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Grazing animal production systems and grazing land characteristics in a semi-arid region of Greece

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Keywords: grazing lands, semi-arid areas, livestock systems

Introduction Rough grazing in Greece cover about 40% of the total land area, is publicly owned and managed extensively (Hadjigeorgiou *et al*., 2002). The Prefecture of Larisa is in the centre of Greece, and has 212,000 ha of rough grazing land, with a variable topography ranging from sea level up to 3,000 m a.s.l. This area is utilized by a total population of 135,000 LU (mainly sheep, goats and some suckler cows), which consumes annually an appreciable fraction of their total nutrient requirements from rough grazing.

Materials and methods Grazing land characteristics and the grazing animal production systems were studied during a two-year period in the above region. Forty exclusion cages were erected in 4 representative areas to harvest herbage twice yearly and soil samples were collected. Herbage samples were analyzed both botanically and chemically. Nutrition balance sheets, on a yearly basis, were constructed according to information provided by twenty farmers regarding the numbers of animals farmed, the quantities of meat and milk produced and the amount of homegrown or purchased supplementary feeds fed to the animals indoors.

Results Soils are low in contents of organic matter (4.5%, s.e. 0.49), $CaCO_3$ (5.1%, s.e. 0.85), and the basic nutrients (0.24% N, s.e. 0.02; 17.4 μg P g^{-1}, s.e. 4.05; 282 μg K g^{-1}, s.e. 23.3). Climate is characterized by low rainfalls (~450 mm $year^{-1}$), high temperatures (mean annual temperature 15.5^{o}C) and a dry summer (June to September). Herbaceous vegetation is dominated by a multitude of annual species (42 were identified) and characterized by a short growth period in spring (February to May); therefore total herbage productivity is low (c. 350 g DM/m^2 per year). Herbage nutritional quality is similarly low. Mean Crude Protein (CP) content (s.e.of mean) was 69 (6.2) g/ kg dry matter (DM) and mean Crude fibre content (s.e. of mean) was 292 (7.8) g /kg DM) and these variables not significantly different between the areas studied. The average farm raised 58 LU, which grazed for most of the year (300 days) and which were fed supplementary roughages (26% of DM requirements) and concentrates (37% of DM requirements). However, although 37% of their nutritional requirements in DM terms were covered through grazing, only by 27% of their metabolisable energy requirements and 19.5% of CP requirements were met by grazing.

Conclusions Rough grazing lands are an important element in herbivore farming systems in Greece. It appears that they have a further potential for improved herbage production, both quantitatively and qualitatively, but traditional management practices prevent the optimal use of resources.

References

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