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THE IMPORTANCE AND ROLE OF BEES IN PLANT POLLINATION

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Abstract
Bees play an important role in plant pollination compared to wild insects. Bees live in large numbers (50-80 thousand), have the ability to collect large reserves of honey and pollen, and perform pollination by visiting a very large number of flowers. The worker bee lands on 100-150 flowers in each flight to the flowerbed, while the bees of the strong family land on 50-60 million flowers of sunflowers, alfalfa, melons, fruit trees, and other plants. During flowering, bees bring 3-5 million pollen grains in their bodies and successfully pollinate plants. Bees perform 80-90% of pollination work, while wild insects it pollinates up to 10-20%.

Keywords. Bee, plant, alfalfa, tree, pollen, bindweed, melon crops, cotton, river, lake, hills, harvest, alfalfa, watermelon, melon, eggplant, cucumber.

Introduction

The importance of bees in pollination has always been important. Many scientists have dealt with the problem of plant pollination. They proved that bees, participating in the pollination of melons and fruit trees, increased their yield by 4-5 times. In all regions of the country, great importance is attached to the issue of increasing the yield with the help of bees and other comprehensive measures. According to scientists, bee pollination increases alfalfa yields by 180-250%, sunflower by 40-50%, rye by 1.5 times, cabbage, turnips, onions by 30-40%, and flax by 27%.

According to A. Nabiev, in some farms of the Amudarya district of the Republic of Karakalpakstan, 2.6 centners more cotton per hectare were harvested from cotton pollinated by bees compared to areas without bees.

For effective use of bees during pollination, a healthy, strong bee colony should have 5-6 brood frames 12-14 days before being taken to the pollination site, with enough bees to feed the offspring. One of the main conditions for achieving high pollination indicators is placing the apiary close to the pollination area and having fewer obstacles for bees to fly here. The fewer natural (rivers, lakes, hills) and artificial (constructions, trees, toxic gases, factory fumes, chemical waste) barriers, the faster bees will reach their destination and start pollinating, spend less energy flying through barriers, their operating conditions will be safer, and fewer bee colonies will be needed to pollinate the designated area.

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In Uzbekistan, for cotton and rice fields, it is advisable to divide the pollinating apiary into smaller sections (40-50 families) and place them 450-500 meters apart. In gardens, this distance will be reduced to 200 meters. If the area is rectangular or circular, it is better to place the apiary in the center of the massif. If it is elongated, it is placed one after another at intervals of 800-1200 meters. In the garden, it should not exceed 200 meters.

Figure 1. Pollination of plants.

To increase pollination efficiency in large, stretched areas, the apiary should be placed 200-300 m inside the field edge, at a distance of 800-1200 m from each other. It should be noted that there should be no plants around the pollinated area that attract bees' attention. Otherwise, some bees will remain in them.

Watermelon, melon, eggplant, cucumber, and wild plants such as saltwort, bindweed, sorrel, etc., stimulate the vital activity of bees.

Bees perch from flower to flower, transferring pollen from one plant to another, ensuring their pollination. Flower scents play a significant role in bees landing on and targeting certain types of flowers. Since the flowers of different types of plants have different odors, bees quickly find them by accurately aiming at them.

Bees adapt well to flowers that they visit more frequently, and each bee can find the flower they are taking nectar from among dozens of flowers. When a bee doesn't always land on flowers of the same plant species

Pollination would not be good. Bees only land on flowers of other plant species when there is a decrease in nectar in plant flowers.

While bees seek food by pollinating flowers and improving fruit varieties to increase productivity, flowers provide bees with nutrients such as pollen and nectar (protein, carbohydrates).

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The correct placement of bee colonies in flower beds, the need for pollination, is calculated by the number of bees and bee colonies pollinating simultaneously in one area.
For pollination of various agricultural crops and orchards
a certain number of bee colonies is required.

Norm of the bee colony for pollination

Increase	A bee family on 1 hectare of planted land	Increase in yield, %
Cotyledon orchards	2,0	25-30
Buckwheat	2,0-2,5	40-60
Sun-facing	0,5-1,0	40-50
Red thistle	4,0-6,0	70-75
Alfalfa	8,0-10,0	60-65
Esparcet	3,0-4,0	30-50
Coriander	2,5-3,0	60-80
Cotton	0,5-1,0	15-30
Melons, cucumbers	0,3-0,5	30-160
Cucumber in the greenhouse	10-12	200-300

The main reasons that increase pollination are:

1. high density of bees per unit area of pollinating crop.
2. forming stable reflexes in bees to visit plants.
3. development of effective timing for the use of pollinating bees, including the biological and physiological characteristics of plants, their cultivation techniques, growing season, temperature, etc.

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