

# Economic Validity of Organic Raspberry Production as a Challenge for Producers in Bosnia and Herzegovina<sup>1</sup>

Radomir Bodiroga<sup>\*</sup>, Zorica Sredojević<sup>\*\*</sup>

<sup>\*</sup> University of East Sarajevo-Faculty of Agriculture, Vuka Karadzica 30, East Sarajevo, Bosnia and Herzegovina

e-mail: radomir.bodiroga@gmail.com

<sup>\*\*</sup> University of Belgrade-Faculty of Agriculture, Institute of Agroecology, Nemanjina 6, 11080 Belgrade-Zemun, Serbia

e-mail: zokas@agrif.bg.ac.rs

## Abstract

*In this paper the focus of the research is the specificities of organic production and the possibilities of organic raspberry cultivation on family farms of Bosnia and Herzegovina. On the basis of the data collected from the raspberry growers survey, as well as the technical-technological standards for the appropriate breeding technologies, the initial economic parameters for economic analysis were determined. Calculations of average revenues and expenditures for representative years of raspberry production, and those based on them were prepared; the cash flows and compiled profit and loss accounts for the period of the next five years of operation were projected. By applying the static methods, the indicators of economic validity for raspberry production are calculated. With that, the following are determined: average net profit, accumulation rate, time period of return of the invested capital in raspberry production, etc. Finally, a comparison of economic indicators with different ways of raspberry cultivation was made. On the basis of the results obtained, the conclusion was that the production of raspberries is profitable in both ways, but more favourable economic results are achieved in organic than in conventional production. Despite numerous shortcomings and risks, the results of the research indicate that in Bosnia and Herzegovina there are significant natural potentials and opportunities for the improvement of organic production.*

**Keywords:** organic production; raspberries; economic indicators; comparisons.

**JEL Classification:** Q10; Q12; Q16.

---

<sup>1</sup> The paper is part of the research projects number: 179028 - The rural labor markets and rural economies Serbia - diversification of income and poverty reduction; and 46009 - Improvement and development of hygienic and technological procedures in the production of foodstuffs of animal origin in order to obtain high-quality and safe products competitive on the world market, funded by the Ministry of Education, Science and Technological Development of Republic of Serbia, in the period 2011-2017

## Introduction

Nowadays, the needs of preserving life resources through their rational use and the development of sustainable agricultural production are globally examined. Although the sustainability in agriculture is linked to wider issues of the global economy, such as the reduction of oil reserves and the production of food for a growing number of people in the country, the direction of agricultural production towards sustainable development has come from "small" producers, environmental organizations and individual experts (Kovačević and Milošević, 2015). The intensive agricultural production affects negatively the land as the basic agricultural resource. The qualitative properties of the land deteriorate to a lesser or greater extent depending on the way they are being managed. The land is contaminated by the use of different types of herbicides, insecticides, fungicides, mineral fertilizers and the like. In addition to being toxic for the agricultural producer himself, they pollute the water-courses, endanger the useful micro-flora, and wild animals. In recent decades there has been a decrease in the diversity of cultivated plants, many genotypes are completely lost, and the genetic basis of most major crops becomes uniformed. Modern agriculture has led to a very simplified structure of agro-ecosystems, reducing biodiversity to a very small number of cultivated plants (Oljača, 2005).

