used to improve meat and milk production in Tanzania by crossing with the Small East Africa (SEA) goat similar to the Malawi local goat. The crosses had higher average daily weight gains of 35-55g/day compared to 19-28g/day for SEA goats (Safari *et al.*, 2005). Farmers keeping Norwegian cross breeds or pure Norwegian had income six times higher than those keeping SEA goats only and had more protein intake. Supplementation with 66% concentrate resulted in a high quality goat meat (Mushi *et al.*, 2008) in terms of chemical composition and cooking quality. Cotton seed cake (CSC) is a cheaper protein rich concentrate compared to soybean used in other studies (Chiwaya, 2007). Moreover, recent studies showed no detrimental effects of CSC and growth rates were similar to the goats on gossypol free diet as long as it does not exceed 15% (Zahid *et al.*, 2003; Solaiman, 2007). In dairy goats CSC increases both fat and protein content of the milk though with an increase in goatish flavour in milk (Queiroga *et al.*, 2009). These aspects will be examined in relation to the Malawi goat processing.

Study Description

The study will be done in Manjawira EPA (Ntcheu District). In a 2x3 factorial design, two breeds of goats (local and Norwegian crosses) will be investigated under three management systems (extensive, semi-intensive, intensive). The data collected will be subjected to Analysis of Variance and General Linear Models of Statistical Analysis System (SAS). Cross-tabulations will be used to analyse data on consumer preferences of the carcass produced.

Research Application

Farmers will obtain technical knowhow on commercial goat production to meet consumer demands. The processors will know the potential products that can be made from locally produced goats. Market linkage between farmers and processors will be strengthened.

References

- Banda, L. J. and Dzanja, J. L. 2006. Goat marketing systems and channels in Nkhoma and Nsundwe areas. *3rd Bunda College dissemination conference proceedings*. pp. 30-36. Lilongwe: Bunda College of Agriculture.
- Banda, J. 2008. *Revoluationalising the livestock industry in Malawi: the 12th University of Malawi Inaugural Lecture*. Lilongwe, Malawi.
- Mushi, D.E., Safari, J., Mtenga, L.A., Kifaro, G.C. and Eik, L.O. 2008. Finishing crossbred goats on concentrate supplement/ : carcass and meat quality. Retrieved from <http://www.icomst.helsinki.fi/ICoMST2008/CD Papers/General speakers+posters-3p papers/Session7/7A/7A.19.Mushi.pdf>
- Queiroga, R.C.R.E., Fernandes, M.F., Medeiros, A.N., Costa, R.G., Oliveira, C.J. B., Bomfim, M. A. D. and Guerra, I. C. D. 2009. Physicochemical and sensory effects of cotton seed and sunflower oil supplementation on Moxotó goat milk, 82: 58-61. doi:10.1016/j.smallrumres.2009.01.003
- Safari, J., Mushi, D. E., Mtenga, L. A., Eik, L., Kifaro, G., Muhikambe, V. and Ndemanisho, V. E. E. 2005. A note on growth rates of local goats and their crosses with Norwegian goats at village level in Tanzania. *Livestock Research for Rural Development*, 17(4). Retrieved from <http://www.lrrd.cipav.org.co/lrrd17/4/safa17047.htm>
- Solaiman, S. G. 2007. Feeding value of whole cottonseed for goats. Tuskegee.
- Zahid, I., Lodhi, L., Rehman, N. and Akhtar, M. 2003. Effects of cottonseed cake gossypol on liveweight of Teddy make goats. *Pakistan veterinary Journal*, 23(1). Retrieved from http://www.pvj.com.pk/pdf-files/23_1/27-30.pdf