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USE OF INNOVATIVE BEE TECHNOLOGY IN THE PRODUCTION OF PLANT PRODUCTS

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ПРИМЕНЕНИЕ ИННОВАЦИОННЫХ ПЕРЕДОВЫХ ТЕХНОЛОГИЙ ПРИ ВЫРАЩИВАНИИ РАСТИТЕЛЬНОЙ ПРОДУКЦИИ

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O‘SIMLIKCHILIK MAHSULOTLARINI YETISHTIRISHDA INNOVATSION ASALARI TEXNOLOGIYALARINI QO‘LLASH

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Annotation. In this article, the ways of using bee technology in the cultivation of plant products and thereby achieving high efficiency, as well as its specific aspects, were considered by the author. Suggestions and recommendations were also made in this direction.

Key words: agriculture, plant breeding, innovation, bee technology, soil quality, food, productivity, pollination, resource, need, agrotechnics.

Аннотация. В данной статье автором были рассмотрены способы использования пчелиной технологии при выращивании растительной продукции и достижения за счет этого высокой эффективности, а также ее специфические аспекты. В этом направлении также были высказаны предложения и рекомендации.

Ключевые слова: сельское хозяйство, разведение растений, новаторство, пчелиная технология, качество почвы, пища, производительность, опыление, ресурс, необходимость, агротехника.

Annotsatsiya. Ushbu maqolada o‘simlikchilik mahsulotlarini yetishtirishda asalari texnologiyasini qo‘llash va shu orqali yuqori samaradorlikka erishish yo‘llari hamda o‘ziga xos jihatlari muallif tomonidan ko‘rib chiqildi. Shuningdek, ushbu yo‘nalish boyicha taklif va tavsiyalar berildi.

Kalit so‘zlar: qishloq xo‘jaligi, o‘simlikchilik, innovatsiya, asalari texnologiyasi, tuproq sifati, oziq-ovqat, hosildorlik, changlatish, resurs, ehtiyoj, agrotexnika.

1. INTRODUCTION

According to a United Nations study, the demand for food will increase by 70 percent by 2050 in line with rapid population growth. This means that in the future, the food needs of almost 10 billion people will have to be met [1]. As environmental and climate changes are difficult to predict, we must turn to innovations in agricultural technology. We don't have to wait a few decades to see how innovative agricultural solutions will affect human life in the future. We are required to use the latest technologies that change the way farmers grow, transport, store and manage their products, making it our primary goal to maximize productivity and save resources at their expense.

2. ANALYSIS OF LITERATURE ON THE TOPIC

“In the world, one of the main reasons for the increasing development of the plant breeding industry is the use of high-level

equipment and advanced technologies, because the economic strategy of developed countries is aimed at the development of innovative processes” [2]. For example, “90 percent of GDP growth in the countries of the European Community is due to innovative activities. Labor productivity accounts for 70% of economic growth, and innovative technologies account for 30%” [3]. According to the analysis, the amount of innovations in the agricultural sector of Uzbekistan is 1-2% of the total gross domestic product [4]. This situation requires the development of scientific-methodical bases of innovations in the cultivation of plant products, systematic research on the scientific-theoretical and methodological aspects of these processes.

The content of innovations in the production of plant products, its specific features are reflected in the concept of innovation. It should be noted that this concept is given different definitions both in the works

of foreign scientists and in the works of our country's scientists.

According to E.M. Rogers, "innovation is anything that is perceived as new by a person or another person who receives it, regardless of the objective novelty of the idea or thing"[5].

According to Gybenz, "innovation is the application of ideas to production, processes, services, marketing systems, or management, whether they are used for products or not" [6].

According to P. Jervis, "innovation is a complex process and each innovation attempt has its own factors"[7].

According to the definitions of innovation in the economic literature, it is recommended to be divided into three groups: "the authors of the first group recognize innovation as a process, the scientists of the second group express it as a final result, and the scientists of the third group describe it as a set of measures in all directions they look" [8].

According to J. Brillman, "innovation is the application of a creative idea that contributes to the development of the company and allows it to solve the problems posed by competitors" [9].

According to the American scientist N. Wiener, "innovation is the result of a thorough and comprehensive search for knowledge by a group of qualified scientists" [10].

According to J. Schmookler, it is defined as "activity aimed at discovering new and useful knowledge about products and processes"[11].

According to D.Archibugi, "innovation means productivity, international trade volume, competitiveness of products, differential economic growth in countries and the causal variable of the growth of dynamics of social systems" [12].

3. RESEARCH METHODOLOGY

The article uses methods of scientific abstraction, analysis and synthesis, induction and deduction, comparison, monographic observation, statistical grouping, and survey. The data of this research is obtained from official sources, relying on the results of the comparative analysis of the scientific and theoretical views of the famous economists on agricultural production, summarizing foreign

experiences, conducting monographic studies and surveys. In depth study of the role of innovations in the sustainable development of the economy was achieved.

