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Availability and use of woody fodder in the diet of small ruminants in the silvo-pastoral zone of Senegal

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Abstract

In extensive Sahelian livestock systems, woody fodder accounts for 40–50 % of dry season livestock feed. Within the EU-Horizon2020 project SustainSahel (https://www. sustainsahel.net), this study aimed to characterise the perception of pastoral communities on availability and use of woody fodder in small ruminants' diet in the silvopastoral zone of Senegal. To this end, an ethnobotanical survey of 81 agropastoralists was conducted in 19 villages of the Ouarkhokh commune in July 2021. Its results allowed listing the main woody species available and their uses in the diet and health care of small ruminants. About 81 % of the surveyed farmers use the available woody fodder species. According to them, the species most frequently consumed by small ruminants are *Balanites aegyptiaca*, *Acacia raddiana*, *Guiera senegalensis, Faidherbia albida* and *Adansonia digitata*. These species were then used in a feeding trial at the Dahra zootechnical research centre of the Senegalese Institute for Agricultural Research (ISRA-CRZ/Dahra), between November and December 2021. The objective was to test the preference of the local Peul peul sheep breed for the woody species pre-selected by the interviewed agropastoralists. The trial was carried out in a completely randomised design with woody fodder as diet supplement allocated to four male sheep aged 18 months with an average weight of 28 kg. It included an adaptation phase of four days during which the animals received the basic ration, a second phase during which the sheep were fed with fresh leaves for five days, a third transition phase of four days, a last phase during which the sheep were fed with air-dried leaves for five days, and two closing days to determine the animals' weight gain. For both the fresh leaf and the air-dried leaf phase, the results of the experiment showed a highly significant difference in sheep's preference of leaves ($p < 0.001$). The forage species most consumed by the animals were *Acacia raddiana* and *Balanites aegyptiaca* in fresh and dry stage. Given the predominant role that woody fodder plants play in the feed supply of extensive livestock systems, their preservation and sustainable use is essential for the feed supply of livestock on natural pasture during the dry season.

Keywords: Dry leaves, feeding trial, fresh leaves, Senegal, sheep, silvo-pastoral zone, woody fodder

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