FOOD AND FEEDING TECHNOLOGY OF BEE FAMILIES IN THE CLIMATE CONDITIONS OF UZBEKISTAN

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Abstract: *In this article, in the climatic conditions of Uzbekistan, the supply of quality food to the bee family, which encourages the bee family to be strong and collect a large amount of honey during the main honey collection period. Such a strong family of bees pollinates the flowers of many agricultural crops and increases their productivity several times. Well-nourished bee colonies have been reported to lay more eggs, have better colony development in the spring, and produce large numbers of young bees before the main honey collection period.*

Key words: *Bee family, nutrition, breeding, protein, carbohydrate, vitamin, fats, breed, evolutionary, mineral substance, trait, crop, generation, honey food, economy, queen bee, local breed, pollen, pollen.*

INTRODUCTION

The importance of nutrients for the normal growth and development of the bee colony is very important. Bees differ from farm animals in that bees have the ability to forage for only a small amount of food. During their evolutionary development, bees are used to save food and spend less, and this feature always frees the beekeeper from manual labor, which ensures the development of the family and high yield.

Providing good quality food in the bee colony will encourage the bee colony to be strong and collect a large amount of honey during the main honey collection period. Such a strong family of bees pollinates the flowers of many agricultural crops and increases their productivity several times. In well-nourished bee colonies, the queen bee lays more eggs, the bee colony develops well in the spring, and produces large numbers of young bees until the main honey collection period.

Research methodology: In order to fill up the supply of food in bee colonies going to the countryside, from the first months of autumn, they can be fed with sugar syrup. However, this method requires a lot of work, so it is advisable to leave a set amount of feed honey for bee families that go to the countryside. For the normal development of the bee colony in the spring, each bee colony requires 10-14 kg of food. Only in this way, the bee family develops well in any weather conditions and produces many young bees.

It can be seen from many years of experience that the average weight of worker bees is 100.1 mg when 3-5 kg of honey food is left for the bee colony in the spring, when 6-9 kg of food is left, the weight of worker bees is 105.4 mg, and when 10-14 kg of food is left its weight was found to be 108.5 mg. Therefore, in the spring season, it is

advisable to provide the bee family with a full amount of food, and they will fully cover the expenses incurred, and in the spring they will get an additional 5-6 kg of honey. A beekeeper who skimps on food supplies makes a big mistake.

For the good development of the bee family, it is necessary to have a supply of pollen. Pollen stock is collected mainly in the spring months. For this purpose, it is necessary to store frames with pollen in separate rooms. Such rooms should be shaded, cool and constantly windy, otherwise the pollen reserves in the frame may become moldy.

The results of the research: the type, classification and chemical composition of food for the normal life and functioning of the bee family, for their growth and development, the food consumed must always contain protein, fat, carbohydrates, mineral salts, vitamins, and water. The nutritional value of these products is very complex, and they are high-yield and high-energy foods.

Proteins are the most complex high-molecular organic substances. It contains 15-18% nitrogen, 50-55% carbohydrates, 6-7% hydrogen, 0.3-2.5% sulfur, phosphorus, iron, magnet and several other substances. Proteins have a very complex chemical composition. In the bee's body, they are broken down into amino acids in the process of digestion. Proteins differ from each other due to the presence or absence of amino acids in their composition.

There are more than 30 types of amino acids. They are divided into two groups, that is, they are divided into types that cannot be synthesized and exchanged in the bee body, and those that are quickly reduced and exchanged in the cells of the bee body.

Bees get protein mainly from plant pollen. Pollen contains 11-42% protein, and perga contains up to 20% protein. The bee family eats a lot, especially during the spring, during the period of intensive breeding of young bees.

Fats are organic compounds that are part of the cell cytoplasm and are vital factors in cell metabolism. The physiological feature of fats is that it is a source of heat for the body. 1 g of fat releases 9.3 calories of heat. The fat reserve in the body of the bee is a source that always supplies the body with energy.

Bees get oil mainly from plant pollen. Gullangi contains up to 1.3-1.4% fat, and perga contains up to 3% fat.

Carbohydrates consist of oxygen, hydrogen and carbohydrates by their structure, and are considered a source that constantly supplies the muscles and tissues of the bee body with energy. It is also important because carbohydrates contain sugar, starch, glycogen, fiber and other nitrogenous substances. Sugar is the most important of them for bees.

