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# CHALLENGES AND PERSPECTIVES FOR APPLICATION OF SUSTAINABLE MARKETING IN ORDER TO INCREASE THE CONSUMPTION OF ORGANIC DAIRY PRODUCTS IN THE REPUBLIC OF MACEDONIA

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***Abstract***. The main goal of this paper is to identify challenges and perspectives for application of sustainable marketing in order to increase demand and consumption of organic dairy products, i.e. to gain insight in consumers' preferences, motives, attitudes and interests to buy organically produced dairy products in the Republic of Macedonia. This research draws on a survey of 209 respondents within the Republic of Macedonia. The descriptive analysis (Cross tabulation), the nonparametric test of significance Chi–square (χ2) and the correlation indicator Phi coefficient were all applied in examining the working hypothesis. The results of these study present organic buyers tend to be older, with higher education and with higher family income than those who do not buy them. However, the main barrier to increase the market share of organic dairy products is consumer information and availability of organic dairy products in the Republic of Macedonia.
***Keyword****:* organic dairy products, consumption, sustainable marketing.

## Introduction

Organic agricultural production provides sustainable development of plant and animal life, whereas the products for human consumption obtained in this manner are healthy and have nutritional value. The economy has a central role in ensuring a sustainable future.

Any strategy may serve as a basis, provided it contributes to the protection of the environment and demonstrates the real and sincere intention of the entire organization in that process.

One of the priorities for immediate action in the sustainable development strategy of any company is the consumption and production.

These strategies determine how sustainability is further implemented, through the following measures for promotion:

- Better products and services that reduce the environmental impact of using energy, resources or hazardous materials;
- More clean, efficient production processes that strengthen competitiveness and
- Switching to consumption of goods and services with less environmental impact.

Sustainable agriculture represents a set of methods that enable the management of agricultural resources, with the purpose of meeting their needs in terms of the quality of agricultural products.

Methods used in organic farming not only allow the production of safe food, but also the protection, or the promotion of the environment.

Organic production is designed so as to protect all resources within the environment, it is not harmful to the environment, is technically applicable, socially acceptable and economically viable. Actually, organic production is an alternative to the now–present conventional production, which is sustainable in the longer term.

The main goals of organic production are as follows: Increasing the production capacity (fertility) of a land; Minimizing the energy inputs of agricultural goods; Reducing the environmental risk; Maintaining the achieved level of production.

Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of chemical inputs with negative effects.

In recent years, people have increased their awareness on the importance of food safety and environment health. All of this contributes to the increasing importance of organic agricultural production in the European Union. The market in the EU, both in terms of the demand and of the supply of organically produced products, is growing from year to year.

Republic of Macedonia as a candidate for membership in the European Union, has good potential for organic farming–quality, less polluted soil compared to the major European countries, extensive traditional agriculture mainly in mountainous areas with suitable environmental conditions for sustainable development of organic production. Buying organic products from local producers contributes to the preservation of a healthier environment, a vital local community and a sustainable local and national economy. Organic production is an agricultural system that aims to provide the consumer with healthy, tasty and natural food [BUTNARIU *et al.*, 2014b; SAMFIRA *et al.*, 2014; BUTNARIU *et al.*, 2012b].

To achieve this, organic farming relies on principles and practices designed to minimize the negative impacts on the environment. More specifically, the rules for organic production are defined in the Law on Organic Production, adopted in 2009.

It has been fully harmonized with the European legislation that regulates the production, preparation, processing, finishing, storage, transportation, distribution, marketing, sale, labeling and control of organic products, for which the methods of organic production have been used. Based on the Law on Organic Agricultural Production, the Ministry of Agriculture, Forestry and Water Economy has adopted a Rulebook on the Procedures of Production of Organic Processed Food, which states that organic processed food should be produced by the use of processing methods which guarantee that the organic integrity and vital qualities of the product are maintained through all stages of the production chain.

In 2013, the National Plan for Organic Production 2013–2020 was adopted, which is an instrument, which provides the basis for further development of organic production in the Republic of Macedonia. At the same time, this National Plan provides for guidelines, activities and measures including policies to be implemented by the MAFWE for the period 2013–2020 for future development of organic production in the Republic of Macedonia, which also covers the livestock sector and the industry for processing of milk and production of dairy products with their opportunities for the application of organic production.

