



Studies of pasture production in Extremadura (Spain)

M. Murillo Vilanova, F. González López, J. Paredes Galán, P.M. Prieto Macías, and V. Maya Blanco
Centro de Investigación "Finca La Orden". 06187 Guadajira, Badajoz. Spain

The region of Extremadura covers more than four million hectares in the South West of Spain, with dehesas occupying almost 1.5 million hectares of its surface. This agro-silvo-pastoral land use system constitutes the most recommendable model for extensive exploitation in Mediterranean areas in which the semiarid climate and the poor, shallow soils are constraints on any other type of agricultural use. It is characterized by a grassland with a disperse cover of oak trees and shrubs, where the main production is extensive livestock combined with agriculture and forestry. The pastures are the basis for animal breeding in the dehesas being these ecosystems of great economic, social as well as environmental value in the southwestern Iberian Peninsula. These facts justify the investigation on pasture improvement and the study on spatial and temporal variations of pasture production in the whole region.

Pasture production is quite variable, highly determined by soil and climate conditions. Rainfall variability produces large seasonal and annual variations, with the highest production in spring, low production in autumn and very scarce in winter. During summer, while pastures are wilting, hard seeds stay latent in the soil and gradually germinate in consecutive months. But variability of pasture production in such a heterogeneous ecosystem does not only depend on edaphic and climate conditions, but also on other factors, such as grazing management, improvement measures, fertilization, exploitation infrastructures, stocking rates, etc. The present study, carried out in the framework of the "Montado/Dehesa" INTERREG project, aimed to sample pasture production in Extremadura, in order to provide a large amount of real data for determining the influence of the different factors involved, which will constitute the basis for the development of a production model. The latter will be integrated into a tool helping to decide on the best practice of dehesa management.

Pastures were monitored in 52 farms distributed throughout Extremadura by determining production, composition and crude protein content. Samples were taken from 208 exclusion cages during four years. The experimental fields included different soil types, developed mainly on slates and granites, and different managing practices. Rainfall variability was registered during the study period, with mean annual values ranging from 280 mm to 500 mm. High production differences were registered between the driest year and the other years. Furthermore, natural pastures showed a mean annual dry matter production of 2390 kg/ha, while improved pastures produced up to 3608 kg/ha.