

65. Floristic Diversity of the Camel Diet in Northern Algerian Sahara

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Introduction

Despite the harsh desert conditions, Saharan rangelands are characterized by very valuable plant diversity (Ozenda, 1981 et Chehma *et al.*, 2005). Moreover, the camel is the only species able to exploit these vast Saharan areas (Gauthier Pilters, 1977; Chehma *et al.*, 2008). The microscopic analysis of plant debris contained in feces or esophageal bowls is a method of studying the diet of grazing animals (Mandret 1989). For this purpose, and to study the plant diversity of the camel diet in its natural environment, the content of plant fragments in feces were analyzed as indicators of types of plant species grazed.

Methodology

The samples of faeces were collected in two regions (Touggourt and Ghardaia), representing the different camels rangelands, over the four seasons of the year (2009/2010). Ground feces are macerated in water for 2 days and then filtered through fine sieve (0.2 mm) to separate the liquid residue. Then washed with bleach to destroy the contents of epidermal cell rinsed with tap water. The epidermis thus obtained were mounted between slide and cover slip in a drop of glycerin and observed with an optical microscope equipped with a camera. The epidermis are identified on the basis of the shape of epidermal cells, stomata, veins and the appearance of the edge of limb (Mandret, 1989)

Results and Discussion

The harvesting of epidermis found in the faeces of camel allowed identifying 102 types representative of 2567 fragments and identifying 65 types of species during the 4 seasons. The number of 65 species grazed by camels at the six harvest sites appears very important if compared with the total number of species listed in six different types of rangeland operated by the dromedary. As such, Chehma (2006) has inventoried 75 spontaneous plant species in the same rangeland studied. The time study showed that, despite the seasonal variability of plant diversity of Saharan rangeland, our results do not reflect a significant seasonal variation with 28%, 27%, 23% and 22% respectively for spring, summer, fall and winter. Chehma *et al.* (2005) recorded seasonal variations in plant diversity in the range 86% in spring, 34% in winter, 14% in fall and 11% in the summer.

This disproportionality between the seasonal variability of grazed species compared to available species, shows that the dromedary had a relative stability of its floristic composition diet, during the year. This confirms the work of Chehma and Faye (2009), who have shown that the dromedary stabilizes its annual nutrient inputs, despite the very significant seasonal variation.

This could be attributed to the dromedary feeding behavior, that is deemed selective for species and plant parts grazed (Yagil, 1985), and even if the forage is abundant, this animal is grazing by walking and generally consuming little of each plant, (Meres, 1959; Gauthier Pilters, 1965).

In terms of spatial distribution, the region of Touggourt represents the highest number, with 72 species for 64 species in Ghardaia. This distribution varies with different types of rangelands. In fact soil factors are involved in the development of vegetation, as they characterize the substrates on which various pastures are growing (Boudet, 1978).

Conclusion

This study indicated that plant diversity of the camel diet is very important, considering the number of fragments of plant species taken from its faeces. Camel were able to graze more than 86% of potentially available plant species in its rangeland. Moreover, because of its characteristic feeding behavior, the dromedary was able to relatively maintain stable annual feed of this diversity, despite

the variability of flora richness is very significant with the seasons. This enables it to exploit food resources less available and thereby make better use of its very poor saharan pastures.

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