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Goat farming in Algerian steppe region: constraints and perspectives

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Abstract. This study aims to characterize the goat farming in steppe zone at M'sila region (Algeria) and to identify its main constraints. In Algeria, goats are distributed mainly in the mountains, the steppe and Saharan areas. The goat population in this agro-pastoral region is about 140000 goats of which 90000 females. A survey of 64 breeders confirmed extensive and mixed management with sheep. The price of goat meat has been in line with sheep's meat, which remains the most consumed meat in the study area. The market demand for goat meat is accentuated especially during the aid Al-Adha and Ramadhan as well as for the farmers' fresh money requirements. Goats are sold around 30000 Algerian dinars depending on age and weight. Otherwise, the price of goat milk, which is gaining interest, has tripled. Despite the attractive price of the goat milk, 67% of the breeders prefer it for to self-consumption. These farms are almost exclusively conducted by men (97%) of over 55 years old. Better organization of the goat sector could make it more profitable and play an important role in rural development.

Keywords. Goat farming – Steppe zone – Meat – Milk – Constraints.

L'élevage caprin en région steppique algérienne: contraintes et perspectives

Résumé. Cette étude a pour objectif de caractériser l'élevage caprin en zone steppique dans la région de M'sila et d'identifier ses principales contraintes. En Algérie, le cheptel caprin est réparti essentiellement dans les montagnes, les zones steppiennes et les zones sahariennes. L'effectif caprin dans cette région agropastorale est d'environ 140000 têtes dont 90000 chèvres. Une enquête auprès de 64 éleveurs a confirmé la conduite en extensif et mixte avec les ovins. Le prix de la viande caprine s'est aligné avec celui de l'ovine qui reste la viande la plus consommée dans la région d'étude. La demande du marché en viande caprine s'accroît notamment lors de périodes de fêtes de l'aïd Al-adha et du ramadhan ainsi que lors de besoins en argent frais des éleveurs. Les chevreaux sont vendus environ 30000 dinars Algérien, selon leur âge et leur poids. Par ailleurs, le lait de chèvre connaît un regain d'intérêt et son prix a triplé. En dépit du prix attractif du lait de chèvre, 67 % des éleveurs enquêtés le destinent en priorité à l'autoconsommation. Ces élevages sont quasi exclusivement conduits par des hommes (97%) âgés de plus de 55 ans. Une meilleure organisation de la filière caprine pourrait la rendre plus rentable et jouer un rôle important dans le développement rural.

Mots-clés. Élevage caprin – Zone steppique – Viande – Lait – Contraintes.

I – Introduction

Goat is known for its adaptation to very rough farming conditions. In Algeria, it is practiced in mountains in the north of the country, but most of the population is distributed in the steppe and sub-desert areas. It is conducted in extensive (Mouhous *et al.*, 2015; Guermah *et al.*, 2018). Goat farming is an important family activity in M'sila region. Technicity is transmitted from generation to generation. The goat population in Algeria is estimated at 5.129.838 in 2014 (DSA, 2016). Goat meat conveys the image of a biological product. It represents a source of animal protein but also income for rural

populations, especially in developing countries (Escareño *et al.*, 2013). Goats are also bred for their desired fleece and skin which is used in particular for the manufacture of guerbas which are light-weight, insulating and easy to carry. They are widely used in the study area. The wilaya (district) of M'sila is part of the Hodna region. This region is located south of the highlands in central Algeria. It covers an area of 18.175 km² for an estimated population of 1 210 952 inhabitants (www.wilaya-msila.dz). More than 30% of the population is concentrated in three important cities: M'Sila, Bou-Saâda and Sidi Aissa. Its main purpose remains agro-pastoralism dependent on low and irregular rainfall. The south of the region receives less than 200mm/year. The north area receives more than 480 mm /year. The climate of the wilaya is of continental type subjected in part to the Saharan influences. It is dry and very hot in summer and very cold in winter. Rangelands and pastures occupy a very large area, 1029564 ha or 56.65% of the total agricultural area. The study of the potentialities of goat farms in this agro-pastoral region remains insufficient. The aim of this work is the characterisation of goat farming and determination of its main constraints in M'Sila region.

II – Materials and methods

In order to characterize the behavior of goat farms and to identify the main constraints, a questionnaire survey of 64 breeders was conducted. Questionnaires concerned firstly the social aspect of the farmer, his age, his level of education, and on the other hand livestock management, feeding mode, type of production. The choice of surveyed areas was made following interviews with veterinarians, butchers and especially the guidance of the agricultural services staff of the wilaya. The selected areas for the survey were, M'sila and its surroundings: 10 farms, Ouled Derradj: 34 farms and Magra: 20 farms surveyed. After tabulation, the collected data was coded and stored in a database designed with Microsoft Excel software 2013. The analysis concerned the descriptive statistics calculated for each of the parameters (means, standard deviations and proportions).

III– Results and discussion

The results obtained show that 97% of goat farming is conducted by men, 48% of whom are over 55 years old. As has been reported in several studies in Algeria, in Mediterranean regions or around the world (Mouhous *et al.*, 2015; Todaro *et al.*, 2015), livestock are mostly conducted in extensive mode, most often in association with sheep. The local race "Arabia" located in steppe, semi-steppe and highland areas, Guintar *et al.*, (2018) is dominant in the farms surveyed. According to the breeders it is more adapted to the climate of the study area.

