

# Current status of honey production in Azerbaijan

*Yusif Abulfat Humbatov*<sup>1\*</sup>, *Vugar Faig Gapagov*<sup>1</sup>, *Irada Khusainova*<sup>1</sup>, *Sergey Yekimov*<sup>2</sup>, *Ramida Farrukh Khalilova*<sup>1</sup>, *Jamala Fizuli Tahirzade*<sup>1</sup>, *Minara Jabrayil Yusifova*<sup>1</sup>, and *Bobur Sobirov*<sup>3</sup>

<sup>1</sup>Azerbaijan Technological University, Baku, Azerbaijan

<sup>2</sup>Czech University of Life Sciences Prague, Kamycka 129, 16500, Praha - Suchdol, Czech Republic

<sup>3</sup>Samarkand branch of Tashkent State University of Economics, 140100 Samarkand city, Uzbekistan

**Abstract:** The coronavirus pandemic affected the beekeeping industry by reducing honey production and breaking logistics chains, creating difficulties in seasonal job activities in the hives and the transportation of beekeeping products, and decreasing the information base related to beekeeping. Yet, the demand for honey as a healthy natural product at the pandemic level has increased considerably. Although Azerbaijan has natural and climatic conditions, it is far behind among world honey-producing countries. The paper discusses the certainty of conducting in-depth research to develop the beekeeping sector, considering it a strategic field. It explores the importance of the beekeeping development project implementation by applying a program that combines planned complex measurements through a systematic approach to short-term and long-term existing concrete problem-solving goals in this field. Keywords: honey production, reforms, science-intensive production, export-oriented production

## 1 Introduction

Some factors affect the food supply rentability. These factors include the availability of natural resources, field economic development, new technology provision, the use of allied production methods, the employment of the population living in the village, state management, etc [1-8].

To improve the provision of quality and safe food products to the population, it is essential to determine the microbiological indicators of products, their supply, storage, transportation, packaging, and other stages according to the relevant state standards. (3)

To develop beekeeping, which has a unique role in ensuring food security, conferences and exhibitions are held under the auspices of UNESCO. The honey fair held annually in Azerbaijan has a positive effect on the scientific, ecological, and economic development of beekeeping and the development of relations between beekeepers and scientific organizations.

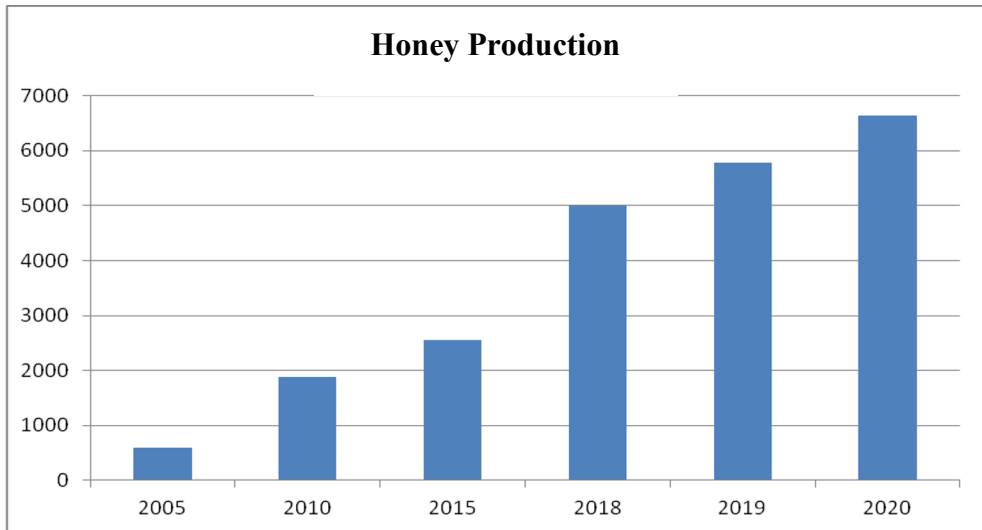
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\* Corresponding author: [humbetov-1964@mail.ru](mailto:humbetov-1964@mail.ru)

## 2 The main part

The President of Azerbaijan signed a special order to speed up the development of this field, and starting from 2018, in the next 5 years, beekeepers will receive 10 manat subsidies from the state budget for each family of bees. After the subsidy mechanism was introduced, it was created an electronic database of all bee families (hives) in the country. As a result, by the 1st of January, 2021, the number of bee families in Azerbaijan increased up to 596,700 with the average productivity of each bee family about 10-12 kilograms. (1).

