

Forage and animal production in the region

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Natural grasslands represent a large area of “campos” ecosystem in the southern of Brazil, Uruguay and northeast of Argentina between 30 and 38 degrees of latitude (Soriano, 1988), supporting beef and sheep meat, wool and dairy production. Forage production is low in quantity and quality, varying between seasons and years (Bermúdez and Ayala, 2005), associated to rainfall regimes (Berretta *et al.*, 1999). Warm season grasses (C₄ species) are predominant with a low proportion of legumes. Beef cattle production in extensive systems is characterized by an advanced heifer mating age, low calving rate, low calf liveweight gains, advanced slaughter age, low extraction rate and annual productivity of 65 kg of liveweight/ha/year (Berretta *et al.*, 1999). Sheep production shows a hogget mating age around 2.5 years with high lamb mortality (Berretta *et al.*, 1999). Improved “campos”, including legumes and phosphorus manure maintaining natural vegetation, increase forage production two to four times, and remove production constraints described. Intensive systems located in more fertile areas are based on cultivated pastures in rotation with cereal or oil crops, where a large group of legumes and grasses can be included in annual, short rotation or perennial pastures (*Trifolium*, *Medicago*, *Lotus*, *Festuca*, *Dactylis*, *Lolium*, *Avena*, *Triticum*, *Chichorium*). Forestry and agriculture development is concentrating meat and wool production to marginal areas, reinforcing value of pioneer legume species for low fertile, acid and dry environments, achieving importance the use of genus *Lotus* from general to specialized purposes. As an example of research priorities in the region, the Pastures & Forages program of INIA Uruguay for the 2007-2011 plan emphasis on: a) *sustainable management on natural grasslands* promoting new ways to add value and/or systems that allow biodiversity conservation, b) *forage plant breeding* focusing on adapted and improved forage species, c) *cultivated pasture management* focusing on stress of plant energy, competition, plant nutritional and soil biotic and non-biotic factors affecting productivity and persistence, d) *soil-plant-animal relationships* focuses on better understanding of productive processes and plant dynamics to enhance productivity and sustainability and e) *integrated weeds, insects and diseases management* focuses on the design of technologies and solutions with an acceptable environment impact. Challenges in the “campos” ecosystem will refer to alternatives for marginal environments, better quality and safe products for local and overseas markets and evaluation of the impact of technology on natural resources. Concepts of environment, social and economic sustainability are also reflected in research, integrating pasture and animal knowledge to develop a network for research and technology transfer.

References

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