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Characterisation of the Production System of Dairy and Beef Farmers from Iporá and Neighbourhood, Goiás State, Brazil

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Introduction

The economy Iporá and surrounding municipalities in Goiás (Amorinópolis, Diorama, Israelândia, Ivolândia and Jaupaci) is predominantly based on dairy cattle and to a lesser extent in beef cattle. Of the 432,700 cattle present in these six counties, 46,700 are cows milked daily with production of 145,137 litres of milk per day (IBGE, 2012).

Beef cattle production systems are complex and diversified, with no single formula and recommendations that can be widely applied throughout Brazil. Thus, ranchers need to develop their own system of production, combining their technological level goals, environmental and market conditions, combined with the financial capacity and human resources available, and with social and environmental responsibility (ABREU et al., 2003). The increase in the productive and reproductive efficiency is vital to the profitability of beef cattle production, since the production system must be understood and managed in a systemic approach (OLIVEIRA et al., 2006).

The objective of the present study was to characterise the livestock production system of dairy and beef farmers in Iporá and surrounding municipalities in Goiás (Amorinópolis, Diorama, Israelândia, Ivolândia and Jaupaci) through a structured modular questionnaire.

Material and Methods

We adopted a convenience sampling methodology for conducting 240 interviews with farmers Iporá and surrounding municipalities in Goiás (Amorinópolis, Diorama, Israelândia, Ivolândia and Jaupaci). Questionnaires were applied between April and November 2013 at various locations and opportunities. They included the field day organized by the company *PROCRIA Saúde e Nutrição Animal*, meetings of rural communities in Iporá, in a joint effort of the Cooperative Family Farming Iporá Area (COOMAFIR), at a meeting of the Association of Rural Producers Headboard Santa Marta (APROSANTA) in the county of Amorinópolis, in agriculture store *PROCRIA Saúde e Nutrição Animal* in Iporá, in the office of the sanitary defense agency (AGRODEFESA) during the campaign of vaccination against FMD in May and November, and even during the 28th Agricultural Exhibition of Iporá. Data were collected impersonally and without the identification of the respondent.

Proceeded to analyse the data using Statistical Package for Social Sciences (SPSS) version 21.0 (IBM CORP., 2012). Data was entered into quantitative variables (scale) and qualitative (nominal) variables. The reported values in the result tables represent the frequencies, percentages, means and standard deviations of the respective dairy production variables.

Results and Discussion

Production indices of dairy farms Iporá and region are shown in Table 1. Should be noted that from the total of 162 milk producers, 103 produce up to 150 litres / day (small producers). The average number of lactating cows per farm is 27 ± 28 , producing 213.1 litres of milk per day. This represents an average yield of 7.9 litres / cow / day. Technical indexes of the farms studied in this research are below the average of Goiás state evaluated between August 2000 and July 2001. At the time, milk production per farm was 552 litres / day and productivity / cow of 9.86 litres / day (LOPES et al., 2007). Thus, it can be inferred that the production system of milk producers of Iporá and region reaches low productivity, which may affect in the profitability of the activity. Another relevant data presented in Table 1 is the average number of dry cows (26 ± 31) compared to the average number of lactating cows (very similar). This implies an increase in the total cost of feed to animals of the herd that are not producing milk.

Table 1: Production indices of dairy farms of Iporá and surroundings, Goiás state, Brazil.

Milk (liters/day) ¹	Frequency (n)	Lactating cows (n)	Dry cows (n)	Lactation (days)
Until 50	41			
51-100	30			
101-150	32			
151-200	14	27 ± 28	26 ± 31	243 ± 46
201-300	21			
301-600	16			
601-2,000	8			
Total ²	162	162	156	159

¹Average is 213.13 litres/farm/day; 7.9 litres/cow/day.

²Total of dairy farms in studied sample of 240.

Most of dairy and beef cattle farmers have reported signs of pasture degradation on their farms ($n = 100$ for milk, $n = 73$ for beef). A total of 118 dairy farms and 86 beef farms informed regular investments in pastures (Table 2).

Table 2 displays that the most common methods in reforming pastures are those that involve the preparation or soil disturbance, followed by application of soil amendments (lime or phosphates) and fertilizers, and broadcast seeding. However, a few producers ($n = 5$ for milk, $n = 4$ for beef) decided for Crop-Livestock Integration, when in the same area simultaneously cultivates an annual crop (crop) and a forage plant for establishing the new pasture. Thus, farmers obtain a better utilization of the area, dilute the costs for establishing new pasture due to revenue from annual crops, increased soil fertility and increase in revenue from new pasture (TRACY and ZHANG, 2008).

Table 2: Number of farms with evidences of pasture degradation, frequency and method of pasture renovation by dairy and beef farmers in Iporá and region, Goiás state, Brazil.

Signs of pasture degradation	Frequency (n)	
	Milk	Beef
Yes	100	73
No	59	36
TOTAL ¹	159	109

Carries out pasture renovation	Frequency (n)	
	Milk	Beef
Yes	118	86
No	41	22
TOTAL ¹	159	98
Method of pasture renovation	Frequency (n)	
	Milk	Beef
Soil preparation and broadcast seeding	30	20
Soil preparation, fertilizing and broadcast seeding	29	16
Soil preparation, liming and broadcast seeding	12	11
Soil preparation, liming, fertilizing and broadcast seeding	17	11
Soil preparation and rationing	4	8
Crop – Livestock - Integration	5	4
Following the recommendations of an agricultural engineer	2	3
Soil preparation and fertilizing	-	2
Broadcast seeding and fertilizing	1	1
Soil preparation and liming	-	1
Just broadcast seeding	2	-

¹Total of respondent farmers.

Among the problems currently faced by dairy and beef farmers in Iporá and region (Table 3), we highlight the price of milk (n = 71) and the price of beef (n = 62) are low, the price of inputs very high (n = 83 for milk, n = 60 for beef) and lack of appropriate policies for dairy (n = 48) and beef (n = 36) herds. It is noteworthy that the farmer does not influence the price of milk or beef, mostly because they are commodity type products. Thus, it is necessary that the beef and milk farmers improve their production systems in order to increase productivity on their farms, resulting in increased income and reduced dependence on price increases of marketed products.

Table 3: Main problems faced by dairy and beef farmers in Iporá and region, Goiás state, Brazil.

Problems	Frequency (n)	
	Dairy	Beef
Low milk or beef price	71	62
High input prices	83	60
Lack of appropriate supporting governmental policies	48	36
Unskilled labor force	42	35
Lack or low quality of extension services	31	14
Slaughterhouses heavily discount animal weight	-	24

Likewise, the farmer also has little influence on the price of inputs, i.e., the data in Table 3 suggest that respondent farmers have higher expectations of changes outside the farm (through changes in the prices of products sold and inputs) than do investments and adoption of technologies to improve the production system.

Conclusions and Outlook

The dairy and beef production systems in Iporá region and provide low levels of productivity, which can influence the profitability of activities. There is need for participatory actions involving local producers, associations, family farm cooperatives, agricultural extension agencies, schools,

research and extension, targeting improvements in production to increase productivity and income system, reducing vulnerability of dairy and beef farms of Iporá to fluctuations in the prices of inputs, milk and beef in region, especially considering that most of these farmers use family labor.

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