

# DEVELOPMENT OF A FOOD COMPOSITION DATABASE FOR GLUTEN-FREE PRODUCTS



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## Background

Nowadays, the offer of gluten-free products is widespread in the Spanish market, because of an increasing demand. Production in the last 10 years has experienced the largest positive growth in Spain (18.8%), as compared to Western Europe and the rest of the world (13.6 and 15.4% respectively)<sup>1</sup>. However, composition data is limited and there is a concern on whether they are similar to their gluten containing counterparts, especially for target nutrients in health promotion<sup>2</sup>.

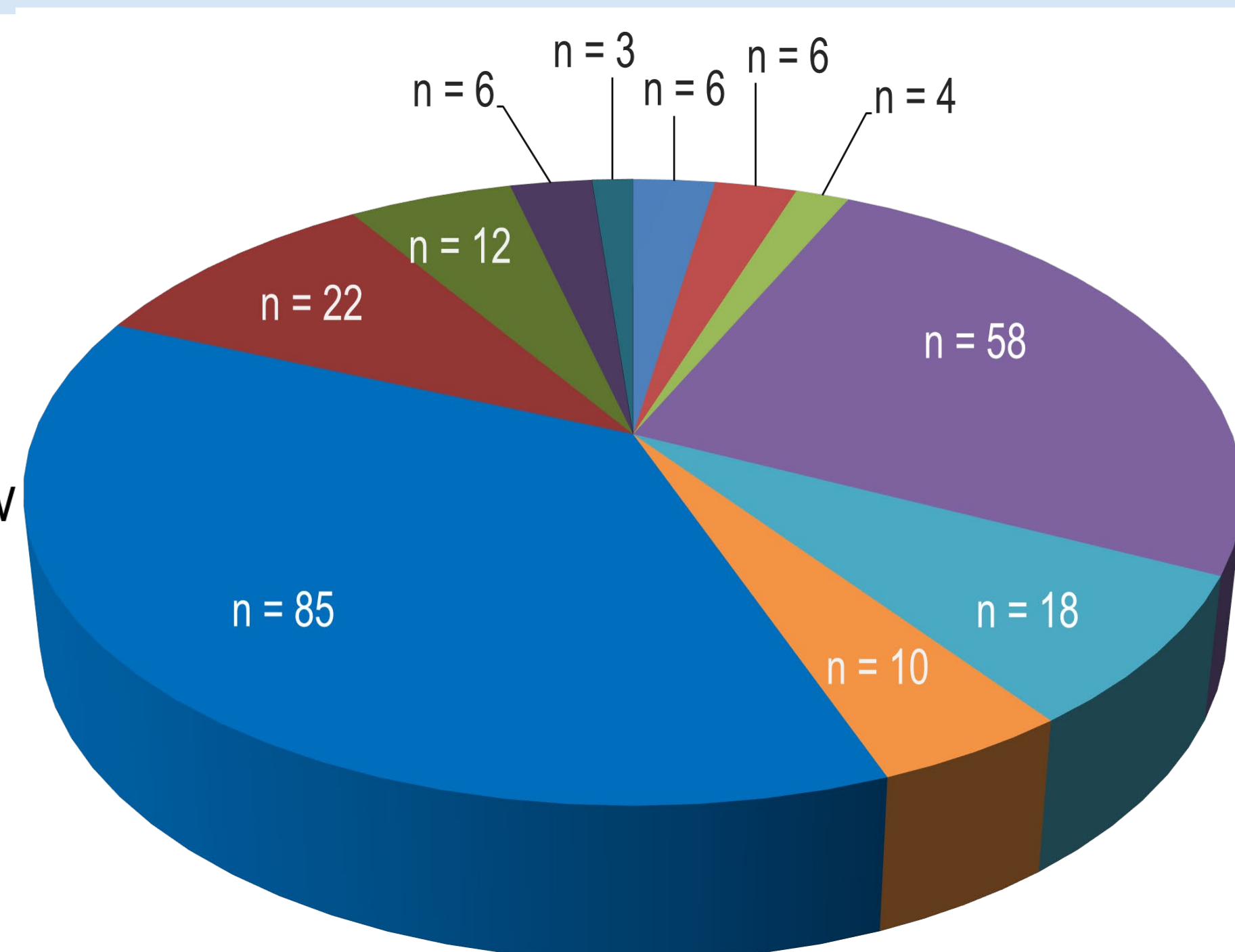
## Objectives

To compile a nutritional composition database for cereal-based gluten-free products in Spain.

