

RESOURCES, ELEMENTS OF QUALITY AND PRICES FOR SOME ASSORTMENT OF ECOLOGICAL PRODUCTS

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ABSTRACT

Like any organic food, by definition, the ecological biscuits do not contain any type of artificial flavors, conservants or colorings (the controversial "E" symbol), are made only with ecological ingredients from ecological farms certified and their nutritional value is very high. In this context, the aim of this study was to identify some resources for some types of ecological biscuits compared with an assortment of the most commonly purchased by Romanian consumers and evaluating of their quality based on the list of ingredients and nutritional values written on the packaging.

The best value for price quality ratio in case of organic biscuits brands was considered the Ecomania biscuits, identified in BioGust store in Craiova city. Invariably, the purchase price of organic biscuits is higher than for conventional brands, but the health benefits, especially for children (who are the largest consumers) are extremely important.

INTRODUCTION

As well as all biotechnologies, agricultural biotechnology can be effective only as part of an integrated plan for use, seen in terms of systemic ecology, which aims at maximizing material and energetic flows in parallel with environmental care (2). The ecological agriculture basis contributes to biodiversity preservation and environment quality, health and security edible protection and increasing the productivity for secure and constant profits obtaining (4). The ecological food products exclude from the list of ingredients the use of GM plants. This is because were and, probably, there will be always pros and cons opinions regarding to the GM plants potential hazard for the consumers health. In fact, it is normal that like any other science, bioengineering also has pros and cons, but it is imperative that the new bioengineering techniques should be prudently addressed without disturbing the ecological balance principle of the living world equilibrium (1).

The food products of the snack type, a category that includes among other things the biscuits are consumed by all age groups, from babies up to old people, but, most often, the list of ingredients on the packaging demonstrates that favorite products are not exactly healthy, and this happens due to the large number of additives, colorings, flavorings and preservatives added. The biscuits represents approximately 5% of snacking occasions, as a study of the market U & A, 360 Insight, quoted by Mondel z International. The market share of salted biscuit type crackers in 2014 was 24%, according to RetailZoom studies (<http://www.revista-piata.ro>). S.C. Croco SRL is the leader in Romania for the biscuits type Crackers, Brezel and Sticks, having a permanent presence in the market since its foundation (October 1994) until the present (<http://www.croco.ro>).

Considering that children are among the biggest consumers, the ideal option for gratification of the appetite for "sweet" but also for maintaining health are ecological biscuits prepared only from natural ingredients, obtained as a raw material in certified organic farms.

MATERIAL AND METHOD

The research material consisted of four types of organic biscuits (Biscuits Cereal Bio, Biscuits Cereal Bio Chocolat au lait, Biscuits integrals Ecomania and Biscuits Cereal Bio with butter, wheat, oats and Earl Grey tea) along with an conventional control (Petit beurre RoStar).

The research method consisted of the crossing of some stages: identification of resources for organic biscuits (supermarkets or small shops in Craiova, but some online stores); identification of organic products to the shelf; the acquisition of some types of organic biscuits (sweet, salty, with seeds, etc.); the acquisition of a notorious conventional product for comparison; the establishment of some quality elements, according to the list of ingredients and nutritional values written on the package; identification of the shelf prices for organic products compared with the conventional product.

RESULTS AND DISCUSSIONS

In experiment, for the control has been chosen the brand of biscuits Petit beurre RoStar, taking into account its notoriety in Romania. In the following, are given some important information regarding to ingredients and the potential health problems that they can create. Ingredients (written on the packaging): sugar, invert sugar expressed vegetable fats non-hydrogenated, water, corn starch, ammonium bicarbonate, sodium bicarbonate, sodium acid pyrophosphate (E450), iodized salt, lecithin, potassium metabisulphite (E223) citric acid (E330) and vanillin. Country of origin: Romania.

E450 (sodium acid pyrophosphate) is a synthetic additive with a role of a stabilizer. It is part of the "E suspicious." According to information from the website www.alegesanatos.ro, the pyrophosphate sodium acid can cause allergies, irritation of eye and skin; decreases the assimilation of minerals; in large amounts changes the balance between calcium and phosphorus in the body, etc.

E223 (sodium metabisulfite) may be used as an antioxidant, decolorizing agent, preservative, flour treatment agent. The consumption in large quantities of sodium metabisulfite can generate: allergic reactions; gastrointestinal problems; headaches (www.alegesanatos.ro);

E330 (the citric acid) is one of the most used food additives, but also is considered by some sources to be one of the most dangerous, especially for people with cardiovascular, renal and digestive diseases. More than that, E330 is considered by some sources "the most carcinogenic" additive (<http://www.sfatulmedicului.ro>; <http://www.agentia.org>). On the other hand, some specialists believe exaggerated and unfounded these theories. For example, Daniela Kolejková (Czech Agriculture and Food Inspection) believes that the E330 is simply citric acid that is commonly present in food (particularly in fruit and vegetables) to which it is added to adjust its acidity and enhance its flavor. Supposed connection with cancer apparently resulted from ignorance, as she believes (3). Probably the truth is somewhere to half, so for to protect our health, we need to consume in reasonable quantities and only occasionally any food which having in the list of ingredients any "suspicious E".

