Chapter 240

Evaluation of complete foods for dogs and cats marketed in the municipality of Parauapebas-PA

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ABSTRACT
Dogs and cats have specific nutritional needs during their development and a diet that meets their requirements is indispensable. Thus, the objective was to evaluate the nutritional compositions of dry rations and analyze whether they interfere with the commercial value of these foods and the costs in the different neighborhoods of Parauapebas-PA, in addition to evaluating the influence of the socioeconomic profile of the tutors on the nutrition of their animals. The survey was conducted in August and September 2017 in Parauapebas-Pa. The results showed that all the rations evaluated for dogs and cats, presented average levels of humidity, crude protein, and ether extract within the required by MAPA, only the crude fiber in Super Premium rations for adult cats presented a higher value. There was a difference in the prices of the rations in the neighborhoods, with Cidade Jardim and Cidade Nova being the highest prices in the Super Premium and Premium categories. The data prove that schooling will not interfere with the type of acquisition of rations or the form of provision of tutors. Most do not know the categories of feed (78.13%), and of these, most provide food randomly (41.86%). It was concluded that there are cases in which some rations do not follow the recommendations of the MAPA. It was also found that, in several cases, the same ratio presents differentiated value among the neighborhoods, requiring consumer research to find values with better cost-benefit. On the other hand, the socioeconomic profile of pet owners does not influence the choice of the feed brand used in the feeding of their pets.

Keywords: Feed, Requirements, Price, Owners, Income.

1 INTRODUCTION

In Brazil, the population of dogs was estimated at 52.2 million, and that of cats at 22.1 million raised in Brazilian households in 2013 (IBGE, 2015). In 2015 the country had the second largest population of domestic animals (dogs and cats) in the world, behind only the United States which contained a population of 74.1 million dogs and 73.3 million cats (ABINPET, 2015). The importance of nutrition for these animals has been growing, this can be verified by the increase in their participation in the national production of feed. Brazil has more than 500 brands and 85 feed manufacturers and is considered, currently, one of the largest producers of food for dogs and cats in the world (CARCIOFI et al., 2009).

Dogs and cats have very specific nutritional needs for each stage of their lives. Therefore, it is essential to eat a healthy diet that meets the requirements of these animals. Some nutrients are extremely

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important for a good quality of life, as they increase immunity and reduce the risk of diseases such as obesity, diabetes, high cholesterol, etc. (My Pet Magazine, 2016). The pet industry has been increasing over the years, and the attachment and affection of people are increasing with their companion animals (dogs and cats), and with this become more present in this market dry commercial rations. Studies also show that dogs and cats are no longer just a companion and are now considered family members, with greater income investment in pet products (LANCENDORFER et al., 2008).

The consumption of pet food in Brazil shows frank growth and expansion due to the lifestyle of its owners, who often adopt them as family members (PORTO, 2013). This greater proximity generates concern about providing them with good health and better quality of life, and food is a key factor in this process (SCHUCH, 2009). Thus, the objective was to evaluate the nutritional compositions of dry rations and analyze whether they interfere with the commercial value of these foods and the costs in the different neighborhoods of Parauapebas-PA, in addition to evaluating the influence of the socioeconomic profile of the tutors on the nutrition of their animals.

2 MATERIAL AND METHODS

The field research was carried out in August and September 2017 in the city of Parauapebas in the Southeast state of Pará, the neighborhoods selected for the collection were: Paz, Cidade Nova, União, Rio Verde, Cidade Jardim, Primavera, Liberdade, and Tropical. The neighborhoods mentioned were chosen because they are among the most populous in the municipality and because they have a great diversity of commercial points. Thus, data were collected in: supermarkets, agricultural houses, feed houses, and pet shops.