The diagram 1 shows a dynamic growth by years in the statistical data of honey.



**Fig. 1.** The volume of the total honey production in 2005-2020

As can be seen from Figure 1, the production of honey, which is the main product of beekeeping, increased significantly in 2005-2020. Since 2018 it has increased almost twice compared to 2015.

The implementation of Azerbaijan President Ilham Aliyev's decree of 2018 was fulfilled through increased of production, which considered establishing a subsidy of 10 AZN per bee family for individuals and legal entities engaged in beekeeping.

In the following years, 6742.2 tons of honey was produced in 2021 and 7445.9 tons in 2022, however, in 2023, there was produced the least amount of honey in the last 27 years, 3500 tons. According to surveys, the main reason for this is the weather conditions - the number of rainy days.

According to the results of the statistical observation conducted by the State Statistics Committee of Azerbaijan, in 2020, the total value of beekeeping products obtained from 596,700 bee colonies in 32,340 households at current market prices was 169.5 million manats. Considering that the total value of livestock products in 2020 was 4400.5 million manats, it is known that the specific weight of beekeeping products within the field was 3.8%.

Until recent years, despite its high quality, the export of Azerbaijani honey was not carried out. Only since 2017, within the framework of the export missions carried out in the country, the first order was placed from the United Arab Emirates. Agreements were signed to export honey to Dubai, Germany, and Japan under the "Made in Azerbaijan" brand. As a result, 6.6 tons of honey in 2017, 8.3 tons in 2018, 0.29 tons or 5.61 thousand US dollars in

2020, and 0.10 tons or 2.13 thousand US dollars in the first 7 months of 2021 were exported.

According to the statistics of 2020, the number of bee families in Azerbaijan has reached 596,700. However, despite this, the country imports honey from many countries. In 2020, most honey was imported from Turkey. So, during the reporting period, Turkey exported 31.43 tons of natural honey worth 175 thousand US dollars to Azerbaijan. This is 5.5% and 11.3% less than a year ago, respectively. The second country in terms of value was Russia. In 2020, 27.31 tons of honey worth 134 thousand dollars were supplied to Azerbaijan from this country. This indicator decreased by 21.7% in terms of value and 25.7% in terms of volume.

Also, in the first half of 2021, 78.7 tons or 401.0 thousand US dollars of natural honey was imported into Azerbaijan (54.6 tons or 200.6 thousand US dollars in the same period of 2020). 26.4 tons of imported honey came from Russia (4.38 tons in the 7th month of 2020), 23.7 tons from Iran (28.7 tons in the 7th month of 2020), and 21.9 tons from Turkey (17.6 tons in the 7th month of 2020). The rest was imported from other countries.

Azerbaijan ranks 9th in the list of countries to which Russia exports honey. The number of countries where Russia exports honey has increased from 17 to 31. During January-May of this year, Azerbaijan increased honey import from Russia by 5.32 times to 23 tons. At present, the share of agricultural products in the export of Azerbaijan is 14% of the total export products of the country. According to the calculations, 0.1% of beekeeping products are exported.

Currently, to protect the domestic market, many countries of the world have certain restrictions on the import of honey from foreign countries. The customs fee is high for imported honey in Turkey, and Israel has banned the import of honey in general. We believe that Azerbaijan also should apply some restrictions to protect the domestic market and create conditions for honey producers to sell their products. In this case, the interest in the field would increase and due to the increase in honey production, the prices would be adjusted according to the purchasing power of the population. Table 1 shows the statistics of the supply of the country's population with basic food products:

**Table 1.** Annual production of the main food products in Azerbaijan, per capita (in kg)

Year	Grain	Potato	Vegetable	Food melon plants	Sugar beet (for industrial processing)	Fruits and Berries	Honey
2005	248	129	135	43	4	75	0,191
2006	239	118	140	43	20	78	0,187
2007	228	121	143	49	16	79	0,184
2008	281	124	141	47	22	82	0,182
2009	332	111	134	47	21	81	0,179
2010	218	107	133	49	28	82	0,177
2011	265	104	134	53	28	85	0,175
2012	298	106	133	47	19	88	0,173
2013	310	107	133	46	20	92	0,171
2014	247	87	126	47	18	90	0,169
2015	174	86	131	50	19	91	0,172
2016	188	92	129	47	32	90	0,275
2017	183	92	142	47	41	96	0,366
2018	205	90	152	40	28	101	0,553
2019	348	101	173	45	111	92	0,579
2020	187	104	174	45	23	113	0,665

2021	188	106	181	46	18	120	0,672
2022	173	107	182	47	21	125	0,739

Source: It was compiled using the Baku-2023 materials of the State Statistics Committee of Azerbaijan Agriculture.

