

STUDY REGARDING THE DYNAMICS OF HONEY PRODUCTION IN ROMANIA

ANCA GABRIELA HANDARIC¹, IOAN CSOSZ¹, ANA-MARIANA DINCU¹, LAURA STRĂIN¹, RAUL PAȘCALĂU¹, RAMONA CIOLAC¹, DAN SARMEȘ¹

¹*Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara, Faculty of Agricultural Management, Timisoara, Romania, anca_handaric@yahoo.com*

Abstract: *Honey consumption in Romania is a lower one, despite the benefits that this product has for health. The main market is external one, over 60% from the Romanian honey production being exported to countries like Germany, UK, Italy, France, Austria, USA, Canada, Japan or China.*

Romania's accession to EU has opened new horizons to beekeeping in general and beekeepers in particular, and that's because the penetration on the EU market is much easier, and subsidies are also present.

Key words: production, consumption, beekeeping, honey.

INTRODUCTION

Honey is a bee product obtained by converting and processing nectar or manna stored by bees and deposited in honeycombs cells to be food for the population of the hive.

Honey obtaining is the main purpose of beekeeping from the present and past.

The beekeeping represents one of the oldest occupations of Romania's territory. [4]

In our country, the abundance and variety of nectarous resources from wild and cultivated flora provide food for bees, from early spring until late autumn. [2]

In these terms, in recent years, beekeeping - an activity that does not require special investments has become a profession for people whose existence is assured from incomes from beekeeping as a means of relaxation for those who exploit low effective. [2]

MATERIALS AND METHODS

The conducted research has focused the evolution of honey production obtained in Romania and imports-exports of honey in the period 2000-2011.

The data necessary for the present study have resulted after consultation the statistically specialty material, such as Ministry of Agriculture and Sustainable Development documents regarding National Beekeeping Program, dates of Beekeepers Association from Romania.

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RESEARCH RESULTS

In the present, beekeeping acquires new meanings, its practice covering not only its economic importance but also the scientific, environmental, social, importance etc. In Romania, the beekeeping activity of bees was developed in favorable natural conditions, which contributed to the further development of this activity and thus to achieve significant bee production. [2]

Honey is the main product of beekeeping, recognized for its qualities nutritional and for its therapeutic effects. It was found that honey is biologically one of the most complex products, in which's composition were discovered important substances for human body. From these we mention:[6]

- **Vitamins that are found in honey** are: B1, B2, B3, B4, B5, pyridoxine (vit. B6), cianocobamida (vit. B12), ascorbic acid (Vit. C), vitamin A, vitamin D, tocopherol (vit. E) and trace of K vitamin. These vitamins are in very small quantities. Therefore, to meet the needs of vitamin C exclusively from honey consumption would be necessary a daily consumption between 2.5 to 3 kg of honey.

- **Minerals** that are found in honey are: calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, zinc, etc., its ranges between 0.25-0.50%, maximum for honey from flowers to a maximum of 0.85% for manna honey. To ensure daily requirement of minerals exclusively from consumption of honey would be necessary a honey consumption of 0.5-1.5 kg. Honey is composed primarily from carbohydrates and water. Most honeys assortments have approximately **82.4% carbohydrate and 17.1% water**.

- Dominant **carbohydrates** are **the fructose** (38.2%) and **glucose** (31.3%) which are hexose that can be easily absorbed by the body. Other carbohydrates present in honey are: **maltose** (7.3% in honey nectar and respectively 10.3% in manna honey) which is composed from two molecules of glucose, **sucrose** (max. 5% in nectar honey and max. 10% manna honey) is a dicarbohydrate composed from one molecule of glucose and one of fructose. The other carbohydrates are found in smaller quantities (isomaltulose, turanose, maltulosa, nigerosa, leucrose, metezitoza, erloza, kestoza etc), but those are not never all together found (E. Crane, 1980). As food honey is a source of carbohydrates, easily digestible, natural and which provides quick energy. [6]

In terms of concentration in sweet substances, honey takes part from foods that have a high concentration of sugar about 80-100%. [6]

The quality of honey should be respected just before harvest. So must be avoided, during visits to the apiary, dirty of the frames with soot from the smoker. Honey subjected to such a treatment has an unpleasant taste of smoke, especially if there are many cells unsealed. Also in this respect, the beekeeper should know that honey is a food that requires a great care. [6]

Nutrient potential - Through its nutritional qualities is considered a food of a high value in people food of all ages, having a widespread dietary and therapeutic uses.

