Chapter 167

Evaluation of food labeling manufactured in Inhumas-GO

10.56238/tfisdwv1-167

Lethicya Lucas Pires da Silva
Bachelor's Degree student in Food Science and Technology - IFG
E-mail: lethicyalp@gmail.com

Simone Silva Machado
Professor/researcher of the Federal Institute of Education, Science and Technology of Goiás - Campus Inhumas - IFG
E-mail: simone.machado@ifg.edu.br

ABSTRACT
Food labels have information that adds value to the product, having as main function the communication between the manufacturer and the consumer. This information allows consumers to make choices and analyze the quantity and quality of nutritional constituents present in food. It is essential that the statements are expressed clearly and accurately, so that there are no wrong or double-meaning interpretations. Research shows that there is no mandatory information and incorrect descriptions of the product composition. The aim of this study was to evaluate and identify the adequacy of the information contained in the labels of industrialized products of companies located in the municipality of Inhumas - GO to the current Brazilian legislation. An evaluation form was prepared based on the determinations of RDC No. 259/02, RDC No. 359/03 and RDC No. 360/03, all of the National Health Surveillance Agency (Anvisa), Ministry of Health. Therefore, it was verified with the results that the labels of popcorn, snacks and jams presented the best percentages for conformities (100%), while the labels of sweets in syrup, cut and grated presented lower rates of conformities (96%). Moreover, it is noticed that the items with the most inadequacies are the units of measurement and declaration of nutrients.

Keywords: consumer, food legislation, food label

1 INTRODUCTION

The food label has become a fundamental tool for communication and information. In it, the consumer has access to information about composition, nutritional profile, origin and content so that they can compare and choose products. According to Resolution of the Collegiate Board (RDC) No. 259/2002 (1), labeling is conceptualized as "all inscription, legend, image or all descriptive or graphic matter, written, printed, stamped, engraved, embossed or lithographed or glued on the packaging of the food."

In Brazil, the labeling of packaged foods is regulated by legislation through agencies such as the Ministry of Health through the National Health Surveillance Agency (ANVISA), the Ministry of Agriculture, Livestock and Supply (MAPA) and the National Institute of Metrology, Quality and Technology (INMETRO). The general principle of all food labelling legislation is to provide consumers with a basis for making informed choices about the foodstuffthey consume and to prevent all practices that may mislead the consumer.

Many food industries, especially micro and small enterprises, lack information and do not follow the legal aspects that guide labelling. In order to facilitate the understanding of nutritional information by the consumer, ANVISA began, almost three years ago, the process of revising the current labeling standards for the adoption of a new model of nutritional labelling of foods. On October 7, 2020, the Board of Directors of Anvisa unanimously approved the new standard on nutritional labeling of packaged foods.

Research in the area of food shows lack of some information from the labels or even confusing messages that can induce the consumer to error (2). Food laws began to be produced in the 1950s, but were only mandatory in 1999, with the creation of the National Health Surveillance Agency (ANVISA). Decree Law No. 986 of 1969 (3), designates that "all food will be exposed to consumption or delivered for sale after registered with the Ministry of Health." Thus, some information is fundamental, such as: type of food; name or brand; manufacturer's name; factory site; registration number with the Ministry of Health; indication of the use of intentional additives; identification number of the departure, batch, date of manufacture and the indication of the weight and/or volume which must be mandatory and legible on the packaging of the products .(

Resolution RDC No. 259 of 20 September 2002 (1) highlights that packaged foods should not contain some information such as: use of words, signs, incorrect or false phrases that leave the consumer confused; should not indicate that the food has medicinal or therapeutic properties; it should not say that the product prevents diseases or has curative action.

The label has the ability to ensure the traceability of food, recomposition of history with the exposure of the origin, composition and registration of each industrial process (5). In addition, food labelling guides the consumer on the quality and quantity of nutritional constituents of the products, and thus can promote appropriate food choices, but the reliability of the information is indispensable. However, it has been observed the transfer of incorrect information, which can generate confusion, especially with regard to complementary nutritional information (INC) and the rules on special purpose foods (6).