Minerals are among the most important substances in cells and tissues and are a source of energy in metabolism. 6-7% of mineral substances such as calcium, magnet, iron, sulfur, phosphorus, chlorine are found in the body of bees. Bees get minerals mainly from pollen and some from flower petals.

Vitamins are of great importance in the metabolism of the bee body, normal growth and development of the family and throughout its life. The main source of

vitamins is plant pollen and feathers. Some types of honey contain soluble vitamins, which are quickly reduced in the bee's body. Microorganisms living in the body of bees and in their intestines are also a source of vitamins.

Water plays an important role in the body of bees. 75-80% of a bee's body is water. Bees use water to maintain normal temperature and humidity in the hive. Bees get a large amount of water from flowers coming from the field. Because the composition of the flower contains 50% water on average. During the period when there are few flowers in the field, bees take water from various water sources such as streams, ponds, canals and water tanks placed in the apiary. In particular, the bee family spends a lot of water in the spring when they consume liquid honey for breeding.

For the normal life of the bee family and its development, there must be nutritious food. The amount of protein, fat, carbohydrates, vitamins, mineral salts and water contained in the feed changes the life of the bees and allows them to gain a lot of energy in their body. Among the bee feeds, honey and pollen are abundant in all the above-mentioned substances.

Food requirements of the bee family

In beekeeping, accurate and complete information is needed about how many kilograms of food a bee colony spends during the year to maintain its life. It is certainly known that the bee family is a biological unity and it consists of several hundred thousand individuals, their age, number and physiological state are constantly changing. In addition, bees forage from the field and spend it uncontrollably, and it also depends strongly on the bee breed.

The norm and technology of feeding bee colonies. The norm of feeding a bee family depends on the location of each region, climatic conditions, family strength and bee breed. The climatic conditions in the mountainous regions of Uzbekistan and the conditions in the southern regions are sharply different from each other. Taking this into account, the amount of fodder left for winter should be 15-16 kg in cotton growing areas and 18-20 kg of fodder honey in mountainous areas.

Feeding the bee family during the winter period: If the amount of honey left for the bee family for the winter period is low, in order to replenish the food supply, the frames with honey taken in advance are used to replenish the amount of food in the family. If the food left in the bee colony contains sharp honey residues, it should be replaced quickly. For this, 60% sugar juice made from 2 parts sugar and 1 part water is given as feed. When fed in this way, the amount of winter food is improved and it is possible for the bee colony to leave the colony healthy.

Feeding the bee colony during the active period: Feeding the bee colony during the most active period in the spring is a key activity to encourage the colony to hang and develop and to encourage the queen to lay more eggs. In particular, this event is of great importance in the spring when the weather is capricious, when there are few flowers and pollen from the field. Supplementing the bee colony is best started after the spring inspection. During the inspection period, if bee families with insufficient

food are found, they should be fed from the frames of honey taken from the reserve. Such honey frames are usually kept in a slightly warm place, and if the honey is softened a little, it will be reduced well by the bees.

If there is not enough honey for the bee colony during the spring, sugar syrup (2 parts sugar to 1 part water) is prepared for such bee colonies. To prepare sugar syrup, water is boiled and sugar is added to it as needed and mixed. After cooling the juice to 30-40%, 200-400 grams is poured into the hives of the bee family, depending on the strength of the family.

The importance of water and salt in the life of bees. Water is essential for feeding bees. In hot weather, water is also used to cool the nest. In July and August, the air temperature reaches 40-450C, but even then the temperature inside the beehive is around 34-350C. Because bees bring water and put it everywhere in the frames of the hive as small drops of water. And bees in the hive, by flapping their wings, create a strong air current, turn the water droplets into steam, and cool the hive.

If fresh water is not available nearby, it will be brought in. 20-30 bottles of water will last 5-7 days for 100 bee families. One bee colony consumes 800 grams of water on average per night. Or, at a temperature of 39-400C, one bottle of water is enough for 100 families of bees for 3-4 hours. Water is necessary not only for bees to drink, but also to maintain and normalize humidity in the hive.