Benefits of honey consumption: [6]

- Is a very good calming of the nervous system;
- Constantly consumed destroy germs of some of the most dangerous diseases;
- Gives the body the energy needs, reason for which it is the ideal food for athletes, children or persons subject to a stressful life (physical and intellectual effort);
- Is the food that provides the quantity of glucose required to heart for daily labor without requiring other organs (liver, stomach, kidneys);
- In combination with tea, honey is used to treat bronchitis, cough and even arthritis;

Disadvantages honey consumption:

Frequent consumption of honey increases the frequency of dental caries, chronic hypoglycemia. Honey is rapidly absorbed into the blood and causes a vigorous secretion of insulin in the pancreas. [6]

Honey market, with particular reference to the Romanian market, is characterized by the existence of a supply/demand system of two well-defined products:

- honey for table, its use being achieved through consumption by humans. The great part from honey consumption corresponds to this type and can be estimated at approx. 85% from all honey marketed; [1]

- industrial honey whose using destination is food industry (bread, confectionery, beverages) as a sweetener, flavoring to ensure freshness of products and pharmaceutical and cosmetic industry, tobacco industry also. [1]

Romania has a long tradition in the breeding bees field and making bee products, beekeeping occupation itself being as independent occupation since ancient times, initially for the products obtained (honey, pollen, royal jelly, propolis, wax and venom from bees) and later, including in the present, for the contribution that these insects have to increase to fruit, vegetables and seeds crops, through pollination. [2]

Today, in the globalization context, beekeeping acquires new meanings, its practice covering not only its economic importance but also the scientific, environmental, social, environmental biodiversity importance. [1]

In Romania, the beekeeping has been developed in favorable natural conditions, which contributed to the further development of this activity and, thus, to achieve significant bee production. [1]

In Romania, there are floral honey (honey nectar) monofloral or polyfloral and honeydew honey, manna or forest honey. [4]

The most popular varieties of flower honeys are the acacia (*Robinia pseudoacacia*), lime (*Tilia platiphyla*), sunflower (*Helianthus annuus*), peppermint (*Mentha sp.*), Raspberries (*Rubus L. idaeus*), rape (*Brassica napus oleifera L.*), coriander (*Coriandrum sativum L.*), flying (*Epilobium augustifolium L.*), garden Goldenrod (*Solidago canadensis L.*) and others. [2]

According to the Beekeepers Association, unlike other European countries, in Romania the effectives of bee families and honey production have increased year by year. For example, in 2005 there were 925,000 bee families, from which were obtained 17,704 tons of honey. In 2006 there were 975,062 families, with a production of 19,177 tons. In 2007 there was registered an upward trend in the number of bee families, namely 1,085,905 families. The output at that year was 20,159 tons. In 2008, in Romania there were 1,109,298 families, from which were obtained 20,945 tons. [2]

Despite the increasing of the number bees and honey production, can not be neglected the loss of thousands of families each year. The main reasons that lead to their disappearance are incorrect making of the phytosanitary treatments in crops and forest. Annual losses were estimated between 5,000 and 7,500 bees' families. [2]

Romania ranks seventh place in Europe after the number of bees and has over 1.27 million bee families, compared to the level before 1989, when there were over 1.4 million bee colonies. In 2011 there were registered 1.1 million bee colonies.

At national level are registered a number about 40,000 beekeepers, total number of bee families being over 1,100,000. The main counties where are found most bees families are: Valcea, Mures, Arad and Bihor. [3]

Starting with the year 2000, the number of bee families showed a progressive increase due to the financial support provided by the government through the measures meant to support rural development, in a first stage, and then due to the European funds allocated through integration into the European Union. To develop the beekeeping sector in Romania, should take into account the intensification and diversification of production, increasing the bee families number, ensuring the production quality. [3]

Table 1

The evolution of bee families

Years	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010 estimation
Bee families/ thousands	614	745	781	839	888	920	975	1.086	1.109	1.110	1.280

In Romania it is produced, in average, annually, from 20,000 to 22,000 tons of honey, finishing in fourth place in Europe, but in 2012 due to weather conditions were made between 50-60% of this production, depending on the areas. Between 2000 and 2010, Romania has produced on average 24,700 tones of honey, following that in the 2014 Romanian beekeepers receive new finance of funds.

