



MEDI-BEEB

NEED ANALYSES REPORT

Vytautas Magnus university

Assoc. prof. dr. Anželika Dautartė
prof. dr. Virginija Dulskienė

1. General beekeeping information

In Lithuania, beekeeping evolution may be separated into two stages: tree hollow beekeeping and hive beekeeping. Foresters, particularly woodworkers, performed tree hollow beekeeping throughout the pre-state period and in the Grand Duchy of Lithuania. They had both natural and manmade hollows that could be accessed through ladders or a climbing apparatus. Tree hollow beekeeping thrived in the early 16th and 17th centuries before disappearing owing to rampant deforestation. It was regulated by Russian Empire restrictions in the 19th century (in 1804 it was forbidden to cut hollows). Hollow beekeeping was still practiced in the wooded southern region of Lithuania in the late 19th century, but it vanished by the 20th century.

The organised activity of Lithuanian beekeepers began around the turn of the 20th century. The society "Bitė" existed in Vilnius from 1915 and in Kretinga from 1919 to 1927, with branches throughout Lithuania. In Kretinga county, the society "Spiečius" functioned from 1917 to 1918. From 1927 to 1940, Kaunas was home to the Lithuanian Beekeepers' Society. The journals "Lietuvos bitininkas" (1905), "Sodyba" (1928-1931), and "Naujoji sodyba" (1938-1944) all included articles about beekeeping. Since 1947, public apiaries have been developed (privatized after 1991). Beekeeping has been managed by the Republican Beekeeping Office since 1950, and by the Republican Beekeeping and Gardening Trust from 1962 to 1989. The Lithuanian Horticultural Society's Beekeeping Section was active from 1959 to 1989. In 1963 more than 200000 bee colonies were in farm and amateur beekeepers apiaries, yielding 1452 t of commercial honey and 5.9 t of wax. From 1980 until 1991, the beekeeping board was supervised by the Ministry of Agriculture. The Beekeepers' Union was established in 1989, and by 2000, it had 44 groups throughout Lithuania. In 1983, the Beekeeping Museum was opened in Stripeikiai (Ignalina district municipality). The excessive use of pesticides hampered the growth of beekeeping in the 1980s and 1990s, and now the spread of the dangerous bee illness varroa, which has been spreading since 1978, complicates problems further. Following the restoration of independence (1990), the establishment of specialised private farms housing 30-100 or more bee colonies began.

According to the data of the Lithuanian Statistics Department, at the beginning of 2020, Lithuanian beekeepers kept 203.4 thousand bee colonies. Compared to 2015, 67 % more bee colonies were registered (Figure 1).

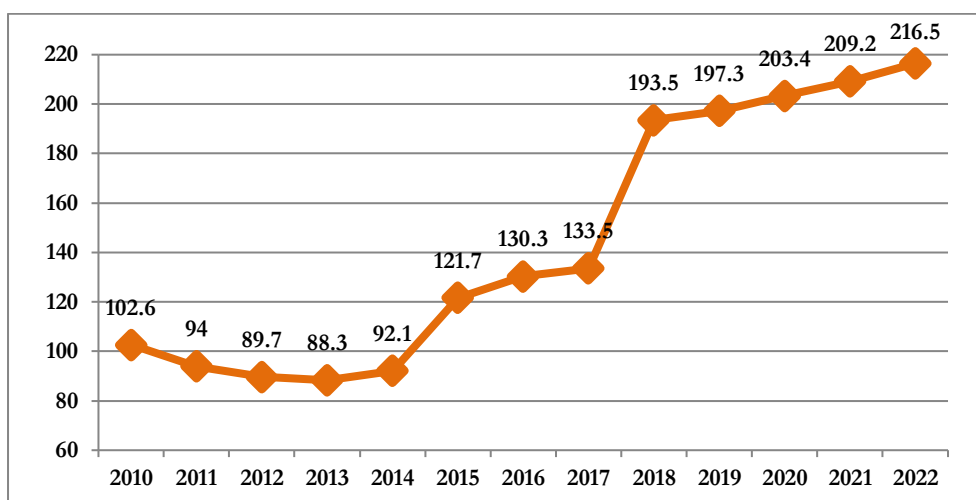


Figure 1. Bee colonies in 2010-2022 (in the beginning of the year),in thousands

Source: The Lithuanian Department of Statistics and Agrpbite.lt

At the beginning of 2020, the largest number of bee colonies were registered in Vilnius (32.2 thousand), Panevėžys (29.1 thousand) and Kaunas (27.2 thousand) counties. Figure 2 shows the number of bee colonies in all counties. On average, 23 bee colonies were kept in one Lithuanian apiary. Organic beekeeping farms (27) accounted for only 0.6%. According to the Agricultural Information and Rural Business Centre, in 2019 there were 42 or only about 0.5% of professional farms (holding more than

150 bee colonies). from all beekeepers. Compared to 2018, the number of professionals has decreased by almost 40 %. On average, such a farm in 2019, had about 297 bee colonies. The average age of beekeepers in 2019 was 46 years.