Mid-sized herds are the most frequent, 23.5% have 10 to 20 goats. Large herds are quite rare. However, 12.5% of the surveyed breeders have 70 to 80 goats and 5% have a population of over 100 animals.

93.4% of breeders sell males aged 6 –12 months or older, and keep only one male in the herd for reproduction.

A lack of technical skills of breeders and extension has been noted, this situation was previously reported by Kadi *et al.*, (2016).

Goat meat is dedicated to breeders self-consumption and then for sale. Goats are sold in the market or in the farm on feet and like carcasses in butchers. Prices of goats are different according to their age and weight. Recently prices of goat meat and milk increased significantly. Milk is sold at 150 Algerian dinars the liter and goat meat is at 1400 local dinars the kilogramme, recently aligned to meat sheep. Bring together the two components: more productive orientation towards mixed farming (milk/meat) and the sale of young goats participates to sustain household cash flow and allow securing the farming system. This option was also reported by Sahraoui *et al.*, (2016).

The majority of breeders surveyed (64%) practically only graze on steppe routes and stubble cereals. 36% of breeders distribute barley in addition to grazing (Fig. 1). Goats reared with sheep rarely benefit from feed supplement.

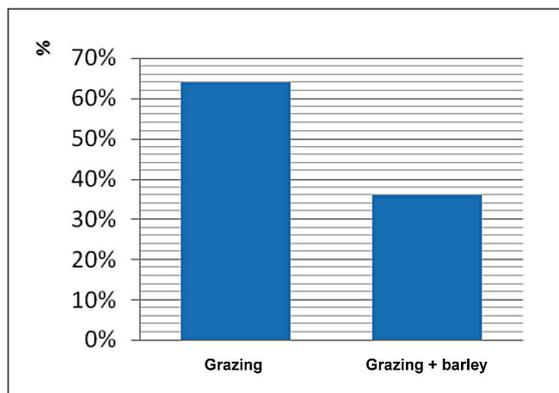


Fig. 1. Feeding mode of surveyed breeders.

The practice of rationing is not found in any of the farms surveyed which explains the low productivity in milk and meat of these farms. Watering is always available, drinkers are developed and water comes from wells and cisterns.

According to the results of the survey, 67% of breeders are oriented towards milk production, 22% towards the mixed type (meat-milk) and 11% are oriented towards the production of kids for fattening (Fig. 2). These three production systems meet three strategies followed by breeders. The majority of breeders (67%) raise goats for their milk. The surplus production is intended for sale. Kids goats, are destined for the market at a very young age. On the other hand, the mixed system farms) are interested in the two productions. In addition to milk, kids are then fattened for market. Finally, the third system is followed by these very few breeders (11%) who raise chevons for fattening. Often these breeders leave the milk of goats for their kids goats. They have some cows for their own consumption of milk. This configuration of breeding strategies is also reported by Mouhous *et al.*, (2015) in the mountains of Kabylia (Algeria).

All the breeders feed the kids with the goats milk and 87% wean them at the age of 3-4 months. Kids can be sold from six months old or more. The price of goat meat has been aligned with that of sheep in the local market, which is a contribution to household cash flow.

An important demand of goat meat related to its medicinal and dietary virtues is observed. This meat is considered as a bio product. Among the grazed species in the study area, *Artemisia herba alba*, *Artemisia campestris*, *Peganum harmala*, *Ziziphus lotus*, *Medicago arborea*, may give organoleptic and therapeutic qualities to local goat meat.

According to the breeders responsesm ilk production of Arabia goat breed is about 1liter to 1.5 liter per day. Produced milk quantities are low, 67% of the breeders use it for self-consumption.

Otherwise, our survey reveals that the majority of breeders do not pay fees for veterinary care of goats.

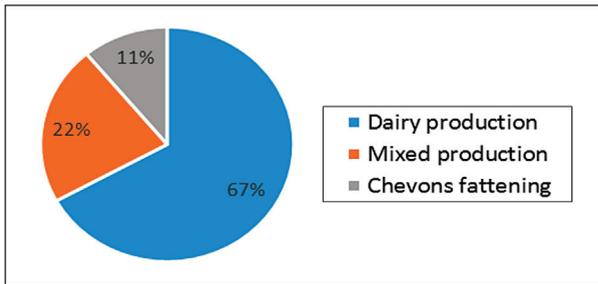


Fig. 2. Different Types of production (milk, meat or mixed).

IV – Conclusion

The study leads to several results: Farming conditions are often difficult and technical supervision is often weak in traditional farms, which explain low performances. Goat farming in the study area faces different constraints. Low rainfall, an insufficient food supply, a lack of livestock management and extension, lack of farmer training and financial assistance for this sector make this activity less attractive.

Low productivity could be improved by better farm management and by the use of selected breeds with higher potential. Extension and training for better livestock management are among the prospects to be considered. Goat farming contributes to improving household incomes and reducing rural exodus. The organization of a goat sector is necessary for the sustainability of goat farming. Several elements argue for a better profitability of this activity. Prices of meat and milk, new consumer trends, ancestral knowledge of local farmers could enhance the profitability of this sector. Goat called poor's cow could someday become rich's cow.

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