## Methods

A market study (September 2016 - March 2018) based on supermarket visits (highest market share) and product web page scanning was conducted. Nutritional composition declared on product's labels from packaged cereal-based gluten-free foods marked with the European gluten-free label, The Spanish Federation of Celiac Associations (FACE) symbol and the nutritional claim "SIN GLUTEN" was collected. Development a food database according LanguaL™ Thesaurus EuroFIR. Included food subgroups are shown in Figure 1.

- Alcoholic beverages
- Imitation milk products
- Frozen dairy desserts
- Breads and similar products
- Breakfast cereals
- Cereal or cereal-like milling prod. and deriv
- Fine bakery ware
- Pasta and similar products
- Savoury cereal dishes
- Prepared food products
- Spices, condiments or other ingredients

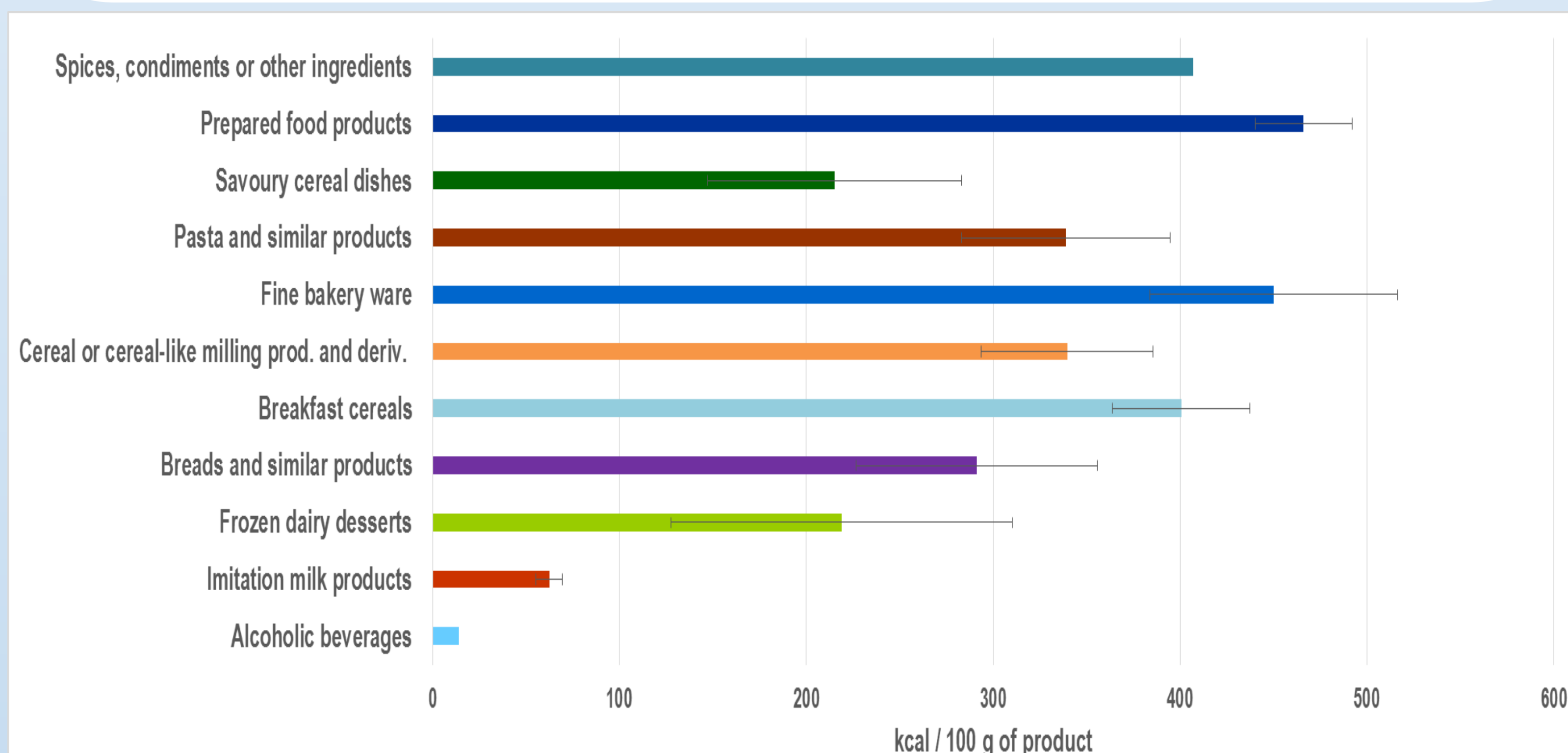


**Figure 1.** Types and number of Gluten Free food products available in the Spanish market.

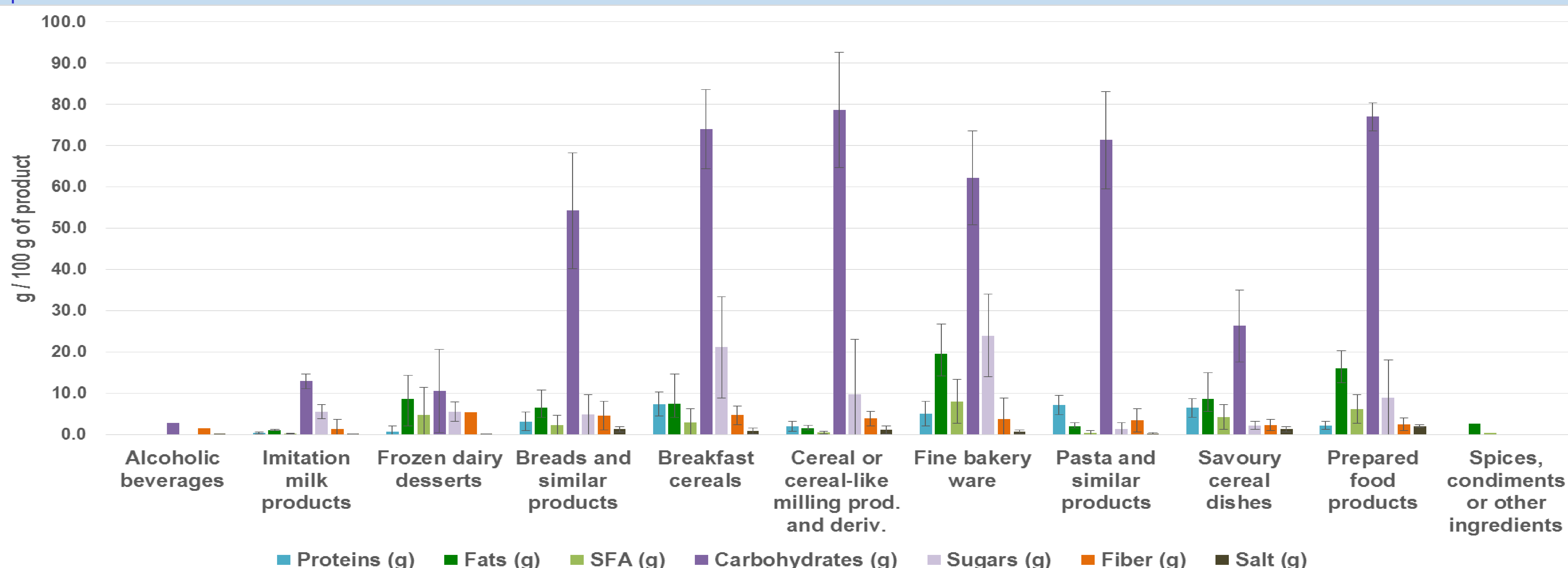
## Results

Nutritional information of product's label from 230 gluten-free cereal-based foods was obtained. Energy, proteins, total and simple carbohydrates, total lipids, saturated lipids, fiber, sodium, salt and cholesterol were the only nutrients declared on the label. Micronutrient content was not included in any gluten-free product.