Data were obtained from 357 dog foods (218 for adults and 139 for puppies) and 103 for cats (84 for adults and 19 for puppies), where they were organized and tabulated, being separated, first, by neighborhood and then by category (Super Premium, Premium, and Standard). The parameters collected were: metabolizable energy, crude protein, ether extract, fibrous matter, sodium, humidity, type of sale, and unit price of the rations. Through the values obtained in the research, the calculations were made to know how much the consumer is paying in the kilo of the ration in the different neighborhoods surveyed, where the values obtained were made through the division of the price by the kilo of the ration.

For the research with the tutors, questionnaires were elaborated with closed questions such as data of the tutors (name, sex, age, income, and level of education), data of the animal (quantity per owner and weight), the relation of the animal and its feeding 6 (reasons for opting for the brand used, frequency of daily ration, another type of food, preference for brand, food problem, criterion to establish the amount of feed, conformity as stage of development) and the relationship between the owner and the feed mark used in the feeding of the animal (identification of the feed category using the nutritional composition of the product present on the label) was questioned.

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The data were tabulated in electronic spreadsheets and converted to percentage means about the total number of interviewees. The corrections were performed using the chi-square test to correlate the socioeconomic variables with the behavior profiles of the tutors regarding the feeding of the pets, with a significance of 0.05%.

3 RESULTS AND DISCUSSION

In the evaluation of the labels, all the feed classifications evaluated, both for dogs and cats, presented average levels of humidity (UM), crude protein (CP), and ether extract (EE) within the requirements of normative instruction No. 30, of August 5, 2009, of the Ministry of Agriculture, Livestock and Supply (MAPA) (Table 1). However, the average of crude fiber (FB) in the Super Premium classification in adult cat food presented a value higher than that indicated by MAPA, of a maximum of 5% in the inclusion of diets. The high values of crude fiber were found in three brands of feed, two for neutered cats and one for animals with a tendency to be overweight. Fiber is a good option for animals that suffer from diseases such as obesity and diabetes because they have low calories that promote greater satiety and decreased hunger, and for helping to control blood glucose, helping in the treatment of these diseases (TORTOLA, 2013).

Table 1 – Means of the nutritional values described in the labels of dry food for dogs and cats, adults, and puppies marketed in the municipality of Parauapebas - PA.

Categories	Dogs – Adults				Dogs - Puppies			
	ONE (%)	BP (%)	EE (%)	FB (%)	ONE (%)	BP (%)	EE (%)	FB (%)
Standard	11,66	20,36	7,85	5,17	11,69	26,69	8,00	4,46
Premium	8,03	22,93	9,72	3,51	7,19	27,05	9,32	3,48
Super Premium	10,83	26,20	15,44	3,56	10,74	27,81	17,22	2,80
Average Dogs	9,33	22,83	10,17	3,91	8,35	27,17	10,80	3,44
	Cats – Adults				Cats – Puppies			
Standard	11,11	25,11	8,22	4,72	-	-	-	-
Premium	11,32	30,24	9,49	4,03	11,65	32,35	9,59	3,85
Super Premium	10,67	34,67	14,67	5,87	10,00	34,50	14,00	2,75
Average Cats	11,25	29,30	9,40	4,24	11,47	32,58	10,05	3,74

UM: humidity; CP: crude protein; EE: ether extract; FB: crude fiber.

As expected, in the Super Premium category for dogs and cats, they were the ones that presented the highest average of protein reported on the label in their compositions, sometimes associated with the best quality of the diets, even raising the cost. However, diets with high protein levels overload the digestion, absorption, and elimination of unusable nitrogen, causing an overload of liver and kidneys in the animal, reducing the efficiency of the rations and increasing their cost (BERTECHINI 2006).

The average prices of the diets studied had notable differences between the categories of rations in the neighborhoods surveyed (Table 2). The commercialization of Super Premium rations was restricted to some neighborhoods of Parauapebas, possibly associated with the presence of more specialized shops and with a greater variety of products.

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Table 2: Average prices of the kilo (R$/kg) of the rations sold in the neighborhoods of Parauapebas - PA.