The information contained in the labels contributes to the health of the population. The laws and codes request essential information, in an appropriate way to avoid confusion, but the various irregularities found are still visible. Studies show that there is no mandatory information and incorrect descriptions of the composition of the product (7).

It is perceived the non-conformity of many products marketed, it is also identified the difficulty of the consumer in interpreting the information made available. Moreover, many consumers are not aware of nutrition labelling, so they do not show much interest in this data. It is important to verify the items that need further improvement and modifications, aiming to improve understanding and meet the needs of the market (8).

According to Gonçalves et al (9), it is important that the data contained in the labels are complete, true, enlightening, with due quantity and quality, besides showing the other characteristics of the composition of the food. Although labels are mandatory, it does not mean that consumers are using in choosing products to improve their diet and healthy eating. Therefore, it is necessary for people to know how to interpret nutrition labelling.

In addition, labelling must be appropriate. To label correctly, companies must be attentive throughout their manufacturing process and also in the choice of raw material, passing the information in a clear, legible way, with location and font of letter that is easy to identify (10).

2 MATERIAL And METHODS

The present study was carried out from November 2020 to August 2021, with the analysis of the labels of processed foods produced by companies located in the municipality of Inhumas - GO.

The survey and selection of food was carried out and then presented to those responsible for the labelling of industries a proposal for quantitative research, with application of a verification form based on current legislation. The verification form was drawn up in accordance with Resolutions RDC No 259/2002 (1), RDC No 359/2003 (11) and RDC No 360/2003 (12). The new Legislation RDC No. 429/ 2020 of the Health Surveillance Agency (13), is not yet in force, so it was not possible to analyze its application on the labels evaluated.

After the validation of the verification form, it was applied for the evaluation of 75 product labels from five industries in the municipality of Inhumas - GO. To elaborate the graphs and analyze the results, the Excel *software* was used to obtain the frequencies of the collected data. According to the results obtained by tabulating the collected data, a didactic manual for guiding food labeling was prepared, delivered and explained to the responsible for product labeling of each company.

3 RESULTS AND DISCUSSION

In the survey of processed foods produced by companies located in Inhumas - GO, five industries were selected and 75 labels of their products were analyzed.

The labels of the selected products were evaluated according to the predefined items, according to the legislation, and the number of labels in non-compliance with current laws is presented in tables 1 and 2.

The irregularities evident during the label analysis were incorrect unit of measurement and the non-declaration of some mandatory nutrients. Industry A had 23.3% of its labels with non-conformities in the unit of measure and 10% of the labels did not present the declaration of all mandatory nutrients. Industry E presented irregularities in 14.3% of its labels, in relation to the declaration of mandatory nutrients.

Table 1: Percentage of irregularities presentedin the analyzed products, by industry of Inhumas-GO.

Irregularities	**Industry (%)**				
	The	**B**	**C**	**D**	**And**
Vocábulos or other graphic representations that may make the information false/incorrect or that may induce the consumer to error or deception, in relation to the composition, origin, type, quality, quantity, validity, income or form of use of the food.	0	0	0	0	0
Attributeeffects or properties that do not have or cannot be demonstrated.	0	0	0	0	0
Highlight thepresence or absence of components that are intrinsic or proper to foods of equal nature.	0	0	0	0	0
Emphasize qualities that may induce deception with respect to real or supposed therapeutic properties of components / ingredients.	0	0	0	0	0
Indication that food has medicinal or therapeutic properties.	0	0	0	0	0
Error in the indication of geographical names.	0	0	0	0	0
Absence of the expression "type" for foods manufactured according to technologies characteristic of different geographical places, for that of	0	0	0	0	0