The nutritional values of this product are presented in figure 1. Thus, the caloric value is 427.1 kcal/100 g, the lipid content is 10.3 g/100 g, the content in carbohydrates is 75.4 g/100 g; the fiber content is not mentioned on the package. The medium price for sale is 1.5 lei /100 g.

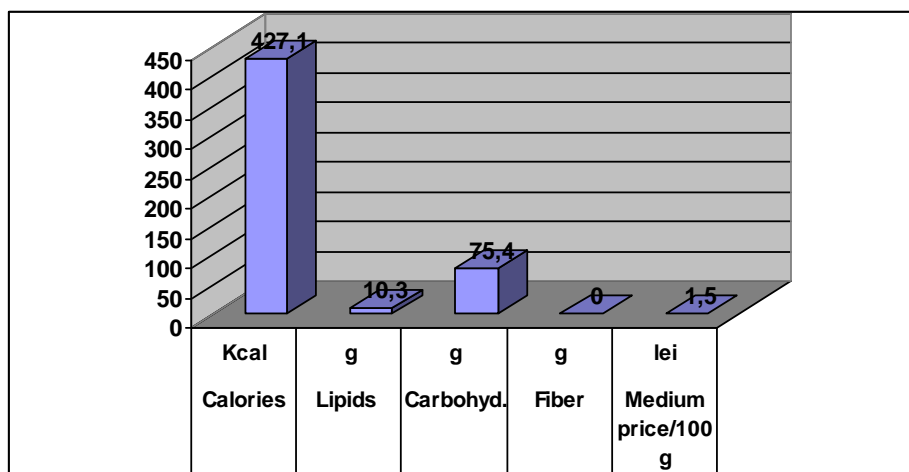


Fig.1. The nutritional values written on the packaging of conventional biscuits Petit Beurre RoStar (Values for 100 grams of product)

Some resources for the sweet ecological biscuits identified are noted below:

The supermarket Auchan (Craiova) sells biscuits certified organic brand Bio Cereal. The ingredients are fully organic: whole wheat flour, wheat bran, integral oat flakes, sugar from sugarcane, vanilla, sea salt. Country of origin: France. The nutritional values of this product are presented in figure 2. Thus, the caloric value is about 507 kcal/100 g, the lipid content is about 26 g/100 g, the content in carbohydrates is about 55 g/100 g and the fibers content is 6.7 g/100 g product. The medium price for sale is 8.3 lei /100 g.

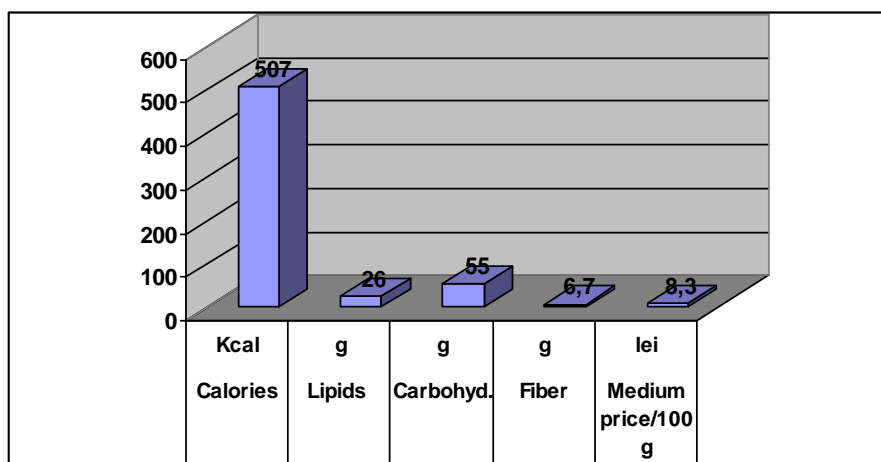


Fig.2. The nutritional values written on the packaging of ecological biscuits Cereal Bio (Auchan supermarket) (Values for 100 grams of product)

Also, the supermarket Auchan offers other types of ecological biscuits (Cereal Bio brand): with milk, milk and chocolate, with seeds, etc. For example, the biscuits Cereal Bio Chocolat au lait contain the following ingredients: whole wheat flour, wheat bran, whole oat flakes, cocoa, milk, sugar from sugarcane, vanilla, sea salt. All ingredients, except salt, are coming, according to the label, 100% from organic farms. The nutritional values of this product are presented in figure 3. Thus, the caloric value is about 492 kcal/100 g, the lipid content is about 27 g/100 g, the content in carbohydrates is about 60 g/100 g and the fibers content is 7.7 g/100 g product. The medium price for sale is 9.3 lei /100 g.

