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Fodder Balance and New Approach for Management of Pastoral Ecosystems in North-Benin

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Abstract

The seasonal shortages and the poor quality of available fodder are the major problems faced by cattle breeders in Benin. These factors are sources of several conflicts between breeders and farmers in the north of the country. Getting data on the evolution of the natural grasslands is an urgent need today. It is within that framework that the present study on carrying capacity and the management of ecosystems in northern Benin was carried out. The aims of the study are: (i) to make the typology of the pastoral resources of the area, (ii) to determine the productivity and carrying capacity of the various types of Grasslands, (iii) to analyse the modes of exploitations of the fodder resources in the area (iv) to identify the impacts of these modes on the viability of the pastoral ecosystems and (v) to propose a strategic plan for sustainable management of those ecosystems.

Overall, 6 types of grasslands were identified on the basis of phytosociological field surveys. The average potential productivity of the herbaceous layer is about $3.71 \text{ t DM ha}^{-1} \pm 2.07$. That of the harvested residues is $0.12 \text{ t DM ha}^{-1} \pm 0.07$. This corresponds to a carrying capacity of $0.32 \text{ UBT ha}^{-1} \text{ year}^{-1} \pm 0.31$ compared to a seasonal load rate of $0.34 \text{ UBT ha}^{-1} \text{ year}^{-1} \pm 0.11$. This results in a surplus load of 0.02 UBT ha^{-1} . This situation obliges breeders to prune woody fodder. The impacts of such practices are already perceptible on *Khaya senegalensis* and *Azelia africana* whose individuals present traces of multiple pruning. Strategic proposals for the control of the load rate (differential taxation) and the use bush fires, with the aim of improving the quality and production of fodders, were formulated.

Keywords: Benin, carrying capacity, fodder resources, modes of exploitation, viability