

## DEVELOPMENT OF ECOLOGICAL BEEKEEPING IN BULGARIA: STATUS AND PROSPECTS

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### **Abstract**

*In recent years, organic production has been one of the sectors that has grown in terms of areas, animals and number of people involved in a control system, successfully applied in Bulgaria, even in times of crisis. The reasons why organic production develops favourably are diverse and are related to the recognized benefit for the development of rural regions and the environment, as well as to the need and preferences of consumers for healthy and quality foods and also to the excellent prerequisites for the development of organic production in Bulgaria and the support of organic producers under the Rural Development Programme. The aim of this article is to analyze the status and development of organic beekeeping in Bulgaria, as well as to highlight some issues faced by organic livestock sector, and thus to stimulate and encourage the development of the potential Bulgarian organic beekeeping. The research is based on official statistical data of Ministry of Agriculture, Food and Forestry. Bulgaria is a traditional producer of different types of organically certified honey with excellent quality indicators and a large part of the production is exported to the world market. There is a need for research, analysis and evaluation of the status of ecological beekeeping in Bulgaria.*

**Key words:** organic beekeeping, honey, organic products, Bulgaria

### **INTRODUCTION**

In recent years, organic production has been one of the sectors that has grown in terms of areas, animals and number of people involved in a control system, successfully applied in Bulgaria, even in times of crisis.

Beekeeping is an important and lucrative agricultural industry. This is due both to the extremely valuable products that are obtained from beekeeping – honey, wax, propolis, royal jelly, and to their useful role in increasing the yields of nearly 50 species of agricultural plants by pollinating them. Honey is a natural product, considered a high nutritive value food and therapeutic qualities and justifies why honey is used in human consumption, in medicine, in food industry [7].

Many factors have influence on the beekeeping programmes in different countries [9].

Bulgaria is a traditional producer and one of the main exporting countries of organic honey in the world [2]. Organic livestock farming in Bulgaria faces serious issues – farmers have

to produce certified products and at the same time they have to achieve sustainable levels of cost effectiveness, which would allow them to realize higher profits and maintain their market positions [3].

To the favorable climate, a wide variety of honey plants and the overlap of beekeeping in the economic life of the camp, define Bulgaria as typical beekeeping country. Development of beekeeping as livestock subsector provides both additional income and alternative employment for the population of the less developed rural areas in Bulgaria [4].

### **MATERIALS AND METHODS**

The aim of this article is to analyze the status and development of organic beekeeping in Bulgaria, as well as to highlight some issues faced by organic livestock sector, and thus to stimulate and encourage the development of the potential Bulgarian organic beekeeping.

The reasons related to the favourable development of organic production in Bulgaria are diverse and are related to the recognized benefit for the development of

rural regions and the environment, as well as to the need and preferences of consumers for healthy and quality foods and also to the excellent prerequisites for the development of organic production in our country and the support of organic producers under the Rural Development Programme.

The organic livestock sector in Bulgaria is less developed than organic plant production, but the analysis of the data in recent years has shown a positive trend in the annual increase of organically raised animals. Considering the support opportunities for organic livestock farming within the framework of the new programming period, this trend was also maintained in 2016. Organic livestock farms in Bulgaria raise mainly cattle, sheep, goats

and bees. Bees account for the largest share of organic livestock production, followed by sheep (Table 1). In recent years there has been a significant growth of farmers engaged in organic beekeeping and Bulgaria is approaching the top leaders in the industry, in the best European countries, such as Spain. Organically raised bee colonies increased by more than 25% in 2016, which reached 31.35% of the total bee colonies raised in Bulgaria. In 2016, 1,489,516 tons of honey were produced from organic beekeeping, which was 64 tons less than the previous year and equals to 14.57 % of the total honey produced in the country for the accounting year - 10,218 t honey for 2016.

Table 1. Animals in a control system (animals in transition are included)

	Number of organically raised animals in 2016	Total number of animals raised in 2016	% of organically raised animals from the total number of animals raised in 2016
Cattle	9,718	557,900	1.74
Sheep	26,809	1,360,100	1.97
Goats	8,242	237,500	1.65
Bee colonies	236,462	754,105	31.35

Source: Ministry of Agriculture, Food and Forestry (MAFF), according to the data from the annual reports of organic production controllers, 2016 [5].

Several consecutive years have been marked with low yields for beekeepers and poor condition of bee colonies, and this year the situation is particularly severe. Producers even have to seek additional income because their beekeeping activity alone proves insufficient.

The organic market in Bulgaria is relatively new and still too small, but at the same time it is fast-growing. Over the past few years there has been a boom in the market for organic products in Bulgaria. The number of specialized shops is increasing, as well as the number of large retail chains involved in the distribution of organic food. The consumers believe that organic food, though more expensive than non-organic, is healthier, tastier and is produced in ways that protect and preserve the environment. Consumer confidence in the quality of these foods is higher, because of the strict control and standards of production.

Most of the Bulgarian organic food and products are bound for foreign markets.

Bulgaria is a traditional producer of different types of organically certified honey with excellent quality indicators and a large part of the production is exported to the world market.

## RESULTS AND DISCUSSIONS

Beekeeping is an important and lucrative agricultural industry. This is due both to the extremely valuable products that are obtained from beekeeping – honey, wax, propolis, royal jelly, and to their useful role in increasing the yields of nearly 50 species of agricultural plants by pollinating them. Biological value of bee products is due to the rich content of enzymes, vitamins, amino acids, antibiotics, hormones, etc., which are easily absorbed by the body and play the role of natural medications. A large number of these components are found in medicinal plants and bees just collect them in their ready-to-be-used form [8].