**Prepared food products** were the most caloric gluten-free food group ( $466.0 \pm 25.9$  kcal/100g of product) (Figure 2), and they also provided the highest amounts of saturated fatty acids ( $6.1 \pm 3.5$  g) and salt ( $2.0 \pm 0.3$  g). **Fine bakery ware** included the highest amount of sugars ( $24.0 \pm 10.0$  g) (Figure 3).



**Figure 2.** Medium energy content in gluten-free food products.



**Figure 3.** Macronutrients, fiber and salt contents in gluten-free food products (average  $\pm$  SD) (SFA: saturated fatty acids).

## Conclusions

According to the current nutrition labelling in cereal-based gluten-free products, the macronutrient profile can be known, but there is no information on micronutrients. It is urgent to provide vitamin and mineral contents for a better nutritional assessment of the celiac population.

[1] Worldwide production of gluten-free products. Source: Euromonitor International. Available online: <http://panypizza.com/sin-gluten-categoria/la-calidad-organoleptica-una-prioridad-las-marcas-sin-gluten/>. [2] Missbach B, Schwingshackl L, Billmann A, Mystek A, Hickelsberger M, Bauer G, König J. 2015. Gluten-free food database: the nutritional quality and cost of packaged gluten-free foods. *PeerJ*3:e1337.

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