Table 1 shows that although the production of many agricultural products (food products) in Azerbaijan is consistent or slightly different from the norm for some food products per capita during the year, according to the data of 2017, the production of honey from medical food products is within the food norms. although it is lower than the set norm (0.5 kg), it has been in line with the norm since 2018. (2)

An advantage of the favorable conditions for the development of beekeeping in our Republic is the Karabakh zone, which was under occupation for nearly 30 years and as a consequence of this harmed the growth of honey production.

In 2020 the liberation of the Karabakh, which has favorable natural climate conditions for beekeeping, opened wide opportunities for the development of beekeeping. The President of Azerbaijan makes regular trips to these lands, and according to his instructions, the transfer of beekeepers to those areas has already been approved. (5)

Azerbaijan Beekeepers Association has launched a program for the development of beekeeping in Karabakh as in the past beekeeping was more developed in Kalbajar and Lachin. We believe that by the new economic zoning, it is possible to develop beekeeping in economic regions such as Karabakh and East Zangezur in two directions:

- mountain beekeeping;
- lowland beekeeping

Vegetation and natural-climatic conditions in those areas are favorable for the placement of beehives. For the development of migratory beekeeping, which is one of the main factors for honey production, the complex organization of mountain and lowland beekeeping and the creation of large specialized beekeeping farms based on scientific principles are appropriate.

The statistics show that in the recent past, the amount of honey obtained from each bee family in beekeeping farms in the Karabakh zone was 30-35 kg. At the same time, the quality of honey produced in those areas differs from honey in other areas. A large number of bee families have been moved to the Kalbajar and Lachin pastures, which have already been freed from occupation. Since the areas are away from public places, traffic, and other places, there is no doubt that the productivity here is high.

Moreover, it is possible to organize beekeeping in Karabakh on an industrial basis by conducting monitoring in these areas and initially assessing the possibilities of use in the Lachin and Kalbajar grasslands, determining the risks, and accordingly ensuring the migration of a larger number of farms to these grasslands in the coming years. Considering that Karabakh is also suitable for tourism, offering eco-friendly honey to citizens of foreign countries coming with the purpose of tourism would have created the basis for the further expansion of beekeeping in these areas.

Due to the implementation of the mentioned measures it is possible to increase the annual production of honey in Azerbaijan by up to 10,000 tons. Taking into account that the domestic demand is 5 thousand tons, it means that it is possible to export about 5 thousand tons of products. This means that additional currency will enter the country's budget.

Today, if we pay attention to the statistics of honey production in the world, we will see that although the coronavirus pandemic that started in 2020 has harmed the development of beekeeping, the demand for honey, a healthy natural product, has increased in most parts of the world. As a result, honey exports in 2020 are 15% in terms of value compared to 2019 and the volume increased by 18%. (9)

In 2020, the issue of honey production in the world was uncertain. The obtained statistical information suggests a 15-20% increase in honey production and export. The average world export price of honey was 3000 US dollars per ton. During the mentioned period, the demand for high-quality guaranteed honey in the world market, primarily for New Zealand manuka honey, distinguished by its scientifically proven bactericidal properties, has increased significantly. As a result, in 2020, New Zealand is well ahead of China, which has been the leader in honey exports for several decades.

In May 2021, UN COMTRADE and the International Trade Center published summarized data on world honey trade in 2020. The statistical data of these two international statistical centers are used as a basis for studying the world honey market situation, based on the data presented by the ministries of trade, economic development, agriculture, and other ministries and departments of the UN member countries.

In 2020, the value of honey exports in the world was 2288 million dollars, and the volume was 765 thousand tons (in 2019, respectively, 1984 million dollars and 639 thousand tons). During the indicated period, 179 countries of the world exported honey.