In Republic of Macedonia a Macedonian Organic Producers Federation has been formed, which effectively represents the organic producers interests and supports the presentation of the Macedonian organic products.

Organic farming and organic production of dairy products fall within the framework of sustainable agriculture.

However, it is necessary to distinguish these two concepts as production of organic products may be unsustainable, organic products could be produced on large industrial farms, whereas farms that are not registered as organic could actually implement sustainable practices on organic production for generations.

For example, some organic farms breed dairy cows in a natural system and over a large area, but do not really maintain the minimum requirements for

organic certification, whereas small farms that are not certified can better maintain organic requirements and be sustainable in their practices.

The procedure for certification, and afterward for inspection of the manufacturing process, is necessary for labeling products as organic as it points to the fact that the dairy products should, from the start of production, be produced in accordance with the principles of organic production.

Manufacturers of organic dairy products should be certified for organic production. Basically, animals whose products are certified must have access to the external environment, whether tied or let loose, in order for the animals to feel naturally, behave naturally and be healthy, comfortable and have proper care taken for them. Certified organic animals cannot be raised with antibiotics.

Consumers must not consume products from animals treated with antibiotics, in particular, for the period during which the antibiotics are still in the animal organism. Artificially added hormones are not allowed in any organic or sustainable agriculture.

The phenomenon of sustainable development or sustainability, which dramatically changed the role and behavior of nations, represents a major catalyst for the changes in government policies and legal frameworks.

Sustainability was defined by the International Union for Conservation of Nature in 1969 as "achieving economic growth and industrialization, without environmental damage" [KEINER, 2006].

After the occurrence of environmental disasters, the concept itself didn't gain much in strength until 1987, when the United Nations published a report of the World Commission on Environment and Development (now known as the Brundtland Report) in which sustainability was redefined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [Le BLANC *et. al.*, 2012; HART, 1997; DAILY 1990; BUTNARIU *et al.*, 2005; BARBAT *et al.*, 2013; RODINO *et al.*, 2014].

Satterthwaite suggests that sustainable development is simply a development, or activity for fulfilling the basic needs of the population and of the people and animals, which will be implemented so as to allow for the population to satisfy its needs in such a manner that does not limit or impair the principal capacities in the economic, social, environmental and organizational systems.

In this context, of great significance is sustainable agriculture that will enable the survival not only of the rural population, but also of the people in urban areas who are directly dependent on the production of food in non–urban areas. Organic (alternative, ecological, biological) agriculture developed as a response to the increasing environmental degradation, deterioration in the quality of food and the ever growing threat to the health of the human population.

This means that regardless of current difficulties, efforts are being made in aligning the development with the needs of the market and in protecting the environment and reducing the quantity at the expense of the quality of food, whereby, it is necessary to reduce the use of agrochemical agents and to favor agricultural techniques that will make optimal use of natural resources (recycling of biomass and energy) and will also minimize the production of waste materials.

According to the definition of the FAO (Food and Agriculture Organization of the UN) and WHO (World Health Organization), "Organic agriculture is a holistic production management system which promotes and enhances agro–ecosystem health, including biodiversity, biological cycles, and soil biological activity.

It emphasizes the use of management practices in preference to the use of off–farm inputs, taking into account that regional conditions require locally adapted systems.

This is accomplished by using, where possible, agronomic, biological, and mechanical methods, as opposed to using synthetic materials, to fulfil any

specific function within the system." [FAO/WHO, Codex Alimentarius, 2007].

Today, the role of marketing is to improve the living conditions. Public concern over the deterioration of the environmental conditions is increasing and marketing experts are realizing even more the needs and the value of sustainable marketing.

The role of marketing in process of development is obvious, and its role has been subject of intense analyses and discussions in last few decades [CROSS, 2003; BUTNARIU and CAUNII, 2013; NEGREA *et al.*, 2015].

A two–dimensional change needs to be made in the fundamental approach to marketing in order to facilitate sustainable development. The first would be to define the wants and expectations of consumers, and the other would be in regards to enabling consumers to decide on the desired choice that will allow them to satisfy their needs and desires.

The new orientation of sustainable marketing basically has a two dimensional change in basic approach to marketing for the future [SHETH *et. al.*, 1995; BUTNARIU *et al.*, 2014a; SAMFIRA *et al.*, 2015].

