

Voinea, Lelia; Popescu, Dorin Vicențiu; Negrea, Mihai Teodor

## Article

# Good Practices in Educating and Informing the New Generation of Consumers on Organic Foodstuffs

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## BEST PRACTICES

**GOOD PRACTICES IN EDUCATING AND INFORMING  
THE NEW GENERATION OF CONSUMERS ON ORGANIC FOODSTUFFS****Lelia Voinea<sup>1</sup>, Dorin Vicențiu Popescu<sup>2</sup> and Mihai Teodor Negrea<sup>3\*</sup>**<sup>1)2)3)</sup> *Bucharest University of Economic Studies, Romania***Please cite this article as:**

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**Abstract**

The positive image of organic products among consumers has grown gradually. Today, this image is based on a number of researches and studies conducted by specialized government bodies and private organizations and research institutes that show that these products offer, in terms of their nutritional profile, a high intake of nutrients with positive impact on health. Consumers also know that operators who produce and sell such products are subject to rigorous regulations for obtaining the organic certificate and the right to use the organic logo and are regularly monitored by inspection and certification bodies in this regard – facts that increase the new generation of consumers' confidence in the quality and safety of these products. Having the aim of highlighting the decisive factors which contribute to the creation of a positive image for the ecological foodstuff among consumers and in order to understand the real motivations of the decisional process of buying these products, an exploring marketing research was realized among the new generation of consumers. Another aim of the investigation is the identification of some problems connected with a possible unbalanced nutritional profile of some ecological products commercialized in Romania and whose consumption may be inadequate for a diet and, implicitly, for some consumers' health, especially for those having certain food restrictions caused by nutritional diseases from which they suffer. In this regard, we are going to analyse, from a scientific point of view, the nutritional profile of some ecological foodstuff found on the market in Romania, using an accredited and standardized method within the European Union- the SAIN-LIM method. Thereby, the paper aims to highlight the antithesis between the formal positive consumer perception and the nutritional profile of some organic products on the Romanian market. Through this endeavour we intend to draw attention on the need of adopting a good practices guideline in education and consumer information in order to acquire the skills for a more correct buying decision. We believe that these good practices should be included among the pursuits of the education system, government structures and specialized NGOs.

**Keywords:** the new generation of consumers, ecologic foodstuff, good practices, nutritional profile, consumer perception, education and consumer information

**JEL Classification:** M10, O13, Z10

\* Corresponding author, **Mihai Teodor Negrea** – teodor.negrea@com.ase.ro

## Introduction

Eating organic products defines, among other habits and activities, the modern consumer's concern for a healthy lifestyle. Nowadays many food products look the same, many of them have almost the same name and we must quickly decide what product to buy (Voinea, Popescu and Negrea, 2011). Our decision criteria are not only related to price, but also to the content of the product, not to mention its impact on our health. All of these are possible because of the main "mutations" suffered by the new consumer, who is individualistic, involved, independent and knowledgeable (Negrea and Voinea, 2013).

Numerous studies conducted in developed countries have shown that the new generation of consumers includes individuals who are more economical, more responsible and more demanding than traditional consumers. Currently, the new generation is increasingly attentive to all aspects involved in purchase of products (from design, safety, provenance to economic and social impacts of their consumption), through all this new generation of consumers becoming more vigilant and aware of its ability to influence world consumption choices (Salzman and O'Reilly, 2010).

The consumer of the new generation is increasingly concerned over a certain level of authenticity of the goods, which must be original, eventually innovative and that would allow to differentiate in relation to other consumers. In this regard we recall some characteristic features of the new generation (Lewis and Bridger, 2000):

- Individualism (as a result of subtle differences that customizes products between them);
- Involvement (still with authenticity as a final goal, the new generation of consumers are very attentive to details that might have implications for family health, or that would affect adherence to certain ethical principles);
- Independence (is related to involvement and is manifested especially in the decision-making process because the new generation tends to reflect with its own mind on all aspects of consumption);
- Information (new generation of consumers are often very well informed because mastering the information offers many courses of action, by default more variants of choice, occasion with which it can highlight their superior reasoning).

For several decades now, organic farming represents an area of great interest, given the benefits it promotes: a healthy agro-ecosystem, biodiversity, the soil's biological activity, preservation of environment, in general, and of rural landscapes in particular. In addition, organic products, which are obtained under very strictly regulated conditions regarding the prohibition of genetically modified organisms, chemical pesticides and fertilizers or antibiotics, contribute to the development of a harmonious lifestyle based on a nutritionally balanced diet.

In this context, there is an increase in the importance given to organic farming in the European Union – which, through its support, has set a priority in the Common Agricultural Policy, as reflected by increasing subsidies for this type of economic activity - and in Romania, where we see that the area under cultivation and the trade in organic products is constantly expanding, given the export and competitive advantages that they offer businesses.

A lot of specialized studies have proved the fact that ecological foodstuff have a high level of nutrients with a positive impact over health, first contributing to the fortification of the

immune system and to the reducing of risk for food allergies or some serious diseases (Pamfilie, Procopie, Bobe and Vişan, 2011). The promotion of the nutritional and sanogenetic benefits of the ecological foodstuff lead to the creation and consolidation of a favourable image for this food within the consumers and to the expanding of the eco trend in the past years, both at an international level, and at our country's level (Pamfilie and Voinea, 2009; Voinea, 2010). Taking as a premise the existence of this positive image for the ecological foodstuff among consumers, we performed an exploring investigation, based on a structured interview and using the questionnaire as an instrument to collect the information, with the aim to highlight the main factors involved in the delineation of the positive image which the ecological foodstuff is enjoying, the specific criteria of choosing these products by the new generation of consumers in a real situation of purchasing something.