In conventional agriculture, efforts are made to achieve as much production as possible with the least possible investment in labour, which has negative consequences for both the environment and the most important agricultural resources. To this day, the human influence on the environment has taken on such proportions and forms that seriously endanger the future of mankind, as the biosphere is being increasingly polluted by various forms of substance and energy, thereby disturbing the dynamic balance of the ecological system. For this reason, it is imperative to impose the need to return to primal natural laws, which condition the physical existence of individuals, populations and all kinds of living beings of plant and animal origin (Mladenović and Nedić, 2005). Bearing in mind the aforementioned and a number of other negative consequences of intensive agriculture, there is an increasing number supporters of agricultural production based on different principles. Different forms of ecological agricultural production (biological, organic, etc.) are elements of sustainable development and sustainable agricultural production. Such forms include the application of methods that encourage natural biological cycles to protect ecosystems, and in the function of producing healthy food. Sustainability implies a backbone of past experience, the adoption of production that will achieve high yields and profits, without degradation of natural resources on which agricultural production is based (Kovačević and Milošević, 2015). Organic agricultural production, whose synonyms are also ecological or biological agriculture, originated at the very beginning of the 20th century from the theory and practice of three types of agricultural production that were carried out mainly in the Northern European countries: Biodynamic agriculture, represented in Germany by the initiator Rudolf Steiner, organic farming in the soil of England, whose theoretician was Albert Howard and biological agriculture that developed in Switzerland under the influence of Hans-Peter Rusch and Hans Muller (cit. Hristov and Relić, 2005). According to the International Federation of Organic Agriculture Movements (IFOAM, 2017) organic agriculture is defined as a production system that maintains soil, ecosystems and human health. Modern organic agriculture is being developed on ecological principles, which at the same time means economic production along with preserving agro-ecosystems and ecosystems. It implies the production of high-quality, sanitary safe, controlled and certified food that satisfies the needs of modern consumers, contributes to the rational use of resources and the preservation of the environment. The profitability of this type of agriculture is usually better than the conventional type, as it is in accordance with the wishes of a certain number of consumers. It should be emphasized that it originated not for the sake of profitability but because of sustainability (Lesar, 2010; cit. Kovačević and Milošević, 2015).

The fact that organic products have significantly higher prices on the market than conventional ones does not diminish the demand for them, primarily because the organic product is considered to be healthier and thus more welcome in human nutrition. Organic products are increasingly gaining popularity in the world, the demand of them is growing, and along with the demand, the economic viability of this type of agricultural production is growing. Bearing this in mind, the focus is set on the state of organic production in Europe, the opportunities and challenges for its more successful development in Bosnia and Herzegovina, as well as the economic viability of switching from conventional to organic production, taking organic raspberry cultivation as an example. In this paper, the subject of the research paper is the economic analysis of raspberry cultivation on the family farms, and the starting hypothesis is that raspberry production in Bosnia and Herzegovina provides a fairly safe income to breeders. Therefore, the main objective of this research is to determine the profitability of this production from the aspect of the producer (breeder) based on the invested assets and the achieved financial results per area unit.

## **Material and Methods**

During the year of 2017, in the selected family farms in the territory of Bosnia and Herzegovina a survey was conducted and the technical-technological and organizational-economic conditions for the development of organic production were considered on the basis of the data obtained. In addition, the economic feasibility of such production from the aspect of the producer on the example of raspberry cultivation was determined. On the basis of calculations in different conditions of raspberry production per area unit (Sredojević and Simić, 2016), the input-output amounts for the next five-year period were designed and economic indicators of validity of this fruit from the aspect of the producer were determined. Statistic and static calculation methods were used. The following economic indicators were determined: the coefficient of economy, the average net profit, the accumulation rate and the time of the investment return for both production methods.

By using the SWOT analysis, opportunities, weaknesses, threats and hazards for improving of organic production in Bosnia and Herzegovina have been identified.