Sustainable marketing is a concept first defined by the authors Sheth and Parvatiyar. In their definition, they analyze the paths and methods that are used in aligning the economic and environmental factors through reinvention of the products and the systems of products [SHETH *et. al.*, 1995].

Donald Fuller defines sustainable marketing as "the process of planning, implementing and controlling the development, pricing, promotion, and distribution of products in a manner that satisfies the following criteria:

a) consumer needs are met,
b) organizational goals are attained, and
c) the processes are compatible with ecosystems" [FULLER, 1993; PETRACHE *et al.*, 2014].

This definition emphasizes the processes that are used to actively manage, and thus achieve customer satisfaction and the goals of the organization.

The most important factor in this definition is that the entire process should be compatible with the ecosystems in order to reduce the eco–costs, which represents a benefit to society as a whole.

Hence, it is important to highlight that the needs of the consumers must not be inconsistent with the needs for maintaining the environment. Marketers themselves must take responsibility for sustainable marketing. That means operating in a responsible and ethical way to bring both immediate and future value to customers [KOTLER and ARMSTRONG, 2012; BUTNARIU *et al.*, 2012a; BUTU *et al.*, 2015].

The views of the management teams of the producers of milk and dairy products as well as of the marketing experts in that marketing is in the service of the needs of society with the role of informing potential customers about the availability of products, which will further enhance the quality of life of consumers, will become sustainable only if communication is implemented and maintained with current and future customers on the importance of organic products.

In this case, the sustainable marketing concept plays an important role because it stimulates the consumption while consumers satisfy their needs and desires.

However, the critical role that marketing has in the development will be much better perceived when it will meet the current needs of consumers in terms of milk and dairy products, without jeopardizing future generations to fulfill their needs and wants.

This can be achieved by following the path of sustainable marketing.

## Material and methods

A questionnaire intended for consumers in the Republic of Macedonia was prepared for the needs of the study.

The questionnaire consists of 20 questions, of which 6 are related to the basic characteristics of consumers, while the other 14 questions were designed with the purpose of obtaining information on the decisions and interests of the Macedonian consumers in buying organic

dairy products, starting from the elements of the marketing mix.

Several publications, papers, reports, models and methodologies related to the assigned field were used as reference and analyzed in the preparation of the questionnaire.

The survey was conducted from 15 January to 15 February 2016 and included 209 consumers randomly selected.

Even though this is a relatively small sample, nevertheless, the responses from the survey can be considered as sufficiently indicative and can present information useful in creating marketing strategies for companies in terms of consumption and interest in organic dairy products in Republic of Macedonia.

The following text contains the working hypotheses, which have been formulated based on the established objectives of labor and tools of the marketing mix.

With the purpose of obtaining data for formulating sustainable marketing strategies and examining the correlation between the decision of buying organic dairy products and the four marketing elements (product, price, promotion, and place), the questionnaire contains certain questions that are based on these elements of marketing.

Hence, the formulation of the working hypotheses resulted as follows:

- (H1) The quality of the organic dairy product is an important factor in buying this type of product.
- (H2) The availability (distribution) of organic dairy products on the market has a significant impact on the purchasing of this type of product.
- (H3) Greater promotion of organic dairy products leads to greater purchasing of these products.
- (H4) The price is not a significant factor in the decision to purchase organic dairy products.

The SPSS 16.0 (Statistical Packages for the Social Sciences) and Microsoft Office Excel were used in processing and analyzing the data obtained by the questionnaire.

The descriptive analysis (Cross tabulation), the nonparametric test of significance Chi–square ($\chi 2$) and the correlation indicator Phi coefficient were all applied in examining the working hypothesis.

The test is based on null hypothesis, which means that there is no statistical significance between the two variables.

If $\chi 2$ calculated > $\chi 2$ theoretic for a significance limit $p < 0.05$, the null hypothesis is rejected then its alternative (H1) is allowed.

## Results and discussion

The significance of organic milk and dairy products, which present another opportunity for producers of milk and dairy products to offer the international market contemporary branded products that will satisfy the refined tastes of consumers, is gaining in relevance throughout the world.

They contain certificates as a guarantee for high product quality and safety that offers greater nutritional value and safety for consumers. In buying such products, customers are at the same time also supporting eco–agriculture, which enables the protection of the environment and thus ensures the health of the population as well as the fertility of the animals and of the land itself.