Another hypothesis of the research considers the existence, on the Romanian market, of organic products from different groups of food products - bakery, confectionery, pastries, dairy products etc., all industrially produced - with nutritional content that is inappropriate for a balanced diet, as in their chemical composition there are substances with a negative impact on consumer health (salt, added sugar, saturated fats) in the case of an unbalanced food diet. To verify the hypothesis above in our research it was used the SAIN-LIM method.

The expected results aim to accurately prove the fact that in a number of food products, obtained and marketed under the organic terminology in Romania, there are chemical components that, although not predominant in terms of their participation in defining the nutritional profile of the products concerned, can however constitute potential risk factors for the consumers' health. In other words, we are going to prove the existence of an antithesis between a favourable formal perception and the unbalanced nutritional profile of some ecological foodstuff present on the Romanian market.

We intend that the results of our research to be harnessed for further development of a good practices guideline regarding the education and information of the organic products consumers, that would enable them to consciously choose such products, taking into account both the health benefits and potential health risks.

To achieve its purpose, this work paper, divided into several sections, begins with an overview of the literature to identify the most relevant aspects regarding the quality and sanogenetic value of organic food. This section is followed by another section dedicated to the objectives and methodology used. The third section includes results and discussion. At the end of the paper are outlined briefly the conclusions drawn from the research conducted while being given a set of best practices to be implemented in educating and informing the new generation of consumers on organic products.

### **1. The investigation of the scientific specialized literature with the aim of identifying the most relevant aspects regarding the quality and the sanogenetic value of the ecological foodstuff**

To refer to food produced without using synthetic chemicals (fertilizers, soil, feed ingredients and additives for food preparation) is most often used the phrase "green product" and also "organic product" or "biological product". Therefore, differences between the terms "eco", "bio", "organic", and "ecological" are just terminological. On a

global scale, the preference for one of the synonymously terms imposed its prevalence in the economical practice and in common vocabulary. Thus, in Germany, Spain, Denmark and Romania is preferred the term “ecological”, in France, Italy, Portugal and the Netherlands is the most commonly used term “biological”, while in Britain and the U.S. the term “organic”. (Voinea, 2010).

Organic foods are products exclusively natural, which fully comply with biological processes, being certified by an approved institute to carry the label “organic”, indicating that they were obtained according to recognized standards for organic farming (Dima, Diaconescu, Pamfilie, Procopie, Popescu, Bobe and Voinea, 2005).

As defined by FAO (Food and Agriculture Organization), cited by Viorel, Bucată, Diaconescu, Gieraths and Weiller (2004), organic farming is “a holistic production management system that promotes agro-ecosystem health, biodiversity, biological cycles and soil biological activity.

In another sense (Romanian national office for traditional and organic products, n.d.), organic farming is a natural system for plant cultivation, animal husbandry and food production. Therefore, it includes all stages of production, processing and distribution: primary production of an organic product, storage, processing, transport, sale or supply to the final consumer as well as labelling, advertising, import, export and subcontracting (Bobe, Procopie, Pamfilie and Toma, 2014).

The objectives of organic agriculture are (Ministry of Agriculture and Rural Development, n.d.):

- ensuring food products with a balanced nutritional profile, thus healthy for the body and safe for consumption;
- development of consumer confidence and protecting their legitimate interests;
- job creation and operation of fair competition in the food market;
- preservation of the environment in general, and of rural landscapes in particular.

To achieve these goals a set of measures is required, such as: implementing a sustainable management system for agriculture, manufacturing products of superior nutritional quality and producing a wide variety of processed food products and other agricultural products in accordance with the requirements of consumers for goods made by using processes that do not harm the environment, human health, respectively, plant health and animal welfare (EC Regulation 834/2007 on organic production and labelling of organic products).

The importance of organic agriculture is also reflected by the fact that it has become one of the priority objectives of the EU Common Agricultural Policy, a reality demonstrated by increasing subsidies, both from European funds and the national.

We note, however, that the subsidy for agricultural area will be restricted by strict environmental performance standards contained in the so-called “greening measures” (30% of direct payments will be subject to compliance with environmental friendly agricultural practices: crop diversification, maintaining permanent grasslands and conservation of 5-7% ecological focus areas). In addition, at least 30% of the money allocated to rural development programs will have to be allocated to agro-environment measures supporting organic agriculture, namely supporting investment projects related to the development of environmental innovation (Capital.ro, 2013).

In Romania, in recent years, organic farming has experienced a sustained growth rate as reflected in the number of operators working in the system, which exceeded 26.000, and the expansion of areas covered by organic crops, encompassing approximately 450,000 hectares. Most of the production, over 90%, is exported to countries like Germany, Italy, Spain, UK and the Nordic countries. Among the products with the largest share of exports are honey, oil products, fruits, rapeseed and sunflower oil etc. Although Romanian demand of organic products is not very high, recorded sales have exceeded 80 million Euro lately, especially through the network of hypermarkets (Bio Romania Association, 2013).

Using as criteria the origin and state of technological processing, organic foods can be grouped as follows:

- primary unprocessed plant products of plant origin;
- unprocessed animal products;
- processed products for human consumption, prepared from one or more ingredients of plant origin and / or animal origin.

