

THE INFLUENCE OF MIGRATION OF THE MALE LINE OF BEES IN THE BEE FAMILY

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Abstract.

The article presents information on the effect of migration on the release of male bees in a colony and seasonal changes in the number of male bees in a colony.

Key words: bee family, male bee brood, queen bee, worker bee, bee egg, physiological changes, wax cups, frame-comb, migratory, non-migratory.

Relevance of the topic

If you take a look at a bee colony, there is one queen bee, over 50,000 to 70,000 worker bees, and 200 to 1,000 male bees. The number of male bees may increase slightly during migration in bee families.

In the family, male bees have the largest body size. Their wings are large and longer than their bodies, which makes them make a humming sound when they fly. With the arrival of spring, the worker bees in the beehive begin to care for them. As soon as the male bee passes his horn to the worker bees, they feed him without saying anything. With the arrival of autumn, the attention to male bees is much less.

Does a bee colony need that many male bees? - a question may arise. [2.6] The answer is that male bees are the family's future, its hope and its confidence. Because the male bee is the only representative that preserves and continues this breed in a pure state. Mother nature created them with such a valuable feature.

That is why the worker bees in the hive keep several hundred male bees as family members to fertilize the queen bees. [1.4] This situation gives the queen the hope that the more male bees surround her for the first time during her flight in the fresh air, the more she will be protected from being eaten by all kinds of birds. [5.3]

A colony of bees is more fertile when living in small apiaries than in any large apiary. Due to the small internal volume of such beehives, air exchange is bad for them, bees live densely in the hive, as a result, the inside of the hive heats up. However, these cannot be the main reason for the migration.

In such bee families, there are too many unemployed, older workers and male bees. Under the influence of inactive worker bees, since no work is being done in the hive, their lifespan is slightly extended, as inactive bees live longer. As a result, the reasons and signs of bee colony migration begin to appear. This can be the reason for separation from the family.

It is during this period, in the third stage of the development of strong bee colonies, that the queen bees reduce egg laying and, therefore, the number of larvae in the colony is also greatly reduced. Because worker bees are not fully employed, physiological changes occur in their bodies.[3] These physiologically altered bees also encourage queens to lay eggs in the brooding

wax cups on the edge of the hive frames and in the male cells located on the top and bottom of the surface of the beehive frame.

Sometimes, when there are few male cells in the bee colony, worker bees at the edges of the frame expand the mouth side of the cells and create conditions for them to produce male bees.

As a result, queen bees begin to lay eggs in large numbers in the cells of male bees with such enlarged mouths. This situation is observed more often in families that tend to separate the queen bees. This is the main sign of the migration of the bee family.



Figure 1. The process of determining the amount of offspring in the bee family.

Place and methods of experimentation: research work was carried out on the farm “Ghulomhaja beekeeping” (“G’ulomxo’ja asalchiligi”) in the Tashkent District of the Tashkent region. Bee families on the farm meet all the requirements when conducting research work. The estate contains about 300 Bee families.

To this end, we measured the male bee breed in different months in experimental groups. We used a frame-setka tool to measure the amount of offspring. Each cell in the frame-Setka will be 5×5 cm in size, with 70 male bee offspring per cell.

Research results

During the study period, special attention was paid to the strength of bee families, the age of the Mother Bee, the offspring of male bees in the family and the amount of nutrients. Frames in the family of fly-prone bees in experimental groups were taken one by one, and the fields in the frame where the male bees were located were measured and calculated using a frame set tool.

The following table 16 provides data on the variation in male bee lineage in families of migratory bees.



Table 1

The variation of male bee lineage in migratory Bee families is a square

№	Bee migration	n	Months		
			May X±Sx	June X±Sx	July X±Sx
1.	Control group The non-brood bee family	10	7,9±0,24	9,6±0,27	9,8±0,15
2.	a family of migratory bees Group experiment Group I	10	13,8±0,19	11,7±0,24	18,0±0,18
3.	Experience Group II	10	15,1±0,25	14,4±0,30	21,3±0,15

As can be seen from Table 1 data, in families of migratory native bees in the control group, the male bee lineage was 13.8 squares in may, 11.7 squares in June, and 18.0 squares in July. During the same period, bees in the I-experiment group of Carpathian bees grew up to 13.8 squares in may, while 9.9 more male bee lineages grew in the same period compared to the control group, or 174.7%. When 11.7 square male bees were grown in June, this was 2.1 more than the control group, or 121.8% more. In July, however, it was found that in Experimental Group II, 18.0 square male bee offspring were grown, an increase of 8.4 over the control group, or an increase of 183.6%.