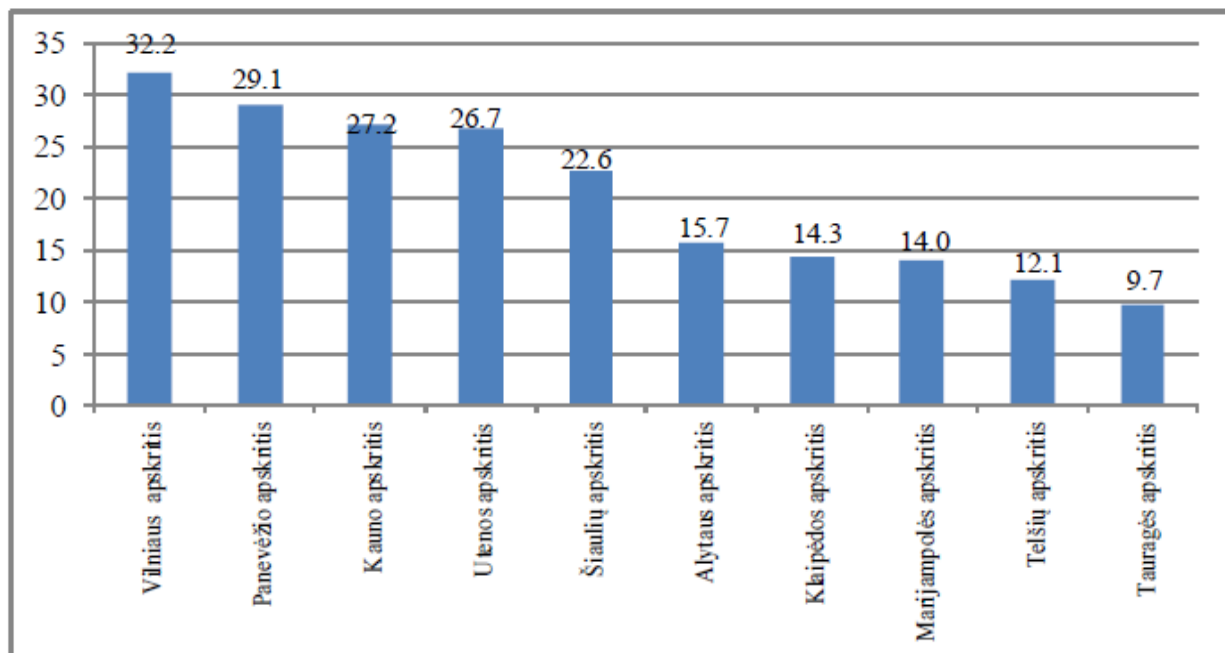


Figure 2. The number of bee colonies in 2020 by county, (in thousands)

Source: The Lithuanian Department of Statistics

At the end of 2007, the National Quality System for Agricultural and Food Products was legalized in Lithuania. The products grown or produced under this system were decided to be called products of exceptional quality. Later, this name was clarified, and from 2015 November 1 such products are called products manufactured according to the National Agricultural and Food Quality System (NQP). These products are marked with a special Quality Mark. NQP are products intended for human consumption, the quality of which exceeds the safety, animal and plant health, animal welfare or environmental requirements set by EU and national legislation. Due to the use of certain farming or production methods, these products have special characteristics. Their production and/or processing process stands out for its naturalness, nutritional value, and environmental protection aspects.

According to PB Ekoagros, in 2016 the number of beekeeping farms engaged in the production of bee products produced in accordance with the NQP was 119, in 2017 – 131, in 2018 – 127 and in 2019 – 107 (Figure 3).