By October 1, 2019, bee colonies were 867.6 thousand, which is 10.8% more than the previous year. The bee colonies from which honey was harvested in 2019, reached 702.8 thousand (14.5% more) and the honey harvested was 11,518 tons - 11.4% more than in 2018. The average yield of honey from a bee colony decreased by 2.4%, to 16.4 kg. For the period from January 1st to September

30th, 2019, bee farms harvested 7,835 tons of honey (4.0% less than the previous period), and by January 1st, there were 1,544 tons of unrealized honey from previous years and by October 1st, 2019, 5,223 tons remained for realization (59.0 % more than October 1st, 2018). The number of farms with bee colonies in 2019 was 13,771 or 12.3% more [6].

Table 2. Bee colonies by statistical regions in Bulgaria, in 2018 and 2019 (Number)

Bee colonies by statistical regions, in 2018 and 2019 Statistical areas (NUTS1) and statistical regions (NUTS2)	Bee colonies by 01/10/2018	Bee colonies by 01/10/2019	Change 2019/2018	Bee colonies from which honey was harvested in 2018	Bee colonies from which honey was harvested in 2019	Change 2019/2018
Bulgaria	783,348	867,561	10.8%	613,946	702,851	14.5%
<i>Northern and South Eastern Bulgaria</i>	654,103	728,569	11.4%	520,865	597,551	14.7%
North-Western	154,228	158,721	2.9%	117,934	125,561	6.5%
Northern Central	187,035	210,830	12.7%	158,096	172,910	9.4%
North-Eastern	172,637	190,417	10.3%	140,261	166,253	18.5%
South-Eastern	140,203	168,601	20.3%	104,574	132,827	27.0%
<i>South-Western and Southern Central Bulgaria</i>	129,245	138,992	7.5%	93,081	105,300	13.1%
South-Western	47,329	48,740	3.0%	31,889	35,657	11.8%
Southern Central	81,916	90,252	10.2%	61,192	69,643	13.8%

Source: MAFF, Agrostistics Department, surveys 'Beekeeping in Bulgaria', No. 368, February, 2020 [6].

When choosing a place for beekeeping, it is necessary to choose the most suitable area or region and to choose a place where to put your apiary [1]. An important condition for a bee farm to obtain high yields of honey is the availability of good honey plants in the area around the apiary, the blooming periods to overlap and thus the vegetation to ensure continuous harvesting throughout the season. It is necessary to create an individual calendar, the so-called "phenological calendar", for each locality in the area, with a radius of 2 km. The choice of a place for the apiary, where the hives are placed, should meet the following important conditions:

- To be in the center of an area with rich flora and a variety of honey plants, blooming at different periods, so that bees could collect nectar and pollen for longer periods during the year.
- To be well protected from prevailing strong and cold winds – bee colonies exposed to

adverse wind conditions develop slowly, the bees get easily exhausted and a significant part of them dies.

-To be away from chemical plants and facilities, major railway stations, landfill sites, candy shops or sweet factories, etc.

-To be dry and sunny – in lower, humid and shady places bee colonies develop slowly and get sick more often, the bees work less and for shorter hours.

Adequate support of bee colonies requires the beekeeper to be aware of the condition of the colony at all times, and this is achieved through inspections. Inspections of bee colonies can be carried out throughout the year, except for the winter season.

When starting an organic production, each producer develops and submits to the relevant control authority a plan which necessarily complies with all the requirements for organic production, a logbook of farming activities, plant protection measures, preparations

purchased, quantities and directions of the realized production. Cooperation between more producers of organic bee products can significantly ease the costs of entering and maintaining new markets [3].

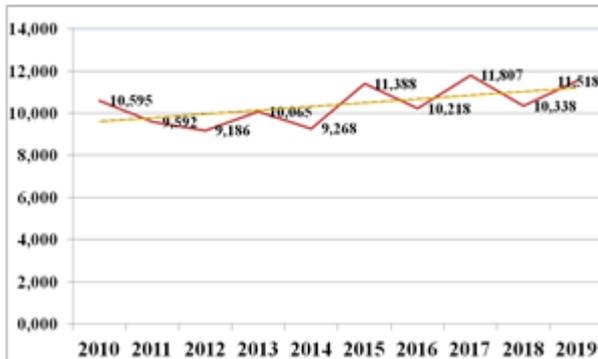


Fig.1. Production of honey in Bulgaria

Source: MAFF, Agrostistics Department, surveys 'Beekeeping in Bulgaria', No. 368, February, 2020 [6].

The organic market in Bulgaria is relatively new and still too small, but at the same time it is fast-growing. Over the past few years there has been a boom in the market for organic products in Bulgaria. The number of specialized shops is increasing, as well as the number of large retail chains involved in the distribution of organic food. Most of the Bulgarian organic food and products are bound for foreign markets. Bulgaria is a traditional producer of different types of organically certified honey with excellent quality indicators and a large part of the production is exported to the world market. Bulgarian organic fresh fruits and vegetables, milk and dairy products, jams, dried fruits and nuts, have excellent taste qualities and are highly valued both in the European and world market [4].

## CONCLUSIONS

There is a need for research, analysis and evaluation of the status of ecological beekeeping in Bulgaria. The internal and external market of bee products in Bulgaria is insufficiently developed [4].

In terms of organic beekeeping in Bulgaria, the stimulation of quality and competitive production in accordance with the requirements of European markets and consumers, as well as the provision of

opportunities for sustainable development of organic production should be a priority of Bulgarian agricultural policy [10].

Bulgaria will continue to work towards ensuring the control of organic production and its compliance with the requirements of the European and national legislation in this field, as well as towards promoting the benefits of organic food and products to human health and the benefits of organic production methods, as being more environmentally friendly and more sparing in their use of natural resources [5].

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