Such positive arguments for organic production show that this method offers several advantages, and therefore it is justly receiving greater popularity among consumers and greater support, and is applied by manufacturers throughout the world.

Directing economic entities towards organic production of milk and dairy products and their protection means implementing a contemporary concept of production, starting from animal feeding and husbandry, through production of raw milk and its processing in organic conditions and ending with the certification mark "organic product".

Organic production of milk and dairy products is experiencing greater expansion globally and can greatly influence the increase of production and demand for milk and dairy products.

There are strict rules for marking and labeling so that consumers may recognize organic products more easily. Therefore, the use of e national mark (label) for organic products produced in R. Macedonia is mandatory.

For this purpose, Republic of Macedonia has adopted a Rulebook on the form, content and color of the national label for organic products and the national label for organic products in transition.

The logo to be used for marking of organic products is prescribed in this Rulebook.

The main element of the label has the form of a plant–a tiller with five symmetrical green leaves. In the middle is a yellow circle that symbolizes the sun.

The word "organic" is written on the left side of the label and the word "product" on the right side.

The lower part has a green ellipsoid figure that represents a shade.

The increase in the production of organic dairy products is largely determined by organic livestock production.

The natural conditions that can be found on the territory of the Republic of Macedonia pose the greatest strengths, obtained from the SWOT analysis, in organic livestock–breeding in the country.

The traditional knowledge and skills of the farmers, as well as the relatively cheap labor that is available in the country are a strong incentive for even greater development of organic livestock production.

To these natural preconditions, as strengths, we will add the measures and actions taken by the state, such as: subsidizing livestock facilities, the developed system for labeling animals, the accreditation of control/certification bodies, as well as the coordinated action of the NGO sector. Furthermore, we will also mention the interest of trade chains for trading with domestic organic products of animal origin.

On the other hand, the lack of information and education of the majority of participants in organic production poses a problem which prevents quality growth of this type of production.

The limited availability of raw materials in the production, primarily in the purchasing of protein feed, is the result of the very frequent inadequate number of animals per size of arable land, mostly in the mountainous parts of the country.

If we see the strengths of this segment of agriculture, and at the same time improve its weaknesses, we come to the conclusion that traditional farming can be a strong link that can be used in the function of the development of organic production of dairy products by certified milk processing facilities, development of rural tourism, thereby enabling the revitalization of abandoned rural areas and stimulation of other economic activities within them.

The threats with which organic livestock production is faced can be manifested through a further reduction of livestock and degradation of pasture, which will result in a decrease in the production of livestock products and will cause greater dependence of the Republic of Macedonia from importing the same.

Global warming is just another negative factor which negatively affects the development of organic raising of domestic animals.

According to the Ministry of Agriculture, Forestry and Water Supply of the Republic of Macedonia (2013), sheep farming is the leading branch in organic livestock production (95% of organic production).

Goat breeding and cattle account for 2–3 % in organic livestock production.

As a result of the increase in the production capacities and the number of farmers who are joining the system of organic production, as well as the full implementation of the projected funds in recent years, financial support to organic production has been increasing from year to year.

Regardless of the situation, the number of companies–producers of milk and dairy products that have received certification for organic production of milk and dairy products is very small.

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Those that are oriented towards organic production have obtained certification for production of organic goat and sheep milk and organic goat and sheep cheese.

There is an interest among consumers for organic products, however, organized education is needed in organic production, adequate support from the state and an organized market.

The increased consumption of organic products opens many other opportunities, alongside the increased motivation of the organic producers of milk and dairy products to produce larger quantities of such products, there is an increasing interest of retailers for selling organic milk and dairy products in the domestic and foreign markets.

That is also the main reason why the subject of the conducted survey is the attitude and behavior of the consumers of organic dairy products in the Republic of Macedonia, which has the purpose of seeing just how much sustainable marketing tactics will contribute to the increase in the demand for these products.

Table 1 shows the characteristics of the surveyed consumers (survey sample) regarding age, gender, education level, employment status, total number of household members and their personal monthly income.

