https://gospodarkainnowacje.pl

GOSPODARKA I INNOWACJE

LABORATORIUM WIEDZY Artur Borcuch

Volume: 46 | 2024

Economy and Innovation
ISSN: 2545-0573

For more information contact: editor@gospodarkainnowacje.pl

THE ROLE OF BEEKEEPING IN AGRICULTURE AND THE HISTORY OF THE INDUSTRY

Farmanov Jonibek Ziyadullayevich
Independent researcher

ARTICLEINFO.

Keywords: beekeeping, agriculture, bees, beekeeper, honey, pollenation, ecosystem, yield, biodiversity, economic contribution.

Abstract

this article describes the beekeeping industry, its history and role in agriculture. The article also develops technologies for producing honey, which is the main product of beekeeping, and provides suggestions and recommendations. The state policy on the development of beekeeping in the Republic of Uzbekistan was also studied in detail.

Introduction

Beekeeping is one of the branches of agriculture based on the breeding of bees to obtain honey, wax and other products (bee milk, bee glue, bee venom, etc.), as well as their pollination to increase crop yields. The science of organizing and managing beekeeping farms covers the legal and organizational aspects of the activities of rapidly developing agricultural enterprises, ways of using advanced technologies in raising bee colonies and increasing productivity and obtaining high-quality products.

Today, the need for beekeeping in Uzbekistan and the preservation of its reasonable specialization in the production of honey, which is a medicinal product, daily forms the basis of our economy during the transition of our independent republic to a market economy. The beekeepers of our republic are faced with the firm task of increasing honey production by increasing the productivity of each bee colony. To do this, every beekeeper and every manager needs to take care of the bee colony in accordance with veterinary rules and move the bees to places where serial plants grow.

Research materials and methods

The ancient Egyptians also knew about bees. They placed beehives on ships and delivered flowers to many places. Jars of honey found in the tombs of pharaohs confirm that the ancient Egyptians practiced beekeeping. According to ancient scriptures, the tears of Ra (the Sun God) turned into bees when they fell to the ground. Honey is considered the drink of the gods. That's why they kept their hives in sanctuaries. Ancient Egyptian noblewomen used honey as a cosmetic.

Aristotle studied the fact that bees bring flowers to their hives and collect pollen. Aristotle was the first to observe bees and he found that male bees did not do any work and called them idlers. To protect the honey in the hive from male bees, he proposed putting a barrier at the hive door that worker bees could pass through but male bees could not.

In the 18th century, the French scientist Reaumer built a hive with two glass walls, observed the life of bees and proved that the mother bee lays eggs, and the worker bees raise the larvae with special food.

Swiss beekeeper François Hubert, a contemporary of Reaumur, reported that a mother bee mates with a male bee outside the hive. Later he proposed artificial insemination of the mother bee. Francois Hubert was the first to discover that bees produce wax from honey and pollen. In ancient times, honey and wax were widely used in trade. Honey and wax are provided on credit or at interest. Bee families and beekeeping secrets are passed down from generation to generation.

The invention of the split frame hive by P.I.Prokopovich in 1814 made it possible to extract honey without killing bees. Later, P.I.Prokopovich invented artificial wax and honey extractors.

Bees were first brought to Uzbekistan in 1872. Exhibitions organized by enterprising beekeepers influenced the successful development of beekeeping among the local population. These exhibitions promoted beekeeping methods and bee products. Later, a beekeeping school was opened, and the culture of its maintenance improved. The bees were transferred to frame collective hives, and now people can intervene in the lives of bees and create the necessary conditions for them at the right time. By 1926 year 1,970 bee families survived in Uzbekistan.

In 1930 year 20,080 bee families were preserved under the care of the Ministry of Agriculture of Uzbekistan, in 1940 year - 37,690, in 1970 year - 71,672 bee families. In addition, amateur beekeepers have identified more than 70 thousand bee families.

By 1980 year it was established that there were 190 thousand bee colonies in Uzbekistan.

Beekeeping is especially developed in Russia, Ukraine, the USA, Mexico, Turkey, and France. The international beekeeping organization "Apimondia", founded in 1887, makes a great contribution to the development of international relations among beekeepers. This organization holds symposiums, congresses, and exhibitions dedicated to beekeeping, and since 1966 it has published a special international magazine, Apiakta. Although beekeeping products as food and medicine have been known in Uzbekistan since ancient times, keeping bees in boxes began in the second half of the 19th century. The first families of bees were brought to Turkestan from the Semipalatinsk region of Kazakhstan in 1841. In the second half of the 19th century, Central Russian bees, Caucasian gray mountain bees, Ukrainian steppe bees and others were brought to Turkestan. A population of bees has emerged in Uzbekistan, differing from its ancestors in biology and useful economic characteristics.

Private beekeepers with 20-50 (90%) or 50-150 (10%) hives are also involved in beekeeping. Honey is collected twice per season: in May-June (spring) and in August-September (summer). In 1996, 17.1 thousand tons of honey and 187 tons of wax were produced. The republic produces more than 20 thousand tons of honey per year. Bees are kept primarily in a portable manner. Bees are used to pollinate agricultural crops (cotton, sorghum, hemp, alfalfa seeds, etc.). It has been established that pollination by bees increases cotton yield by an average of 5.1-5.9 centners.

In order to develop the bee family in the republic, time requires the development and implementation of innovative technologies for honey production, the introduction of scientific and technical achievements, and best practices in beekeeping. The creation of new breeds of bees and improvement of their selection is also an important issue. It should be noted that the majority of queen bees grown in our republic remain low-yielding. Another problem facing beekeepers is the constant fight against bee diseases and pests. The issues of American and European rot, varroatosis, and wax moth, which are very dangerous infectious diseases, have not yet been fully resolved. Practical measures to combat other predatory insects and birds have not been developed, the prevention of various bee diseases and sanitary and veterinary control are not fully established. Beekeeping farms should not focus on just one honey crop. To do this, they need to raise and buy queen bees and packaged bees from early spring. In addition, it is advisable to establish the production of bee milk and poison. Because currently on the world market, 1 gram of bee venom costs 100 US dollars, and 1 kilogram of bee milk costs 1000 US dollars, and the production of such products brings great economic benefits to the farm.

Bee products are widely used in cosmetics. In subsequent decades, many countries have paid special attention to the healing properties of biologically active substances contained in some products that are gifts of nature. For the same purpose, they found that biologically active substances contained in beekeeping products serve as an excellent source for the preparation of various medicines in cosmetics.

Thus, the production of all kinds of creams, shampoos, toothpastes, soaps, and lipsticks from beekeeping products has been widely introduced. Honey is widely used in the food industry. In particular, honey is widely used in the preparation of all kinds of sweets, halva, cookies, cakes, muffins, ice cream, pickles, as well as soft and thirst-quenching drinks with honey. They allow you to quickly cure many diseases of the human body.

When writing the article, we used statistical observation, summation and grouping, analysis and synthesis, induction and deduction, analysis of the works of foreign scientists, study of regulatory documents, logical control and questioning.

Discussion and results

When plants bloom and begin to provide sap for the bees' nests, the amount of water supplied by the bees to the nests decreases. If there is naturally strong nectar, then the bees completely stop bringing water to their nests, because they satisfy their need for water from the water contained in the nectar. In beekeeping, the productivity of a bee colony depends on the food reserves accumulated during the wintering of bees in the previous year. The collection of honey by a bee colony next year will depend on how much and high quality food is collected during the main sap collection season this year. With the accumulation of sufficient and high-quality nutrition, bee colonies successfully winter and develop well in the spring.

The results of our experiment confirming the correctness of the above provisions are presented in Table 1 below.

Table 1. The effect of overwintering edible honey on productivity

Number of experiments	Number of bee family (box)	Amount of honey remaining for the winter (kg)	Amount of honey collected by bees (kg)
1	5	3.7	4.1
2	5	5.2	6.5
3	5	10.2	16.4

According to the results of the analysis, colonies with the largest food reserves in the hive collect the largest amount of honey in one season. When eating sugar syrup, firstly, sugar is several times cheaper than honey, and secondly, bees feeding on sugar honey are freed from consuming black honey, which consists of sweet liquids secreted as waste from aphids - an agricultural pest. Farms specializing in beekeeping achieve high efficiency as a result of using modern methods of feeding bees, while simultaneously improving the quality of the above-mentioned traditional food products, increasing the productivity of beekeeping.

Conclusion and suggestions

Beekeeping is an agricultural industry that has been developing since ancient times. Based on our research, methods have been developed to protect bees from infectious diseases and technology for growing artificial queen bees. Based on the overwintering data in this article, the bees with the most nutrient reserves in the hive produce the most honey per season. Taking this into account, methods were shown to obtain the largest amount of honey from the masters and deliver it to the people using honey extractor technologies.

The role of beekeeping in agriculture and the history of the industry underscore the significant contributions of bees to our ecosystem and food production systems. Throughout history, beekeeping has been an essential practice, providing not only honey and beeswax but also playing a crucial role in pollination and enhancing agricultural productivity. The evolution of beekeeping from ancient times to the modern era reflects its enduring importance and adaptation to changing agricultural practices and environmental challenges.

Beekeeping serves as a vital link between agriculture and the environment, contributing to biodiversity, ecosystem stability, and sustainable farming practices. The decline in bee populations in recent years has raised concerns about the future of food security and agricultural sustainability. Therefore, preserving bee populations and supporting beekeeping practices is essential for maintaining healthy ecosystems and ensuring the continued productivity of agricultural systems.

By implementing these suggestions and fostering greater collaboration and support for beekeeping, we can ensure the continued role of beekeeping in agriculture and uphold the vital contributions of bees to our ecosystems and food systems.

References

1. O‘zbekiston Respublikasi Vazirlar Mahkamasining 03/1–348-Sonli «Respublikada 2009–2011-yillarda asalarichilik sohasini Rivojlantirish bo‘yicha amalga oshiriladigan chora-tadbirlar» Dasturi. – T., 2009- yil 3- mart.
2. Kraxotin N. F. O‘zbekistonda asalarichilik. – T.: Mehnat, 1991.
3. Isamuhamedov A. I. Asalarichilik. – T.: O‘qituvchi, 1995.
4. Крахотин Н. Ф. Календарь пчеловода. – М.,1989.
5. Xurramov, A., Xushmuradov, O., Turobov, S., Faxriddinov, B., & Namozov, B. (2023). Issues of improving cotton reform. In *E3S Web of Conferences* (Vol. 452, p. 01041). EDP Sciences.
6. Хушмурадов, О. (2023). TIJORAT BANKLARI MOLIYAVIY BARQARORLIGINI TA’MINLASH ISTIQBOLLARI. *Ижтимоий-гуманитар фанларнинг долзарб муаммолари/Актуальные проблемы социально-гуманитарных наук/Actual Problems of Humanities and Social Sciences.*, *3*(10).
7. Хужакулов, Х. Д., & Хушмурадов, О. Н. (2023). ЎЗБЕКИСТОНДА ДЕМОГРАФИК ЖАРАЁНЛАРНИНГ ЎЗИГА ХОС ХУСУСИЯТЛАРИНИНГ СТАТИСТИК ТАҲЛИЛИ. *Gospodarka i Innowacje.*, 9-18.
8. Хушмурадов, О. (2023). ҒАЛЛАЧИЛИКДА БОЗОР МЕХАНИЗМЛАРИНИ ЖОРИЙ ҚИЛИШ ЭРКИН РАҚОБАТ ГАРОВИ. *Gospodarka i Innowacje.*, 411-419.
9. Alisherovich, T. S., & Ugli, N. B. B. (2023). Internal Control in Banks. *EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY*, *3*(3), 34-39.
10. Alisherovich, T. S. (2023). IMPROVING ACCOUNTING AND ITS MAINTENANCE IN BANKS. *Gospodarka i Innowacje.*, *31*, 15-20.
11. Oman, X., & Alisherovich, T. S. (2022). THE ROLE AND IMPORTANCE OF CLUSTERS IN THE AGRICULTURAL SECTOR. *Gospodarka i Innowacje.*, *29*, 202-206.
12. Туробов, Ш. А. (2022). АЁЛЛАР МЕҲНАТИДАН САМАРАЛИ ФОЙДАЛАНИШ ИСТИҚБОЛЛАРИ. *IJTIMOIY FANLARDA INNOVASIYA ONLAYN ILMIY JURNALI*, 127-134.
13. Фарманов, Ж. (2023). РАҚАМЛИ ТЕХНОЛОГИЯЛАРНИ ЖОРИЙ ЭТГАН АСАЛАРИЧИЛИК ХЎЖАЛИКЛАРИНИ СУБСИДИЯЛАШ ТИЗИМИНИ ҚЎЛЛАБ-ҚУВВАТЛАШ. *Conferencea*, 24-27.

14. Фарманов, Ж. (2023). ИҚЛИМ ЎЗГАРИШИ ШАРОИТИДА АСАЛАРИЧИЛИК ТАРМОҒИНИ РИВОЖЛАНТИРИШДАГИ ТИЗИМЛИ МУАММОЛАР. *Conferencea*, 31-35.

15. Фарманов, Ж. (2023). ИҚЛИМ ЎЗГАРИШИ ШАРОИТИДА АСАЛАРИЧИЛИК ТАРМОҒИДА РАҚАМЛИ ТЕХНОЛОГИЯЛАРНИ ЖОРИЙ ЭТИШ. *Gospodarka i Innowacje.*, 389-395.

16. Фарманов, Ж. (2023). АСАЛАРИЧИЛИК ТАРМОҒИДА РАҚАМЛИ ТЕХНОЛОГИЯЛАРДАН ФОЙДАЛАНИШ ТИЗИМИНИ РАҒБАТЛАНТИРИШ. *Gospodarka i Innowacje.*, 396-403.

17. Ergasheva, N. (2023). MAKTABGACHA TA'LIM TASHKILOTLARIDA AUTSORSING XIZMATLARIDAN FOYDALANISH SIFATINI BAHOLASH. *Innovatsion texnologiyalar*, *51*(03), 142-148.