The top 10 honey-exporting countries in 2020 are New Zealand, China, Argentina, Germany, Ukraine, Spain, Brazil, Hungary, India, and Vietnam. In the same period, the 10 countries that imported the most honey were the USA, Germany, Japan, Poland, France, Spain, Belgium, Saudi Arabia, Italy, and the Netherlands. The average price of one ton of New Zealand honey was 22,927 dollars, and the price of Vietnamese honey was 1,351 dollars, which is 17 times more.

In 2020, Russia exported 2,802 tons of honey (-2,401 tons in 2019) and according to this indicator, it was in 34th place among honey exporting countries. Accordingly, the value of Russian exports was 5034 thousand dollars (in 2019 - 5565 thousand dollars). The main exporters of honey in the world, as in previous years, were the USA, Germany, and Japan.

According to statistics, in 2020, all the world's leading honey importers increased their purchases from abroad. In 2020, Russia imported 215 tons of honey worth 838,000 dollars (slightly more than in 2019) and ranked 77th and 74th in the world ranking for these two indicators, respectively. (9)

The positions of the countries of the world in the field of beekeeping are different. Today, the People's Republic of China ranks first in the development of beekeeping. Beekeeping is highly developed in Turkey. In them, providing knowledge to workers in the field of beekeeping, organization of necessary infrastructures, and state support for this field is at a high level. Latin America is one of the continents lagging in the development of beekeeping in the world today. The main reason for this is the low level of demand for puppies among the population of that country. Most of the honey produced in the country is exported to other countries. The amount of honey obtained from each bee family does not exceed 15 kg.

In world beekeeping, North America has been able to maintain its leadership in modern beekeeping until today. The reason for this is that the species of bees brought from Europe to America have an advantage in terms of honey collection. On average, the amount of honey per American per year is 0.5 kg.

If we look at the numbers, we will see that the amount of honey obtained from each bee family in our country is less than that of Latin America (15 kg), which is lagging behind in the development of beekeeping. Although a sharp increase in the number of bee colonies has been observed in our country in recent years, productivity is low.

At the same time, the amount of exports is significantly lower compared to the countries of the world. I believe that to develop beekeeping in our country, it is necessary to carry out deep scientific-research works in this field and use the advanced experience of world beekeeping.

Thus, from the conducted research, it can be concluded that using the favorable soil and climate conditions for the development of beekeeping in our country, to increase the production of honey, which is the main product of beekeeping:

- economic management mechanisms in this field should be improved;
- modernization of the rural way of life in the regions, taking into account that beekeeping farms are located mainly in rural areas;
- adaptation of the infrastructure serving this area to modern requirements;
- improvement of material and technical provision of beekeeping;
- creation of beekeeping farms near agro-parks;
- creation of specialized beekeeping farms and development of professional beekeeping in our republic;
- the merger of small-scale apiaries in the form of a joint-stock company by combining their resources;
- increasing productivity due to the development of migratory beekeeping, etc

In 2018, the decree of the President of the country on the development of beekeeping and the purposeful reforms carried out in the direction of the development of beekeeping in our republic created conditions for the development of this field, the increase of interest in beekeeping and the transformation of quality Azerbaijani honey into a major export product. Currently, honey production in ABAD containers, which is one of the largest projects in our republic, is being successfully carried out. To ensure the export of honey, it is important to package it elegantly and ensure its quality.

We believe that to ensure the necessary development in beekeeping and turn it into a competitive and profitable field, the application of existing advanced beekeeping practices and technologies should be implemented in our country. Also, a legal framework should be created to ensure staffing in beekeeping, improvement of breeding work, preservation of our valuable local bee gene pool, an increase in production, and expansion of the use of beekeeping products.

Considering the country's beekeeping as a strategic sector of the agricultural sector, it is necessary to implement a programmatic beekeeping project that includes planned complex measures through a systematic approach and provides short-term and long-term concrete goals to solve the above-mentioned problems. (7)

### **3 Conclusion**

According to statistical data, in 2020 there were 596.7 thousand bee families in 32340 farms in Azerbaijan, which means that each farm consists of 18 bee families on average. As a result, we can conclude that most of the beekeeping farms operating in this area are of small size. So the owners of this farm are not very professional beekeepers. As can be seen from the statistical figures, the productivity of each bee family is about 10-12 kilograms on average. Therefore, the creation of large farms by gathering small beekeeping farms and the management of these farms by experienced beekeepers, increasing productivity due to the development of migratory beekeeping would have created the basis for increasing honey production in Azerbaijan.

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