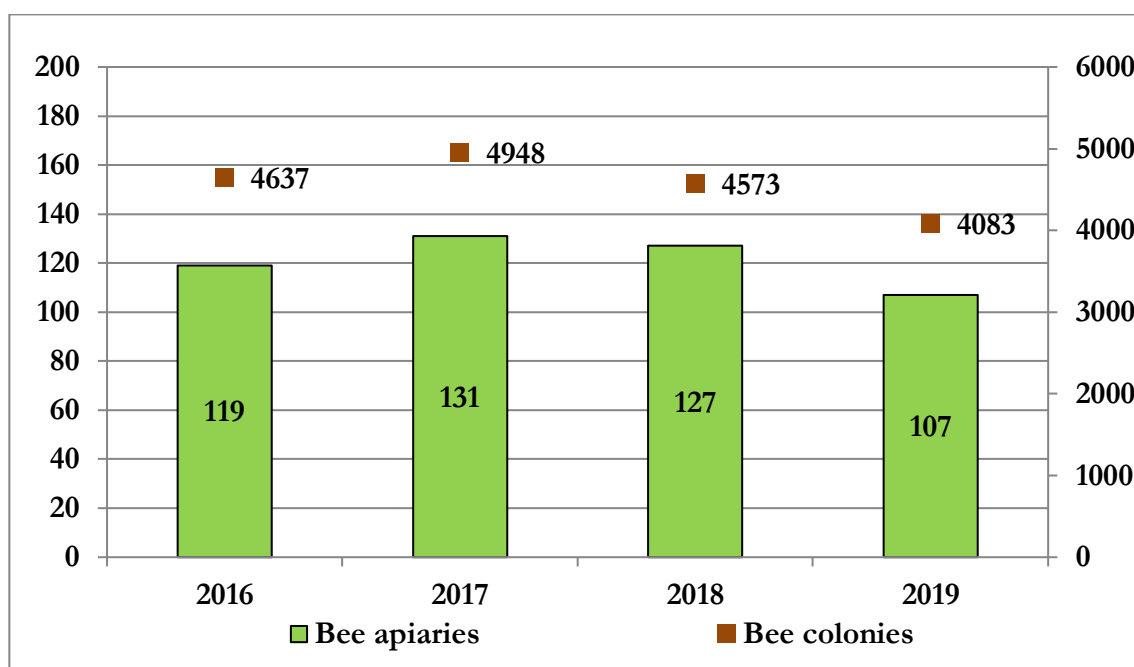


Figure 3. National Agricultural and Food Quality System (NQP) beekeeping

Source: PB „Ekoagros“

Organic beekeeping and the production of organic bee products are being developed in Lithuania. An organic apiary is an apiary where, to obtain uncontaminated bee products, the established requirements for the cleanliness of bee pastures, bee care and treatment, collection, processing and storage of honey and other bee products are followed. According to the data of PB Ekoagros, in 2016 the number of certified beekeeping farms engaged in organic beekeeping was 22, in 2017 – 23, in 2018 – 25, and in 2019 – 27 (Figure 4).

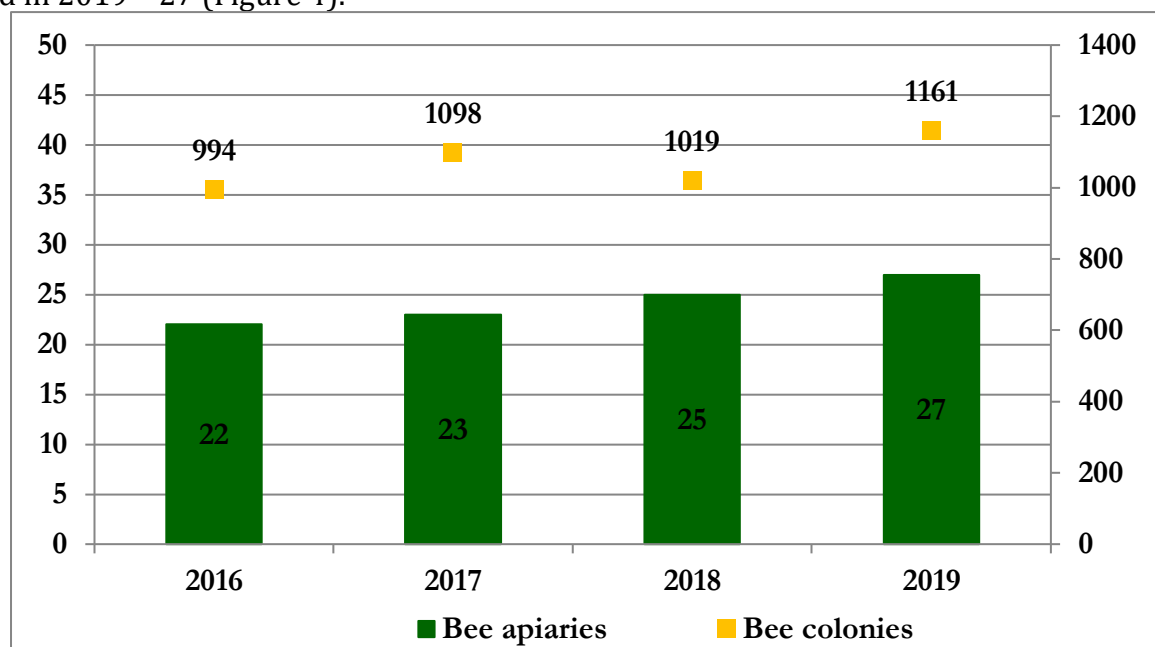


Figure 4. Organic beekeeping

Source: PB „Ekoagros“

2. Production of bee products

According to the data of the Lithuanian Statistics Department (SD), in 2016 2708 t of honey were produced in Lithuania, in 2017 – 2622 t, in 2018 – 4207 t and in 2019 – 5284 t. In 2019, compared to 2016, honey production increased by 95.1 %, and in 2018, compared to 2017 - 60.5 %. Such a significant increase in honey production in one year can hardly be explained by favorable weather for beekeeping. Most likely, this is related to the revised methodology of the statistical survey, approved by the Director General of SD in 2018. This version is also confirmed by the fact that the number of bee colonies published by the SD in 2016-2017 was noticeably different from the data of the State Food and Veterinary Service (SFVS) (at the end of 2016, according to SD- 133.5 thousand, and according to the SFVS - 188,000; at the end of 2017, according to the SD – 137.8 thousand, and according to SFVS – 191.8 thousand), and in 2018 almost coincided at the end (according to SD – 198.0 thousand, and according to SFVS – 193.7 thousand).