In the USA, standards have been introduced for the production and manipulation of biological agricultural products, which are applicable to the entire logistic chain, from the farmer to the consumer. These standards are also applicable for the intermediary operations. According to these standards, four categories of biological products are determined (Diaconescu, 2004; Dima, Diaconescu, Pamfilie, Procopie, Popescu, Bobe and Voinea, 2005):

- 100% biological, representing the products that do not contain but biologically produced ingredients;
- biological, representing the products that contain 95% biologically produced ingredients (referred to the product's weight);
- products prepared from biological ingredients, representing the products that contain more than 70% biological ingredients, but maximum three biologically produced components can be specified on the main wrapping label;
- transformed products that contain less than 70% biologically produced ingredients, and the "biologic" term cannot be written on the main wrapping label, but in the ingredients' list on the wrapping the components that are biologically produced can be specified.

The transition from a conventional agriculture to an organic one, the two being in deep antithesis with one another, is subject to completing a conversion period (which can last from a few weeks in birds producing eggs, to a few years for perennial crops and plantations), and requires strict compliance with the rules and principles laid down in national and EU laws. At the same time, throughout the food chain approved inspection and certification bodies exercise their competences. Only after completing these steps, manufacturers can obtain a certificate of organic product and the right to use the organic logo.

In order to guarantee the organic origin of a food product several symbols were used at both Community and national level (Dinu, 2011).

The first EU organic symbol (Figure 1) was launched in the late 1990s, its use being voluntary.

In order to give consumers confidence in the origin and quality of foods and beverages, as well as to guarantee compliance with Regulation (EC) no. 834/2007 on organic production

and labelling of organic products, from 1 July 2010, the European Union uses the “Euro-leaf” symbol (Figure 2), which certifies organic products.



**Figure no. 1: Voluntary EU organic logo** **Figure no. 2: New mandatory EU organic logo**

*Source: European Commission, n.d.*

*Source: European Commission, n.d.*

In accordance with Regulation (EU) no. 271/2010 on organic production logo of the European Union, the new symbol is mandatory for all pre-packaged organic food products in the European Union. It can also be used voluntarily for organic products manufactured within the EU, but are not pre-packaged, or for all organic products imported from third countries (European Commission, n.d.).

The Community logo for organic production may be associated with national logos. In Romania, for example, the specific national logo for organic products is “ae” (Figure 3), which, if used with the Community logo, has the purpose of identifying products manufactured in accordance with organic production methods and ensuring that they are certified organic by an inspection and certification body accredited by the Ministry of Agriculture (Dinu, Schileru and Atanase, 2012). In addition to logos, the label applied to an organic product should include a compulsory reference to organic production, as well as the name and code of the inspection and certification body that performed the inspection and issued the organic product certificate (Ministry of Agriculture and Rural Development, n.d.).



**Figure no. 3: The national “ae” logo for organic products**

*Source: Ministry of Agriculture and Rural Development, n.d.*

Because organic food products must be obtained by strictly applying the principles of organic agriculture, these products have authentic and attractive taste, texture and features.

Thus, in the production stage at the farm is prohibited the using of genetically modified organisms, chemical pesticides (herbicides, fungicides, etc.), chemical fertilizers or antibiotics. High quality products are obtained only through multi-annual crop rotation, by providing plants and animals the needing time to reach maturity, and by using species and varieties of native plants and animals (Gheorghe, Nistoreanu and Filip, 2013).

To ensure a high level of quality during processing is strictly prohibited to use GMOs, and there are severe restrictions on the use of synthetic food additives and processing additional substances (European Commission, n.d.).

Experimental research has shown that organic foods have a high content of vitamins, minerals, essential fatty acids and antioxidants, contributing primarily to strengthening the immune system (Pamfilie and Voinea, 2009) (Table 1). For example, recent comparative studies conducted on organic/non-organic products, in the case of vegetables, fruits and cereals, revealed that in the case of organic farming, the nutritional content is higher by 27% in terms of vitamin C, 21% for iron, 30% for magnesium and 14% for phosphorus (ProDietaBio.ro, n.d.). In addition, organic meat, dairy and eggs contain more essential fatty acids while goat cheeses have more calcium. Also, organic foodstuff consumers are not exposed to the risk of food allergies, as for many conventional products. In addition, the absence of nitrates in organic foodstuff helps reduce the risk of cancer (Cottingham and Winkler, 2007).

**Table no. 1. Special nutritional characteristics of organic food products**

Organically produced food products	Special nutritional characteristics
Eggs	Eggs from poultry that have not been fed with genetically modified fodder or with synthesis vitamins has a stronger shell and a higher content of vitamins.
Milk	Milk from animals bred in organic farms (where the natural grass represents 84% of cows' feed) has a conjugated linoleic acid concentration, which helps prevent the appearance of cancer, 60% higher than in the normal milk. In addition, the omega-3 fat acids and the vitamin E concentrations (also, substances with an important role in reducing the cancer and heart diseases appearance risks) are higher.
Meat	Meat from grass-fed animals has a higher content of essential fatty acids Omega-3 type and has a lower risk of contamination with Escherichia Coli.
Oil	The ecologic oil from cold presses corm germs is assimilated by the organism in a 99% proportion, being twice richer in vitamins A, D and E than any other refined oil type, including the olive oil.
Fruits	Organic fruits reduce the risk associated with pesticides, and if consumed in high season their sensory characteristics are better compared to those which ripen during transport.