sensory properties similar or similar to those that are typical of certain recognized zones.					
Labelling outside processor establishments, enabled by the competent authority of the country of origin, for preparation or fractionation.	0	0	0	0	0
Mandatorytraining does not meet the criteria: written in the official language of the country of consumption with appropriate size, highlight and visibility characters, without prejudice to the existence of texts in other languages.	0	0	0	0	0
Absence ofthe selling food name.	0	0	0	0	0
Absence ofingredients.	0	0	0	0	0
Absence of liquid conteúdos.	0	0	0	0	0
Absence of identification of the origin.	0	0	0	0	0
Absence of identification of the lot.	0	0	0	0	0
No reasonfor validity.	0	0	0	0	0
Absence of instruções on the preparation and use of food, when necessary.	0	0	0	0	0
Error in the list of ingredients, as to be included in descending order, of their proportion.	0	0	0	0	0
Absence ofmandatory basic nutrient slight.	10	0	0	0	14,3
Absence ofd-lighting of additives.	0	0	0	0	0
Unit of measurement incorrect.	23,3	0	0	0	0
Absence of the name (registered name) of the manufacturer or producer or fractionator or proprietor (owner) of the trade mark.	0	0	0	0	0
Absence of the country of origin, municipality and full address.	0	0	0	0	0
Absence ofregistration number or identification code of the manufacturer with the competent body.	0	0	0	0	0
No terms para identify the origin ("manufactured in... ", "product ..." or "industry ...").	0	0	0	0	0
Absence of batch identification (code or clear language, which allows the identification of the Lot to which the food belongs, in a way that is visible, legible and indelible).	0	0	0	0	0
Absence ofp orção and homemade measures.	0	0	0	0	0

Source: Lethicya Lucas Pires da Silva (2021).

As for the category of products,popcorn, snacks and jams showed the best conformity rates on their labelling. Being 100% conformities and 0% non-conformities, as shown in Figure 1. Sweets in syrup, cut and grated presented the lowest rates of conformities in their labelling. Being 96% of conformities and 4% of non-conformities (figure 1).

Table 1: Percentage of products in accordancewith the legislationin force on food labelling, by category.

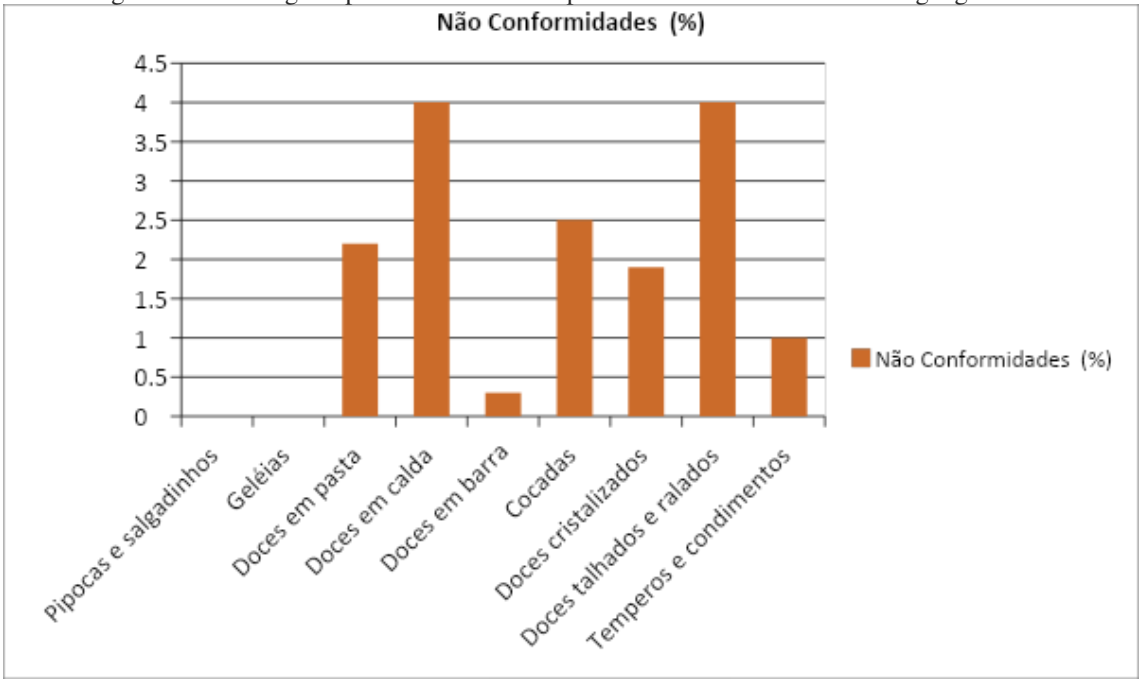
Category	Compliances (%)
Popcorn and snacks	100
Jams	100
Sweets in paste	97,8
Sweets in syrup	96
Candy bar, tablets and pieces	99,7
Cocadas	97,5
Candied sweets	98,1
Carved and grated sweets	96
Seasonings and condiments	99

