

BEEF MEAT PRODUCTIVE CHAIN OF ONE SLAUGHTERHOUSE IN SÃO PAULO STATE ON 2002

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Background

The slaughterhouse constitutes the centre of technological processing, sanitary defence, food preservation, commercial added value, for employment generation and of great economical interest for the producer, the industrial and the government. At the same time, each operation, can provide original information of high zootechnical value with reference to the breeds, the age of the animals, their weight, the carcass weight, the precedence of the animals, their feeding, their hygienic-sanitary conditions, the processing losses of the meat and by products and the value added in the final product. (BLISKA, 1996; BLISKA et al., 1996; JANK, 1996; OLIVEIRA et al., 1996; HUSTON, 2000; HOWELS, 2000; MIRANDA, 2001). Nevertheless there isn't in the national literature a specific study since the precedence of the animals till their final destination in the market, including the fresh and frozen beef cuts and the industrialized products.

Objectives

The objectives of this study was to evaluate the beef meat productive chain of one slaughterhouse in Sao Paulo state, including the animals origin, weight, carcass classification, destination of the fresh / frozen beef cuts and the industrialized products on 2002.

Methods

The 222.892 bovines slaughtered at Friboi Ltda., unit of Andradina-SP, were from the states of Mato Grosso do Sul, São Paulo, Goiás, Paraná, Minas Gerais e Mato Grosso. The slaughtering was made according to the sanitary and industrial inspections regulation for animal products. – RIISPOA (BRASIL, 1997). The cattle-buying department informed the origin of the animals. The weight of the hot carcasses was taken directly after the evisceration and carcass toilet. The Federal Inspection Service informed the classification and tipification of the carcass. The weight of the beef cuts (Tenderloin, striploins, topsides, rump) were informed by the production control department, and the final destination of the beef cuts and industrialized products were informed by the commercial department. To evaluate the effect of; the origin of the animals, the pluviometer effects over the medium weight of the carcass and the medium weight of the hindquarter cuts designated to the local or external market. The statistical analysis were made with Graph Pad InStat tm, with a significance level of 5% to compare the medias (F test) adjusted by the minimum square method mentioned by SNEDECOR (1976).

Results and Discussion

Table 1. Medium weight of the 222.892 carcass/Kg, in relation to their origin and the seasonality (rainy season from November to April and the drought from May to September) and the respective media, in 2002.

Origin	GO	MG	MS	MT	PR	SP	Média	D. P.
Jan	0	0	241,03	271,27	255,51	260,37	245,88*	12,55
Feb	236,69	0	257,81	261,32	248,66	236,62	252,46*	11,53
Mar	281,37	0	247,85	269,51	255,83	266,54	252,65*	12,90
Apr	264,37	0	253,36	0	225,85	229,94	246,54*	18,51
May	259,57	199,54	258,15	258,83	262,53	244,36	254,31*	24,18
Jun	251,13	0	254,79	254,64	238,68	242,37	251,85*	7,38
Jul	258,55	0	241,66	256,92	239,60	257,52	244,22*	9,38
Aug	243,39	127,33	251,38	245,37	237,62	256,66	250,76*	49,25
Sep	254,61	242,86	257,88	246,48	215,10	254,38	255,30*	15,79
Oct	252,17	202,76	246,38	225,72	254,07	241,58	246,13*	19,65
Nov	242,47	217,15	244,11	0	276,64	250,88	246,94*	21,28
Dec	247,14	183,52	236,59	271,68	232,57	247,28	238,47*	29,29
Média	253,77 ^a	195,53 ^b	249,25 ^a	256,17 ^a	245,22 ^a	249,04 ^a	248,79 ^a	
Desv. Pad.	12,30	38,91	7,26	14,00	17,48	10,49	5,07	

a, b Médias na mesma linha seguidas de diferentes letras diferem significativamente ($p < 0,05$)

*Médias na mesma coluna não diferem significativamente ($p > 0,05$).

We can observe in Table 1 that there is uniformity in the weight of the animals independently of the origin of the animals, with exception to the state of Minas Gerais which presented a medium weight of the carcass lower than the other states. This difference can be explained by the racial difference in the states livestock. The animals in the state of Minas Gerais are, in their majority, mixed breeds with dairy aptitudes. The animals from the other states are from Zebuine origin and some of them are from industrial cross breeding. When we compare the pluviometric variation there was no significant variation ($p > 0,05$) in the carcasses weight in the rainy season (October to March) and the draught (April to September) this is probably due to the mineral supplementation, the pasture rotation, intensive production, all those are common practices among the beef suppliers. The obtained results shown 43,83% of the carcasses were classified as "B" or Young animals and 25,60% as "R" or intermediary animals, and 50,36% of the "B" carcasses were from the state of São Paulo.

