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PROFITABLENESS AND PERSPECTIVE OF THE APICULTURE IN NORTH-EASTERN BULGARIA

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INTRODUCTION

The trends in the change of the profitability of Bulgarian beekeeping starting from the country's accession to the European Union (EU) in 2007 to the present 2020, are being studied, depending on the changes in the market price of honey and its prime cost. The survey was conducted among selected apiaries in North-eastern Bulgaria.

MATERIAL AND METHODS

The data on the cost of honey in farms from north-eastern Bulgaria for the period 2011 - 2019 are based on a cluster sample of four places from Ruse district - Nikolovo village, Brestovitsa village, Bazovets village and Yuper village. During the analysed period, as beekeepers, the authors conducted systematic observations in their own and neigh boring apiaries, exchanging information and experience about the cost of honey produced. Lyubenov observed 32 pcs conventional apiaries from the village of Nikolovo, Hristakov 42 pcs organic apiaries from the village of Brestovitsa and 44 pcs from the village of Bazovets, Atanasov 34 pcs conventional apiaries from the village of Yuper, i.e. a total of 86 pcs biological and 66 pcs conventional farms. The results were discussed with beekeeping unions and in the training of beekeepers in the National Agricultural Advisory Service.

CONCLUSIONS

✓The surveyed market prices and the prime cost of honey from apiaries in the region of Ruse show that they achieve a small net profit when selling conventional honey on the organizational markets - EUR 3.78/kg. The placement of organic honey as a raw material on the organizational markets is not profitable for them. In the distribution of consumer markets, they reach a net profit of EUR 7.98/kg for conventional and EUR 7.91/kg for organic honey. In an organic farm with 1000 hives, it is EUR 790.969 i.e. very low.

✓The apiaries in the Ruse region have 10.26% commercial profitability of the costs in marketing to conventional consumer markets, 8.83% in organic consumer markets and 8.2% in organizational conventional markets. Organic honey sales, as a raw material on organizational markets are unprofitable. Given the high volatility of honey prices, there are periods in which cost-effectiveness will be much lower.

✓The downward trend in bee market prices and the increase in its cost price lead to a decrease in profitability of the business. Measures must be taken to stabilize prices and reduce costs. Horizontal and vertical integration of apiaries is needed in order to achieve competitiveness and profitability. Markets and marketing set the directions for integration.

✓Sectoral and cross-sectoral integration will improve revenues by forming bee products with high added value and high sustainable prices, diversification of incomes, preservation of biodiversity, subsidies - pollination and more. It will reduce prime cost by realizing the wholesale advantages in front of small-scale production that allow for better specialization, better technology, higher productivity and higher hive yields.

✓Increasing the profitability of apiaries requires: 1) Marketing strategies to achieve profitability and competitiveness at the trans-regional level, through regional and cross-sectoral integration. 2) The production of bee products with high added value, incl. outside the category of traditional and most widely produced honey and wax. 3) Introduction of new technologies, increase in labour productivity and average hive production and 4) state subsidies assigned to a hive for ecosystem pollination service.

RESULTS AND DISCUSSIONS

In 2008-2009, the National Beekeeping Program (NBP) in Bulgaria was launched. At that time, honey prices were similar to prices in 2019. National markets for organic honey only developed after 2010, assuming that honey obtained from rapeseed and sunflower cannot be organic. Table 1 outline the market average prices in the national organizational and national consumer markets, with their organic and conventional segments. The prices on the national markets are the result of those on the international markets and the beekeepers cannot influence on the prices. All markets and their segments have a steady downward trend in market average prices for honey.

Table 1.

Changes in average prices of honey 2011-2019, EUR/kg.

Market		2011	2015	2019
Organizational (B2B)	Conventional	2.71	2.45	2.30
	Organic	3.99	3.68	2.86
Consumer (B2C)	Conventional	4.40	4.40	3.86
	Organic	5.98	5.98	5.27

The cost per unit of production of honey in Ruse region depends on the labour input and its cost EUR 62.378/ month, social insurance, depreciation and costs for repair, nutrition, veterinary medicines, packaging, transport and more. The costs of selling of 1 kg honey are for unpackaging, packaging, transport and marketing. They all form the full unit cost of conventional and organic honey. In Table 2 the basic cost of conventional and organic honey is determined, under the established economic and geographical conditions of production in the region of Ruse. The cost may also be higher, depending on the distance between the apiary and the processing and packaging site, the prices of the factors and the means of production in investigated regions.