According to SD data, the average amount of honey obtained from 1 colony was 20.5 kg in 2016, 19.3 kg in 2017, 21.3 kg in 2018, and 26.3 kg in 2019. After taking the number of SFVS bee colonies and multiplying it by the average amount of honey obtained from one colony, 3,852 t of honey should have been produced in 2016, and 3,715 t of honey in 2017. Then, in 2018, compared to 2017, honey production increased by 13.2 %, and in 2019, compared to 2016, by 37.2 %.

Almost all honey in Lithuania is produced on the farms of farmers and amateur beekeepers. According to their mandatory annual reports, 2,455 t of honey were produced in agricultural companies and other agricultural companies in 2016, in 2017 – 1,042 t, and in 2018 – 1,441 t.

The average retail price of honey, the main beekeeping product, grew in 2016-2018: in 2018 (6.24 EUR/kg), compared to 2016 (5.69 EUR/kg), it increased by 9.7 %. In 2019 (6.17 EUR/kg), compared to

2018. (5.69 EUR/kg) the price of honey decreased by 1.1 % but was still 8.4 % higher than in 2016 (Table 1).

Table 1. Retail and purchase prices of honey in 2016–2019

Source: The Lithuanian Department of Statistics and Agricultural Information and Rural Business Center

Prices , EUR/kg	2016	2017	2018	2019
Average retail price	5,69	6,09	6,24	6,17
Price in the marketplace	5,21	6,20	6,34	5,43
Purchase price	2,45	2,91	3,10	2,45

Other bee products are also produced in Lithuania: beeswax, pollen (collected by bees), bee bread, bee propolis, royal jelly. However, statistical information on the scale of production of these bee products is not collected. The prices of other bee products are presented in Table 2. The prices of these products increased more than honey in 2019 compared to 2016 - from 16.7 to 46.2 %, although the prices of some products in 2019 compared to 2018 increased by 5 to 12.5 % decreased.

Table 2. Prices of bee products in 2016–2019

Source: Orders of the Ministry of Agriculture of the Republic of Lithuania regarding normative prices of agricultural products and biological assets.

Prices , EUR/kg	2016	2017	2018	2019
Bee wax	6,50	6,50	10,00	9,50
Royal Jelly (1 g)	1,95	1,95	2,50	2,50
Propolis	45,00	45,00	60,00	52,50
Pollen	16,00	20,00	20,00	20,00

In 2018, the average selling price of honey was 3.61 EUR/kg, i.e. honey was sold at the same price as in 2017 (only EUR 0.01 more expensive than in 2017). According to Lithuanian counties, the most expensive honey was sold in Klaipėda (7.04 EUR/kg) and Alytus (5.12 EUR/kg) counties, and the cheapest – 2.77 EUR/kg in Utena county. According to the data of the Lithuanian Statistics Department, in 2018 the purchase price of honey was the highest in the last 10 years (Figure 5).

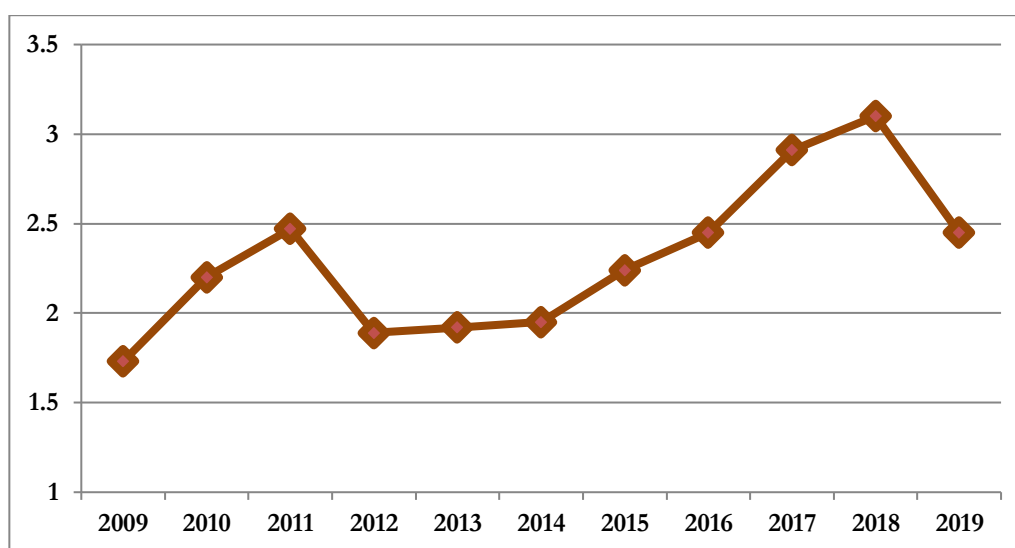


Figure 5. Honey purchase price in Lithuania

Source: The Lithuania Department of Statistics

Table 3. Average price of beekeeping products, EUR / kg

Source: Orders of the Ministry of Agriculture of the Republic of Lithuania regarding normative prices of agricultural products and biological assets.

