

Huge Role of Bees in the Biosphere: Philosophical Analyze

Salomova Khakima Yusupovna*

Professor, Bukhara State University, Uzbekistan. Email: khakima.salomova@mail.ru*

DOI: <https://doi.org/10.46382/MJBAS.2023.7209>



Copyright: © 2023 Salomova Khakima Yusupovna. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Article Received: 25 March 2023

Article Accepted: 30 April 2023

Article Published: 27 May 2023

ABSTRACT

In this article, the question of the natural-ecological standard of bees is highlighted, and practical ways of preserving life indicators of the biosphere are shown on its example. Also, in the article, it is proved through examples that the material foundation of the world order, green economy, lies in the ecological standards of the existence of nature. Currently, there are about 8 billion people living in the world. More than 1.1 billion of this population live in an ecologically dangerous environment. Today, one-third of the world's population lacks clean drinking water. As long as humanity does not comply with the standards and laws of nature in terms of its behavior, labor activities, and impact on nature, it is not a question that it will become not only nature, the environment, but even itself. In order for humanity to live a healthy life on planet Earth, the ozone layer in the biosphere should not decrease below its natural-ecological norm of 300 Dobson units, clean water should not lose its quality indicators, the amount of carbon dioxide in the air should not exceed 0.003%, the biological productivity of water ecosystems should not decrease, the limitic indicators of the soil, ecological values of ecological components should be preserved, pollution and man-made pressures should be reduced.

Keywords: Population; Environment; Ozone layer; Biosphere; Soil; Measure; Nature; Nectar; Natural-ecological standard; Honey; Pollution; Ecological disasters; Green economy.

1. Introduction

In the oldest religious and secular sources, thoughts and actions about the preservation of the world are worthy of praise. Jalaluddin Rumi in his works such as “Masnaviyi manaviy”, “Ichindagi ichindadir” expresses his thoughts about nature and spiritual existence, the standard of the inner spiritual and spiritual world of man, and the order of the universe: “Truth has created everything in its measure. If you add anything to them, everything becomes imperfect” [1].

The word “perfect” mentioned by Rumi refers to the standard. The height of mountains on Earth never exceeds 10 km. When the mountain height increased from 10 kilometers, the planet Earth could not “weight” the mountains of this height at all, because the composition of the Earth's crust can only “weight” the mountain exactly up to 10 kilometers. The number of squirrels determines the number of spruce buds.

The natural-biological norm of the ozone layer must not be less than 300 Dobson units, the natural-ecological norm of carbon dioxide released into the atmosphere must be 9 billion tons per year, and the indicator of oxygen in the atmosphere must not be less than its natural-ecological norm. Every plant in nature is as valuable as the community. It is a model of existence that is both precious and dear and has its own mission.

2. Methodology

Authors have used qualitative and analytical methods, descriptive method for primary model, synthesis and discussion methods in this paper.

3. Main Findings

Nature spends 2,000 to 7,000 years of “work” for the formation of 18-20 centimeter humus crust. Due to the relationship of mankind to the land, the land can be barren or, on the contrary, fertile.

When people use the land, they should pay attention to leaving it in good condition. About 98% of all food consumed by mankind is grown only in the soil. If we observe the life of bees, we can be sure that the philosopher Seneca's phrase, "Shame on you men who are not as hardworking as bees", was not spoken in vain. Although beekeeping was developed 15 thousand years before our era, it was first brought to Turkestan in 1848, and in 1872 to Tashkent. The natural being is perfectly created. Maulana Jalaluddin Rumi wrote two verses about this feathered insect in the natural world, which is a full expression of the wisdom of nature in two verses written in the Persian-Tajik language:

Xona musiqasi biroz holvoy tar,

Haq bar on ki ilmro bikshod dar.

Translation:

The knowledge of the highest truth is abundant,

The room is full of halwa [1].

The work of the bees, no doubt,

Neither a lion nor a donkey can do it.

In modern terms, no other animal can "perform" the function of the bee in the biosphere, not even a large and beautiful lion. That is the essence of biodiversity. Each species has its own function in the biosphere. The function of one species cannot be fulfilled by another.