Classification	DP	CJ	CN	LBD	PMV	RV	TPC	UN	Average
Adult dogs									
Standard	5,54	3,90	6,50	6,83	6,55	4,00	5,31	6,66	6,11
Premium	9,05	13,02	28,51	9,84	7,92	10,14	7,62	11,68	14,31
Super Premium	-	54,59	46,82	-	-	-	13,06	-	47,85
Puppy dogs									
Standard	6,85	-	9,00	6,50	7,00	-	7,00	-	7,20
Premium	9,81	13,84	19,18	9,56	8,24	10,79	9,63	12,71	12,83
Super Premium	-	60,28	48,06	-	-	-	-	-	52,59
Adult cats									
Standard	-	9,99	8,00	7,92	7,83	-	7,25	6,70	7,61
Premium	14,37	19,34	17,58	11,27	11,20	19,75	11,48	14,66	14,85
Super Premium	-	-	66,10	-	-	-	-	-	66,10
Puppy cats									
Premium	19,75	19,83	18,04	13,00	12,95	19,75	-	18,26	18,12
Super Premium	-	-	33,30	-	-	-	-	-	33,30

DP: Of Peace; CJ: Garden City; CN: New Town; LBD: Freedom; PMV: Spring; RV: Green River; TPC: Tropical; UN: Union.

The new city neighborhood is considered the central area of the urban area of the municipality of Parauapebas, possibly so it was found the highest average prices in Premium rations for adult dogs and puppies, in the same neighborhood, however in rations for adult cats and puppies, the highest cost was verified in Super Premium foods, being this the only neighborhood where the commercialization of this category was verified. This price difference occurs because the commercial points draw up sales strategies of the products that aim at competitive advantages where they are distinguished according to the impositions and behavior of the foreign market, competition, and consumers (NUNES, 2014).

The other neighborhoods had lower average values of commercialization. It was also verified that, in several cases, the same ratio presents very different marketing values among the neighborhoods mentioned. It is possible to observe that the Cidade Jardim neighborhood presented the highest average prices in the Super Premium category for adult dogs and puppies, not being verified the sale of this category in cat food.

In the research with the tutors, the chi-square test revealed the influence of income on the evaluated neighborhoods ($p=0.007$). Despite this result, there was no influence of the neighborhood on the reason that led the tutors to acquire the rations ($p=0.39$), and quality was the main reason for the acquisition of a certain brand, followed by technical recommendation, price, recommendation of third parties and recommendation of the seller, respectively (Table 3). These results were expected, because according to Trevizan (2011), in a survey conducted in the city of Dracena-SP, he found that 63.4% of the interviewed public is concerned about the quality of the food that offered to their animal, followed by low price (30%), composition (3.3%) and shape of the pellet (3.3%).

Most of the interviewees were women (62.31%), aged between 21 and 50 years (46.92%), and men represented 37.69% of the interviewees. Gender did not influence parameters such as the type of animals raised ($p=0.39$), number of animals ($p=0.4$), feeding frequency ($p=0.71$), or weight range of the animal ($p=0.3$).

According to Padovani (2017), in a survey conducted with dog and cat owners in Brazil, the owners are, in their majority (51%), married, are on average 41 years old, and 93% live with more than one person.

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In addition, 82% belong to class AB (in class A there are 24%), 59% live in houses and 24% have adopted their dogs, 59% of them are without a defined breed.

Table 3: Mean values of the main reasons for opting for the feed brand used, declared income, and body condition of the animal according to the neighborhoods in the municipality of Parauapebas - PA.