**Table 1.**

Survey sample (N=209)

| Characteristics | n | % | Characteristics | N | % |
|---|---|---|---|---|---|
| **Age** | | | **Number of household members** | | |
| 15–30 | 131 | 62.7 | 2 members | 22 | 10.5 |
| 31–50 | 59 | 28.2 | 3 members | 45 | 21.5 |
| > 51 | 19 | 9.1 | 4 members | 86 | 41.1 |
| **Gender** | | | more than 4 members | 56 | 26.8 |
| Male | 67 | 32.1 | **Monthly personal income** | | |
| Female | 142 | 67.9 | less than 10.000 den. | 18 | 8.6 |
| **Education level** | | | 10.000–30000 den. | 64 | 30.6 |
| Primary school | 2 | 1 | 30.000–50.000 den. | 92 | 44 |
| Secondary school | 58 | 27.7 | more than 50.000 den. | 26 | 12.4 |
| High school | 135 | 64.6 | | | |
| Other | 14 | 6.7 | | | |
| **Employment status** | | | | | |
| Employed | 92 | 44.1 | | | |
| Unemployed | 40 | 19.1 | | | |
| Pupil | 3 | 1.4 | | | |
| Student | 60 | 28.7 | | | |
| Retired | 14 | 6.7 | | | |

About 92 % of respondents have heard of "organic food", whereby, 41 % of them state that the source of information comes from advertising and contents on the Internet, followed by traditional media–TV, newspapers with 28.2 % and 11 % from the description and declaration of the package of the product.

Buyers of organic dairy products said that in the category of organic dairy products they most often buy hard or soft cheese (33 %), followed by milk (20 %) and yogurt dairy products (5.3 %).

About 1/3 of Macedonian consumers (31 %) are not familiar with any company in the country that offers organic dairy products, while 23 % of them know only one company that offers this type of product.

In the analysis of the age structure, the greatest number of respondents, about 42 % aged 31 to 50 years, are the consumers who buy organic dairy products most of all, followed by consumers aged 15 to 30 years (17 %), and only 6 % of the respondents aged 51–70 years.

It confirms the fact that older consumers are becoming more oriented towards buying quality and healthy dairy products and care more about their health and the protection of the environment.

The educational structure of the consumers also has a significant influence on the decision of the consumers.

Based on the conducted research, a conclusion can be made that respondents with a higher level of education are more oriented towards buying organic dairy products.

Hence, respondents with high education are the biggest consumers of organic dairy products (42 %), whereby, consumers with secondary education participate with 17 %.

This is linked with the knowledge and awareness of the importance of organic dairy products for the health of the respondents.

In terms of the employment status, those employed are the ones who usually buy organic dairy products (28 %), followed by students (20 %), unemployed (11 %) and retired persons (5 %).

This can be also confirmed by the fact that according to the level of monthly personal incomes generated by the consumers, most of the respondents who buy organic dairy products are those that generate a monthly income of 30.000 to 50.000 denars per month (33 %), followed by consumers with an income of 10.000 to 30.000 denars (18 %) and those with an income above 50.000 denars (7 %) and the lowest percentage is of those who earn incomes less than 10.000 denars.

This results from the fact that organic dairy products cost more than traditional dairy products, and consequently consumers who are employed and who have higher incomes are those that mostly buy and consume organic dairy products in R. of Macedonia.

The results of the survey confirm that the respondents are aware that the production of organic dairy products enables the preservation of the environment and that it contributes to sustainable development.

In fact, about 84 % of them consider that this production preserves the environment and contributes to sustainable development, contrary to the 1.4 % who do not agree and 15 % who stated that they do not know.

***Analysis of the link between the purchasing of organic dairy products and the elements of the marketing mix.***

In the questionnaire, the following items were given as reasons for buying organic dairy products: good quality product, for the children, at the recommendation of a doctor or nutritionist, due to health reasons, reasonable price, and more.

| | H2 | H3 | H4 |
|---|---|---|---|
| **Chi–Square** | 36.890[1] | 4.611[2] | 13.318[3] |
| **Df** | 2 | 1 | 2 |
| **Asymp. Sig. (2–sided)** | .000 | 0.032 | 0.01 |
| **Phi** | 0.42 | 0.149 | 0.252 |

The results of the survey confirm that more than half (51 %) of the respondents emphasize the quality of the product as the most important factor in buying this type of product and 28 % of the respondents ranked health as second most important.

As a result of the type of question, a simple statistical calculation was applied for checking the first working hypothesis.