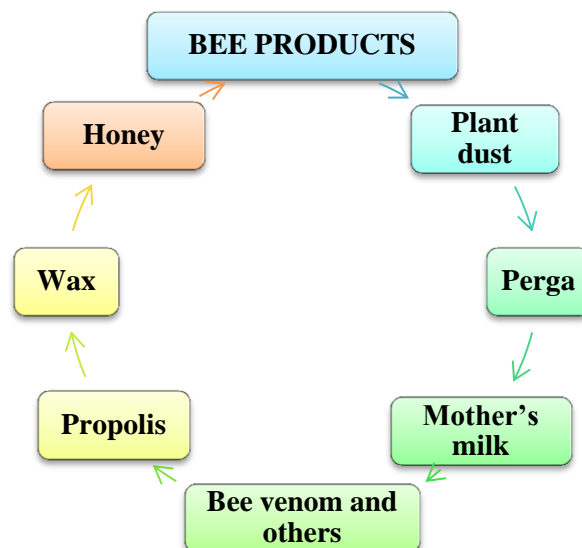


Figure 1. Different types of bee product

These products are loved by everyone. **Jalaluddin Rumi writes:**

What are the natural and ecological standards of bees, why is it necessary to preserve them?

The first criterion is the quantitative ratio between three qualities ("Mother" - female, drone – "male", "worker bees"). To be a family of bees, Mother bees (in the words of Beruni, Yaassib) 1 piece: A male bee

(Trutni) is several hundred pieces: worker bees should be from a thousand to a hundred thousand. This quantitative ratio, strictly speaking, the quantitative ratio between three qualities (“Mother” - female, drone – “male”, “worker bees”), that is, it does not harm the activity of the “family” only if the natural-ecological norm is preserved.

The second criterion is the stewardship function of the queen bee. The queen bee distributes the work to all members of the family, which bee is responsible for the cleanliness of the room, which one is responsible for the temperature of the room, which one is responsible for guarding the door, another one for bringing nectar, and one for the construction of rooms inside the hive. **Third rule - Bees never land on flowers with less than 4.25% sugar content in their nectar.** This quantity represents its lower limit. How do you know if nectar is low in sugar? - is a natural question. Each bee has between 15,000 and 500,000 pairs of olfactory organs. If we dissolve the odorous substance in a ratio of 1:1500, bees have the ability to notice that smell. That’s why it is no exaggeration to say that it is the most refined taster on earth. Bees are champions of smell. They perceive and distinguish smells 1000 times stronger than humans. The smell of flowers and the amount of honey in it can be felt from a distance of 1 kilometer. It takes about 10 million bees to get 1 kg of honey must land on honey-bearing flowers.

The fourth standard bees bring nectar to its “basket” up to 0.008-0.015 grams (which is one tenth of its own body weight), which allows it to fly with the exact amount of nectar weighing up to 0.008-0.015 grams. On the other hand, it allows more plants to be pollinated.

The fifth criterion is that the received nectar is returned by the receiving bees from the mouth to the hive, from the hive to the mouth 120 to 240 times, as a result of which the initial 80% moisture content of the nectar drops to 18%, that is, the nectar turns into honey. Bees that collect honey from only one plant flower are called monofloral honey bees, and those that collect honey from different flower nectars are called polyfloral honey bees. The diagram below shows the natural-ecological standard of bees as far as possible. The benefits of nature to humanity are endless. In ancient Iran, honey was considered the most valuable medicine. In order to collect only 100 grams of honey, bees cover a distance of 46,000 kilometers, in other words, they circle the Earth’s equator once - flying at the same distance.

Maulana Rumi summarizes all the activities of bees in these two verses. Man can never do the work of bees. It is a sign that the existence of nature is indeed created by mature wisdom. We can protect humanity only by protecting the universe and nature. In “Nahl” Surah of the Holy Quran: “Nahl - bees. It was named so because there are verses in the surah about the exemplary lifestyle of bees:

10. It is the one who rains water for you to drink from the sky, and the trees (plants) that feed (your animals) also drink from that water.

11. It collects for you that (water) and (various) crops, olives, dates, grapes and all fruits. Indeed, there is a sign in this (deed) for a people who reflect.

15. Again, He made the mountains in the Earth so that it does not shake you, (made rivers to flow) (for your drink and crops) and (created paths) for you to walk straight.

30. There will be a beautiful reward for those who do good deeds in this world.

68. (O Muhammad!) Your Lord revealed (ordered) to the bees: “Build in mountains, trees and things that (people) build”.

69. Then eat of various fruits and walk on the paths that your Lord has made comfortable (for you)! From their bellies flow different colored juice (honey) which is healing for people” [2].

NATURAL-ECOLOGICAL NORM OF BEES

Compass (guide) standard

Worker bees are delicate tasters. Each whisker has 15,000 to 500,000 pairs of olfactory organs. If we dilute the odorous substance in a ratio of 1:1500, the bees have the ability to notice that smell.

Social standard

Queen Bee: Male (Drone): Worker Bee; 1: A few hundred drones: 1000 to 100000

Wide-polyferous standard bees

Bees collect honey from various plants. Examples of these are: dalit, forest, nectar collecting bees

A functional standard

To collect 1 kg of honey, bees can land on 10 million honey flowers. To collect 1 kg of honey, he goes for nectar 120-150 thousand times. It covers a distance of 65 km in 1 hour. Bees never land on flowers with a sugar content of less than 4.25% in nectar. This amount represents its lower limit.

The process of sending the nectar from the mouth to the honey bee and back to the mouth and from the mouth to the bee is repeated from 120 to 240 times. At this time, the moisture in the nectar begins to disappear. Nectar contains 40% to 80% water, when the nectar turns into honey, its moisture content is 18%, and the water content remains equal to 18-20%. During 1 summer, 1 family of bees gives up to 150 kg of honey.

A balanced standard

A swarm of bees takes 0.008-0.015 grams of nectar into its “basket” (this is one tenth of the bee's body weight), and returns home with nectar. Bees hind legs: fill their “baskets” with pollen, thereby maintaining their balance while flying in space

A mathematical standard

Koenig, Maraldi, McLauren, Forbes measured the angle of beehives. The angle is equal to 109 28 16.349. Up to 4 kg of honey is collected in 9,100 hexagonal hives

Life expectancy standard

Queen bees live for 5-8 years, but their useful life is only 2 years. Drones live only 3 months (in summer). Worker bees live for 21 days.

Ecological sting

On average, one bee family needs 10-15 km, and 1 bee requires 200 m of territory.

Figure 2. The structure of natural-ecological norm of bees

Man, being very hardworking, can never do the work of bees by himself. Ecological habitat area (200 square meters) required for each bee family to live; and having certain plants in it; social norm in the honey bee family:

The mother bee:	Male (Trutny):	Worker bees:
1:	several hundred:	1000 to 100000

When the queen bee dies, the bee colony is destroyed. For the beehive to exist, the triple unity - the specific quantitative ratio of the three qualities - must not be disturbed. Therefore, there is a quantitative ratio of sexes within the species. Among the environmental standards of bees, only the standard of mother bees is considered the limitic, that is, the main standard, which controls other natural-ecological standards and is the central standard.

To clarify our point, let us quote the words of the Greek historian and writer Xenophon about the Mother Bee: “The mother bee stays in the room and does not allow any of her bees to sit idle. Having found a job for all the bees, he checks and accepts the honey raw materials brought by them, places them in his place. He observes that the hive rooms are beautiful and solid, that honey products are fully placed in them, and pays special attention to the moderation of the hive temperature.

There are also a lot of guard bees, who stand in front of the “door” of the apiary and ensure that enemies do not enter. “The Queen Bee alone does not work, but it has its own biological function.” The biological function of the queen bee is to reproduce, and she lays fertilized and unfertilized eggs. Male bees (drones) develop from unfertilized eggs, and worker bees develop from fertilized eggs. This ecological norm in natural existence is always maintained. Let’s assume that if the mother dies, the whole family will be thrown into disarray. Beekeepers replace the queen bee in the family every two years, because her productivity is very high in two years. In order for there to be a region where bees live, there must be a marsh in a certain part of the biosphere, a forest in a certain part, and a mountain in a certain part. Marshes are one of the most favorable ecological niches for bees. Due to the drying of wetlands and the loss of habitats due to the smell of chemical compounds in the atmosphere, these rare insects have greatly decreased [4].

