С Е К Ц И Я
ИННОВАЦИОННЫЙ ПОТЕНЦИАЛ И ПЕРСПЕКТИВЫ РАЗВИТИЯ СЕКТОРОВ РЕГИОНАЛЬНОЙ ЭКОНОМИКИ

JUSTIFICATION – PROFITABILITY OF ORGANIC FRUIT PRODUCTION IN THE REPUBLIC OF SERBIA

Kuzman Boris, Ph.D., Assistant Professor
Institute of Agricultural Economics
Prodanović Radivoje, M.A.
Faculty of Economics and Engineering Management
Bekić Bojana, B.Sc.
Institute of Agricultural Economics
Republic of Serbia

Organic fruit production is a synthesis of knowledge and practice, with the goal to utilize natural potentials of the ecosystem, interactions between living organisms and to minimize chemical inputs.

Profit can be considered as a key factor in orientation of producers toward certain production system. However, reliable data regarding organic fruit production expenses are missing, which limits the possibilities to precisely determine whether organic fruit production is more profitable, in compare to conventional production (Galinato et al., 2011).

Research regarding motives of starting the organic production showed that 45% of producers of organic apple in USA choose organic production to increase their profit. About 23% of producers stated that they started organic production to protect health of their family and the community and 19% of the producers stated that they wanted to implement ecological practice in the production (Slattery et al., 2011).

Goal and importance of this paper work

Goal of this paper work is to explore whether organic fruit production is economically sustainable and whether it is more profitable than conventional production.

Modern trend in nutrition sets high demands regarding quality and health safety of food. Considering that, research which aims to determine economic effects of organic fruit production, which fulfils needed requirements, can be considered important.

Methodology

We shall use standard mathematical-calculative method, indicators, descriptive method, deductive and inductive method, synthesis, generalization and abstraction.

Research results

Economics of organic fruit production

Organic fruit production is determined by many factors, of which crucial importance has economics of production. Economics of organic production, basically, follows the same rules as the economics of conventional agriculture. However, if we want to precisely determine economic indicators in organic fruit production, we must consider some additional factors (Mirecki et al., 2011).

Profitability of organic fruit production depends on more factors such as: yield, production expenses, marketing strategy, subsidies, etc. Potential organic producers

must be convinced that conversion of conventional orchard into organic orchard will be economically payable (Ames et al., 2004).

Profitability of organic fruits is dominantly influenced by yields and prices. If we analyse concurrency of agro-industrial complex of the Republic of Serbia, it can be observed only integrally. It is because primary production, as sector of raw material, is not concurrent to other agricultural sectors due to its specificities (long production process, large impact of natural factors, slow turnover of capital, production of strategic products, etc.), (Kuzman, 2014). In the Republic of Serbia, yields in organic fruit production are lower, comparing to conventional production, which means that organic production can be more profitable that conventional, if expenses per product unit are lower or if selling prices are higher.

Regarding expenses, insurance is among larger expenses, because producers have an obligation to pay in addition for organic orchard insurance. Organic producers must pay certification of production and control by certified agencies (Slattery et al., 2011). Labour expenses are higher in organic production due to the impossibility to use mechanization in the extent as it is used in conventional production. Sellers have larger expenses regarding handling of organic fruit (separation, special records, etc.).

Profitability of organic and conventional production of important fruits in Serbia

Profitability or economic viability of organic fruit production is researched based on calculations received from producers.

The analysis of organic fruit production profitability included 4 fruit species: plums, apples, pears and raspberries, which are representative fruit species considering their participation in the production and export, and considering their production potential, which is not utilized enough.

Table 1 - Profitability of organic and conventional fruit production in Serbia (in 2014)

Items	Plums		Apples		Pears		Raspberries	
	Con.	Org.	Con.	Org.	Con.	Org.	Con.	Org.
Yields (t ha-1)	34	23	40	15	20	11	13	12
Average price (€ kg-1)	0,21	0,29	0,25	0,83	0,41	1,25	1,30	1,75
Gross income (€ ha-1)	7,140	6,670	10,000	12,450	8,200	13,750	16,900	18,782
Expenses (€ ha-1)	3,966	4,216	7,100	9,750	5,800	6,490	11,960	13,200
Net income (€ ha-1)	3,174	2,454	2,900	2,700	2,400	7,260	4,940	5,582
Subsidies (€ ha-1)	-	140	-	140	-	140	100	140
Profit (€ ha-1)	3,174	2,594	2,900	2,840	2,400	7,400	5,040	5,722
Profitability index	44,45	38,89	29,00	22,81	29,27	53,82	29,82	30,46

Source: Calculations (2014).