Table 2.

Expenses of conventional and organic honey in the region of Ruse

Legend:
Bee hive - Dadant blatt system
Yielding conventional honey bouquet 20 (17)* kg per year.
Hourly payment
(2 time min.EUR 311.89) – EUR 3.74 /h

	Conventional			Organic*		
Expenses	EUR/hive	EUR/kg	%	EUR/hive	EUR/kg	%
1. Salary (amount of 1.1 - 1.4 = 4 (4,2)* hours)	14.97	0.75	37.09	14.47	0.85	27.84
1.1. Labor - harvesting (removal / return of frames, extracting, filtering - 2 hours)	7.49	0.37		6.89	0.41	
1.2. Labor - examinations (basic, swarming, informational, etc. - 1 hour)	3.74	0.19		3.45	0.20	
1.3. Labor - nourishment (0.5 hours)	1.87	0.09		1.72	0.10	
1.4. Labor - prevention (varroatosis and other diseases – 0.5 (0.7)* hours	1.87	0.09		1.72	0.10	
2. Self - insurance (31.3% of salary)	4.69	0.23	11.61	4.53	0.27	8.72
3. Depreciation (10% (20%)* of the hive price)	5.11	0.26	12.67	10.23	0.60	19.67
4. Repair (3% (4%)* of the hive price)	1.53	0.08	3.80	2.05	0.12	3.93
5. Feeding - autumn EUR 5.11 (7.67)*, spring EUR 3.07 (5.11)*	8.18	0.41	20.27	12.78	0.75	24.59
6. Medical supplies - autumn / spring EUR 2.05 (3.07)*, etc.	3.07	0.15	7.60	5.11	0.30	9.84
7. Unpackaging (tins - 25 kg, etc.)	1.79	0.09	4.43	1.79	0.11	3.44
8. Transport	1.02	0.05	2.53	1.02	0.06	1.97
All production cost	40.36	2.02	100.00	51.98	3.06	100.00
1. Packaging (decrystallization, filtration, homogenization, packaging and labeling)		0.46			0.46	
2. Packaging (glass jars, labels)		0.18			0.18	
3. Transport		0.03			0.03	
4. Marketing (research, advertising, etc.)		0.03			0.03	
All complete cost price		2.71			3.75	
Share of production cost in total			74.53			81.58

At the end of the analysed period, the gross profit per unit of production of bee honey in distribution on the national conventional organizational markets was EUR 0.275/kg. Farmers in Bulgaria pay a 10% tax on 40% of their turnover at 60% of the normative recognized costs. The net profit in the same markets is EUR 0.185/kg. The apiaries in the Ruse region do not realize gross and net profit on organic honey on the national organizational organic markets. The gross margin for distribution on the consumer conventional markets is EUR 1.15/kg. The net profit in the same markets after paying 20% value added tax on the final price is EUR 0.39/kg. The gross margin on sales on the national consumer organic markets is EUR 1.485/kg and the net profit is EUR 0.455/kg – Table. 3.

Table 3.

Profitability of Organizational and Consumer market at honey

Market	Organizational (B2B)		Consumer (B2C)	
	Conventional	Organic	Conventional	Organic
Market Price (Pe), EUR/kg	2.30	2.86	3.89	5,27
Commercial cost (Sm), EUR/kg	2.02	3.06	2.71	3,75
Gross profit ($Wm = Pe - Sm$), EUR/kg	0.28	- 0.19	1.18	1,52
Tax ($T^{B2B} = Pe.0{,}4.0.1$), ($T^{B2C} = Pe.0{,}2$), EUR/kg	0.09	-	0.78	1,05
Net profit ($Wn = Pe - Sm - T$), EUR/kg	0.19	-	0.40	0,47
Wn per beehive ($Wn° = Wn.yield$), EUR/year.	3.78	-	7.98	7,91
Wn per 1000 beehive ($Wn^{\wedge} = Wn°.1000$), EUR/year.	3,783.56	-	7,976.15	7,909.69
Profitability of turnover ($Rn = Wn/Pe$).100, %	4.19	-	5.25	4.51