Implementation of different integrated crop-livestock systems in lowlands of Southern Brazil: an animal production approach

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Introduction

The introduction of integrated crop-livestock systems (ICLS) is an alternative to rice monoculture in lowlands of Southern Brazil (Anghinoni et al., 2013). During the winter period, the establishment of pastures with livestock emerges as one of the main options for land use due to the existence of forage species adapted to this edaphoclimatic environment. In this study we evaluate the animal production in the first winter grazing season of a long-term ICLS experiment with pastures that present different botanical compositions.

Material and Methods

The experiment was installed in March 2013, in the Corticeiras Farm, Cristal County, Rio Grande do Sul State, Brazil. After soil tillage and correction (liming), the treatments were implemented, being: 1) Annual ryegrass (AR) succeeded by rice; 2) AR succeeded by soybean; 3) AR + white clover (WC) succeeded by Sudan grass; and 4) AR + WC + birdsfoot trefoil succeeded by native summer pasture species (succession field), preceding distinct summer crops. The grazing began on July 3rd, and the end of grazing season was performed according to subsequent crop. The grazing method was continuous with variable stocking to reach an average pasture height of 15 cm. The steers were weighed fasted in and out of the trial period and the data were subjected to analysis of variance and Tukey test at a 5% significance level.

Results and Conclusions

Table 1. Animal production in different winter pastures on the implementation of integrated crop-livestock systems in lowlands of Southern Brazil

Treatment	Average daily gain (kg animal^{-1})	Gain (kg ha^{-1})	Stocking rate (kg ha^{-1})	Grazing days	Next crop
1	0.67 a	340 c	1140 a	92	Rice
2	0.73 a	470 a	1014 b	126	Soybean
3	0.63 a	373 bc	957 b	126	Sudan grass
4	0.65 a	419 ab	970 b	139	Succession field

Means followed by different letters in the column differ according to the Tukey test (5%).

The average daily gains were similar in all treatments, with the highest yields per area being observed in Treatments 2 and 4, and the highest stocking rate in the Treatment 1.

References cited

Anghinoni et al. (2013). Tópicos em ciência do solo. 8: 325-380.

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