

HONEY - A PROSPECTIVE PRODUCT FOR ROMANIAN INTERNATIONAL TRADE

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Abstract: *EU membership imposed in the post-accession period significant changes and improvements in the Romanian agri-food production. It provided also increased trade opportunities on both the Single Market and non-EU markets. Both exports and imports expanded significantly; honey is one of the very few Romanian products that is competitive on the international markets, and especially on the EU markets. Due to its competitive production costs and its excellent quality, honey is a product for which Romania has been constantly a net exporter during the last three decades. It was able to secure a solid market position and it is likely to continue further increasing its production and exports. Although the honey production exceeds by far the domestic consumption, the latter is also expected to increase in the coming years, due to changes in the consumption model, aiming for more healthier nutrition (by substituting in time processed sugars). The present paper is analysing the honey trade performances, as well as the changes in value, volume and geographical orientation of the trade flows.*

Key words: *natural honey, agri-food trade; successful price competition; food products; Romania*

INTRODUCTION

The EU defines honey as “the natural sweet substance produced by *Apis mellifera* bees from the nectar of plants, which the bees collect, transform by combining with specific substances of their own, deposit, dehydrate, store and leave in honeycombs to ripen and mature” [3].

At the time of its accession (2007), Romania joined the EU with an increasing but non-competitive agri-food trade, based on a non-competitive domestic agri-food sector. The European funding accessed from both pillars of the CAP, together with other domestic and foreign investments enabled positive developments in the sector, resulting in significant increases in volume, efficiency and quality of the Romanian agri-food products.

The beekeeping sector developed in terms of number of beekeepers, number of hives, production, and most important primary processing (extraction, conditioning, packaging). Support has been granted through the second pillar of CAP, through European and national funding, and enabled investments in quality and modern processing units, thus ensuring more added value to products for export.

Free access to the Single Market came with advantages and disadvantages. On the positive side, it favoured Romanian exports and pushed for meeting the quality required by implementing the EU rules. On the negative side, it allowed for unrestricted access of Community products on the less competitive Romanian markets, making more difficult for the domestic sector to develop, enter and remain present on the domestic markets.

MATERIALS AND METHODS

The analysis included honey production, consumption and trade at global level, as well as in the EU and in Romania. Honey, although important in terms of uses, is a rather minor product in terms of production, consumption and trade as compared with other major agri-food products such as cereals, meat or milk. Therefore neither EU statistics are very detailed on the subject. For the purpose of this paper, the authors used all available statistics, from various sources: Eurostat, Faostat, UN Comtrade, International Trade Center (ITC Trade Maps), Romanian National Statistics (Tempo-online). Most of these sources use different methods for data uniformization and estimation, therefore it is possible that at higher level of aggregation, the same indicator might have slightly different values. Nevertheless, the consistency of the data source for individual time series has been observed. The authors analyzed the global, EU and international Romanian trade in honey, focusing on the changes in value, volume, and directions of the flows. The analysis has been made on dynamic trends of export, import and trade balance, for a period spanning 20 years, which covers part of the pre-accession period (2002-2006), and post-accession 15 years (2007-2021), divided in three 5-year periods (2007-2011; 2012-2016 and 2017-2021), in order to offset various temporary or conjectural occurrences. The data used for calculations for EU and Romania is from Eurostat database, in the CN (Combined Nomenclature).

RESEARCH RESULTS

Honey is a product that has been harvested by humans from the oldest times.

In recent years, honey consumption has increased. Many factors contributed to such a trend, but most importantly changes in consumer behaviour, resulting from the need to reduce sugar consumption (honey being a healthier substitute), as well as to the current orientation towards more naturally produced foodstuffs, rather than the highly processed ones [15, 19]. Besides its use as food, honey has also many other uses in medicine, in pharmaceutical and cosmetics industries, due to its anti-microbial, anti-inflammatory and immunity enhancing properties [1, 10, 11, 12]. Bee pollen, propolis, and royal jelly are healthy bee related products that have been used for centuries to promote health and wellness. Surveys conducted in several countries (such as Romania, Slovakia, Czech Republic, Poland, Russia) show that older people (age category over 46 years) show a higher and more frequent consumption of honey., as compared to younger consumers [8, 14, 16, 17].