Romanian honey production is, in average, about 20,000 tones/year, and 85% from domestic production is exported, while a Romanian consumes an annual average of 100-150g of honey, 20 times less than the average of Germany (1,500 to 1,700 grams/inhabitant/year). [3]

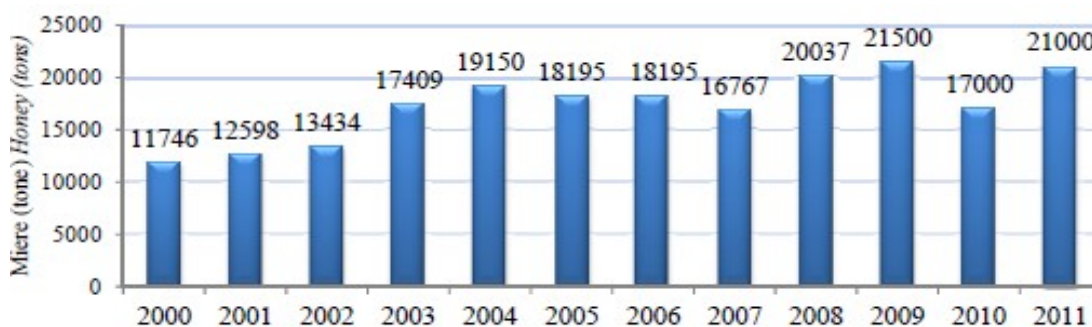
Table 2

Honey production obtained in Romania

Years	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010 estimation
Honey production - tons	11.746	12.598	13.434	17.409	19.150	18.195	18.195	16.767	20.037	21.500	23.700

Source: Modern beekeeping Technologies

In year 2011, Romania was ranked on 17 place among large producers of honey with a production of about 21 thousand tons (Ministry of Agriculture and Rural Development -MADR, 2012). The following figure shows an evolution of honey production in the period 2000-2011, being observed the fact that in 2011 the total quantity of honey increased significantly (with 78%) compared to 2000. The increase of the extracted honey quantity is mainly due to beekeeping sector development through the National beekeeping Program (2007-2010, 2011-2013). [5]



Source: Association of Beekeepers from Romania, 2012

Figure 1. The evolution of honey production obtained in Romania during 2000-2011 period

Romania's honey imports are extremely low compared to those of large consumers worldwide. However, in 2006-2010, Romania's honey imports recorded an exponential growth both in value and in quantitative terms. Therefore, although the volume of imports

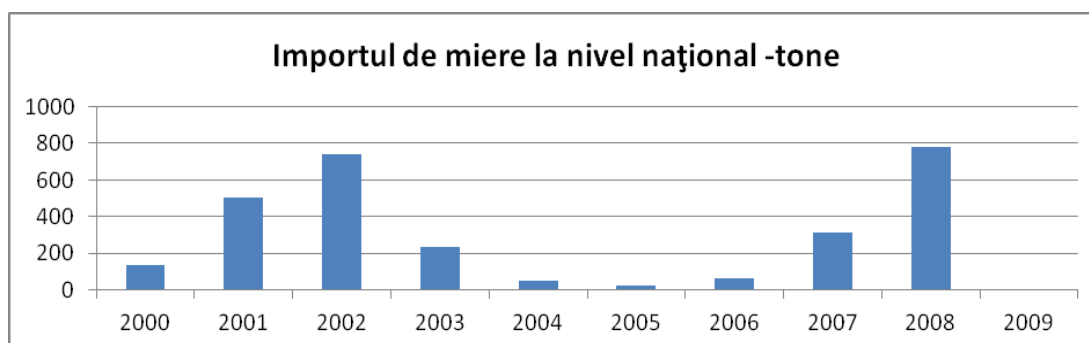
of honey on the Romanian market stood at only 21 tons (35,000 euros) at the end of 2010, it was recorded an increase to over 800 tons (about 1.1 million euros). [5]

Table 3

The import of honey at national level

Specification	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
IMPORT - tons	137	506	739	232	52	21	63	315	777	515,5

Source: Modern beekeeping Technologies



Source: Association of Beekeepers from Romania, 2012

Figure. 2 The import of honey at national level

Romania has a long tradition in the beekeeping field and making bee products, beekeeping occupation itself being an independent occupation since ancient times, initially for the products obtained (honey, pollen, royal jelly, propolis, wax and venom bees) and later, including the present, for the contribution which these insects have to increasing fruit, vegetables and seeds through pollination. [4]

Today, in the globalization context, beekeeping acquires new meanings, its practice covering not only its economic importance but also the scientific, environmental, social, environmental biodiversity importance [3]