Reasons for Purchase	Neighborhoods (%)					Grand Total
	Peace	C.J.	C.N.	R.V.	U.	
Price	5.38	2.31	6.15	5.38	3.08	22.31
Quality	10.77	11.54	8.46	10.77	4.62	46.15
A. Third Parties	1.54	0.77	3.85	0.77	0.77	7.69
A. Veterinarians	0.00	10.00	5.38	3.08	2.31	20.77
A. Sellers	0.00	0.77	0.77	0.77	0.77	3.08
Tutors' Income						
A1 to A5	8.80	14.40	16.80	19.20	11.20	70.40
A9	1.60	9.60	1.60	1.60	0.00	14.40
N.R	6.40	1.60	5.60	0.80	0.80	15.20
Weight of Animals						
Underweight	0.00	0.00	1.56	2.34	0.00	3.91
Overweight	3.91	7.03	3.91	2.34	0.00	17.19
Don't know Inform	0.78	0.78	1.56	0.00	0.78	3.91
Ideal Weight	12.50	17.97	17.19	16.41	10.94	75.00

C.J.: Garden City; C.N: New Town; R.V: Green River; U: Union; A. Third parties: recommendation of third parties; A. Veterinarians: recommendation of veterinarians; A. Sellers: recommendation of sellers.

The data show that schooling will also not influence the behavior of feed acquisition or the way tutors are provided ($p < 0.05$). Most tutors do not know the categories of rations (78.13%) and among these, the main way of providing feed is random, followed by a recommendation of sellers, professional recommendation, and guidance of the packaging, respectively (Graph 1).

The participation of 130 tutors was obtained, of this total, 54 feed their animals only with feed (41.5%) and the others offer other types of food to their pets besides the ration (58.4%), being divided into homemade food (59.2%), snacks (25%), natural snacks (10.5%) and raw food (5.2%). According to Vieira (2017), in interviews conducted in Góias with dog owners, the commercial feed was pointed out as the most supplied food to dogs (59.01%), followed by the association of feed with food leftovers (31.14%) and exclusive feeding with leftovers (9.83%).

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Graph 1: Ways that the tutors provide the rations for the pets in the municipality of Parauapebas – PA
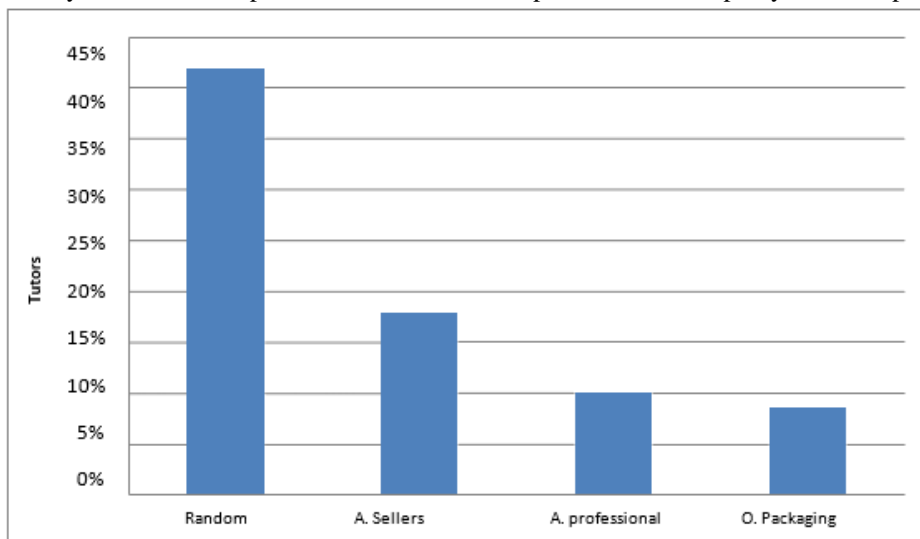
A. Sellers: recommendation of sellers; A. Professional: Professional recommendation; O. Packing: Packing orientation.

4 CONCLUSION

It was concluded that there are cases in which some rations do not follow the recommendations of the MAPA. It was also found that, in several cases, the same ratio presents differentiated value among the neighborhoods and that the location of the point of sale can directly influence the cost of the diets, requiring consumer research to find values with better cost-benefit. On the other hand, the socioeconomic profile of pet owners does not influence the choice of the feed brand used in the feeding of their domestic animals, it was also noted that most of the interviewees were female, but this did not interfere with the parameters related to the data collected.

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