Source: Lethicya Lucas Pires da Silva (2021).

Some of the most recurrent nonconformities were incorrect unit of measurement and lack of nutrient declaration, such as protein, for example. According to Article 2 of DrC No 360/2003 (12), the following nutrients should be declared on nutrition labelling: energy value, carbohydrates, proteins, total fats,

saturated fats, trans fats and sodium. This information is of paramount importance in a correct and appropriate way, as it is a consumer's right. According to Silva et al (14), the correct information on food labels is part of the right to food, because it presents fundamentals that establish healthy eating practices, therefore, it is a question of food and nutritional security.

Figure 1: Percentage of products in non-compliance withcurrent food labelling legislation.



Source: Lethicya Lucas Pires da Silva (2021).

Translation:
Não conformidades (unconformities)
Pipocas e salgadinhos (Popcorn and snacks)
Geleias (Jelly)
Doces em pasta (candies in paste)
Doces em calda (candies in syrup)
Doces em barra (candy bars)
Cocadas (Cocadas)
Doces cristalizados (candied sweets)
Doces talhados e ralados (Sliced and grated sweets)
Temperos e condimentos (seasonings and condiments)

Just over 26% of them label analyzed is with some non-conformity in the unit of measure and about 16% ocult or the declaration of required nutrients. Ribeiro et al. (15), analyzing the labeling of jams, verified that in 40% of the labels analyzed the nutritional information was incomplete or absent.

The material prepared and delivered to those responsible for productlabeling in each industry focused on the items of non-conformities analyzed. For legislation it is essential that all criteria are clear and precise on the label, to facilitate the understanding of consumers.

Santos et al. (16) conducted a study applying a *check list in supermarkets* in the municipality of Santa Luzia/PB, found nonconformities in the sales name, absence of the function of the food additive, absence of allergen declaration, incorrect nutritional table, absence of the mode of conservation and SIF stamp. Finally, the authors concluded that there were flaws in the information contained in the labels.

According to Sousa, Monte and Silva (17), the labels of edible ice cream produced in the city of Teresin a-Piauí had inadequacies, some brands presented non-conformities in the following criteria: lot, conservation mode, daily reference values, homemade portion/measure, allergenic and readability of texts (small letter size and background color with wrong contrast).

Silva and Nascimento (18) analyzed 102 labels of children's food from supermarkets distributed in the city of Aracaju/SE. Higher rates of inadequacies were found in the identification of the country of origin, main panel, indication of dyes and flavorings, validity, conservation and compound ingredients. Furthermore, errors related to the nutritional table were also found.

4 CONCLUSIONS

Therefore, it was concluded that popcorn, snacks and jams presented the best conformity indexes in their labeling (100%). Sweets in syrup, cut and grated presented the lowest rates of conformities in their labeling (96%). The inadequacies are present in the items referring to the unit of measurement and declaration of nutrients required, being 26.7% and 16%, respectively. In general all foods are above 96% in their conformities. It is essential that the food industries comply with the rules of the current laws of the National Health Surveillance Agency (ANVISA).

ACKNOWLEDGMENT

Acknowledgment to the Federal Institute of Education, Science and Technology of Goiás - Campus Inhumas for the opportunity, to the National Council for Scientific and Technological Development (CNPq) for granting the scholarship and the food industries that agreed to be part of the study.

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