Recent trends in international honey production and trade.

According to FAO estimations, the world honey production followed a general upward trend in the last two decades, from 1.11 million tonnes in 1996, up to a maximum of 1.88 million tonnes in 2017, followed by a slight decrease, down to 1.77 million tonnes in 2020. The top honey producers in 2020 were: China (458,000 tonnes), EU (218,000 tonnes), Iran (80,000 tonnes), Ukraine (68,000 tonnes), USA (67,000 tonnes), Russia (62,000 tonnes), Mexico (54,000 tonnes), Brazil (52,000 tonnes). In 2020, Romania produced 30,724 tonnes, ranking 15-th in the global producers' hierarchy.

Out of the global honey production, about 39% is traded. The main player on the honey world market is by far the EU, which supplies 26% of the global exports, while importing almost half of the quantity traded. Thus, in terms of quantities and values, EU is a net importer of natural honey. Other major exporters on the world market are China, Argentina, Ukraine and India, but they are all net exporters. These four countries, together with the EU, account for 74% of the total exported quantities. In terms of imports, hierarchies are different: the second major importer of honey are the USA. The concentration of importers on the global market is extremely high, since the EU together

with the USA account for more than three quarters of the total imported quantities (table 1). Nevertheless, the top seven importers are net importers.

Table 1.
Top exporters and importers (average 2017-2021) on world honey markets

Exports					Imports				
Exporters	Quantity		Value		Importers	Quantity		Value	
	tonnes	%	1000 EUR	%		tonnes	%	1000 EUR	%
World	671,986	100.0	2,028,087	100.0	World	705,268	100.0	2,020,919	100.0
EU	177,562	26.4	667,406	32.9	EU	343,387	48.7	955,989	47.3
China	130,390	19.4	220,594	10.9	USA	197,182	28.0	447,141	22.1
Argentina	67,152	10.0	151,643	7.5	Japan	45,722	6.5	134,943	6.7
Ukraine	62,984	9.4	107,174	5.3	Saudi Arabia	17,724	2.5	70,772	3.5
India	60,382	9.0	91,437	4.5	United Arab Emirates	9,996	1.4	28,657	1.4
Brazil	35,661	5.3	94,646	4.7	Switzerland	8,188	1.2	33,574	1.7
Mexico	24,096	3.6	77,016	3.8	Australia	7,216	1.0	36,233	1.8
Canada	13,466	2.0	40,943	2	Canada	6,787	1.0	28,594	1.4
New Zealand	11,537	1.7	243,002	12	China	4,641	0.7	76,557	3.8
Viet Nam	10,773	1.6	58,834	2.9	Hong Kong, China	3,446	0.5	23,280	1.2

Source: author's calculations using International Trade Center (ITC) Trade Map data [9]

Honey production, consumption and trade in the EU and Romania.

In recent years, the number of bee hives in the EU increased slowly, reaching 20 million in 2021. Among the Member States, Romania ranks second, with 2.53 million hives, after Spain (2.95 million hives), and is followed by Greece, Poland, France, Italy and Hungary (figure 1). The remaining 20 Member States have less than 1 million hives each.

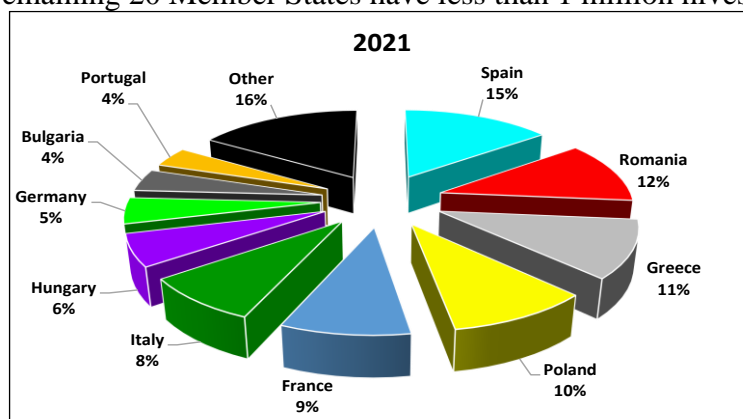


Figure 1. Share of beehives per Member State (2021)
Source: EC – European Commission, Honey market overview [2]

Precise statistics on honey production by Member State are unavailable. Yet, overall estimations of the total EU honey production show that it is about 250,000 tonnes per year [2]. Climate change decisively contributes to honey production and honey quality. [21]. There are estimations or partial statistics from the Member States that show that four EU countries produce more than 20,000 tonnes each per year: Spain, Germany, Hungary and Romania (table 2).

Table 2.

Estimated levels of honey production by Member State (2016)

More than 20,000 tonnes	Between 15,000 – 20,000 tonnes	Between 10,000 – 15,000 tonnes	Between 5,000 – 10,000 tonnes	Between 1,000 – 5,000 tonnes	Less than 1,000 tonnes*
Spain	Poland	Portugal	Italy	Austria	Cyprus
Germany	Greece	France	Croatia	Slovakia	Ireland
Hungary		Bulgaria		Sweden	Luxembourg
Romania		Czech Republic		Lithuania	
		United kingdom		Latvia	
				Denmark	
				Slovenia	
				Finlanda	
				Estonia	

* Note: data not available for Belgium, Malta and Netherlands

Source: EP - European Parliament, February 2018, Key facts about Europe's honey market [3]

It is estimated that the EU numbers approximately 600,000 beekeepers. Only 4% of EU beekeepers have over 150 hives, commonly considered the minimum for professional producers. However, as the boundary between professionals and amateurs vary across countries, and varies in terms of profitability and income levels, this number of hives (150) can only be a orientative one in terms of the ability to provide a viable revenue [4].

Consumption is higher than production and increasing, therefore the EU imports yearly important quantities of honey. European statistics do not provide data on the levels of honey consumption in the Member States, therefore the levels of consumption per capita shown in figure 2 have been extracted from the food balances estimated by FAO.

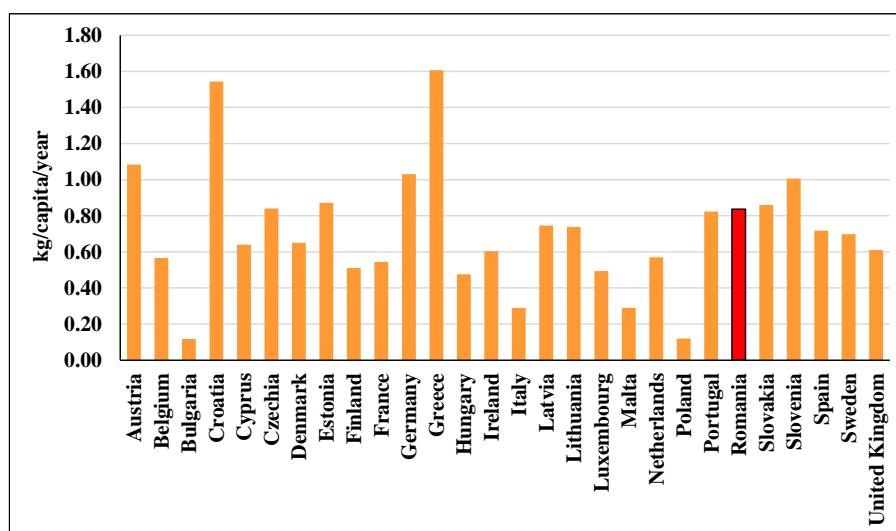


Figure 2. Honey consumption in EU Member States (averages 2015-2019)

Source: author's calculations using FAOSTAT data, Food balances [6]

Although data from FAO food balances show that Greece, Croatia, Austria and Germany have the highest honey consumption (between 1.0 and 1.6 kg/capita/year), there are also empirical estimations of the national beekeepers' associations stating that consumption in Belgium and Netherlands reaches about 1.5 kg/capita/year, 2 kg in Germany and almost 3 kg in Northern countries.

In contrast with the data regarding production and consumption, trade data are very precise.

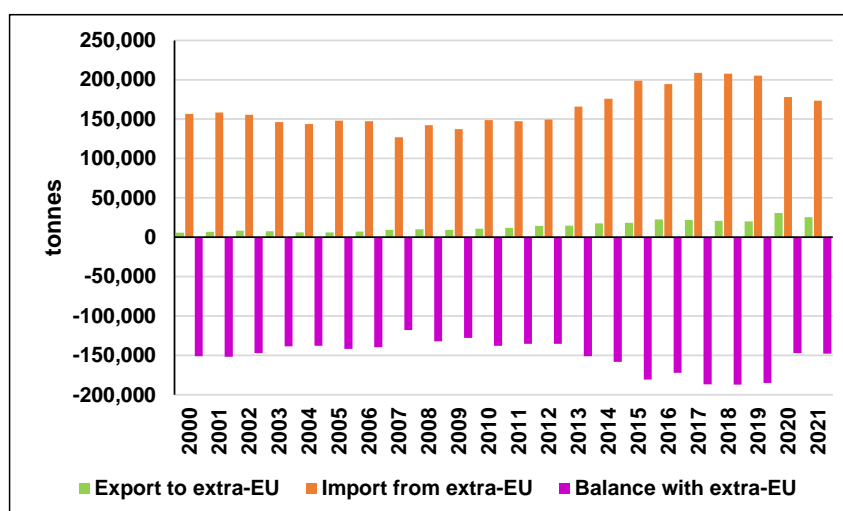


Figure 3. EU trade of honey (tonnes)

Source: author's calculations using EUROSTAT data [5]

Between 2000-2012, honey imports were roughly constant, around 150,000 tonnes per year. After the last enlargement (2013) and post-crisis, imports increased, to go slightly over 200,000 tonnes per year (to a maximum of 208,687 tonnes in 2015), to subsequently drop in the pandemic years, down to 173,400 tonnes in 2021. Exported quantities are very low, amounting between 3.7 and 17.3% of the total imported quantities, with a peak in 2020, when EU exported 30,800 tonnes to various destinations. Thus, the trade balance has been continuously negative. In value terms, the deficit varied from EUR -141 million (in 2007), up to EUR -393 million (in 2015). As compared to world competitors, EU honey producers have relatively higher costs, resulting in higher prices of their exports than price of imported honey. For instance, the EU average unit value for honey exports in 2021 had been 5.76 EUR/kg, while the unit value for imports has been 2.34 EUR/kg.

The imported honey originated mainly from China, Ukraine and Argentina (table 3). They accounted together for 54-67% of all imported quantities.

Table 3.

EU imports of honey by origin

Country of origin	2019		2020		2021	
	tonnes	%	tonnes	%	tonnes	%
China	45,108	22.0	36,790	20.7	48,026	27.7
Ukraine	44,523	21.7	54,802	30.8	53,849	31.1
Argentina	21,269	10.4	22,816	12.8	14,396	8.3
Mexico	18,205	8.9	17,393	9.8	15,486	8.9
Turkey	2,977	1.5	3,186	1.8	4,676	2.7
Cuba	6,477	3.2	6,993	3.9	7,052	4.1
Brazil	3,562	1.7	6,079	3.4	7,934	4.6
Vietnam	504	0.2	598	0.3	924	0.5
Others	62,550	30.5	29,288	16.5	21,063	12.1
Total imports from Extra-EU	205,175	100.0	177,945	100.0	173,406	100.0

Source: author's calculations using EUROSTAT data [5]

In Romania, beekeeping is an ancient traditional occupation of the local population. Since the Middle Ages, Romanian provinces were known in Europe as a plentiful source of

quality honey. In the 15-18th centuries, part of the taxes due to the Ottoman Empire (to which Romanian provinces were vassals) had to be paid in kind (live animals and honey) [7]. Bekeeping has favourable conditions, in terms of climate and flora diversity, and has gained a solid position on export markets.

After a period of decline (1992-1999), the number of hives in Romania entered a steady upward trend. The total number of hives in the country increased in 2021 as to 1999 by a factor of 3.1, but inequally distributed all over the county: numbers increased by factors of 4.3; 4.2 and 3.7 in Nord-Vest, Sud-Est and Sud-Vest Oltenia regions respectively, while decreasing by 36% in Bucuresti-Ilfov region (figure 4).

The honey production followed a similar trend, reaching a minimum value in 1998 (10,200 tonnes). Its upward trend peaked in 2021, reaching 30,831 tonnes. Again, production gains were distributed unevenly across the country: production increased by a factor of 3.9; 3.85; and 3.3 in Nord-Vest, Sud-Vest Oltenia and Sud-Est respectively (figure 5). Yet, there are some visible variations, due to the production dependence of weather conditions: late spring frosts or very wet springs make the bees unable to fly.

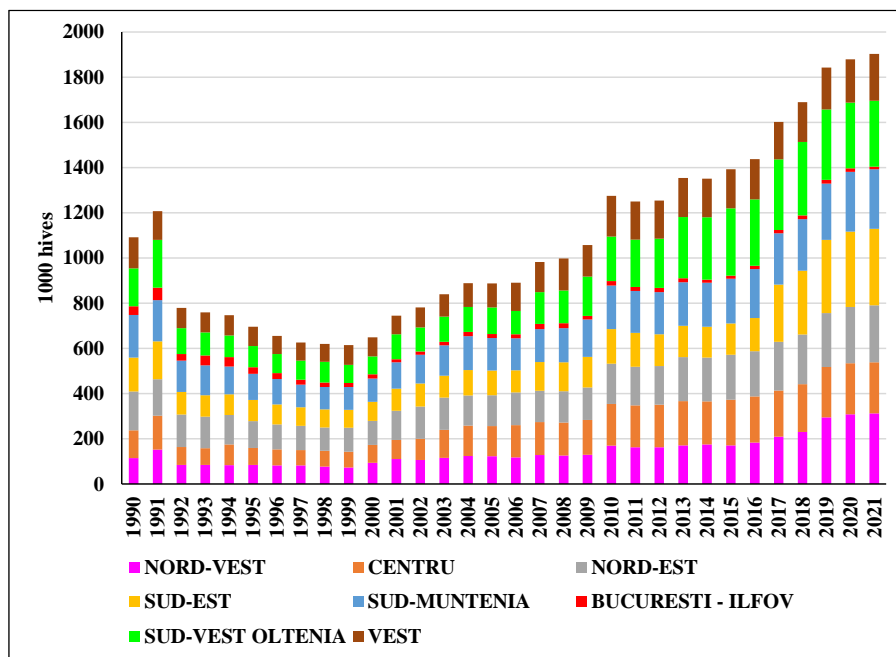


Figure 4. Number of hives in Romania, by development regions (1990-2021)
 Source: author's calculations using INS Tempo-online data [18]

At the same time, too wet or too dry springs and early summers impact negatively upon the capability of plants to flourish and produce nectar for bees to collect.

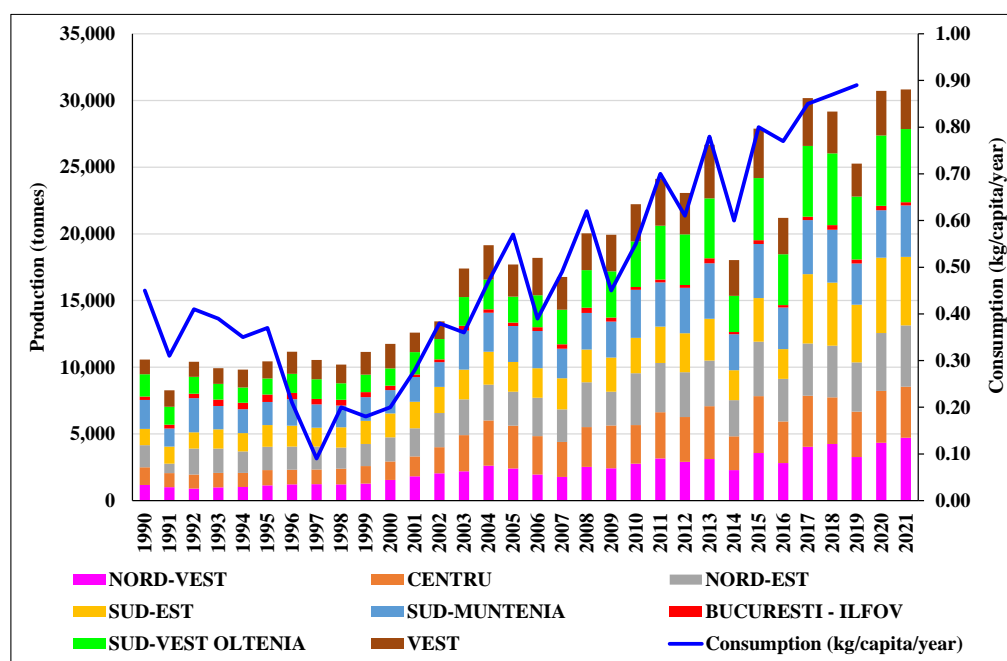


Figure 5. Honey production in Romania, by development regions (1990-2021)

Source: author's calculations using INS Tempo-online data [8] and FAOSTAT data [8]

The honey consumption per capita is still quite low in Romania, but after the year 1999, the last year of the economic “transition” recession, the per capita consumption took a generally upward trend (with some variations) when in Romania started a decade-long economic growth period. FAO estimates of the per capita honey consumption shows a general upward trend, from an all-time minimum of 0.18 kg in 1999, up to 0.9 kg two decades later. It is a result of public campaigns promoting healthier nutrition models and diversification of cooking patterns mostly in urban areas.

Traditionally, Romania is an important exporter of honey. For the last three decades, it has been a net exporter.

Since the quantities traded with the EU are far higher than quantities traded with non-EU countries, the overall trade balance remained permanently positive.

After EU accession, 90-95% of the Romanian exports were directed to the EU countries. The main destination countries have been Germany (taking more than 40% of the total exported quantities), Italy, Poland, France and Spain (table 4).

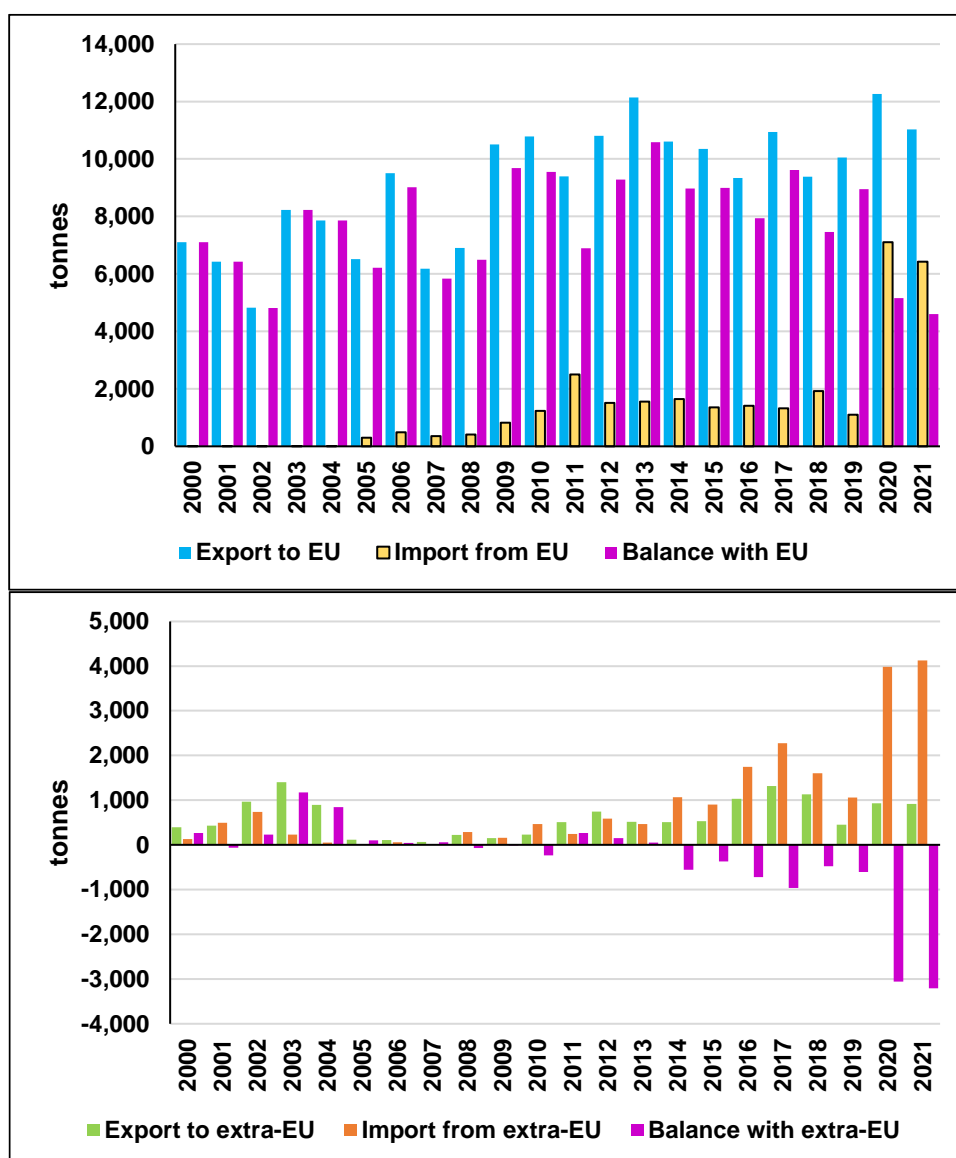


Figure 6. Honey – trade with the EU and extra-EU countries (tonnes)
 Source: author's calculations using EUROSTAT data [5]

Table 4.

Romanian honey exports by destination

2006			2011			2016			2021		
Destination	Tonnes	%	Destination	Tonnes	%	Destination	Tonnes	%	Destination	Tonnes	%
EU	9.500	100.0	EU	9.391	100.0	EU	9.343	100.0	EU	11,426	100.0
Germany	5.681	59.8	Germany	5.402	57.5	Germany	3.748	40.1	Germany	4.794	42.0
United Kingdom	1.679	17.7	Italy	1.112	11.8	Italy	1.289	13.8	Italy	1.646	14.4
Hungary	523	5.5	United Kingdom	826	8.8	France	913	9.8	Poland	1.162	10.2
Italy	440	4.6	Austria	530	5.6	Poland	782	8.4	Denmark	859	7.5
Belgium	301	3.2	Poland	455	4.8	Spain	626	6.7	Spain	848	7.4
Spain	258	2.7	France	404	4.3	Denmark	423	4.5	France	519	4.5

Source: author's calculations using EUROSTAT data [5]

Starting with 2014, imports from extra-EU countries increased significantly, to more than 1,000 tonnes per year, and it surged in 2020 and 2021, when imports increased by a factor of 4 as to 2019 (table 5).

Table 5.**Romanian honey imports from extra-EU origins**

2011			2016			2021		
Origin	Tonnes	%	Origin	Tonnes	%	Origin	Tonnes	%
Extra-EU	244.1	100.0	Extra-EU	1,749.0	100.0	Extra-EU	4,125.4	100.0
China	243.6	99.8	R. Moldova	841.5	48.1	China	2,254.6	54.7
Singapore	0.4	0.2	China	568.4	32.5	Ukraine	1,168.9	28.3
-	-	-	Ukraine	296.9	17.0	R. Moldova	673.4	16.3
-	-	-	Serbia	42.0	2.4	Japan	20.8	0.5

Source: author's calculations using EUROSTAT data [5]

The main sources for importing honey are from outside EU, namely China, Ukraine and R. Moldova. Lately, such imports increased significantly, and many local beekeepers are very unhappy, because it seems that some traders are importing large quantities of low quality and cheap honey, mix it with good quality Romanian produced honey and sell the mixture under EU label, since the labelling regulations are not very strict and do not require explicitly labelling that would allow a clear traceability of the product.

There are also some important weak points in the apiary domestic sector; the main one is the producers' reluctance to association. Poor marketing, especially international marketing is also a major weak point of the Romanian beekeeping sector. The Romanian beekeepers should also take into consideration applications for the EU quality schemes (PDO – Protected Designation of Origin; PGI – Protected Geographical Indication and TSG - Traditional Speciality Guaranteed), which again, once obtained, ensure protection and better marketing in the international arena.

There is an important need to protect and improve the Romanian local bee breeds, since they are very well adapted to the local conditions. It is necessary in order to avoid dependency of local beekeepers of imported foreign breeds, less adapted and more sensitive to specific local climate and flora [20].

There are in place national and European policies addressing apiculture issues. European Union support for beekeeping is provided through the national apiculture programmes. The Romanian National Apiculture Programme (PNA), approved by the EC shortly after accession, represents a support measure for beekeepers and associative forms with joint national and EU funding through which beekeepers and associative forms can settle various expenses they incur in the apiary. The PNA provides technical and financial support for the following actions: (a) technical assistance for beekeepers and beekeepers' organizations; (b) fighting aggressors and diseases specific to hives; (c) the rationalization of transhumance; (d) assistance measures for the repopulation of beekeeping livestock in the EU; and (e) improving the quality of the products in order to better exploit the products on the market [13].

Among the factors jeopardizing the productivity of the bee farms, the most important ones are: outbreaks of specific diseases (such as CDD - Colony Collapse Disorder), climate changes (more frequent droughts reduce the diversity and quantity of flowers visited by the bees), specific chemicals used for pest control in crops. It may become a concern, given bees' indispensable role in the natural pollination of cultivated crops and wild plants, and consequently, in contributing to general food production.

There is a need for better regulations, since illicit practices (such as adulteration of honey with sugar) practiced both inside and outside the EU, together with loopholes in the EU rules regarding the production standards, labelling and origin tracking, affect negatively the quality of honey and fails to secure fair competition for EU beekeepers that are making efforts to maintain the high quality of their products.

CONCLUSIONS

Continuing a century-old tradition, beekeeping is one of the most successful activity in the Romanian agri-food sector. Honey is one of the few agri-food products that is constantly demanded for export. In the last three decades, the beekeeping activity developed continuously. The number of beekeepers and hives increased, there were important investments in both primary honey production, as well as in processing, conditioning and packaging. As a result, honey production increased continuously in Romania in terms of quantity and quality, thus allowing the apiary sub-sector to remain present and expand its position on export markets.

Both exports and imports increased almost continuously in value and volume, with a strong orientation of exports to the EU markets. The Romanian trade balance in honey was continuously positive in the last three decades.

There are in place national and European policies addressing apiculture issues. Support for beekeeping is provided through the national apiculture programmes.

Based on its long-time tradition in beekeeping, Romania has an important potential in producing honey, and high quality additional bee products (such as propolis, raw pollen, royal jelly, etc.). It has excellent conditions for producing a diversified range of honey types, as well as to convert to organic production. Together with competitive production costs, all these premises are able to provide the Romanian beekeepers important advantages on European and global markets for apiary products.

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