Product	2018	2019
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Honey (retail price), EUR/kg	6,24	6,17
Honey (wholesale price), EUR/kg	3,10	2,45
Bee wax, EUR/kg	10,0	9,50
Royal Jelly, EUR/g	2,5	2,50
Propolis, EUR/kg	60,0	52,50
Pollen, EUR/kg	20,0	20,00
Bee breeding		
The average price of a queen bee	40,0	60,0
The average price of a swarm , EUR/kg	28,0	27,50

Some of the honey produced in apiaries in Lithuania is bought by wholesale and retail trade companies, as well as processing companies. After evaluating the data of the Lithuanian Statistics Department, as well as after interviewing the large honey producing companies and finding part of the information in media sources, it can be estimated that the companies in 2016-2019 bought about 20-30 % of the produced honey, of which about 2-3 % was intended for processing, the rest for trade in the domestic market and export.

The largest share of honey produced in 2016-2019 was sold directly to consumers - about 50-65 %. Honey is sold directly from home, at markets, fairs, and various events. Online shopping has also become very popular in recent years.

The balance of foreign trade in honey was positive in 2016, exports exceeded imports by 185.0 t, but in 2017-2018 the balance was negative due to a decrease in exports, and imports exceeded exports by 476.5 t in 2017; and in 2018 – 354.0 t. As exports increased again in 2019, the foreign trade balance was positive, and exports exceeded imports by 486.1 t.

In 2019, 1089.3 t of Lithuanian honey was exported abroad, which was 59.9 % more than in 2018 and 11.5 % – than in 2016. The trends in the changes in the quantities of re-exported honey were like those of Lithuanian honey exports: 603.9 t of honey were re-exported in 2016, 415.9 t in 2017, 353.8 t in 2018, and 764.5 t in 2019. In 2019, 2.2 times more honey was re-exported than in 2018 and 26.6 % - than in 2016. In 2019, the total honey export increased by 79.1 % compared to 2018, and by 17.3 % compared to 2013.

In 2016-2019, over 97 % honey of Lithuanian origin was exported to other EU countries. Most honey was sold to Germany in 2016-2018 (36.4% in 2016, 33.5% in 2017, 24.1% in 2018), but in 2019, although 21.8% was sold to Germany. of honey, Poland became the largest foreign market, where 47.0% of Lithuanian honey was exported. The other largest honey exporting countries were Lithuania's neighbors - Latvia and Estonia. 42.2% was exported to Latvia, Estonia, and Poland in 2016, 55.3% in 2017, 50.6% in 2018, and 64.1% in 2019. honey (Fig. 6). The total export of honey, including re-export, also took place almost exclusively to EU countries (1.3-2.3 % of honey was exported to third countries) and to the same countries as the export of Lithuanian origin. In 2016, most honey was exported to Germany (32.4%) and Poland (25.0%), in 2017 - to Estonia (24.0%) and Germany (21.3%), and in 2018 and 2019 - to France (18.5% and 19.3%) and Germany (17.8% and 18.9%).

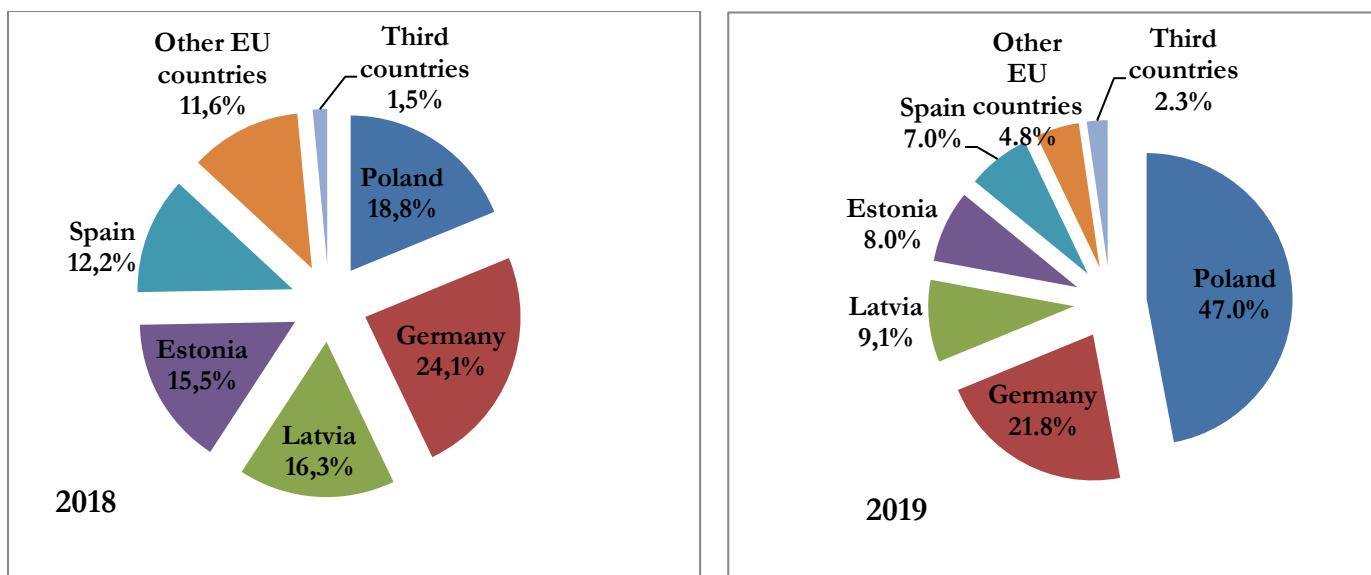


Figure 6. Geographical structure of honey exports of Lithuanian origin

Source: The Lithuanian Department of Statistics

The amount of honey imported to Lithuania changed little in 2016-2019. In 2016, 1395.5 t of honey was imported to Lithuania, and in 2019 - 1367.7 t, or 2.0% less than in 2016. The amount of imported honey remaining on the Lithuanian market increased from 791.6 t in 2016 to 1034.0 t in 2017; In 2018, it decreased to 968.5 t, and in 2019 to 603.2 t. In 2019, compared to 2018, 37.7 % of imported honey remained on the Lithuanian market, and compared to 2016, 23.8 % less imported honey. The share of imported honey in the total honey consumption in Lithuania (the calculation does not consider the change in stocks) was almost unchanged in 2016-2018: in 2016 it was 21.6 %, in 2017 – 24.7 %, and in 2018 – 21.5 %. However, in 2019 this share decreased to 12.6 %.

The geographical structure of honey imports remained almost unchanged in 2016-2019. About half of all honey was imported from Ukraine, another third - a quarter from China and 16.1-21.0 % from Poland (Fig. 7). Some honey was imported from Latvia (1.4-3.5%), and very little from other countries. A total of 75.5% of honey was imported from third countries in 2016, 81.2% in 2017, 79.9% in 2018, and 77.1% in 2019.

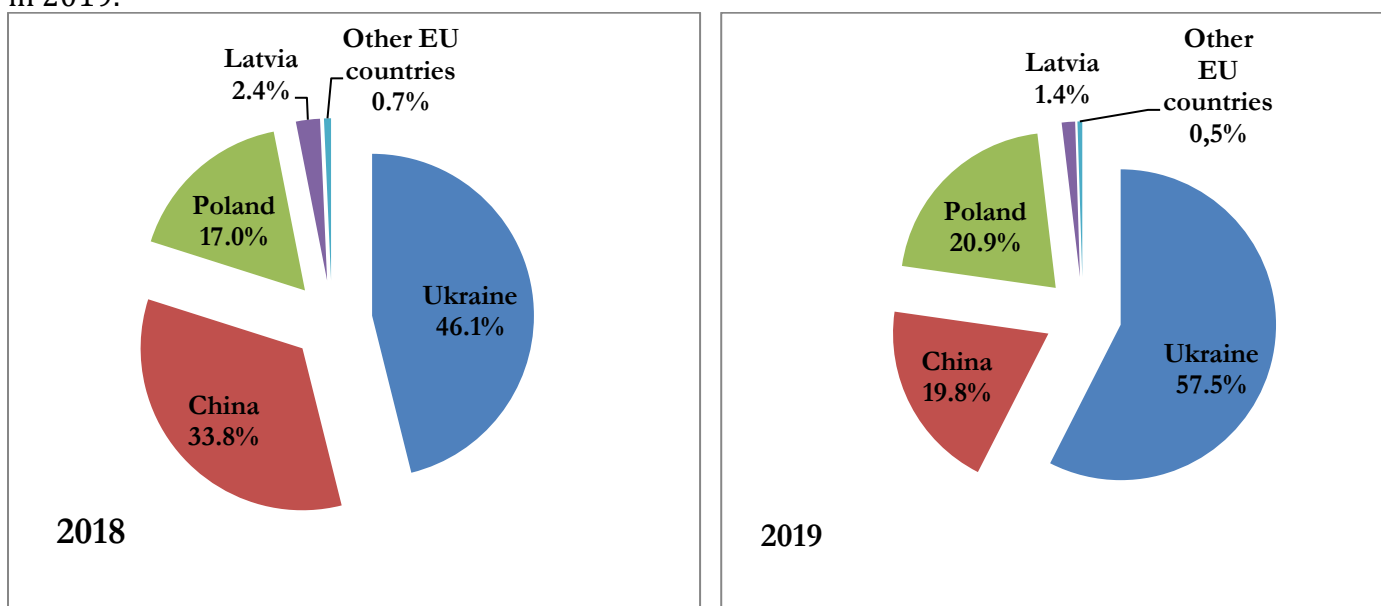


Figure 7. Geographical structure of honey imports of Lithuanian origin

Source: The Lithuanian Department of Statistics

In 2019, beekeeping farms engaged in the production of bee products produced in accordance with the NQP produced 155.0 t of honey, i.e. 14.6 % less than in 2018. In addition to honey, other bee products

were also produced - pollen, bee bread, propolis, royal jelly and mixtures of bee products. In 2019, compared to 2018, the production of all these bee products increased (Table 4).

Table 4. Production of bee products produced according to the National Agricultural and Food Quality System (NQP) in 2016–2019

Source: PB „Ekoagros“

Products	2016	2017	2018	2019
Honey, kg	172650,22	158665,67	181435,73	155029,6
Pollen , kg	1573,20	2062,30	1975,30	2187,3
Bee bread, kg	1815,90	2143,51	2060,27	2280,92
Propolis, kg	129,82	95,35	108,18	119,8
Royal Jelly, kg	0,950	0,687	0,105	1,055

In 2019, organic beekeeping farms produced 32.3 t of organic honey, i.e. almost one third less than in 2018. In addition to organic honey, pollen, bee bread and pitch were produced. In 2019, compared to 2018, the production of all these bee products decreased (Table 5).

Table 5. Production of organic bee products in 2016–2019

Source: PB „Ekoagros“

Products	2016	2017	2018	2019
Honey, kg	34500,00	42776,93	47836,4	32326,5
Pollen , kg	604,00	543,00	410,0	369
Bee bread, kg	494,20	610,15	724,0	592,8
Propolis, kg	30,76	50,02	62,6	39,0
Royal Jelly, kg	0,72	0,575	0,0	0,0

3. Information on the production, storage and marketing of bee products in terms of apitherapy and apitherapy

Historical approach. Apitherapy began in Lithuania in 1962, when prof. A. Lukosevičiūtė and assoc. prof. A. Eviltis began researching the benefits of fresh royal jelly on patients with cardiac problems at Kaunas Clinics. The Kaunas Pharmaceutical Factory "Sanitas" began producing ethanol extract of propolis and royal jelly tablets in 1966. In 1967, the first Lithuanian bee venom ointment, "Apitrit," was invented. A. Gendrolis, a pharmacist at the time, began researching propolis in 1971 and submitted his first dissertation on the investigation of certain eye drops for industrial production in 1974. L. Mackevicius, M.D., was the first in Lithuania to use bee venom (stings) for therapy in 1975, and he invented an apparatus for this purpose. Constituent Assembly of the Lithuanian Apitherapy Association was held on 1991 10 02 at State Pharmaceutical Company "Sanitas". This was the birthday of the Lithuanian apitherapy association. In October 1991, apitherapy classes were held in Druskininkai. Their duration was 60 hours, and the audience included 27 people from Lithuania, Latvia, Estonia, Ukraine, and Russia.

The Lithuanian Healthy Lifestyle and Natural (Complementary and Alternative Medicine Chamber was established in 2011. The activities of the Chamber were divided into two sectors:

1. healthy lifestyle focussing on the development of activities in the field of health protection and promotion as well as disease prevention.

2. application of natural medicine methodologies in diagnostics and treatment of diseases.

Resolution of the Seimas of the Republic of Lithuania on the "Policy for the Protection and Promotion of Individual and Public Health" was adopted in 2012, which included a provision stating that we would seek to regulate the provision of non-traditional medical services in the form of legislations".

Resolution of the Government of the Republic of Lithuania "On the Approval of the List of Priority Legislative Initiatives for 2014" was adopted in 2014, which included a decision to regulate the practice of non-traditional medicine. Department for Coordination of Non-traditional Medicine Initiatives was established at the Ministry of Health in 2014.

Law on complementary and alternative healthcare (CAHC) of the Republic Lithuania No. XIII-2771 was on 14 January 2020, came into effect on 01-Jan-2021. The law on CAHC provides preparation of legislations: to form a development committee and a committee for the assessment of specialist qualifications; to approve a list of specific services to be included; to prepare a procedure for the preparation of CAHC service provision protocols; to prepare the rules for licensing the activities of CAHC establishments; to prepare the rules for licensing the activities of CAHC specialists.

It is planned to conduct postgraduate studies at the Lithuanian University of Health Sciences in Kaunas with the aim of obtaining the qualification of a CAHC apitherapy specialist. Higher education establishments are in the process of developing training programs, which are coordinated with the development committee and approved by the Minister of Health. In-service trainings may be carried out by associations and CAHC establishments upon planning with the Ministry of Health. There are a specific service classified as CAHC: Water treatment therapy; Body aromatherapy; Therapy of facial care procedures; Facial aromatherapy; Phytotherapy; Hirudotherapy; Apitherapy; Endobiogenics; Ayurveda; Canin therapy; Acupuncture; Applied kinesiology; Osteopathy; Dolphin therapy; Hypotherapy.

There are the specific documents required to obtain a licence as a specialist in CAHC apitherapy as follows: Higher education graduation document; Proof of acquired professional qualification in CAHC apitherapy; Proof of the right to reside and work in Lithuania; Proof of proficiency in the official language; License issued for the indefinite period.

The qualification requirements for a natural person seeking a licence as a specialist in CAHC apitherapy are as follows: a natural person seeking a license as a specialist in CAHC apitherapy must have a higher education degree or an equivalent higher education qualification acquired upon completion of studies in the field of medicine or rehabilitation, or dentistry, or pharmacy, or oral care, or public health, or nutrition, or biology, or genetics, or microbiology, or molecular biology, or biophysics, or biochemistry, or veterinary studies and must have completed apitherapy trainings under the procedure established by the Minister of Health.

There are two types of specialist licence to provide CAHC apitherapy services: Complementary and alternative health care specialist for apitherapy and Assistant specialist in CAHC apitherapy"

There are specific licensing requirements for a CAHC apitherapy establishment (institution) as well: the staff of a CAHC establishment must hold valid licences of specialists in CAHC apitherapy; Requirements and protocols for the provision of CAHC apitherapy services; CAHC apitherapy establishment must hold a hygiene passport, CAHC apitherapy establishment must hold a civil liability insurance, licence for a CAHC apitherapy establishment is issued for an indefinite period of time.

The Minister of Health of the Republic of Lithuania on June 30, 2022, signed an order on the Approval of the description of requirements for the provision of supplementary and alternative healthcare apitherapy services. The description of the requirements for the provision of complementary and alternative healthcare apitherapy services determines the rights, duties and competence of specialists providing complementary and alternative healthcare apitherapy services, the duties and competences of CAHC apitherapy specialist assistants, requirements for the apitherapy products used to provide the

CAHC apitherapy service, the premises where the CAHC apitherapy service is carried out, the procedure for organizing the provision of this service, handling documentation.

Research on the use of bee products in treatment practices. Lithuania has very old beekeeping traditions and for centuries bee products have been used in folk medicine for treatment of wounds, cough, ulcers, tuberculosis, and other diseases. Scientific research on apitherapy in Lithuania started more than 50 years ago when fresh royal jelly was applied at the Cardiology Department for patients suffering from cardiovascular diseases. From 1971, Lithuanian scientists have been focusing on investigation of propolis qualities and propolis preparations development. Scientists from the Lithuanian Oncology Centre, Institute of Experimental and Clinical Medicine as well as the Lithuanian Nutrition Centre conducted research of bee products in 1990 -1998. The findings of the research indicated that bee products had a positive effect on the immune system of patients. Research of the chemical composition and biological properties of honey and pollen as well as the hygienic analysis were conducted by the staff of the Lithuanian Nutrition Centre. In 1995 dr.J. Jankauskienė was the first in Lithuania to start using honey to treat some eye diseases under the guidance of prof. E. Daktaravičienė, the ophthalmologist at Kaunas Clinics. Eye drops containing honey, i.e., "Oftalmelis", were registered in 1998. They moisturize the eyes, reduce vitreous haze, and improve vision. "Viziovitalis", which contains royal jelly, was developed in 2006 thanks to the efforts made by prof. J. Jankauskienė. It is recommended for use in patients with the early stage of age-related macular degeneration. "Oculocin Propo", i.e., eye drops containing propolis and used to manage eye irritation, are also manufactured in Lithuania. Nowadays, bee products, particularly honey and propolis and its preparations (tablets, suppositories, ointments, mouth sprays, and others), are quite popular among consumers and are available in most of the Lithuanian community pharmacies usually positioned as dietary supplements.

Apitherapy products. There are a few companies, dealing with apiproducs in Lithuania: "Domus naturea", "Valentis" and "Medicata". „Medicata“ is a colony-owned and operated business, which has been manufacturing food supplements over 60 different products rich in natural vitamins and amino-acids, natural medicines, and cosmetics. Company was founded in 1994 in Lithuania. It was one of the first ones in Lithuania to introduce Good manufacturing practice (GMP) in 2006. Today company distribute products in all three Baltic countries – Lithuania, Latvia, and Estonia), Nordic countries Sweden and Norway, Ireland. We have an ambition and patience to serve for other Nordic countries, Germany, and UK market. The partners and the largest retailers in Lithuania: Euroapothecca (Franmax), Tamro Baltics (Phoenix group), Limedica (Polska Grupa Farmaceutyczna). The main business focus is on products from the beehive – propolis, royal jelly, bee pollen and honey. Currently is offered to customers more than 60 different products. Company is a member of Lithuanian Confederation of Industrialists (LPK), Lithuanian Association of Pharmaceutical Enterprises (LAPE), Lithuanian Pharmaceutical Association, Lithuanian Apitherapy Society and since 2015 member of Germany Apitherapy Society (Deutscher Apitherapie-Bund).

The following apiproducs are produced by the "Medicata" company: Royal jelly in honey; Bee bread with propolis and honey; Propolis in honey; Pollen with propolis and honey; Honey tea with propolis and herbs: Evening, Cold, Immunity; Propolis; Apromel; Salveprol; Aprotusin, Promenthol plus for immunity; Propolis capsules; Propolis oil; Procalend; Propolis spray; Propolis drops; Propolis ointment with zinc; Propolis-marigold ointment; Propolis ointment; Campharol; Raminta, soothing propolis balm, Apilak 10, Apilak 50, Apilak 70 (royal jelly); Visiovitalis; Pollen tablets; Bee bread; Bee bread lozenges.