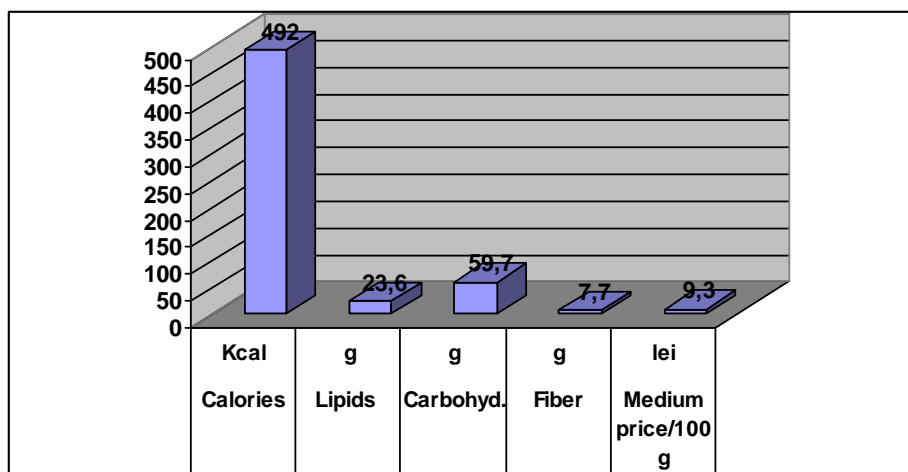


Fig.3. The nutritional values written on the packaging of ecological biscuits Cereal Bio Chocolat au lait (Auchan supermarket) (Values for 100 grams of product)

The BioGust store (Craiova) offers the integral biscuits Ecomania brand, produced in Tg. Mures, Romania. Food product certificate by Ecoinspect Romania. Ecological ingredients: integral wheat (the spelta variety), sunflower oil cold pressed, non-iodized salt and water. The taste is exceptional and there are several varieties (with pumpkin seeds, with flax seeds, etc.). The nutritional values of this product are presented in figure 4. Thus, the caloric value is about 363 kcal/100 g, the lipid content is about 18 g/100 g, the content in carbohydrates is about 40 g/100 g and the fibers content is 7.4 g/100 g product. The price is about 12 lei/package of 200 grams or approx. 6 lei/100 grams. It was found, in this case, the best value for money, in comparison to other types of biscuits studied.

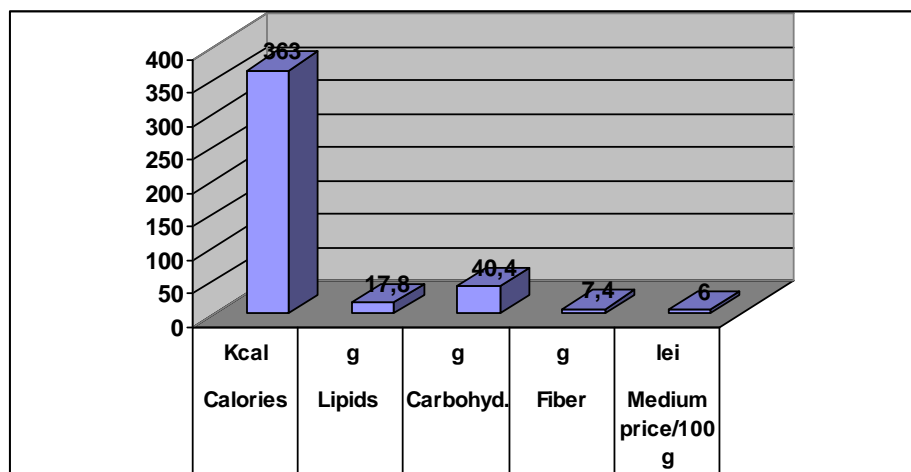


Fig.4. Nutritional values written on the packaging of ecological biscuits Ecomania (BioGust store) (Values for 100 grams of product)



Photo 1. BioCereal, ecological sweet biscuits marketed in the supermarket Auchan (A) and Ecomania, the salted integral biscuits marketed in the BioGust store (B)