Plum production realized a net profit of 3.174 €/ha, which was 580€ more in compare to net profit from organic production, that is 2.594 €/ha. Profitability index of organic plum production is 38,89 and it is lower, if we compare it with the profitability

index of conventional plum production, which is 44,45. If the producer follows the logic of profit, as a primary motive for selection of the production system, it is clear that he will stay in conventional production, and that organic producer will benefit if he direct its production toward conventional.

Calculation of apple production profitability showed that the profit was almost equal in these two production systems. Conventional apple production gives profit of 2900 €/ha, which is only 60 € higher than in organic system, where profit is 2.840 €/ha. If we compare relative indicators i.e. profitability indexes, we can see that conventional apple production is more profitable in compare to organic. Profitability index of conventional apple production is 29,00 and it is higher in compare to organic production where it is 22,81.

In organic pear production there was a profit of 7400 €/ha, which was about 3 times more than in conventional production, where profit was 2.400 €/ha. Profitability index is twice larger than in organic pear production and it is 53,82, while that indicator in conventional production is 29,27. This is the result of organic pear price (150 – 200 RSD), which is 3 times more expenses than pears from the conventional production (35 – 50 RSD).

Raspberry production is more profitable in the organic production system. Production of organic raspberry achieves profit of 5.722 €/ha, while at the same time in conventional production that amount is 5.040 €/ha. Profitability index in organic raspberry production is 30,46 and it is slightly higher than in conventional production where it is 29,82.

Conclusion

Organic fruit production in the Republic of Serbia has its economic justification, but it cannot be said that it is more profitable in compare to conventional production. What is important to state is that production of some fruits creates larger net profit while this profit is lower in the production of other fruits.

So, organic fruit production, although it is not more profitable than conventional production, it has economic justification, which gives optimism regarding its development. If we add to this that organic production system protects resources and the environment, and that organic products have high quality, than there is a general benefit to find possibilities to improve economy of this production.

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ENABLING ENVIRONMENT AND SOME INDICATORS TO ORGANIC FARMING IN SERBIA

Sredojević J. Zorica, PhD., Full Professor
University of Belgrade-Faculty of Agriculture
Kljajić Ž. Nataša, PhD, researcher
Arsić V. Slavica, MSc., researcher
Institute of Agricultural Economics, Belgrade
Republic of Serbia

The Republic of Serbia is one of the medium populated European countries. According to the last census, the total population in Serbia is 7,186,862 (excluding Kosovo), i.e. there are 92 inhabitants per km² (SORS, 2014). Based on the same data, the population in Serbia has been reduced by 311,139 (or 4%) since 2002. The following has occurred during the last decade in Serbia: population regression, i.e. a reduction in the total population, a decline in the birth rate, an increase in the mortality rate, the concentration of population in urban areas and emptying of rural areas, as well as specific demographic aging of the population.

Serbia's natural resources make it a country with respectable capacity for a growth of its agri-food sector's productivity and competitiveness. The contribution of agriculture to the Serbian economy is considerable. Agriculture contributes significantly to the country's trade balance. The agricultural and food export share in total export is about 20%.

Materials and Methods

The data sources included statistical and other publications, both from domestic and foreign literature internal databases, web sites, via e-mail from farms /entities, etc. Research methodology includes the use of different statistical method. The results are shown in tables and graphs along with the appropriate interpretation.

Results and Discussion

Gross domestic product and other economic indicators - Gross domestic product (GDP) is the best indicator of business and economic trends in Serbia in the past. During the five-year period, from 2010 to 2014, the value of the most important indicator of the national economy and the indicator of productivity and efficiency in the production of goods and provision of services required for different types of consumption in Serbia. In the structure of the gross domestic product of Serbia in 2014, business services had the largest share, which accounted for 61%, industry accounted for 24%, agriculture, hunting, fishing, and forestry accounted for 10%, and construction accounted for 5%. The constant decline in the share of agriculture in gross national income (GNI) structure