MEDWIN PUBLISHERS
Committed to Create Value for Researchers

International Journal of Zoology and Animal Biology
ISSN: 2639-216X

The Rapid Disappearance of the National Bee in Egypt is a Phenomenon Whose Causes Could be Solved

Shairra S.A*

Department of Biological Control, Plant Protection Research Institute, Agriculture Research Center, Egypt

***Corresponding author:** Souad A. Shairra, Department of Biological Control, Plant Protection Research Institute, Agriculture Research Center, Egypt, Email: s_shairra_egy@yahoo.com; s.shairra.egy@gmail.com

Conceptual Paper
Volume 4 Issue 5
Received Date: October 06, 2021
Published Date: October 22, 2021
DOI: 10.23880/izab-16000331

Abstract

Ancient Egyptians favored bees as a food source. The native bee in Egypt, Apis mellifera lamarckii, has importance in ancient Egypt's ecosystems, in its ability to pollinate flowers and their defence effects against bee pests and diseases. More than 4,000 years ago, bees with beekeepers appeared on the walls of Egyptian temples. As a result, the job of beekeeper emerged for the first time in history, which is the category involved with growing honey bees, breeding them, and collecting their products. Beekeeping is fraught with difficulties. Beekeeping in Egypt has problems because there is insufficient regulation of the bee industry. There is no regulation of bee pastures. Despite the fact that Egypt is a source of honey bees and queen bees, the procedure is not well-organized enough to benefit from the Egyptian bee richness. In the absence of basic knowledge, it is difficult to make decisions in this area, and there is also a disconnect between the academic studies on bees and the challenges faced by beekeepers on the ground. The availability of insurance for the beekeeper on his apiary is required to solve an issue like the extinction of native beehives. As well as regulating the creation of native bee habitats. It should be fed in isolated habitats that imitate their native environment, with responsible authorities monitoring and tracking his locations and conserving Egyptian bee genetic maps. Process of beekeeping regulation. In the last few decades, the Egyptian honey bee has seen a drop in the number of hives in most of its ecological areas, prompting a slew of study investigations to try to figure out what's causing this. This conceptual paper will look at some of those factors and see if there are any potential solutions that could aid in the conservation of native honey bees.

Keywords: National Bees; Environments; Biodiversity; Pollination; Phenomenon

Background

Egyptians of antiquity favored bees as a food source [1]. Bees are social insects that live in groups and work together to keep their species alive and to benefit the ecosystems in which they inhabit. Native bees, *Apis mellifera lamarckii*, were important in ancient Egypt not only for their ability to pollinate flowers but also for their defence effects against bee pests and diseases. Egyptian honeybees are smaller, more aggressive and built smaller colonies than the other European honeybees [2]. Which aids in the proliferation of plants, hence preserving nature's biodiversity and the production of vital fruits for human and animal use [3,4].

The greatest threats to native bees observed at excessive pesticide usage, and climate change, which has resulted in the inclusion of several of these species on the Red List of Threatened Species by the International Union for Conservation of Nature (IUCN) [5].

According to historical data, it might be argued that Egypt has the longest known history of honey bee use of all the ancient world's countries. King Menes (4445 BC), the founder of the First Dynasty of Egyptian Kings, was regarded as the "beekeeper," and following rulers were frequently referred to as the "Bee King" [1,6-8]. The earliest Egyptian drawings and paintings on tombs, sarcophagi, temples, and obelisks vividly demonstrate how beekeeping was an integral part of society. The sun temple of the king NY-USE-RRA, which features a sculpture representing beekeeping [9,10], contains the oldest evidence of such practice from the Fifth Dynasty, Old Kingdom [1]. Bees are one of the most important insect groups that benefit humans, and they are mostly social insects that live in organised groups and work as a single unit to maintain their species and serve the ecosystems in which they live. However, there are 20,000 species of bees worldwide, all of which belong to the order Hymenoptera [11-13].

The majority of people connect bees with honey bees, which are only a small fraction of the huge universe of bees. Honeybees are members of the Apis genus, which includes nine species that all make honey. The majority of these animals can be found in Southeast Asia and the Indian subcontinent.

Apis mellifera, the Western honey bee, is the most frequently utilised species for the commercial production of honey, wax, and all other bee products in the world [7,14].

There has always been a reciprocal link between man and bees since man first appeared on the surface of the planet, prompting man to consider restricting these insects in order to reproduce and benefit from them [3].