*Source: Voinea, 2010.*

Considering all these nutritional benefits of organic products compared to conventional products, the positive image of these foods among consumers is explained as well as the expanding organic trend in recent years, as evidenced by the numerous studies conducted worldwide (Finch, 2005; Cottingham and Winkler, 2007; Bellows, 2008; Zepeda and Deal, 2009; Voinea, 2011). This positive image is reinforced by the belief of many consumers, especially the female audience, that organic food contributes not only health maintaining, but also silhouette maintaining.

## 2. Research objectives and methodology

A basic hypothesis of the present study, stated after the investigation within the specialized literature, consists in the existence of a positive image of the ecological foodstuff within consumers.



Although numerous experimental studies have highlighted the nutritional and higher sanogenetic potential of organic foods, another hypothesis of our research is that some processed organic products (especially those in the category of snacks, confectionery and industrial pastries), like their conventional equivalents can generate nutritional imbalances if consumed frequently and in large quantities. These imbalances are the result of high amounts of added sugars, salt and saturated fats, contained by some processed organic foods.

Starting from these premises, our approach aims at highlighting a possible antithesis between the favourable formal perception of the ecological foodstuff among the young Romanian consumers and the unbalanced nutritional profile of such foodstuff. In this regard, our investigation aims at the following objectives:

- Objective no. 1: the highlighting of the involved factors in the delineation of the positive image for the ecological foodstuff;
- Objective no. 2: understanding the decisional process of purchasing the ecological foodstuff, by highlighting the determining factors of the purchasing decision;
- Objective no. 3: identifying the specific criteria for choosing the ecological foodstuff by the consumers in a real purchasing situation;
- Objective no. 4: determining the frequency in consumption for the main groups of ecological foodstuff;
- Objective no. 5: determining the potential nutritional imbalances which the consumer may face, by determining the nutritional profile of the ecological foodstuff;
- Objective no. 6: highlighting the possible antithesis between the favourable formal image perceived by the consumers and the real nutritional value of some ecological foodstuff.

The realization of the established objectives involved the utilization of a complex interdisciplinary methodology, combining instruments specific for the marketing research with methods specific for the research of foodstuff goods. Thus, for performing the stage of highlighting the consumer's perception over the ecological foodstuff, a marketing exploring investigation was realized, utilizing the questionnaire as an instrument for collecting the information, and for the stage of evaluating the nutritional profile, the SAIN-LIM method was applied. This method aims to establish the nutritional profile of organic products with potential health risk to consumers, randomly selected from the internal network of hypermarkets and is based on two indicators: SAIN and LIM. The SAIN indicator summarizes the favourable aspects of the food product and highlights the average coverage percentage of the recommended daily allowance for the essential nutrients with beneficial health impact, the so-called positive nutrients (proteins, fibres, vitamins, minerals, polyunsaturated fatty acids). The LIM indicator summarizes the unfavourable aspects of the food product and is based on compounds that have to be included the human diet in limited quantities (saturated fat, added sugars, sodium and salt) (Darmon, Maillot, Darmon and Martin, 2007; Onete, Voinea, Filip and Dina, 2014).

## **2.1 Exploratory investigation regarding the consumer's perception over the ecological foodstuff**

A marketing exploring investigation was realized in order to highlight the determining factors of the positive image which the ecological foodstuff is enjoying among consumers and to understand the essential factors of the decisional process of purchase, as well as the

specific criteria for choosing the ecological foodstuff by consumers, in a real purchasing situation.

The research realized was of instrumental type, being conducted as a pilot survey, which was meant to test the instrument of collecting the information (questionnaire) among respondents who has the profile of a new generation of consumers. In the process of selecting the respondents was intended that they have a relevant profile in relation to the characteristics of new generation of consumers, in terms of age (18-35 years), level of education and the use of social media habits (Gheorghe, 2010).

The investigated community was made of about 100 people, of which 62 had responded. Research was conducted between March and May of 2014.

The method utilized for collecting the information was the one of the structured interview, and each of the subjects was given a questionnaire with 21 closed-ended questions, some of them with a single possible answer, and others with multiple variants.

## 2.2 Evaluating the nutritional profile using the SAIN-LIM method

To demonstrate the risk of nutritional imbalance to which some consumers that overestimate the nutritional and sanogenetic virtues of organic food may be exposed to, we selected several organic food products on the Romanian market and we evaluated their nutritional profile, using the SAIN-LIM method.

The SAIN –LIM method was developed by a team from the INRA/INSERM Joint Research Unit on Human Nutrition in Marseille and released in 2009 by the French Food Standard Agency, is based on two indicators (SAIN and LIM).

The SAIN indicator summarizes the favourable aspects of foodstuff and estimate the average percentage of the recommended daily intake for essential nutrients with benefit on health, so called positive nutrients (proteins, fibres, vitamins, minerals, unsaturated fatty acids) and it is calculated using the formula (Darmon, Vieux, Maillot, Volatier and Martin, 2009; Achir, Bohuon, Collignan, Trezzani and Trystram, 2011):

$$SAIN = \frac{\sum_{i=1}^n \text{ratio}_i}{n} \times 100$$

$$\text{ratio}_i = \left[ \frac{\text{nutrient}_i}{RV_i} \right] \times \frac{100}{E}$$

where:

nutrient<sub>i</sub> is the quantity of positive nutrient in 100 g of foodstuff, RV<sub>i</sub> is the daily recommended value for nutrient *i*, n is the number of positive nutrients and E is the energy content of 100 g of foodstuff (in kcal/100 g).

*The acceptability threshold: SAIN > 5*

The LIM indicator summarizes the adverse aspects of food and is based on nutrients that must be limited (saturated fatty acids, added sugars, sodium or salt) and it is calculated

using the formula (Darmon, Vieux, Maillot, Volatier and Martin, 2009; Achir, Bohuon, Collignan, Trezzani and Trystram, 2011):

$$\text{LIM} = \frac{\sum_{i=1}^3 \text{ratio}_i}{3} \quad \text{ratio}_i = \left[ \frac{\text{nutrient}_j}{\text{MRV}_j} \right] \times 100$$

where:

nutrient<sub>j</sub> is the content of negative nutrient in 100 g of foodstuff, and MRV<sub>j</sub> is the daily maximal recommended value for nutrient *j*.

*The acceptability threshold: LIM < 7.5.*

In order to establish the nutritional profile of a foodstuff, the values of SAIN and LIM indicators will be compared with the acceptability thresholds.

According to the values of SAIN and LIM, foodstuffs can be classified into four classes (Figure 4):

SAIN	<b>I</b> <b>FOODSTUFFS RECOMMENDED FOR HEALTH</b> (fruits and vegetables, yogurt and fresh cheese, legumes, potatoes, lean meat, fish, eggs, whole wheat bread)	<b>III</b> <b>FOODSTUFFS RECOMMENDED OCCASIONALLY</b> (smoked/salty fish, ham, red meat and some cheese)
	<b>II</b> <b>NEUTRAL FOODSTUFFS</b> (refined cereals, white bread and pasta, white rice and dried fruit)	<b>IV</b> <b>FOODSTUFFS TO AVOID</b> (sausage, sweets, fatty and salty cheeses, fats and sauces)
0	7.5	LIM

**Figure no. 4: Foodstuff Classification according SAIN and LIM values**

*Source: adaptation from Darmon, Maillot, Darmon and Martin, 2007*

### 3. Results and discussions

From the total of respondents (62 master students from the master programs of The Faculty of Commerce), 51.6% were women, and 48.4% were men. With regards to the income level achieved by the respondents, 33.9% fit within the interval 1001-1500 RON, and 37.1% exceed 1501 RON.

Within a percentage of 62.9%, the respondents stated that they are preoccupied a lot with having a healthy nutrition; in parallel, 67.7% from the respondents consider that the

ecological foodstuff are a healthier nutritional option in comparison with the conventional food.

With regards to the first objective of the investigation, that of highlighting the involved factors in the delineation of the positive image for the ecological food, the results of the investigation show that:

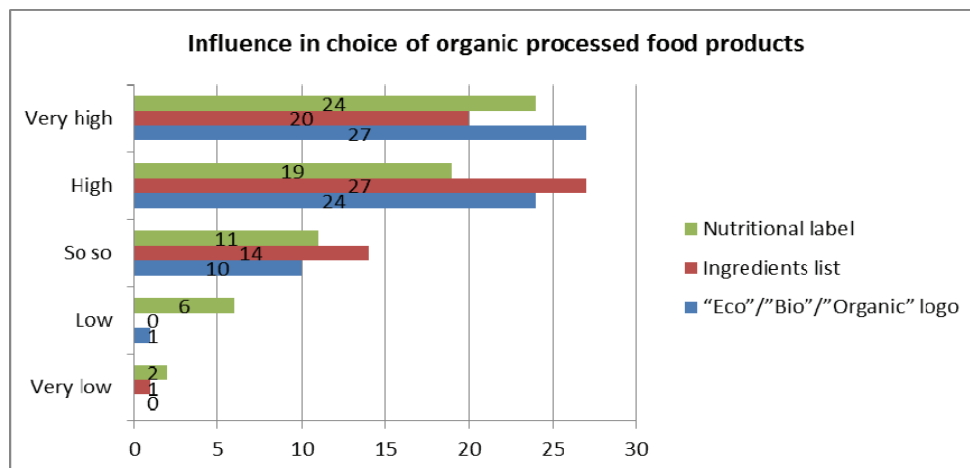
- The respondents consider that the ecological agriculture represents a superior system for producing the food products, in comparison with the conventional agriculture, because: it promotes biodiversity (25.85%), protects the environment (19.4%), ensures the durable development of the rural communities (29%) and favours a healthy lifestyle (25.8%);
- The greatest part of the respondents (67.8%) agree with the idea that the ecological foodstuff have, generally, a positive image in comparison with the conventional foodstuff;
- The respondents consider that the most important factors involved in creating a positive image of the ecological foodstuff are the following: the derivation from the ecological agriculture, certified by the logo “eco”/ “bio”/ “organic” (87.1%), the supplementary nutrients with a positive impact over the health (proteins, vitamins, minerals, essential fatty acids, fibres), and the reduced addition of substances having a negative impact over it – salt, sugar, saturated fats (within the processed food) (both with 79%), and high food safety (72.6%), superior organoleptic characteristics (66.1%).

With regards to the second objective of the investigation, which aimed at understanding the decisional process of purchasing the ecological food, the results highlighted the following aspects:

- The decision of purchasing an ecological food product is motivated mainly by: consumer safety (48.4%), the ratio quality-balanced price (29%), and high nutritional value (21%);
- The most important aspect of the nutritional value of the ecological food products, in the respondents’ opinion, is represented by the superior level of proteins and essential fatty acids of the omega 3 type (37.1%), followed by the presence in small quantities of salt and sugar added through the recipe (25.8%);
- The presence of the mention “100% natural” on the package for a food product guarantees for the respondents that they have an “ecological product” only in a percentage of 38.7%; the results of the investigation show that more than a third from the total of the respondents confound the terms “natural product” and “ecological product”.

With regards to the third objective of the investigation, consisting of highlighting the specific criteria for choosing the ecological food products, the results of the investigation showed that:

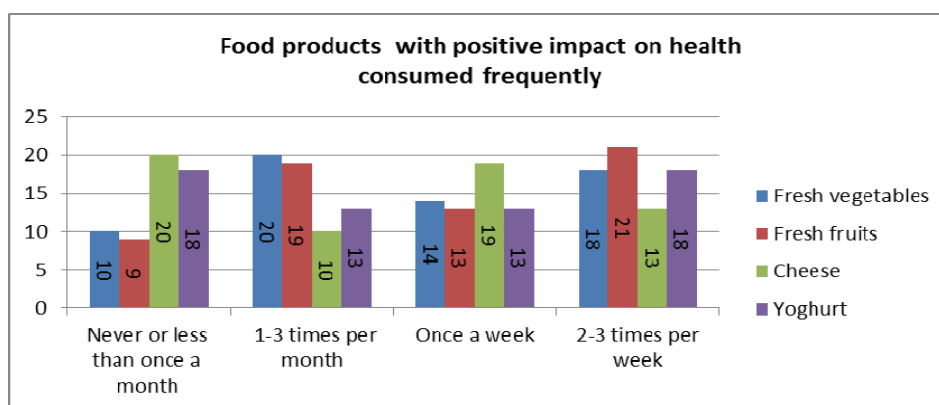
- The respondents prefer to purchase the ecological food products mainly from specialized fairs (71%), specialized food stores (62.9%) and online food stores (51.6%);
- When they are in a real purchasing situation, the respondents are influenced in choosing the processed ecological food products mainly by the following criteria: the logo “eco”/ “bio”/ “organic” (82.2%), the list with ingredients written on the package (75.8%), the nutritional tag (69.3%) (Figure no. 5).



**Figure no. 5: The influence of specific criteria for choosing the ecological food products**

*Source: original*

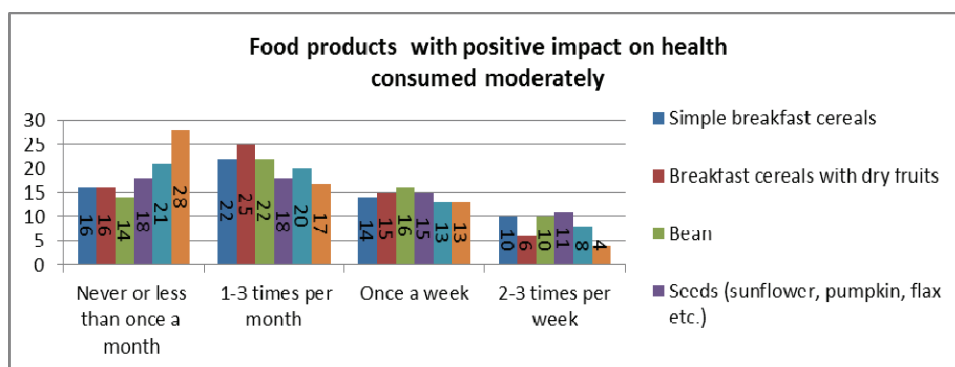
With regards to the frequency of consuming the main ecological food groups, which represents the fourth objective of our investigation, the results demonstrate the fact that the respondents consume at least once a week the following categories: fresh fruit (54.9%), fresh vegetables and dairies (each with 51.6%) and acid dairy products (50%) (Figure no. 6).



**Figure no. 6: The frequency of consuming the main ecological food groups**

*Source: original*

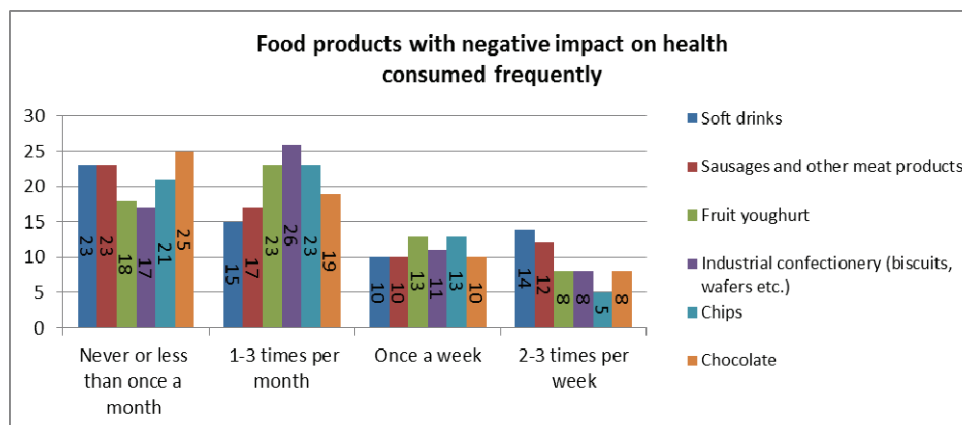
The results of the investigation also highlights that some ecological food groups with a positive impact over health are consumed, with a frequency of at least once a week, in a smaller percentage, therefore: cereals for breakfast simple and with candied fruit (approximately 35%), beans and seeds (both with 41%), honey (33.9%), vegetable cans (27%) (Figure no. 7).



**Figure no. 7: Ecological food groups with a positive impact over health consumed with medium frequency**

*Source: original*

Moreover, we notice that, in a relatively high percentage, some food groups are frequently consumed, food containing compounds with a negative impact over the health in higher quantities (added sugar, salt and saturated fats); therefore – soft drinks (38.7%), processed meat products and other meat products (35.5%), fruit yoghurt (33.9%), pastry industrial products (biscuits, wafers etc.) (30.6%), chips (29.1%), chocolate (29%) (Figure no. 8).



**Figure no. 8: Ecological food groups with a negative impact over health consumed with high frequency**

*Source: original*

This last result, analysed within the context of the question connected with the criteria of choosing the ecological food, is going to generate some contradictions, because the list of the ingredients written on the package and the nutritional tag, according to the facts stated by the respondents, are among the criteria with the greatest capacity of influencing the choice (75.8%, respectively 69.3%). Therefore, we could conclude that either the respondents didn't give sincere answers to the question referring to the choice criteria, or that they don't have cognitive abilities for a correct interpretation of the written information from a food product tag.

In order to highlight the possible nutritional imbalances which the consumer might face, which constitutes the fifth objective of our investigation, the nutritional profile of some ecological food products within the Romanian market was evaluated, utilizing the SAIN-LIM method. The two indicators (SAIN and LIM) were calculated, by using the nutritional information from the labels

Although Romania is currently not required to apply the provisions of Regulation (EU) no. 1169/2011 on nutritional information, we note that there are many products on the Romanian market imported from EU countries whose labels contain nutritional information reported as required by said regulation (mandatory information: energy value and the amounts of fat, saturated fatty acids, carbohydrates, sugars, proteins and salt; these mandatory information may be supplemented by quantitative indication of the following components: monounsaturated fatty acids, polyunsaturated fatty acids, polyols, starch, dietary fibre, vitamins and minerals present in the product in significant quantities). In addition, some Romanian food manufacturers have voluntarily aligned to the requirements of the new Regulation (EU) 1169/2011 on the provision of food information to consumers.

To assess the nutritional profile using the SAIN-LIM method, organic foods were selected in order to provide nutritional information in accordance with Regulation 1169/2011 (Table 2).

**Table no. 2: The nutritional labels of the analysed products**

Label's information (for 100g)	Cookies Bio with dark chocolate (Nutrition et Sante, France)	Biscuits Bio with 3 cereals (Probios, Italy)	Gaufre Bio with honey (Bio All Green, Germany)	Wafer Bio with cocoa cream (Crich, Italy)	Musli Bio with dry fruits (Bio Nature, France)	Halva Bio with sesame and honey (Allos, Germany)	Chocolate Bio with milk (Carrefour, France)	Tortilla Chips Bio (Delhaize, Belgium)
Energy (kcal)	490	428	492	514	430	579	562	492
Proteins (g)	7.6	7	11.8	7.4	7	16.8	9.7	6.7
Carbohydrates (g), of which Sugars (g)	62.1 28.6	73 16	72 23*	58.7 19.7	64.5 27	37.5 25.1*	48.7 46.5	60.3 1.5
Fat (g), of which Saturated fat (g)	22.5 10.2	12 1.8	20.1 9.8	27.1 19.1	14.5 5.9	41 7.9	36 22.1	24 10.8
Fibres (g)	4.2	2.8	1.6	2.8	6.9	4.8	2.5	4
Salt (g)					0.1			0.8
Sodium (g)	0.17	0.3	0.2	0.1		0.1	0.09	0.3

\* In the case of honey Gaufre Bio (Bio All Green, Germany) and Bio sesame and honey halva (Allos, Germany) for the LIM indicator calculation the sugars declared on the nutrition label were not considered because they do not reflect the added sugar, as they are simple sugars derived from honey (sugar is not included in the list of ingredients of these two products).

To calculate the SAIN indicators for each product, the followings daily recommended values for the positive nutrients were considered: Proteins – 65 g, Fibres – 30 g, Vitamin B1 – 1.2 mg, Vitamin B2 – 1.6 mg, Vitamin B3 – 15 mg, Vitamin B6 – 1.7 mg, Vitamin B9 – 0.135 mg, Fe – 12.5 mg, Mg – 390 mg. In order to calculate the LIM indicators for each product, the followings daily maximal recommended value for undesirable nutrients

were considered: Sugars – 50 g, Saturated fatty acids – 22 g, Sodium/Salt – 3.153 g/8g (Darmon, Mailliot, Darmon and Martin, 2007).

The values of the two indicators (SAIN and LIM), calculated for the two products are shown in Table 3.