For this study we have studied four hindquarters cuts (rump, tenderloins, topsides and striploins) with high commercial value in the local market and in the export market, the selling percentage of those cuts are shown in Table 2.

Table 2. Percentage (%) of special cuts designated to the export market, per month, in 2002, in the slaughterhouse Friboi Ltda, Andradina – SP.

Beef Cuts	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Média	D. P.
Tenderloins	98,52	99,56	99,77	99,82	99,62	99,80	99,57	99,72	99,67	99,79	99,80	99,35	99,58	0,36
Striploins	63,74	77,82	75,68	86,24	93,17	93,55	92,59	91,12	89,40	86,60	73,93	59,18	81,92	11,77
Topsides	87,93	92,50	90,30	92,48	91,78	94,17	86,79	93,99	92,27	81,25	73,87	59,42	86,40	10,38
Rump	33,37	36,63	42,57	53,47	32,02	10,95	16,32	46,13	38,35	16,38	11,58	29,06	30,57	14,05

We can notice in Table 2 that for the hindquarters cuts selected there is a tendency to the export market; this is related to the high quality of those cuts and the preference of the international buyer for this type of product. Another factor with great influence in this tendency is the high price achieved in the international markets. The rump cut has a good value in the local market due to the 3 cuts witch are included in it (Cap of the rump, tail of the rump, heart of rump) witch has a very good demand in local market due to the barbecue destination of those cuts in Brazil. Table 3 shows the participation of the 4 chosen cuts in the pistol hindquarter.

Table 3. Percentage (%) of the special cuts in relation to the pistol hindquarter, per month, in 2002, in the slaughterhouse Friboi Ltda, Andradina – SP.

Beef cuts	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Média	D. P.
Tenderloin	3,13	3,02	2,97	3,09	3,31	3,14	3,03	3,04	3,11	2,98	3,01	3,05	3,07	0,09
Striploins	8,22	8,36	7,51	8,21	8,77	9,01	8,78	8,14	8,82	8,76	8,68	9,62	8,57	0,53
Topsides	11,60	9,77	10,54	10,78	11,00	10,16	10,33	10,58	10,54	9,38	10,56	11,86	10,59	0,69
Rump	5,99	6,15	6,37	6,37	7,59	7,57	1,35	6,79	6,73	7,12	7,35	7,32	6,89	0,57

We can notice that there is no big variation in the hindquarters cuts weight during the year. Witch shows uniformity in the deboning procedures and the cut standards. OLIVEIRA et al. 1996 mention higher medium weights for the topsides (7,67kg), the rump (5,71 kg), the tenderloins (1,97kg) and the striploins (5,91 kg). This difference is probably due to genetical differences between the animals (Nelore breed), the feeding, the process of deboning and specifications of the cuts.

The total volume of exports of fresh / frozen beef cuts (ton.), in 2002, from Friboi Ltda, Andradina – SP were from 15,899.64 ton., chilled product boneless (3,827.54 ton. or 24%) and frozen boneless (12,072.10 ton or 76%). Those results agree with data presented by BLISKA (1996) about Brazilian beef exports in 1995, were the boneless beef was 83%. The volumes of the export for the four cuts were organized by continent. The European market absorbed the higher volume of those cuts (rump 91%; striploins 91%; topsides 80% and tenderloin 99%). The reason for that is that the European market is very strict, always looking for high quality products and can bear the high costs of those products

The total volume of industrialized products exported by Friboi Ltda, Andradina – SP in 2002 was of 18,984.11 ton, with 70% of corned beef, 18% other canned products, 11% cooked frozen meat and 1% of beef extract. The industrialized products (corned beef, cooked frozen meat and other canned products) corresponded to 71,87% (95.902 ton.) of beef meat exported in 1995 (BLISKA, 1996).

Conclusions

The majority of the slaughtered animals were from the state of Mato Grosso do Sul.

More than 50% of the slaughtered animals do not attempt to the Hilton quota program.

The medium weight of the carcass had no significant variation, due to the state of origin, with exception to Minas Gerais.

The pluviometric variations did not affect the medium weight of the carcass, witch demonstrate a good handle in the farms.

The special beef cuts such as tenderloins, striploins, and topsides with destination to the export market are heavier and more uniform than those designated to the local market, with exception to the rump that is not so heavy.

The total volume exported of industrialized products was bigger than the exported volume of fresh and frozen beef cuts.

The corned beef was the industrialized product with the bigger exported volume in 2002.

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