Bees do not find water with their eyes, but with their glands that sense moisture in the air. That is why bees never fly to the ground where there is oil, alcohol and other liquids.

Bees consume well salt water with a concentration of 1.2-1.5% during brooding and collecting a lot of honey. Therefore, it is enough to add 2 grams of table salt to one liter of water in the water tank where they drink. More than this amount of salt can harm the bees.

Salt is necessary for the family of bees, especially in spring and summer, when they are active. However, salt can cause great damage to the bee colony in winter. Because it accumulates in the hindgut of the bees, the digestion process is disrupted and the bees become constipated.

Pollen substitutes in the bee family.

In order for the bee colony to develop in the early spring and encourage the queen to lay eggs daily, the bee colony must have an adequate supply of protein-rich food, pollen.

In case of insufficient supply of pollen, it is necessary to replace them with products rich in protein. These can include cow's milk, dry milk, soy flour, brewer's yeast, and similar protein foods.

Preparation of pollen. The pollen product is prepared from early spring. For this, in the period when the pollen is very saturated, a pollen catching device is installed in the flight holes of the beehive. Such devices are put in in the morning and taken out in the afternoon. By doing this, the bee family will get more pollen products, and they will create better conditions for the care of the young bee offspring in the hive. The

collected pollen product should be dried in a shady place with a gentle breeze. When drying the pollen, do not spread them too thickly, otherwise the pollen will not dry, and as a result, they may not dry out due to moisture and become moldy.

Conclusion: If the fruit trees are blooming in the field, in order to train the bees to the flowers of these trees, they are given stimulating sugar juice. For this, sugar juice is prepared by adding water to sugar in a ratio of 1:1. A part of the flowers of the blooming plant is added to this juice, and they are mixed for some time. 200-250 grams of the prepared stimulating juice is given to the bee family in the evenings every day. Bees that have eaten such stimulating juice will dig as much as possible and begin to collect nectar from the flowers of the plant. Feeding a colony of bees in this way gives good results. Bees also get sick. Disease-causing microbes are invisible to them. Various antibiotics are added to the sugar syrup prepared for the treatment of such infected bee colonies. Giving such healing nutrients in the early days of spring gives good results. In particular, the family of bees that have just come out of the colony are infected with various mineral substances contained in the honey feed during the winter season, and they accumulate in the hindgut of the bees and can cause diarrhea to the bees. During this period, therapeutic feeds are beneficial in the treatment of bees.

REFERENCES:

1. O□zbekiston Respublikasi Prezidentining 2017 yil 16 oktyabrdagi “Respublikamizda asalarichilik tarmog‘ini yana rivojlantirish chora-tadbirlari to‘risida”gi PQ-3327-sonli qarori.

2. Gulov A.N., Borodachev A.V., Beryozin A.S. Vozrast trutney i kachestvo trutney. “Pchelovodstvo”, 2015, №4, str. 24-26.

3. Jamolov, R. Q., Xatamova, D. M., Xolmatova, M. A. (2022). Asalarilar oilasining yashash tarzi. Oriental renaissance: Innovative, educational, natural and social sciences, 2(10-2), 666-671.

4. R.Jamolov., O.To‘rayev, D.Xatamova. “Asalarichilik asoslari”, Farg‘ona “Classik”, 2022.

5. Jamolov R., Boboyev B., O‘ktamjonov S. Farg‘ona vodiysida ona asalari yetishtirishning asalarichilikni rivojlantirishdagi va oila mahsuldorligini oshirishdagi ahamiyati Science and innovation.–2022.–т. 1.–№. d7.–c. 43-49.

6. Jamolov, R. Q., Xatamova, D. M.,Xolmatova, M. A. (2022). Asalarichilik va uning ahamiyati. Oriental renaissance: Innovative, educational, natural and social sciences, 2(10-2), 644-649.

7. R.Q.Jamolov, O.T.Avazxonova, M.D. Mirzobiddinova, A.N. Ergasheva. Asalarizorda asal tortish texnologiyasi. Science and innovation 2 (Special Issue 6), 964-967 b.

8. R.Jamolov. O□zbekistonda asalari zotlarini tanlash va parvarishlanayotgan asalarilar irqlari tarkibi. (Science and innovation 2 (Special Issue 8), 630-634 b)