4. ANALYSIS AND RESULTS

Currently, the developed countries of the world are trying to use bees effectively to achieve high productivity in agriculture and thereby achieve great results. Because these insects can control crops through natural pollination of plants and replace chemical drugs with an environmentally safe and crop protection system and increase productivity, therefore agriculture that helps to protect bees and increase their pollination ability are introducing more innovations in hive technology and are using commercially bred bees in this direction. The system does not require water spraying or the use of tractors. Instead, a scientifically engineered beehive allows bees to travel across a field to pollinate and protect certain plants by spraying pest-fighting powders on their feet.

This innovation in agricultural technology will help improve sustainable farming, yield and soil quality. Suitable for many crops that require chemical solutions, including cotton, greens, sunflowers, apples and tomatoes, it works for all sizes of farms and ranches.

In the process of statistical monitoring, we researched several farmers and peasant farms in Yakkabog District, Kashkadarya Region, and the data showed that the productivity of cotton and grain production, which consists of healthy bee technology, is up to 37%, the productivity of vegetable production is up to 36%, and the productivity of horticulture and viticulture is up to 36%. up to 25 percent, it became known that it increased. It is close to the field, provided that the farmers and the peasants are engaged in beekeeping farms, in agreement with the households of the farm, to leave the seasonal crops for raising bees and to provide certain information for each beehive. They follow this process until the bees are placed in places and the bees collect honey and pollinate the plants. Bees collect honey and pollinate it. So, this method of farming helps to restore crop productivity.

Table 1.

Difference indicators of agricultural products grown by traditional and bee technology in Yakkabog district [14]

Farmer (peasant) farm name	total area, ha	direction	2021			2022		
			productivity of land without beehives (hectare, sotix)/hundred	productivity of beehive lands (hectare, sotix)/centner	difference (percent +/-)	productivity of land without beehives (hectare, sotix)/hundred	productivity of beehive lands (hectare, sotix)/centner	difference (percent +/-)
Tursunov Shoxrux	0,35	vegetable farming	260	340	31	263	341	30
Maxmatqosim Dilshodbek	51	cotton and grain	27	35	30	26	36	38
Qahramon Mirziyo	52,4	cotton and grain	28	37	32	27	37	37
Jumanov Normurod	0,4	vegetable farming	241	328	36	248	335	35
Yuqori sifat innovatsion qurilish	17	vegetable farming	254	341	34	251	324	29
Darman-farm	171	horticulture and grapes	89	108	21	91	114	25

In order to widely spread this foreign experience to our country and to widely introduce the practice of bee pollination to increase the productivity of agricultural crops, the Cabinet of Ministers of the Republic of Uzbekistan dated June 12, 2023 “On additional measures to support the beekeeping network and pollination of agricultural crops with bees” [13] was adopted. According to it, it is planned to implement the following measures:

- to increase cotton productivity in 2023 on an area of 200,000 hectares, use agrotechnics of cotton pollination with bees;

- in 2023-2024, to increase the number of bee families, to organize provision of bee pollination services to increase the productivity of agricultural crops;

- training of qualified specialists who provide the service of pollination of agricultural crops with bees;

- further improvement of agrotechnics of bee pollination of agricultural crops and its application;

- development of recommendations for solving problems in this regard;

- promoting best practices in beekeeping by inviting qualified specialists and scientists from countries with developed beekeeping;

- the importance of using agrotechnics of bee pollination in cotton fields and intensive fruit orchards at the “Farmers' School”, its economic effect, the effect on the increase in the yield and quality of agricultural crops, and the use of experiences in foreign countries with developed beekeeping industry in this regard. It is decided to organize training courses for cotton-textile clusters, farms and intensive orchard owners. Also, in the decision, in 2023, cotton-textile clusters in the Kashkadarya region will make 19,500 hectares of cotton-textile agro-techniques, and 39,000 beehives will be placed there.

5. CONCLUSIONS AND SUGGESTIONS

In today's developed era, in order to meet the high level of the population's demand for food, it is necessary to implement the production of products in agriculture through

innovative ways. Because innovative solutions are the most effective considering the scarcity of resources and the limitlessness of people's needs.

Therefore, it is recommended to use the above-mentioned bee technology in farmers and peasant farms in order to increase the yield of crops in agriculture and get several harvests in one growing season. In this case, the

average yield can be increased by 35-40% and the condition of the land can be maintained by minimizing the use of chemical drugs. For this, farmers and peasant farms make a mutual agreement with the beekeeping population, and in exchange for paying a certain amount of contribution for each beehive, the beekeepers, as well as their own farms, contribute significantly to increasing their income.

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