18. Ergasheva, N. (2023). AUTSORSING XIZMATLARIDAN FOYDALANISH MEXANIZMINING MAZMUN-MOHIYATI. *THE INNOVATION ECONOMY*, *1*(03).

19. Raxmatullayevna, E. N., & Akbarshoh, M. (2023). CHORVACHILIKNI INTENSIV RIVOJLANTIRISHDA XORIJ TAJRIBASIDAN SAMARALI FOYDALANISH. *Gospodarka i Innowacje.*, 467-472.

20. Ergasheva, N. (2023). POSSIBILITIES OF APPLICATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGY IN TEACHING FOREIGN LANGUAGES IN UNIVERSITIES. *International Journal of Pedagogics*, *3*(05), 46-51.

21. Murodova, N. U., Temirova, F. S., Alimkhanova, N. A., Dostova, M. K., & Azimova, K. E. IMPROVING THE CALCULATION OF INVENTORIES OF GOODS IN ACCOUNTING. *Kielce: Laboratorium Wiedzy Artur Borcuch*.

22. Nigora, A. (2022). Monetary policy. *Web of Scientist: International Scientific Research Journal*, *3*(10), 585-591.

23. Nigora, A. (2022). ACCOUNTING STANDARDS AND QUALITIES. *Web of Scientist: International Scientific Research Journal*, *3*(9), 533-539.

24. ALIMKHANOVNA, A. N. Applying Effective Methods to Stabilize Inflation: the Role and Importance of Monetary Policy in Curbing Inflation. *International Journal of Innovations in Engineering Research and Technology*, *7*(4), 1-4.

25. EGAMBERDIYEVNA, A. H., MURTAZAYEVNA, H. Y., & SABIROVICH, E. A. Modern Practice of Regulating Processes of Attracting Foreign Investments and Approaches to Its Improvement. *International Journal of Innovations in Engineering Research and Technology*, *7*(2), 1-7.

26. Хасанова, Ю. М. (2023). Банковская система Республики Узбекистан в условиях цифровизации экономики. In *Экономическое развитие России: вызовы и возможности в меняющемся мире* (pp. 121-126).

27. Хасанова, Ю. М. (2023). РЕГИОНЫ И ИХ РОЛЬ В ПОВЫШЕНИИ ИНВЕСТИЦИОННОЙ ПРИВЛЕКАТЕЛЬНОСТИ. *Экономика и социум*, (10 (113)-2), 831-836.

28. Хасанова, Ю. М. (2022). ЎЗБЕКИСТОН РЕСПУБЛИКАСИДА ХОРИЖИЙ ИНВЕСТИЦИЯЛАРНИ ЖАЛБ ҚИЛИШ МЕХАНИЗМЛАРИНИ ТАКОМИЛЛАШТИРИШ ЙЎЛЛАРИ. *Gospodarka i Innowacje.*, *29*, 196-201.

29. Berdiyarovich, B. S. (2021). Analysis of total product sales benefits and factors influencing their changes. *European Scholar Journal*, *2*(6), 28-31.

30. Бутунов, Ш. Б. (2022). Аудит и оценка финансовой отчетности. *Экономика и социум*, (12-1 (103)), 509-516.

31. Бутунов, Ш. Б. (2022). Анализ валовой прибыли от продажи продукции и факторов, влияющих на ее изменение. *Экономика и социум*, (10-1 (101)), 290-295.

32. Бутунов, Ш. Б. (2023). МОЛИЯВИЙ ҲИСОБОТНИ АУДИТОРЛИК ТЕКШИРУВИДАН ЎТКАЗИШДА ХАЛҚАРО СТАНДАРТЛАРНИ ҚЎЛЛАШ. *Gospodarka i Innowacje.*, 255-262.

33. Murodov, J. C. (2023). KLASTER TIZIMI VA UNING FERMER XO 'JALIKLARI RIVOJIDAGI O 'RNI. *Oriental renaissance: Innovative, educational, natural and social sciences*, *24*, 147-155.

34. Муродов, Ж. (2022). ҚИШЛОҚ ХЎЖАЛИГИДА ИННОВАЦИОН ЖАРАЁНЛАРНИНГ СТАТИСТИК ТАҲЛИЛИ. *Iqtisodiyot va ta'lim*, *23*(Maxsus_son), 576-581.

35. Utanov, B., Mamatkulov, B., Akhmedova, M., Murodov, J., & Abdiqulova, D. (2021). Correlation Of The Interaction Of Agricultural Production With The Volume Of Dehkanproduction In Uzbekistan. *Ilkogretim Online*, *20*(3).

36. Муродов, Ч., & Муродова, М. (2014). Агрокластер: ташкил этишнинг назарий асослари. *Экономика и финансы (Узбекистан)*, (2), 19-25.