More than 4,000 years ago, bees with beekeepers appeared on the walls of Egyptian temples. As a result, the job of beekeeper emerged for the first time, which is the category concerned with growing honey bees, breeding them, and collecting their products [1-3].

What are the Reasons for this Sudden Disappearance?

There is currently no known cause for the disappearance of bee hives, as well as the resulting loss of output and colonies that were once teeming with a huge number of healthy bees. However, some reports and scientific studies have discussed plausible causes for this phenomena, such as the usage of certain insecticides and their impact on honey bees and wild bees [8,4].

Insect pests such as the little and larger wax moths, Galleria sp., prey on the wax frames in which bees store honey, and their larvae feed on the wax frames. Varroa mites are one of the possible causes, in addition to infecting the wax with many of the accompanying fungi, which exposes the frames and brood to weakness and destruction. Varroa mites, a tiny parasite that parasitizes and weakens honeybee larvae, possibly affecting their behavior, and is currently the world's largest killer of honey bees. Also, *Nosema apis*, which is caused by a single-celled parasite that was recently, and has been linked to the disappearance of bees in a number of scientific publications, with the US Department of Agriculture classifying it as one of the most prominent suspects. The changed nectar may negatively affect the behavior of the workers, preventing them from returning to their hives in some way, as well as the phenomenon of global warming, or what is known as the greenhouse effect, and some fingers point to it as the cause of the disappearance of bees; Because temperature and humidity have a demonstrable effect on these insects, the situation with this disease is still murky. Egypt's situation is not much different. The reasons behind these phenomena and the losses it produces are unclear, and no research has been done to solve the enigma of this event and the losses it causes by beekeepers and workers bee [8-11].

What are the Problems and How to Support Beekeepers in Egypt?

Despite the fact that Egypt is one of the countries where beekeeping began more than 4000 years ago, there is insufficient regulation of the bee industry in Egypt. There are no management of bee pastures in nature, or studies showing how many cells an acre of alfalfa or citrus fruits, for example, needs to give a higher yield. Although Egypt is a source of honey bees and queen bees, the process takes place without sufficient organisation and in the absence of basic information, and there is no limit to the number of beehives in governorates or the status of beekeepers, and despite Egypt being a source of honey bees and queen bees, the process takes place without sufficient organisation and in the absence of basic information.

It's tough to make decisions in this area because there's a disconnect between academic bee research and beekeeper difficulties on the ground. A problem like the disappearance of beehives, for example, necessitates the presence of insurance for the beekeeper on his apiary, and this sort of insurance will help him offset the financial loss [12-14].

In Egypt, the Solution Exists and is Simple to Execute

- Encouraging novice beekeepers to raise Egyptian bees and educating them on the benefits of doing so
- Creating isolated habitats for native bees to feed on that mirror their natural environment
- The competent authorities' monitoring and tracking of his whereabouts
- Encouraging scholars to do Egyptian bee research and to submit theses for masters and doctoral degrees.
- Preserving Egyptian bees' genetic maps. Process of beekeeping regulation
- Maintaining a comprehensive database of Egyptian beehives
- -Establishing a beekeepers insurance programme
- Quality control and inspection of samples before and after they are presented in the market
- Development of production and validation in a honey extraction, and the processing, packaging and its storage.

Conclusion

Bees are one of the most important components of ecosystems around the world, and they are the primary producer of food sustainability; they play the most important function in the pollination of plants, which results in the production of seeds. Additionally, conservation practices not only help improve honey bee health but also help improve the quality of water, soil and wildlife habitat.

References

1. Bunson MR (2002) Encyclopedia of Ancient Egypt New York, USA pp: 67.

2. Hammad MB (2018) Bees and beekeeping in ancient Egypt (a historical study). J of the Association of Arab Universities for Tourism and Hospitality 15(1): 1-16.

3. FAO (2009) Bees and their role in forest livelihoods pp: 204. http://www.fao.org/3/i0842e/i0842e00.pdf

4. Westphal C (2008) Measuring bee diversity in different European habitats and biogeographical regions. Ecological Monographs 78(4): 653-671.

5. Luxembourg (2014) Publications Office of the European Union. European Red List of Bees pp: 98.

6. Kritsky G (2010) The Quest for the Perfect Hive, A History of Innovation in Bee Culture pp: 11.

7. Mortensen AN, