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Integrated Crop-Livestock-Forestry systems: alternative recovery/renewal of pastures in Rondônia-Brazil

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Introtuction

The cattle in Rondonia has evolved expressively in recent decades, going from an importer to a major exporter of meat, milk and derivatives, currently one of the main economic and social relevance activities. However, there are still many challenges to make it look sustainable, mainly in the environmental area, but in opposition at this reality, there are several opportunities available in order to mitigate or to overcome these challenges. In this sense the integrated Crop-Livestock-Forestry systems (iCLF) have been indicated as an alternative. However, a larger scale the adoption, especially in the Amazon biome, requires certain caution, since it does necessary long-term research to identify different models of implementation and maintenance thereof.

Material and Methods

With this order was implemented a Technology Reference Unit-TRU in iCLF at the Experimental Field of Embrapa Rondônia in Porto Velho, RO, Brazil. Where the climate is tropical humid type Am and the predominant soil type is Latosol dystrophic, clayey, which was limed and fertilized as analysis results to meet the requirements of the crops. The TRU was divided into four modules of 2.5 ha each, totaling 10 ha, established in pasture in the degradation process, which from 2008 began to be cultivated with different crops (Table 1) and pastures (Table 2) rotations and successions.

Results and Conclusions

The results and information collected by 2013 (Tables 1 and 2) corroborate and point to the potential of iCLF as conversion tool and degraded areas, as well as the maximization of production factors of the system components, and point to bottleneck related to infrastructure harvesting, postharvesting and marketing of harvests.

Table 1. Productivity of crops established in the TRU in iCLF/Porto Velho-RO-BR, from 2008 to 2012.

Crops	Average productivity		Harvests
	Kg de grains[(1)] ha^{-1}	Sacks of grains ha^{-1}	
Rice (in shell)	3.003	50	2008/09 e 2011/12
Soybeans	2.856	47	2008/09, 2010/11 e 2011/12
Corn grain	3.331	56	2009/10
	t de MV ha^{-1}	t de MS ha^{-1}	
Corn silage	31,0	10,0	2009/10 e 2011/12

(1)Corrected so13% moisture.

Table 2. Production of pastures established in the TRU in iCLF/Porto Velho-RO-BR, from 2008 to 2013.

Grass	Grazing	DM	Weight gain		Stocking	
		kg ha^{-1}	g animal^{-1} day^{-1}	kg LW ha^{-1}	AU ha^{-1}	kg LW ha^{-1}
Ruziziensi[(1)]	I[(3)]	4.093	393	228	3,0	1.304
	II[(4)]	5.947	456	141	2,1	947
Xaraés[(2)]	II[(4)]	6.999	384	118	2,0	916

(1)*Brachiaria ruziziens*is; (2)*B. brizantha*. Xaraés; (3)Intermittent grazing 02/12-18/10/12; (4)Continuous grazing 10/07-13/11/13.