**Table no. 3: The nutritional profile of the analysed products**

Products	SAIN	LIM	Nutritional profile and recommendations
<b>Cookies Bio with dark chocolate</b> (Nutrition et Sante, France)	<b>2.83</b> (<5)	<b>36.16</b> (>7.5)	<i>Very unbalanced nutritional profile</i> , the product should be consumed with great moderation
<b>Biscuits Bio with 3 cereals</b> (Probios, Italy)	<b>2.25</b> (<5)	<b>17.36</b> (>7.5)	<i>Very unbalanced nutritional profile</i> , the product should be consumed with great moderation
<b>Gaufre Bio with honey</b> (Bio All Green, Germany)	<b>2.47</b> (<5)	<b>16.78</b> (>7.5)	<i>Very unbalanced nutritional profile</i> , the product should be consumed with great moderation
<b>Wafer Bio with cocoa cream</b> (Crich, Italy)	<b>1.97</b> (<5)	<b>43.12</b> (>7.5)	<i>Very unbalanced nutritional profile</i> , the product should be consumed with great moderation
<b>Musli Bio with dry fruits</b> (Bio Nature, France)	<b>3.56</b> (<5)	<b>27.4</b> (>7.5)	<i>Very unbalanced nutritional profile</i> , the product should be consumed with great moderation
<b>Halva Bio with sesame and honey</b> (Allos, Germany)	<b>3.54</b> (<5)	<b>12.72</b> (>7.5)	<i>Very unbalanced nutritional profile</i> , the product should be consumed with great moderation
<b>Chocolate Bio with milk</b> (Carrefour, France)	<b>2.13</b> (<5)	<b>65.27</b> (>7.5)	<i>Very unbalanced nutritional profile</i> , the product should be consumed with great moderation
<b>Tortilla Chips Bio</b> (Delhaize, Belgium)	<b>2.67</b> (<5)	<b>23.79</b> (>7.5)	<i>Very unbalanced nutritional profile</i> , the product should be consumed with great moderation

Source: original

The values of SAIN and LIM indicators show that all the analysed bio products have a very unbalanced nutritional profile, which determines their classification into the category of food to avoid.

In addition, from the analysis of the information declared in the ingredients list on product labels, we note that the selected organic products also contain unhealthy ingredients, as follows: glucose syrup/high fructose from corn, starch, flavours, growth enhancers (potassium tartrate, sodium hydrogen carbonate, and ammonium carbonate), synthetic vitamins and minerals.

Analysing the results of the exploring investigation and the results of evaluating the nutritional profile, we consider that *the sixth objective of our investigation* is accomplished, which aimed at highlighting the antithesis between the favourable formal image perceived by the young consumers and the real nutritional value of some ecological food products



within the Romanian market. Therefore, this antithesis is not only a presupposition within the boundless space of the possible, but it represents a reality of the actual market relations.

### **Conclusions**

The accomplished exploratory investigation proved that among the new generation of Romanian consumers there is a favourable image of the ecological food products, especially based on the provenance from the ecological agriculture, certified by the logo “eco”/ “bio”/ “organic”, on the supplementary nutrients with a positive impact over the health, and also the reduced addition of substances with a negative impact over this, on the high food safety, and on the superior organoleptic characteristics.

Despite the positive developments, we must warn consumers that the presence of any form of “organic” labelling does not exclude the possibility that these products are nutritionally unbalanced, the latter aspect being the subject of this research.

In practice, the results of our study show that processed organic food products, although obtained from ingredients from organic farming, may expose consumers to the risk of nutritional imbalances, sometimes serious, because of the high content of negative impact compounds (salt, added sugar and saturated fats). If sugar, salt and saturated fats, although organic certified, are added by manufacturers in exceedingly large quantities, with the primary goal of obtaining products that entice many senses and create consumer dependency, the risk of nutritional imbalance is as high as for conventional foods.

Also, the results of research conducted in this paper highlights the need to strengthen nutritional education of consumers in Romania and we believe that could be the basis for a set of best practices for educating and informing consumers of organic food products. Given the issues presented in this paper, we consider as appropriate to implement educational programs in a guideline of behaviour for foodstuffs consumption, which could be entitled “Good practices for healthy nutrition of young consumers”, able to lead to the development of skills of the new generation of consumers in Romania in an objective assessment of nutritional characteristics in various practical situations of buying and thus in making choices of healthy foodstuffs.

The good practice guideline should provide a conceptual framework for selecting types and quantities of foodstuffs, including organic, so as to ensure nutritional balance. Therefore, the reason to develop such a guideline would be to translate expert recommendations on nutrient intake into recommendations on quantities of foodstuffs to be consumed.

In this regard, the guideline will provide general information about healthy eating principles: the role and importance of essential nutrients (macronutrients - fat, protein, carbohydrates and micronutrients - vitamins, minerals substances) as well as semi-essential nutrients (phytochemicals with a role of antioxidant), benefits and disadvantages of the main foodstuffs groups.

The guideline will include information about the causes of nutritional degradation of modern alimentation (refining food raw materials, the widespread use of food additives in food processing, genetic modification of food resources) and will highlight the risks of excessive consumption of ultra-processed foodstuffs.

Particular attention will be given to organic products, where will be presented first of all the principles in obtaining and sanogenetic and nutritional benefits. There will also be indicated

ecological symbols used at EU and at national level, which guarantees the origin of organic farming of a foodstuff. The guideline will have to warn the new generation of consumers that certain processed organic foodstuffs, although are obtained from ingredients derived from organic farming, can expose them to the risk of nutritional imbalances due to the high content of compounds with a negative impact, such as salt, added sugar and saturated fat.

Since the good practice guideline aims to develop the skills of the new generation of consumers in Romania for objective evaluation of food and making healthy food choices, it is imperative that it includes a section on labelling that provides guidance on the manner of interpretation of all nutritional information and their integration in the context of diet.

As young consumers should be able to evaluate the nutritional profile of foodstuffs consumed, based on the nutritional information stated on the labels, we consider it useful to include in the guide and to exemplify methods for calculating the nutritional value of foodstuff.

Based on the above considerations, the behaviour guideline of foodstuffs' consumption may become a useful tool in choosing healthy foodstuffs that should be included in the daily diet of young consumers, in order to reduce future risk in occurrence of serious chronic diseases.

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