## **Results and Discussion**

### **Organic production in Europe and the environment of Bosnia and Herzegovina**

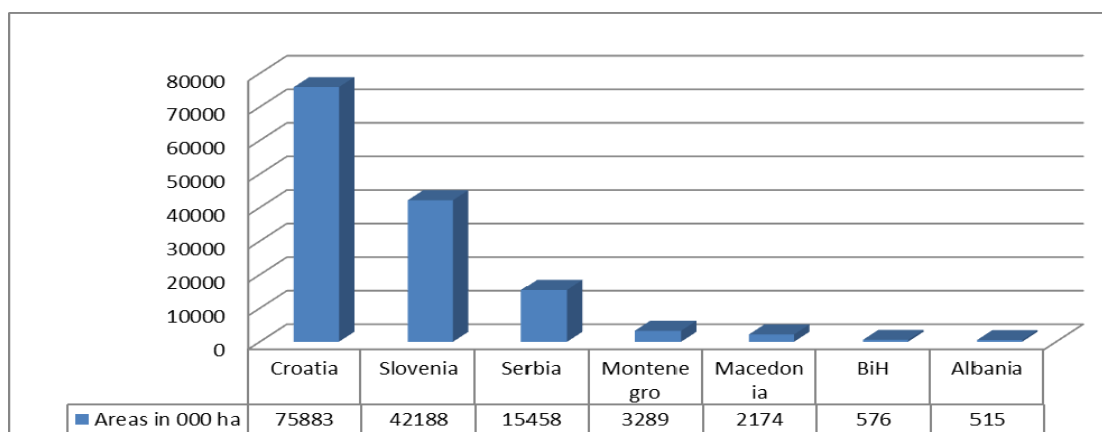
The share of organic production in total agricultural production has significant oscillations in the member states of the European Union. Despite this, the market for EU organic products is one of the most developed in the world. Some of the basic indicators of organic production and consumption of both the European countries and EU member states as a whole, as well as the individual members, ending in 2015 are listed in Table 1. According to the same data, compared to other European countries, the countries of the European Union have a greater share of organic than in total agricultural land as well as higher consumption per capita. Spain has the largest areas under organic agriculture, while Serbia has recorded the highest increase in organic agricultural areas in 2015 (Table 1). In the countries of the European Union, twelve associated members (Bulgaria, Estonia, Latvia, Lithuania, Malta, Poland, Romania, Slovenia, Slovakia, the Czech Republic, Hungary, Cyprus), EFTA countries (Iceland, Liechtenstein, Norway, Switzerland) and countries like Bosnia and Herzegovina, Croatia and Serbia, organic production is in total about 4.3 million hectares (Radosavljević et al., 2014).

**Table 1.** State of organic production in Europe and the European Union in 2015

Indicator	Europe	European union	Top 3 countries in Europe
Areas under organic agric.	12.7 million ha	11.2 million ha	Spain 1.97 million ha Italy 1.49 million ha France 1.37 million ha
Share of organic in the total agricultural area	2.5%	6.2%	Liechtenstein (30.2 %) Austria (21.3 %) Sweden (16.9 %)
Growth of organic agricultural areas in % from 2014 to 2015	8.2	7.8	Serbia (+60 %) Bulgaria (+59 %) Russian Federation (+57 %)
Consumption per capita	36.4 €	53.7 €	Switzerland 262 € Denmark 191 € Sweden 177 €
Areas for collecting wild plants	17.7 million ha	15.4 million ha	Finland 12.2 million ha Romania 1.8 million ha Bulgaria 0.9 million ha

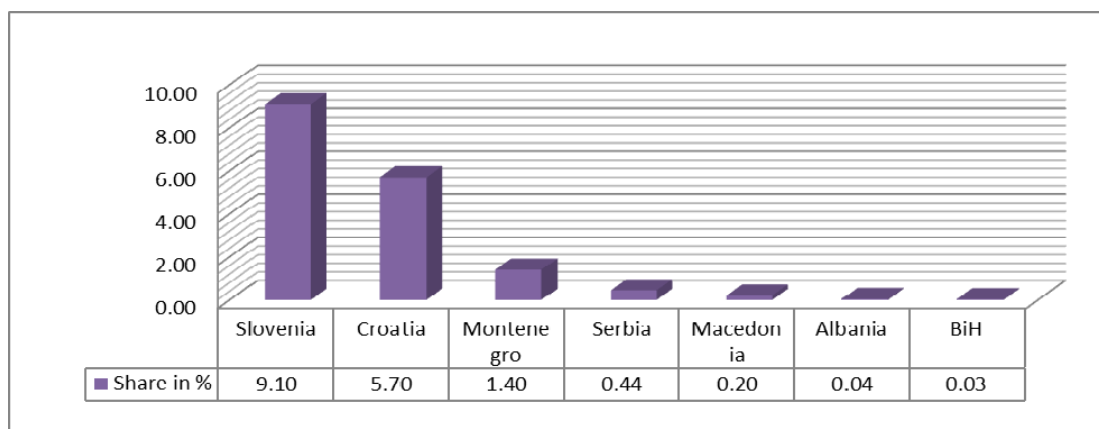
Source: FIBL-AMI, 2017.

