



University of Kentucky
UKnowledge

International Grassland Congress Proceedings

21st International Grassland Congress / 8th
International Rangeland Congress

Potentialities Evaluation and Sylvo-Pastoral Improvement Test in a Semi Arid Zone in the Southwest of Algeria

D. Bouderbera

Université des Sciences et Technologie H. Boumediène, Algeria

Malika Dahmani-Megrerouche

Université des Sciences et Technologie H. Boumediène, Algeria

Follow this and additional works at: <https://uknowledge.uky.edu/igc>



Part of the [Plant Sciences Commons](#), and the [Soil Science Commons](#)

This document is available at <https://uknowledge.uky.edu/igc/21/10-1/48>

The 21st International Grassland Congress / 8th International Rangeland Congress took place in Hohhot, China from June 29 through July 5, 2008.

Proceedings edited by Organizing Committee of 2008 IGC/IRC Conference

Published by Guangdong People's Publishing House

This Event is brought to you for free and open access by the Plant and Soil Sciences at UKnowledge. It has been accepted for inclusion in International Grassland Congress Proceedings by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.

Potentialities evaluation and sylvo-pastoral improvement test in a semi arid zone in the southwest of Algeria

D. Bouderber, M. Dahmani-Megrerouche

Laboratoire d'Ecologie et Environnement, Faculté des sciences biologiques, Université des Sciences et Technologie H. Boumediène. BP 32 El-Alia, Bab-Ezzouar, 16111, Alger. Algérie.

E-mail : dbouderb@yahoo.fr ; malika_dahmani@yahoo.fr

Key words : coppice, production, pastoral load, improvement

Introduction The area of study (coppice of Holm oak of the South West of Algeria) has known a period of deep social mutations due to the intensification of agriculture and an uncontrollable flux of migrant populations. These latter combined with harsh ecological conditions (dryness, soil erosion and excessive pasturing) led to a swift degradation of the vegetation (Dahmani, 1988; Ghazi & Lahouati, 1997) spoiling its pastoral purposes. The aim of our study is on one hand the evaluation of the productive potentialities in woody and pastoral matter and on the other hand, a contribution to the preservation and improvement of the coppice that turns out to be a fundamental source of food for the herds.

Methods The studied samples for the assessment of the biomass and the woody production are determined by the allometric method (Gounot, 1969; Heim, 1977) connecting the surface of the top wood/crown with the biomass (Bouderber & Dahmani, 1990, 1999). The pastoral production is evaluated by an indirect method (linear sampling, specific contribution and specific quality index) (Daget & Poissonnet, 1972). A test of improvement of the pastoral production is tempted in four plots (L1, L2, L3, L4: 25m x 25m) while combining three treatments: cut of the herbaceous and the woody low (C), straw (P, Pf) and N.P.K. fertilization (F). The effectiveness of these tests is appreciated by the determination of the fodder potential, expressed by the pastoral value, load and production, in comparison with the reference plot (T).

Results This preliminary assessment of the potentialities of the holm oak coppice (Figure 1) shows a woody annual production of 0.089t/ha/yr, a clear primary production of 0.271t/ha/yr, a natural pastoral value ranging between 29.3 and 38 and a pastoral load between 1.40 and 1.81 ha/sheep. This weak sylvo-pastoral potentiality excluded envisaging any current business concern and requires the implementation of appropriate model of management. The test of improvement tempted in this study shows that the profit of the most important pastoral value is obtained (Figure 2), in the cut and fertilized plots (L4 and L3).

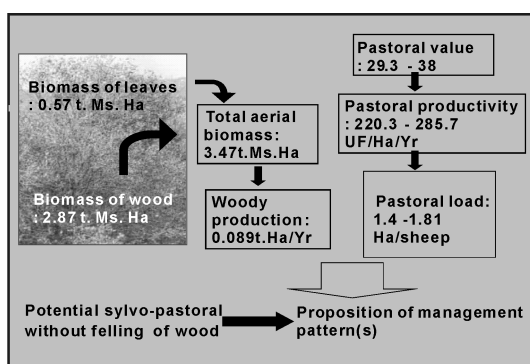


Figure 1 Woody and pastoral production in the holm oak coppice.

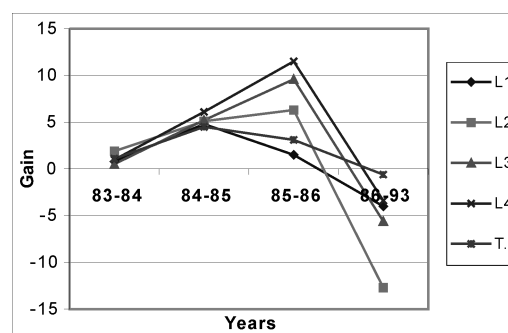


Figure 2 Fluctuations of winning of pastoral value. L1 : C+P, L2 : C+Pf, L3 : C+P+F, L4 : C+F, T : reference, C : felling, P : straw, Pf : short straw, F : fertilizer

Conclusions This survey underlines the low natural productive potential of this coppice (Achhal, 1979; Lossaint & Rapp, 1978; Quezel & Medail, 2003). It also shows that chemical fertilization (N.P.K) associated or no, with biological fertilisation (straw) can improve the fodder value of the vegetation (Sabate & al., 1992). This positive effect must be confirmed however by a long-term follow-up of the improvement tests. The possible introduction of palatable species could also give convincing results. A study of the food behaviour of the sheep (Cuartas & al., 1992) in relation with the phenology of the introduced species would lead to more significant pastoral load results and the elaboration of a precise pastoral calendar. Otherwise, the improvement of the woody production could be carried out by some appropriate forestry operations (Bellon & al., 1992; Ducrey 1996).

Reference

Achhal A. (1979). Le chêne vert dans le Haut Atlas central : Etude phytocéologique. Problèmes posés par les aménagements de la chênaie. Thèse Doct. 3^{ème} cycle, Univ. Aix-Marseille. 116p.