world congress on integrated crop-livestock-forest systems
3rd International Symposium on Integrated Crop-Livestock Systems
towards sustainable intensification • brasilia • brazil • 2015

Analysis of the economic viability from an integrated system of rice and beef cattle in the Pampa Biome of Rio Grande do Sul, Brazil

João Batista B. MARQUES[1]*, Carla LEHUGEUR[2] , Melissa Rita do COUTO[3]
[1] Embrapa Pecuária Sul, P. O. Box 242, Zip: 96401-970, Bagé, RS, Brazil, [2] Secretaria da Agricultura e Pecuária, Av. Getúlio Vargas, 1384, Câmaras Setoriais e Temáticas, Zip: 90150-004, Porto Alegre, RS, Brazil, [3] Embrapa Pecuária Sul, P. O. Box 242, Zip: 96401-970, Bagé, RS, Brazil.
E-mail address of presenting author*: joao.marques@embrapa.br

Introduction

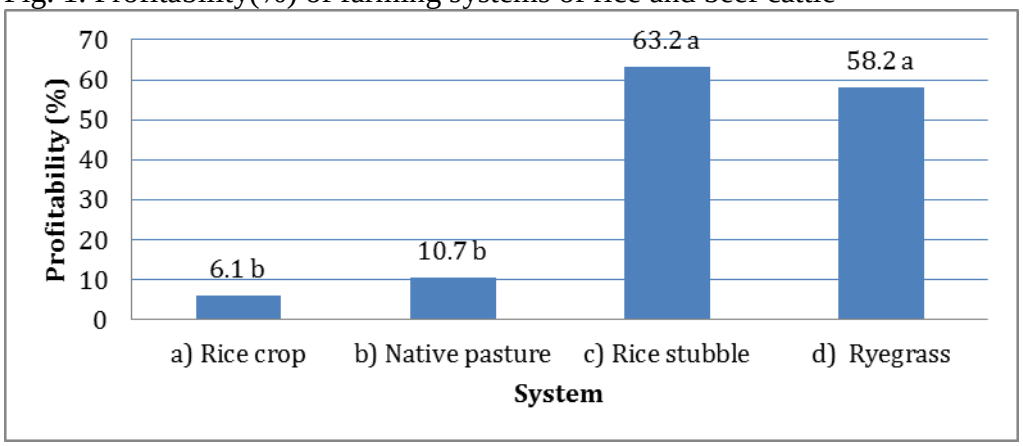
The environmental conditions of the Pampa Biome are favorable to the degradation of soil, especially when grain crops are introduced in this region, traditionally exploited with beef cattle systems. The preservation of this biome becomes easier when integrated systems are developed, increasing productivity and profitability. In this context, the present work reports the profitability results of four different agricultural systems.

Material and Methods

The field experiment was carried out in a native pasture area, located at the Embrapa Pecuária Sul Research Centre, Bagé (31°22'S, 53°59'W, 176 m asl) in 2009/2010 growing season. The treatments were: a) rice crop- in conventional plough tillage; b) native pasture- with beef cattle with a forage allowance of 12 kg of dry matter (DM) per 100 kg of live weight (LW) (DM at 12% of LW); c) rice stubble- integrated crop/livestock system with steers grazing rice stubble (DM at 12% of LW); d) ryegrass- integrated crop/livestock system with steers grazing ryegrass pasture planted after rice crop (DM at 12% of LW). For each system, it was evaluated the cost of disbursement, opportunity cost of land and opportunity cost of capital. The gross revenue was also evaluated for each system. Finally, we calculate the profitability, deducting all the costs from the gross income and dividing it by total cost.

Results and Conclusions

Fig. 1. Profitability(%) of farming systems of rice and beef cattle



During the 2009/2010 growing season, irrigated rice cropping under conventional plough tillage and steers grazing on native pasture, explored without rotation systems, presented lower profitability than steers grazing systems in rice stubble and steers grazing ryegrass planted after rice crop (Fig. 1). Therefore, integrated crop-livestock systems which include rice and steer fattening are more efficient under the economic point of view than individual systems involving only one of these farming productions.