If it is possible to get up to 300 kg of honey from the flowers of 1 hectare cotton garden in Uzbekistan, 30 kg from 1 hectare pumpkin garden; If we know that 50 kg of honey can be collected from a 1-hectare sunflower field, it becomes clear that every particle of soil in Uzbekistan is gold and the uniqueness and value of every plant.

If cotton is pollinated by bees, its productivity increases by 25%, and the number of bolls increases by 12-13%, scientifically proven. At the same time, the ripening period of the pod was accelerated by 5-9 days, the fiber and seed quality improved, the seed’s ability to germinate increased, and the oil content of the seed increased.

Bees consume only 1% of the honey they produce. It provides the remaining 99% to mankind. Here is the nobility. This is why our Prophet Muhammad said: “There are two ointments in the world: the Quran and honey”. Quran is the ointment of the soul, and honey is the ointment of the human body. It is the duty of all mankind to preserve such a majestic species in the biosphere [5].

4. Suggestions

Studying the natural-ecological norms of each flora and fauna and teaching them that following them is the most important factor in the overall protection of the environment to the youth of the whole world and to all mankind

[6]. Any unnatural smell means death for bees. Since the reason for the death of the bee family is “alien” smells, it means that the whole world should be protected from all kinds of pollution, from chemical, physical, biological, radioactive pollution, and from the smells of automobile emissions.

Firstly, protecting the ecological niche of each plant, each member of the animal world; in other words, forests, swamps, steppes and deserts must be preserved in order for bees to live.

Secondly, all flora and fauna, representatives of inanimate nature do not go beyond their natural-ecological norm. An anthropogenic factor that causes ecological disasters is abnormality.

5. Discussion and Conclusions

The world is constantly renewing, changing, developing. The development of society must take into account the limits of the possibilities of the biosphere. In the form of economic relations, natural pollution makes up 3-10% of the total pollution, while anthropogenic pollution makes up 90-97%. When the “70% rule” is applied to each type of hunting, only when the elements taken in the humus crust of the soil are returned, the soil can again give us its unique blessings. It is not for nothing that it is stated in Surah “Hijr” that “We bring down everything with a measure”. Humanity must never harm the order of the universe. Any negative action will damage the indicator of life of the biosphere - UNIVERSAL ORDER. The core of the “green economy” that resonates in the field of world science today is the maintenance of the natural-ecological standard of all ecological components in nature.

Declarations

Source of Funding

This study did not receive any grant from funding agencies in the public or not-for-profit sectors.

Conflict of Interests

The author declares that there is no conflict of interest regarding the publication of this paper.

Consent for Publication

The author declares that he/she consented to the publication of this study.

References

Jalaluddin Rumi (2008). Proverbs, Tashkent: “Sharq”, Page 12.

Holy Quran. Surah “Nahl” consisting of 128 verses, <https://quran.com/an-nahl>.

Khakima Yusupovna Salomova (2021). Appearance of quality, quantity and norm categories in the medical thoughts of Avicenna. *Academic Research in Educational Sciences*, 2(1): 916-922. doi: 10.24411/2181-1385-2021-00118.

Yusupovna, Salomova Khakima, Abu Raykhan Beruni (2021). About the Quantity and Measures of Natural Being (2021). *Irish Interdisciplinary Journal of Science & Research*, 5(2): 50-54.

Yusupovna, Salomova Khakima (2021). The Condition, Consequences and Danger of Biological Changes in Biosphere. Irish Interdisciplinary Journal of Science & Research, 5(1): 01-06.

Sobirovich T.B. Evolution of ideas and views on the development of democratic society and spiritual renewals. Scientific Bulletin of Namangan State University, 10: 243-250.