Hence, it can be noted that the first hypothesis (H1) is confirmed in that the quality of the organic milk product does represent an important factor in buying these products.

The Table 2 below shows the results of the data processing for the other three working hypotheses using Chi–Square and Phi coefficient.

**Table 2.**
Results from the Chi–Square and Phi coefficient

Source: Analysis of results from own research (January–February 2016)
1 The minimum expected count is 19.38.
2 The minimum expected count is 12.56
3 The minimum expected count is 6.46.

From the Table above we can notice that the correlation, between the availability (distribution) of organic dairy products on the market and the buying of this type of product, is statistically significant.

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This correlation p<0.05 (in this case it is .000), indicates a significant relationship between these two variables.

Phi coefficient is 0.420 which shows a moderate (average) correlation (relationship) between the buying of organic dairy products and their availability on the Macedonian market.

Hence, hypothesis H2 is confirmed–the availability (distribution) of organic dairy products on the market has a significant impact on the purchasing of this type of product.

The statistical test for the third working hypothesis H3–greater promotion of organic dairy products leads to greater purchasing of these products, indicates that there is very little statistical significance (p =0.032), and χ2 calculated <χ2 theoretic (4.611 <12.56).

Therefore, the working hypothesis H3 is rejected and the null hypothesis–greater promotion leads to greater purchasing of organic dairy products is accepted.

The results of the survey also confirm the last working hypothesis H4–the price is not a significant factor in the decision on buying organic dairy products.

The results in the Table indicate that there is statistical significance between these variables.

In this relationship P> 0.005 and is 0.001, while the Phi coefficient is 0.149 indicating a certain correlation between the price and the purchasing of organic dairy products.

Hence, the last hypothesis is accepted.

Figure 1 provides an illustrative display on the willingness of consumers to buy organic dairy products regardless of their prices.

64.2 % of the respondents purchased organic dairy products, of which 61.2 % stated they would buy regardless of the price of these products.

Furthermore, of those who did not buy (35.9 %) almost 39 % stated that they would like to buy regardless of the price and about 55 % do not know what decision they would bring.

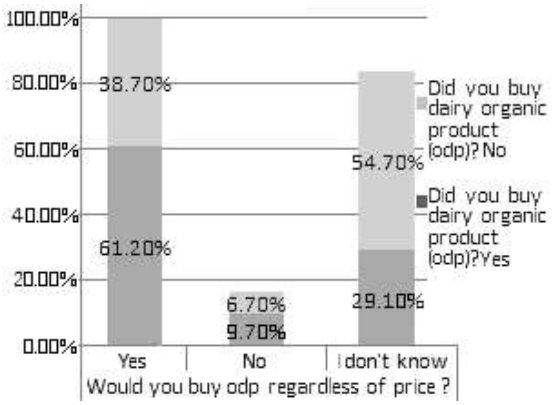


*Figure 1.* Willingness to buy organic dairy products regardless of their prices
Source: own research January–February 2016

Based on the previous analysis, a conclusion can be drawn in that good quality and better availability of organic milk products on the Macedonian market may contribute to the higher consumption of the same products.

Although the results showed that promotion is not crucial for a greater consumption of these products, still, one must not exclude the fact that the lack of information on organic dairy product was given as a reason by 55 % of the respondents who did not buy organic dairy products.

## Conclusions

Macedonian companies that wish to build sustainable marketing strategies must take into consideration the characteristics of their current and future customers and their changed behavior in the new environment, where information and communication technologies become dominant in the life and work of people and modern life inflicts greater attention to nourishment in order to maintain the health of people and protection of their own environment.

In today's information society, Macedonian consumers point out the need of finding information on the Internet regarding the characteristics and experiences of using the products and services, therefore, the Internet media must be taken into account in their strategies, as a source for a closer

cooperation with the customers and promotion of their organic products.

There is a significant correlation between the amount of the monthly household income and the buying of organic dairy products.

Good product quality and caring for one's own health are decisive factors for the buying of organic dairy products.

Respondents who did not buy this type of product stated the lack of awareness and unfamiliarity with these products as the main reasons.

Therefore, companies need to draw more attention to providing information and informing future consumers on the benefits of this type of product.

The statistical analysis confirmed the connection between good quality and product availability, on one side, and the decision to buy organic dairy products, on the other side.

It was also determined that the price of the product is not the major deciding factor for buying, as is the case with the larger promotion.

