



Economic viability of integrated crop-livestock systems using dual-purpose wheat: farm case study in the Northern region of Rio Grande do Sul state, Brazil

Claudia DE MORI¹, Renato Serena FONTANELI^{1*}, Giovanni FAÉ¹, Henrique Pereira dos SANTOS¹, Ivonei LIBRELOTTO²,

¹ Embrapa Wheat, Rodovia BR 285, km 294, CEP 99001-970, Passo Fundo, RS, Brazil. ² Farmer, Boa Vista das Missões, CEP 23890-000, RS, Brazil.

E-mail address of presenting author*: renato.fontaneli@embrapa.br

Introduction Dual purpose (DP) wheat is an alternative to minimize forage shortage composing integrated crop-livestock systems (ICLS) to increasing income and crop diversification. The aim of this study was to estimate costs and profitability of an ICLS using DP wheat adopted in a farm in the Northern of Rio Grande do Sul state, Brazil.

Material and Methods

The case study was conducted in a crop-beef cattle farm in Boa Vista das Missões, RS (Lat. 27° 39' 26" S, Long. 53° 19' 8" W and 600 m asl), in a dystrophic Red Latosol (Oxisol) and total area of 111.8 ha). The cropping system adopted by the farm at 2011/12 and 2012/13 was soybean-oat-corn-dual purpose wheat. The production costs (variable, operational and total costs) using linear depreciation and economic results (gross revenue, gross margin, operational profit margin, profit and income-cost ratio) (HOFFMANN et al., 1987) were determined.

Results and Conclusions

The table shows economic analysis obtained by crop rotation system.

INDICATOR	2011/2012	2012/2013	TOTAL
Yield	3,480 kg ha ⁻¹ soybean 250 kg ha ⁻¹ a meat	8,100 kg ha ⁻¹ corn 2,700 kg ha ⁻¹ DP wheat 300 kg ha ⁻¹ meat	
Variable cost (US\$ ha ⁻¹)	970	1,760	2,730
Operational cost (US\$ ha ⁻¹)	1,098	1,821	2,919
Total cost (US\$ ha ⁻¹)	1,539	2,221	3,760
Gross revenue (US\$ ha ⁻¹)	2,440	2,844	5,284
Gross margin (US\$ ha ⁻¹)	1,470	1,084	2,554
Operational margin (US\$ ha ⁻¹)	1,342	1,023	2,364
Profit (US\$ ha ⁻¹)	901	623	1,524
Income-total cost ratio	1.59	1.28	1.40

The economic results from the ICLS adopted by the farmer in two years were positive, generating average profit of US\$ 1,524 per ha and income/total cost ratio of 1.40. Comparing this ICLS with a system simulation of summer crop without rotation in winter and livestock (soybean-fallow-corn-fallow; total revenue US\$ 3,522 per ha; total cost US\$ 2,703 per ha, profit US\$ 819 per ha) was observed a profit increase of 86.2% per hectare in two years.

References cited

HOFFMANN, R. et al. (1992). Administração da empresa agrícola. 7. ed. 325p.