In conventional agricultural production, Bosnia and Herzegovina (B&H) is not competitive in comparison to developed European countries. However, according to available resources for organic production, it may take a significant place (Graph 1). Uncontaminated soil, water and air provide all the preconditions for dealing with this type of production.

**Chart 1.** Agricultural areas under the organic production of countries in the region

Source: FIBL-AMI, 2017

When it comes to areas of organic production, B&H is at a fairly low level. With 75,883,000 ha under organic production, Croatia is the leader in the region, while the smallest area under this kind of production system is Albania, only 515,000 ha. If we take into account the participation of areas under organic production in the total agricultural area, the situation is slightly different. Slovenia is leading the region, while Bosnia and Herzegovina has the least participation (Chart 2).



**Chart 2.** Share of areas of organic production in total agricultural land by individual countries in the region

Source: Authors' calculation on the FIBL-AMI database, 2017

According to the participation of areas of organic production in the total agricultural land of some countries in 2015, B&H takes a rather weak position compared to other European countries. Only Andorra follows Bosnia with 0.01% of the area under organic production. For Bosnia and Herzegovina to join into the European Union, one of the conditions is it should be a minimum of 3% under organic production in the structure of agricultural land. Therefore, it is necessary to take more effective measures to fulfill the stated conditions. On a significant number of family farms, traditional agricultural production takes place, neither with the use of synthetic chemicals for protection nor mineral fertilizers and other inputs that are not allowed in organic production.

An organic production law on the territory of B&H does not exist, but it has been adopted at the entity level. The Law on Organic Food Production in the Republic of Srpska was adopted in 2004, while in the Federation of Bosnia and Herzegovina the Law on Organic Agricultural Production was adopted only in 2016. In addition to the lack of a unique law, organic production in Bosnia and Herzegovina is accompanied by other aggravating circumstances. For example, the Organic Production Law provides for the use of seed or planting material that originates from organic production, which is an additional problem for potential producers. Then, the owners of agricultural livestock holdings who are trying to obtain organic production certificates face the difficulties of complying with the rules on disposal and handling of organic fertilizers. By developing cooperation with producers of organic production from the region, with the mutual support of the need for continuous organic production, more efficient procurement of necessary inputs and realization of final products can be done.

Organic control (accredited by IFOAM), BeHaBiocert, Swedish KRAV, German-Swiss Institute of Macroecology IMO and others are involved in the certification of organic production in the territory of Bosnia and Herzegovina. The largest percentage of exported organic products from Bosnia and Herzegovina are wild and forest fruits.

### **Economic analysis of organic production in family farms**

One of the basic motives of the agricultural producers when switching to organic production is certainly its economic viability. There are different indicators that can be used to measure economic effectiveness depending on the aim and purpose of the measurement. The level of profits is used as one of the most common indicators. Definitions of profit can have different variants. According to the net of accounting data (FADN), family farm income is determined by several components given in Table 2.

**Table 2.** Profit components according to the FADN definition

Farm outputs	<ul style="list-style-type: none"> <li>• Market revenues from the selling of agricultural products</li> <li>• Subsidies and compensatory payments</li> <li>• Other farm income (rent, contractual work for others, etc.)</li> <li>• Net value of inventory change</li> <li>• Value of products used for the needs of the farm</li> </ul>
Farm costs	<ul style="list-style-type: none"> <li>• Specific costs / variable costs</li> <li>• Overheads (including depreciation)</li> <li>• Fees paid to seasonal and non-family workers</li> <li>• Interest on borrowed capital</li> <li>• Paid rents</li> </ul>
Farm profit	= outputs – costs

Source: Offerman and Nieberg, 2000.

Profitability of organic production depends on several factors, such as: production extent, production costs, finished product prices, technical and technological equipment, marketing development, presence of subsidies and the like. The yields and prices of the finished product have a dominant influence on the economic result. In most cases, the yields are lower in organic production compared to conventional, while the situation is reverse when it comes to the selling price of the product. For example, wheat from organic production is sold on the market at prices up to 50-200% higher than wheat prices from conventional ones, while potato prices are higher than 50% and up to as much as 500% (Offerman and Nieberg, 2000).

Nevertheless, high prices do not diminish the demand for organic products, because they contain not only the costs of its production, but also a number of other benefits for man and his environment. According to the FAO, the most significant advantages of organic production are:

- environment protection;
- avoiding future costs to reduce pollution;
- avoiding health risks for farmers due to inadequate handling of pesticides and avoiding future medical costs;
- higher standards for animal welfare and the like.

The structure of organic production costs is slightly different in comparison to conventional production. In addition to the standard costs that are present in conventional farms (depreciation, rent, interest on borrowed capital, etc.) in organic production there are other specific costs. One part of these costs is related to conversion, while others are characteristic of current production. The specific costs of organic production can be divided into production costs, certification costs and marketing costs, as set out in Table 3.

**Table 3.** Cost structure characteristic for organic production

Type of costs	The initial costs of switching to organic production	Current costs of organic production
<i>Production costs</i>	Conversion costs Losses in production Investments in infrastructure	Control and fight against pests Works on the land
<i>Certification costs</i>	Household certification costs The costs of establishing a farmers' association Costs of bookkeeping, training, meetings	Visits and inspection controls Keeping accounting records Training and meeting costs

Table 3 (cont.)

<i>Marketing costs</i>	Investing in objects Development of marketing skills	Marketing management costs Development of marketing skills
------------------------	---	---

Source: FAO, 2007

Reducing costs and thus achieving greater profit in organic production can be achieved by some of the following activities (Simin-Tomaš and Miloradić, 2014):

- by recycling material from the farm as much as possible, which means organic waste composting in order to reduce the cost of fertilizers;
- by minimizing external inputs by creating a closed production cycle on the holding;
- By reducing labour costs through the use of preventive measures against diseases, pests and weeds;
- by engaging in various forms of associations, cooperatives, clusters and other forms of organization.

The more reliable evaluation of the difference in economic performance between conventional and organic production in the holding can be obtained by differential calculation. By applying this method, changes in the financial result in production ( $\Delta FR$ ) are determined, which are derived from the change in the value of output ( $\Delta VO$ ), the amount of changes in total external costs ( $\Delta TEC$ ), i.e.  $\Delta FR = \Delta VO - \Delta TEC$ .

Change in the total value of production at the farm level implies changes in the value of external realization (without evaluating the value of products used on the holding). When calculating changes in total external costs, only costs that change with the change in volume, mode or structure of production (variable costs) are taken into account. In this case, a family farm was analysed, with only one line of fruit production, that is, raspberry production. Here, the assumption is that the farm in conventional and organic production operates in the same organizational and economic conditions, so the calculated change is only based on input-output parameters with different raspberry cultivation technology. In this case, the values of differentiated calculations were used for different ways of production of raspberries per unit area (Sredojević and Simić, 2016), which are given in Table 4.

**Table 4.** Differential calculation for 1 ha of raspberries

Economic indicators	Sum (EUR)		
	Conventional production (I)	Organic production (II)	Difference (I-II)
<i>I Cash benefits</i>			
Yield	<b>16,700.00</b>	<b>18,400.00</b>	<b>1,700.00</b>
Incentives			
<i>II Cash issues</i>			
Seeds			
Fertilizers			
Mineral	2,230.00		2,230.00
Organic		2,215.00	-2,215.00
Protective means			
Chemical	1,860.00		1,860.00
Biological		1,970.00	-1,970.00
Mechanical services	2,410.00	1,395.00	1,015.00
Work of the workers	2,040.00	1,635.00	405.00
Certification and control		165.00	-165.00
Insurance premium	340.00	590.00	-250.00
Rate			
Other costs	320.00	630.00	-310.00
<b>Total II</b>	<b>9,200.00</b>	<b>8,600.00</b>	<b>600.00</b>
<i>III Financial result (I-II)</i>	<i>7,500.00</i>	<i>9,800.00</i>	<i>+2,300.00</i>

Source: Sredojević and Simić, 2016

According to the calculated indicators in Table 4, by the comparison between conventional and organic raspberry production in the analysed year a financial result of organic production for EUR 2,300 per hectare is more favourable than in the conventional one. So, organic production is in this case more profitable than conventional. Profitability of investing in raspberries depends on a number of factors, such as: market conditions, supply, demand, input and output parities, and others (Sredojević et al., 2013). Similarly, differential calculations can be applied to other production lines, whereby information about the difference in profit for the entire household can be obtained. Using the data from differential calculations, a cash flow projection can be made at farm level to obtain more complete information on the cost-effectiveness of switching to the organic production method.

The level of profitability achieved by the production of raspberries depends on the aggregate production volume and the purchase prices, and can be increased by reducing production costs, increasing the yield per unit area, and by better organization of the production and purchase of raspberries. This production requires greater labour force participation, which contributes to the employment of the local population, and also gives positive social effects (Kljajić et al., 2017).

With the projection of cash flows for the next five-year period, with the assessment of certain business risks, the agricultural producer acquires a wider insight into the movement of revenues and expenditures in conventional and organic production. The data from the raspberry production calculation for 2016 were used as the starting parameters for cash flow planning (Table 4). During the projection, potential risks, such as production, economic, market and the like are taken into account. Although there are deviations in the market for the projection of cash flows into raspberry production, the assumption is that the market price will be the same during the observed period. Projected cash flows and more important business indicators for the next five-year period in different raspberry production conditions per unit area are given in Table 5.

**Table 5.** Cash flows of different types of raspberries (€/ha)

No.	Indicators	Amounts by years (€)				
		1 year	2 year	3 year	4 year	5 year
<i>Organic production</i>						
<b>I</b>	Total revenues	18,400	17,000	17,000	19,000	19,500
<b>II</b>	Total expences	8,600	8,000	7,500	7,000	7,300
<b>III</b>	Gross profit	9,800	9,000	9,500	12,000	12,200
<b>IV</b>	Income tax	980	900	950	1,200	1,220
<b>V</b>	<b>Net profit</b>	8,820	8,100	8,550	10,800	10,980
<i>Conventional production</i>						
<b>I</b>	Total revenues	16,700	15,900	15,300	17,000	18,000
<b>II</b>	Total expences	9,200	7,500	8,000	8,500	7,800
<b>III</b>	Gross profit	7,500	8,400	7,300	8,500	10,200
<b>IV</b>	Income tax	750	840	730	850	1,020
<b>V</b>	<b>Net profit</b>	6,750	7,560	6,570	7,650	9,180

Source: Calculation of the author according to the calculation data for raspberry production on the holding

During the observed period in conventional raspberry production, net profit per year of production varied from a minimum of 6,570 €/ha to 9,180 €/ha in the last year of the projected period. In the same period, net profit in organic raspberry production is higher in all years observed individually, ranging from 8,100 €/ha to 10,980 €/ha. The lowest expenditure is expected in the fourth year when it comes to organic and in the second year when it comes to conventional production.



Static methods can be used to determine the economic efficiency of production, and to make final decisions in terms of economic viability for the agricultural producer. According to the projected indicators in Table 5, by using static methods, the calculation method determines the coefficient of economy, average net profit, accumulation rate and return time of the investment. Amounts calculated of individual indicators of economic justification for raspberry production per unit area in both conventional and organic conditions are given in Table 6.

**Table 6.** Indicators of economic justification for raspberry production per 1 ha

<b>Indicators</b>	<b>Conventional production</b>	<b>Organic production</b>
<i>Total investments (€)</i>	9,000	10,000
<i>Coefficient of economy</i>	1.82	2.14
<i>Average net profit (€)</i>	7,542	9,450
<i>Accumulation rate (%)</i>	83.8	94.5
<i>Investment return time (year)</i>	1.19	1.06

Source: Calculation of the author on the database for the five-year period of exploitation of raspberry plantation

The value of the coefficient of economy is greater than one for both production methods, which means that raspberry production is economical. However, in organic production for 0.32 €, the total amount of total revenues per 1 € of expenditures is higher than in the conventional one. Other analysed indicators point to a higher economic efficiency of organic production. The average net profit is 1,908 € higher than the same indicator in conventional production. Both production methods have an average net profit greater than the limit value, which indicates that the conventional production method has satisfactory economically justifiable value.

The accumulation rate as one of the analysed indicators shows the economic acceptability of raspberry production, and also shows higher values in organic production. Invested capital in organic raspberry production can be returned for 1.06 years, which is shorter in relation to the other observed way for 0.13 years. The value of this indicator in both production modes is less than the minimum period of five years analysed, which indicates the economic justification for raspberry production in both ways.

Taking into account the results of the differential calculations, the projected cash flows, and the values of the established economic indicators, it can be concluded that the organic method of raspberry production is more profitable than conventional under the same conditions. Economic analysis shows that the conversion from conventional to organic raspberry production would result in better economic performance of the analysed household.

### **SWOT analysis of organic production in Bosnia and Herzegovina**

The transition to the organic farming method in the household, in addition to the analysis of economic viability, implies the analysis of the market and other factors in Bosnia and Herzegovina in order to identify favourable opportunities and risks of this type of production.

Using the SWOT analysis in the Bosnia and Herzegovina environment, the strengths, weaknesses, threats and possibilities of organic production were examined (Table 7).

**Table 7.** SWOT analysis of organic production in Bosnia and Herzegovina

<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> <li>• Available and preserved land resources suitable for organic agricultural production;</li> <li>• On a significant number of farms, traditional agricultural methods are represented, which facilitates the transition to organic farming;</li> <li>• Increased interest of the younger population in farms for organic production orientation;</li> <li>• A higher price of organic products is achieved in comparison to conventional and, therefore, better income on the holding.</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient financial support by the state for the organic production sector;</li> <li>• Inability to use EU pre-accession funds;</li> <li>• High costs for certification and control in organic production;</li> <li>• Small number of associations and other associations that associate producers and other stakeholders in the organic production sector;</li> <li>• The advisory service has not been sufficiently developed.</li> </ul>
<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> <li>• In addition to modern technology, information on inputs, organic food markets and the like is easier;</li> <li>• By production of organic products and their processing, products with added value are obtained, and therefore the possibility of higher profit for producers and processors;</li> <li>• Increased employment of rural population and prevention of migration;</li> <li>• Growth in demand in Europe and the world for organic products, which provides an opportunity for export.</li> </ul>	<ul style="list-style-type: none"> <li>• Due to high input prices for organic farming, redirecting to conventional production</li> <li>• Insufficient control of imports and "choking" of domestic organic production;</li> <li>• The low pay capacity of the citizens is also a low demand for organic products</li> <li>• Due to insufficient control and poor organization in the organic production sector, the possibility of misuse and loss of consumer confidence in organic products.</li> </ul>

The forces that characterize the Bosnia and Herzegovina environment and the opportunities offered by organic production are sufficient preconditions for its smooth development and strengthening in the future. In order to further develop and improve this type of agricultural production in Bosnia and Herzegovina, it is necessary to use the identified chances, and reduce or completely eliminate weaknesses. This certainly implies greater state support for organic production, more efficient marketing of organic products and better involvement of actors in the organic sector.

## Conclusion

Considering the available potentials in land and climatic conditions, organic production in Bosnia and Herzegovina is underdeveloped. In the structure of total agricultural land, organic production accounts for only 0.03%.

Raspberry belongs to promising fruit whose production is increasing in the world and in Bosnia and Herzegovina. The raspberry distribution area is very wide. However, despite modest requirements, raspberry production in Europe, as well as in the world, is still scarce on the market. This is a very profitable production and is a great opportunity for manufacturers in Bosnia and Herzegovina.

Based on the established indicators, the raspberry production is both economically acceptable for the producer in an organic and conventional way. In the organic production conditions, the raspberry economy cost ratio is 2.14, and the average net profit is 9.450 € / ha, while under conventional production conditions, the coefficient of economy is 1.8, and the average net profit is 7,542 €/ha.

