

Performance of winter pasture species in different integrated crop-livestock systems in lowlands of Southern Brazil

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Introduction

The introduction of winter forage species in succession to rice cropping in lowlands of Southern Brazil is an option for the productive system diversification (Moraes et al., 2014). This region is characterized by irrigated rice monoculture and fallow periods. Thus, the winter forage species can promote nutrient recycling, the basis to the occurrence of conservation practices and crop-livestock integration adoption by farmers. Species such as ryegrass, white clover and birdsfoot trefoil are adapted to this environment. Thus, this study aimed to evaluate the dry matter accumulation in different combinations of pasture submitted to bovine grazing animals.

Material and Methods

A long-term experiment started in March 2013, in Corticeiras Farm, Cristal County, Rio Grande do Sul State, Brazil. The area was tilled and lime was applied. After this, the treatments were seeded. The study period was the second winter of the trial, in 2014, and in the summer period different crops alternate within each treatment, being (1st winter season / 1st summer season / 2nd winter season): T1 – annual ryegrass (AR) / soybean / AR; T2 – AR + white clover (WC) / Sudan grass / AR + WC; T3 – AR + WC + birdsfoot trefoil (BT) / succession field / AR+ WC + BT, arranged in a randomized block design with three replicates. The grazing method adopted was continuous with variable stocking, aiming to maintain an average pasture height of 15 cm. The end of grazing period varied in each treatment due to the subsequent summer crop. The pasture attributes evaluated were: initial and residual dry matter (DM) and DM accumulation. The DM accumulation rate was evaluated every 28 days in grazing exclusion cages. Data were submitted to analysis of variance and Tukey test at 5% significance.

Results and Conclusions

Table 1. Dry matter accumulation in different pastures in Southern Brazil

Treatment	Initial dry matter (kg ha ⁻¹)	Residue forage (kg ha ⁻¹)	Dry matter accumulation (kg ha ⁻¹)	Grazing days	Next crop
1	1139,2A	1061,3B	3349,5B	113	Rice
2	1507,3A	1196,1B	5372,0A	140	Soybean
3	1874,0A	3005,8A	5784,3A	140	Succession field

Treatments 2 and 3 were those who presented the highest DM accumulation during the trial period. Furthermore, in both treatments the number of grazing days was also superior to Treatment 1. Regarding the residue forage, Treatment 3 showed the highest value.

References cited

Moraes et al. (2014). *Europ. J. Agronomy*. 57: 4-9

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