Promotion is needed for the Macedonian market, for the purpose of getting to know better the benefits of consuming the product, however, it should be taken into consideration that greater promotion does not necessarily mean that there will be greater consumption.

The study also provides the characteristics of the Macedonian buyers of organic dairy products, in that these are consumers aged 31 to 50 years (as the greatest consumers), with a high education, mostly employed, but that students are also important and those who have a monthly household income of 30.000 to 50.000 denars.

Macedonian consumers of organic dairy products respect the good quality of the product and consider the Internet as the main source of information.

An increasing part of consumers in Republic of Macedonia know what organic agriculture is and they know the value of organic food, yet there is much more to be done in this area.

In order to create a domestic supply and demand of organic products, constant informing is necessary and raising consumer awareness through appropriate campaigns, promotions and other information tools.

Certain entities, primarily companies, have established export ties with EU countries on an individual basis, but there is still no organized export of organic products.

This strategic objective will be implemented upon the realization of the previous objective, namely, after the supply and demand have increased in the domestic market and after the quantity of organic products in the Republic of Macedonia has increased.

Then, activities can be undertaken in the direction of establishing stable export relationships with the EU and beyond.

Also, serious actions need to be made in promoting organic food from Republic of Macedonia, through appearances at international fairs and similar events.

## References

1. Barbat, C.; Rodino, S.; Petrache, P.; Butu, M.; Butnariu M. Microencapsulation of the allelochemical compounds and study of their release from different products. *Digest Journal of Nanomaterials and Biostructures*, **2013**, 8 (3), p. 945–953.
2. Butnariu, M. Detection of the polyphenolic components in *Ribes nigrum* L. *Annals of Agricultural and Environmental Medicine*, **2014**, 21(1), p. 11–14.
3. Butnariu, M.; Caunii, A. Design management of functional foods for quality of life improvement. *Annals of agricultural and environmental medicine*, **2013**, 20(4), p. 736–741.
4. Butnariu, M.; Caunii, A.; Putnoky S. Reverse phase chromatographic behaviour of majorcomponents in *Capsicum Annuum* extract, *Chemistry Central Journal*, **2012**, 6(1), p. 1–6.
5. Butnariu, M.; Goian, M.; Ianculov, I.; Gergen, I.; Negrea P. Studies about $CO^{2+}$ ion influence on soy plants development and acumulation of other chemical elements (Iron, magnesium, calcium, potassium and