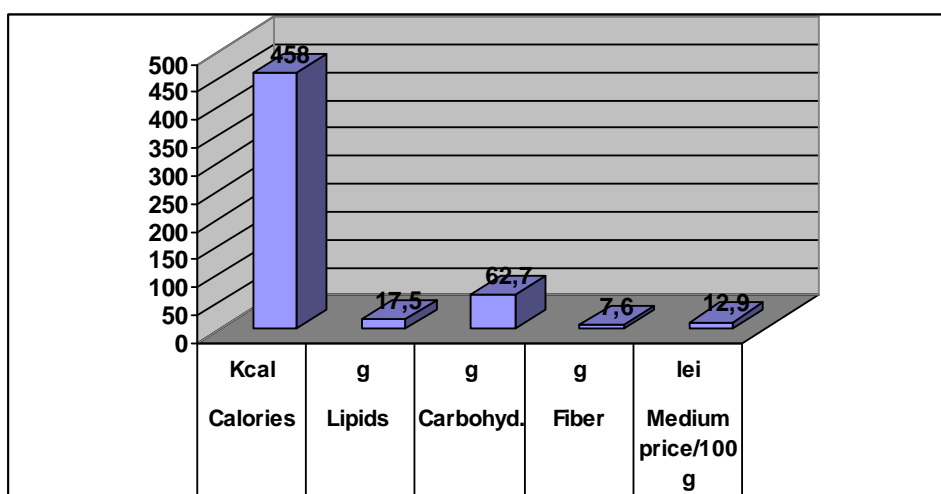


Fig.5. The nutritional values written on the packaging of ecological biscuits Cereal Bio - Biscuits with butter, wheat, oats and Earl Grey (Potecaverde.ro online store) (Values for 100 grams of product)

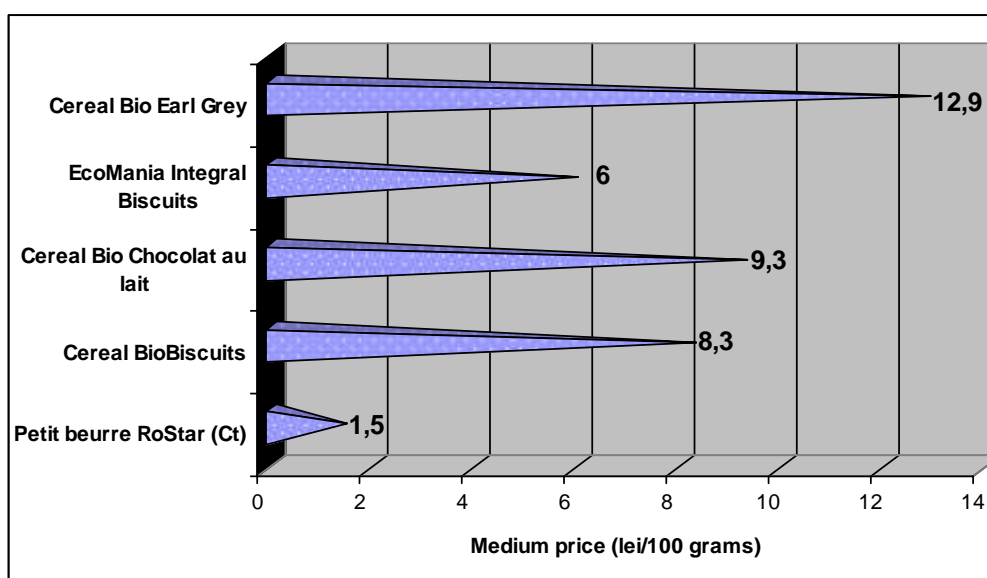


Fig.6. The medium price for the types of biscuits studied

CONCLUSIONS

According to the information on the label of the conventional biscuits type Petit Beurre RoStar, the list of ingredients contains three types of E (E450, E223, E330) of which one (E330) considered by some experts as very dangerous for health. Conversely, in case of the ecological biscuits, none of the brands studied no contains additives, colorants or conservants. In addition, the fiber content is higher to ecological biscuits in comparison with the conventional biscuits, and the content of carbohydrates is significantly lower to ecological types than the conventional types. In terms of nutritional quality, is ascertained the obvious superiority of ecological biscuits studied versus the conventional one.

The average purchase price of ecological biscuits is much higher than the conventional biscuits. Nevertheless, the best quality price ratio was found in the assortment of biscuits Ecomania, produced in Romania, with 100% organic ingredients (identified in the BioGust store, in Craiova city). For the great taste, nutritional quality and for the accessible price, it is recommended this assortment for the youngest consumers, children, and to satisfy the appetite for the "crunching" for each of us.

Obviously, not all consumers can consume (from the financial point of view) ecological biscuits frequently. Therefore, the middle option for maintaining healthy of consumers is moderate consumption of the conventional biscuits (like Petit Beurre RoStar type), but the basic rule is to consult the list of ingredients that should contain fewer chemicals added in the recipe.

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