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Diversity of sheep farming systems in the urban and peri-urban areas of southern Benin

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Abstract

Sheep farming is widely practised in West Africa, where it is associated with high economic and social values. This activity has spread in and around urban areas to meet the increasing urban demand for sheep meat. In addition, the sheep is of religious importance for Muslims in the Eid el Kebir annual celebration (Tabaski). Since little is known about how sheep farms operate in the current context of rapid urbanisation in Benin, this study aimed to characterise and typify sheep production systems in urban and peri-urban areas in southern Benin. Socio-economic and management practices data were collected through a structured questionnaire from a total of hundred farmers selected with the snowball sampling approach. R statistical software was used for Multiple Correspondence Analyses (MCA) followed by a Hierarchical Classification of Principal Components (HCPC) to establish a farm typology based on the acquired data. Comparisons between farm types were done using the non-parametric Chi-squared test for qualitative variables and the Kruskal-Wallis test for continuous variables. The results revealed 6 types of sheep farms which differed in type of housing, fattening unit, location, and proportion of rams in the herd. Irrespective of the farm type, all interviewed farmers were men. Animal husbandry was the main source of income for members of 3 out of the 6 farm types ($p < 0.001$). Overall, the median herd size was 29 animals whereas the median number of sheep fattened in the previous year was 15 with a significant variation between farm types ($p < 0.001$). The majority of the farms (72 %) practised both breeding and fattening. Zero-grazing management (61 %) and feeding concentrate feeds (58 %) were practised widely but varied significantly across farm types ($p < 0.001$). While in almost all peri-urban farms (90 %) sheep manure was used to fertilise the crops fields, more than half of the urban farms reported manure disposal problems. Improper manure disposal is not only an environmental problem but also an economic loss. It may, therefore, undermine the sustainability of these farming systems which are undergoing intensification to meet the need of urban consumers throughout the year.

Keywords: Sheep fattening, small-ruminants, sub-Sahara Africa, typology, urbanisation