phosphorus). *Revista de Chimie*, **2005**, 56(8), p. 837–841.
6. Butnariu, M.; Rodino, S.; Petrache, P.; Negoescu, C.; Butu, M. Determination and quantification of maize zeaxanthin stability, *Digest Journal of Nanomaterials and Biostructures*, **2014**, 9 (2), p. 745–755.
7. Butnariu, M.; Samfira, I. Free Radicals and Oxidative Stress, *Journal of Bioequivalence & Bioavailability*, **2012**, 4(3): 1.
8. Butu, A.; Rodino, S.; Golea, D.; Butu, M.; Butnariu, M.; Negoescu, C; Dinu-Pirvu, C.E. Liposomal nanodelivery system for proteasome inhibitor anticancer drug bortezomib, *Farmacia*. 2015, 63(2), p. 224–229.
9. Comakli B.; Mentese O.; Koc A. Nitrogen fertilizing and pre–anthesis cutting stage improve dry matter production, protein content and botanical composition in meadows. *Acta Agriculturae Scandinavica: Section B, Soil & Plant Science*, **2005**, 55(2), p. 125–130.
10. David P.; Charles M.; Douglas G. Herbage Productivity and Botanical Composition of Hill Pasture as a Function of Clipping and Site Features. *Agronomy Journal*, **2002**, 94(2), p. 351–358.
11. Elgersma, A.; Waver, A.C.; Nalecz–Tarwacka, T. Grazing versus indoor feeding: effects on milk quality. In: Sustainable Grassland Productivity, Eds. J. Loveras, A. Gonzalez–Rodriguez, O. Vazkequez–Yanez J. Pineiro, O. Santamaria, L. Olea and M.J. Poblaciones. *Grassland Science in Europe*, **2006**, 11, p. 419–427.
12. Ianculov, I.; Palicica, R.; Butnariu, M.; Dumbrava.; D. Gergen, I. Obtinerea in stare cristalina a clorofilei din cetina de brad (*Abies alba*) si de pin (*Pinus sylvestris*). *Revista de Chimie–Bucharest*, **2005**, 56(4), p. 441–443.
13. Jancovic, J.; Vozar, L.; Durkova, L. Botanical and production changes in phytocenosis after cessation of mineral fertilizing. *Acta Fytotechnica et Zootechnica, (Slovak Republic)*, **2000**, 3(2), p. 29–31.
14. Kozhuharov, Ya. Developing of optimal fertilizer combinations and time of application on permanent grasslands of the *Agrostis capilaris–Festuca fallax* type. *Journal of Mountain Agriculture on the Balkans*, **2002**, 1(5), p. 352–359.
15. Lidanski, T. Statistical methods in biology and agriculture, *Zemizdat, Sofia*, **1988**, p.150–187.
16. Mihailova, P.; Tzvetkova, E. Nutrient elements leaching in ecosystems of forage crop grown on Dystryc Planosols. *Journal of Balkan Ecology*, **2000**, 3–4, p.48–55.
17. Negrea, P.; Caunii, A.; Sarac, I.; Butnariu, M. The study of infrared spectrum of chitin and chitosan extract as potential sources of biomass, *Digest journal of nanomaterials and biostructures*, **2015**, 10(4), p. 1129–1138.
18. Odzhakova, Ts. Changes in composition and nutritive value of natural grass stands in the region of Middle Rhodopes. *Book of Papers, Stara Zagora*, **2001**, 3, p. 95–99.
19. Pavlov, D. Increasing utilization of nature resources and nature grass associations for development of rural areas. *Journal of Mountain Agriculture on the Balkans*, **2007**, 10(1), p.37–64.
20. Petrache, P.; Rodino, S.; Butu, M.; Pribac, G.; Pentea, M.; Butnariu M.; Polyacetylene and carotenes from *Petroselinum sativum* root, *Digest Journal of Nanomaterials and Biostructures*, **2014**, 9(4), p. 1523–1527.
21. Rodino, S.; Butu, M.; Negoescu, C.; Caunii, A.; Cristina, R.T.; Butnariu M. Spectrophotometric method for quantitative determination of nystatin antifungal agent in pharmaceutical formulations. *Digest Journal of Nanomaterials and Biostructures*, 2014, 9 (3), p. 1215–1222.
22. Samfira, I.; Butnariu, M.; Rodino, S.; Butu, M. Structural investigation of mistletoe plants from various hosts exhibiting diverse lignin phenotypes, *Digest Journal of Nanomaterials and Biostructures*, **2014**, 8(4), p. 1679–1686.
23. Samfira, I.; Rodino, S.; Petrache, P.; Cristina, R.T.; Butu, M.; Butnariu, M. Characterization and identity confirmation of essential oils by mid infrared absorption spectrophotometry, *Digest Journal of Nanomaterials and Biostructures*, 2015, 10(2), p. 557–565.
24. Sandev, S. Chemical analysis methods for feed, **1979**, 123–184.

25. Sebastian, K., Anne Richter, G. Kemmerman, N, Hofmann, M., Johannes, I. Plant species richness and composition in managed grasslands: The relative importance of field management and environmental factors. *Biological Conservation*, **2007**, 134(4), p. 559–570.
26. Stoeva, K.; Yancheva, H.; Todorova, P. Characterization of natural grass stands in the region of Strandzha. *Book of Papers from Scientific Conference with International Participation*, **2002**, 2, p. 227–229.
27. Todorova, P. Biodiversity and ecological evaluation of natural grass stands in the conditions of Central Balkan Mountains. *National Scientific–Practical Conference with International Participation 'Man, Nature, Health'*, **2000**, 1, p. 50–55.
28. Vasileva, V. Root biomass accumulation in vetch (*Vicia sativa* l.) after treatment with organic fertilizer, *Banat's journal of biotechnology*, **2015**, 7(11), p.100–105.
29. Vuteva, V. Climatic parameters and vegetative changes in some grass ecosystems in the region of Sakar. *Ecology and Future*, **2003**, 2, p. 38–45.
30. Yakimova, Ya.; Dzhumalieva, D. Improvement and use of natural meadows and pastures, **1977**, *Zemizdat, Sofia*.

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