In the period 2006-2011, Romania's honey trade has registered a strong upward trend, supported only by the evolution of exports. Thus, in the last 5 years, global demand for honey has experienced an average annual growth of 16%, Romanian exports of honey increased, in average, with 30%. [2]

The value of exports of honey made in Romania has recovered strongly in 2010 after a sharp decline of 27% in 2007, reaching about 32 million. Despite this recovery, the value of exports has registered a modest increase in 2010 compared with the previous year (+ 5%). However, Romania remains among the first 15 honey providers at global level. [2]

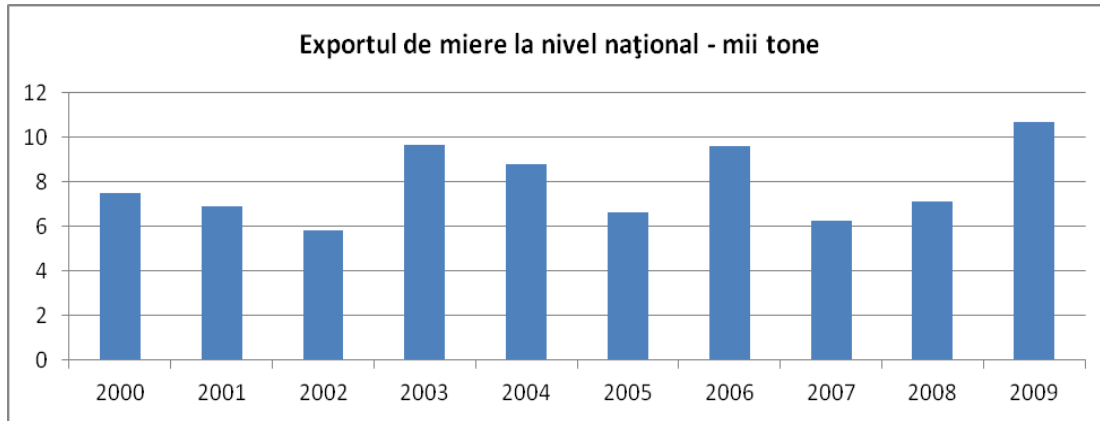
From the total production, 60% is exported in the countries like Germany, UK, Italy, France, Austria, and the United States, Canada, Japan or China. In 2009, Romania has exported 10,654 tons of honey and imported 515 tons. "Romanian honey is highly appreciated in foreign markets, but is recovered at a low price, because honey external processors offer low prices that do not cover costs in beekeeping, being preferred wholesale acquisition system," according to Beekeepers Association. [2]

Table 4

The export of honey at national level

Specification	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
EXPORT - tons	7.501	6.862	5.784	9.633	8.757	6.632	9.606	6.255	7.087	10.654,1

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Source: Association of Beekeepers from Romania, 2012

Figure 3. The export of honey at national level

Due to the specific temperate climatic conditions of our country, quality of bee products is considered to be superior. An example is the honey of locust receiving many medals at international fairs and exhibitions (congress APIMONDIA).also the Romanian propolis value is recognized in professional environments. [2]

An important role in the bee production is held by secondary products among which are: the pollen collected using collectors, propolis, royal jelly, beeswax, venom (apitoxins) and triturate from drone larvae known under the trade name apilarnil. These secondary products are used in the preparation of a wide variety of nutritional supplements and/or medicaments and for the production of cosmetics. [4]

Honey market from Romania is characterized by the fact that most part of the production returns to small private producers, some of them being under the protective umbrella of processors or trade associations, or scrolling through supply contracts with them. [2]

CONCLUSIONS

Our country has a long tradition in the beekeeping field and making bee products, beekeeping occupation itself being an independent occupation since the ancient times, as historical evidence offered in this regard.

Today, Romania is placed among the countries with well developed beekeeping, this situation is a consequence of large number of bee families that we have, of the quantity of honey obtained, of the diversification of bee production and of the results of the research activities and training of the specialists. [3]

Beekeeping has not only an economic importance but also an environmental and social one.

If at the beginnings beekeeping was practiced largely for economic advantages, today it has acquired new meanings in the context of globalization. [2]

The national market of honey is dominated by a few producers of honey, which, besides own production collect and process honey from hundreds of individual beekeepers. Their products are concentrated in the retail chains or delivered as industrial raw material. [1]

Even if Romania, at European level is one of the leading exporters of honey, on the local market are found also the imports, mainly from the European Union and beyond. [5]

The increase of the demand for bee products in the EU and worldwide is an opportunity for Romanians beekeepers who intend to export products. [1]

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