

The risk analysis use supporting decision-making process on crop-livestock systems in Tocantins State, Brazil.

Pedro Henrique Rezende de ALCÂNTARA¹, Marcio Yuri de Souza ARAUJO², Cláudio França BARBOSA¹, Deivison SANTOS¹, Roberto Manolio Valladão FLORES¹, Leonardo José Motta CAMPOS¹, Vitor Del'Álamo GUARDA¹

¹Embrapa Pesca e Aquicultura, 770020-020, Palmas, TO, Brazil ; ²Independent consultant
 E-mail address of presenting author*: pedro.alcantara@embrapa.br

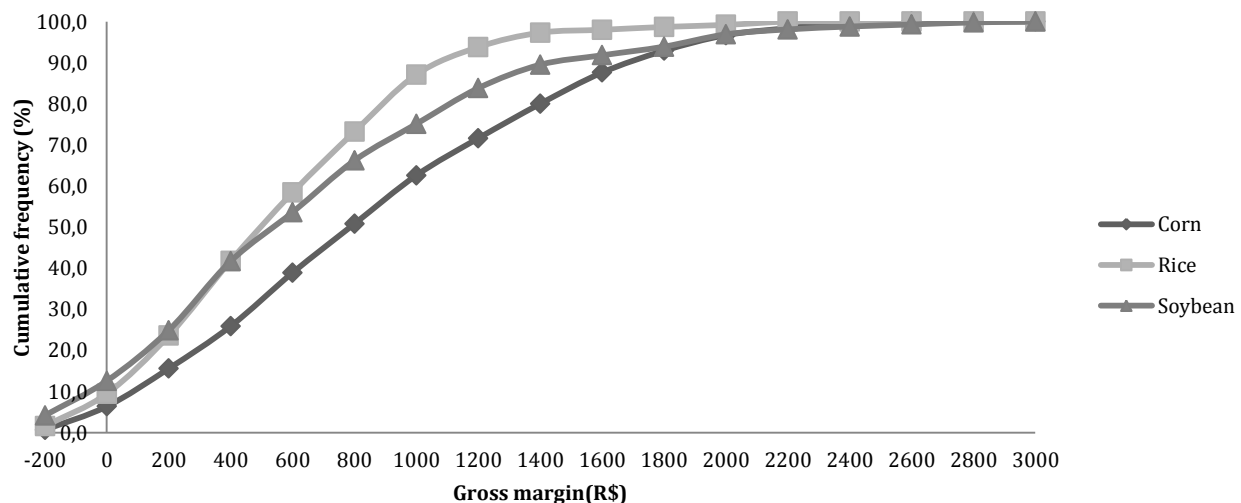
Introduction Decision-making about which crops will compose the crop-livestock system is an extremely important process for success integrated production. This case study aims to present the Monte Carlo (Boyle, 1977) risk analysis as a tool to support this process.

Material and Methods

This case study was based on data from Trigueira Farm, located in Pium, Tocantins (22 L 49.121149W, 10.437507S). The risk analysis was performed for the Tocantins three main grain crops: rice, corn and soybean. The operating cost of each culture was defined from reference technical coefficients and local values. Tocantins market prices for rice, corn and soybean on the from 2009 until 2014 had been adjusted and their frequency determined. The productivity and the selling prices were the variables used in analysis by Monte Carlo method. The each culture risk was determined as the percentage of simulations which the gross margin was negative.

Results and Conclusions

Fig. 1. Gross margin frequency estimated for rice, corn and soybean in Tocantins.



Risk analysis showed that corn, rice and soybean had negative gross margin probability of 6.4, 9.5 and 12.6%, respectively.

References cited

BOYLE (1977) J. Fin. Eco. v.4, i.3:323-338.

Acknowledgements

To the extension workers and Trigueira farmers.