During the same period, it was found that 21.3 male bee lineages were grown in Experimental Group II, an increase of 11.7 over the control group, or 217.3%. This is evidenced by the fact that families of migratory bees in the experimental group always have a high male bee lineage ($P > 0,999$).

During this period, the laying of the eggs of male bees by the mother bees indicates an increase every day.

In families of migratory bees, we can also consider data on the year-round variation of male bee offspring from diagram 1 below.



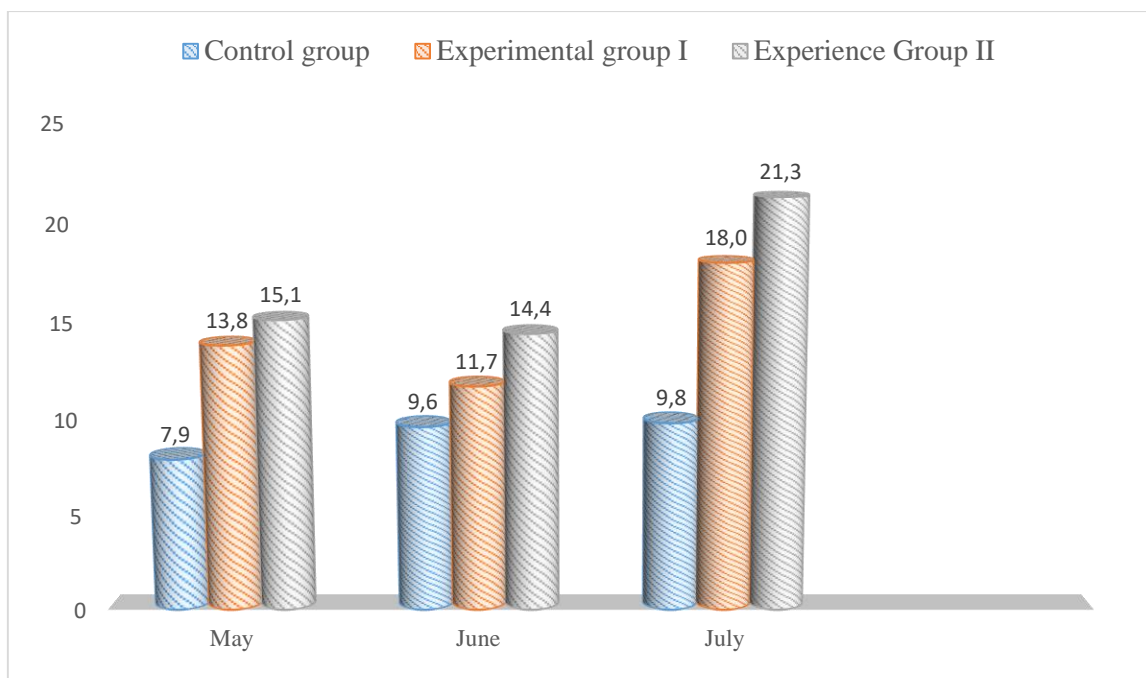


Diagram 1. A diagram of the periodic variation of male bee lineage in families of migrating bees (quarterly)

Diagram 1 shows that in the I-experiment group in families of susceptible bees in the experimental group, it was observed that male bee offspring reached an average of 13.8 squares in may, or an increase in their number by 191.1% compared to the control group. This is what we can see in the control group that the male bee breed has increased by 124.1% by July compared to may ($P > 0,999$).

Similarly, in July, the male bee lineage was 11.7 squares in the I-experiment group, while the II-experiment group was 14.4 squares, or 122.6% more. It was also observed in July that the I-experiment group had at most 21.3 squares, or 3.3 squares more, or 118.3% more.

With the change in the physiological state of bees, their behavior in the family also changes. At this point, the worker watches as the bees climb on top of the mother Wasp and perform "trembling" movements, laying eggs on the mother Wasp. A mother Bee that has fallen into this state will also lay eggs evenly in the cells of any male bee found in its path, and in the wax cups of large mother bees.

As a result, the male bee in the bee family and their offspring led to reproduction. In this case, the reproduction of male bees in the family was a sign that the bee family was preparing for the migration.

Our results obtained O.Yu.Igoshin (2008), E.V.Corresponds to the conclusions of Kuzmina (2011). Based on the results obtained, the researchers assessed the increase in male bee offspring before the release of brood in the bee family as the main sign-sign that indicates the release of brood in the family.

Conclusion

The increase in the number of male bees in the bee family indicates the emergence of new large bees from this bee family. Therefore, in order to prevent the reproduction of male bee offspring in the family and the release of brood, it is always necessary to take measures in the beekeeper.



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