Thus, organic farming gives a more favorable economic result per unit area. The average net profit for the production of organic raspberries is higher than in the conventional for about 1,908

€/ha. The accumulation rate in organic raspberry production is higher than in the conventional 10.70%. Also, the return period of investment in this production is more favourable, i.e. shorter than conventional production.

Despite existing strengths, opportunities and weaknesses in organic raspberry production in Bosnia and Herzegovina, the biggest threats are high input prices. In order to avoid business risk, there is a risk that manufacturers can abandon the application of organic principles and switch to conventional production. Numerous difficulties in the organic production sector concern primarily the non-existence of state-level legislation. The procurement of organic seed and planting material, the method of disposal and manipulation with organic fertilizer is not regulated sufficiently, as well as the provision of inputs for organic livestock production. In addition to this, uncertainty and danger is a decrease in the payment capacity of citizens and, consequently, demand for products of organic origin.

## References

1. \*\*\* *The world of organic agriculture. Statistics and emerging trends 2017*, FIBL& IFOAM - organics international. [Accessed July, 13, 2017].
2. Food and Agriculture Organization (FAO), 2007. *Managerial skills and certification costs at the farm level*. Organic certification schemes: managerial skills and associated costs, Rome.
3. Hristov, S. and Relić, R., 2005. *Uslovi gajenja, dobrobit i zdravstvena zaštita životinja u organskoj stočarskoj proizvodnji*. Poglavlje u monografiji *Organska poljoprivredna proizvodnja*, Poljoprivredni fakultet Beograd, pp. 193-218.
4. Kljajić, N., Subić, J. and Sredojević, Z., 2017. Profitability of raspberry production on holdings in the territory of Arilje. *Economics of Agriculture*, Vol. LXIV, N°1 (1-404), Belgrade, The Balkan Scientific Association of Agrarian Economists, Belgrade, Institute of Agricultural Economics, Belgrade, Academy of Economic Studies, Bucharest, pp. 57-68 <http://ea.bg.ac.rs>
5. Kovačević, D. and Milošević, M., 2015. *Organska poljoprivreda*, Monografija. Poljoprivredni fakultet, Beograd-Zemun, pp.156
6. Mladenović, M. and Nedić, N., 2005. *Organsko pčelarstvo*. Poglavlje u monografiji *Organska poljoprivredna proizvodnja*, Poljoprivredni fakultet Beograd, pp.175-191.
7. Oljača, S., 2005. *Agroekološke osnove organske proizvodnje*. Poglavlje u monografiji *Organska poljoprivredna proizvodnja*, Poljoprivredni fakultet Beograd, pp.1-33.
8. Радосављевић, Ж., Гајдобрански, А. и Крмпот, В., 2014. *Одрживи развој и органска производња као битни фактори савремене пољопривредне производње*. *Агроэкономика* бр. 61-62, pp.20-30.
9. Simin-Tomas, M. and Miloradic, J., 2014. Some economic indicators of organic agriculture. *Proceedings of Sustainable Agriculture and Rural Development in Term of the Republic of Serbia Strategic Goals Realization within the Danube region*. Rural development and (un)limited resources, pp. 393-409.
10. Sredojević, Z. and Simić, I., 2016. *Kako ostvariti profit u organskoj proizvodnji?*. Priručnik, Izdavač: Nacionalno udruženje za razvoj organske proizvodnje "SERBIA ORGANIKA", Beograd, Podržano od strane: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Program za razvoj privatnog sektora u Srbiji (ACCESS), po nalogu Nemačkog saveznog ministarstva za privrednu saradnju i razvoj (BMZ), GIZ Beograd, pp. 47.
11. Sredojević, Z., Kljajić, N. and Popović, N., 2013. Investing in Raspberry Production as an Opportunity of Sustainable Development of Rural Areas in Western Serbia, *Economic Insights – Trends and Challenges*, Vol. II (LXV) No. 1/201, pp. 63-72, [http://www.upg-bulletin-se.ro/archive/2013-1/6.Sredojevic\\_Kljajic\\_Popovic.pdf](http://www.upg-bulletin-se.ro/archive/2013-1/6.Sredojevic_Kljajic_Popovic.pdf)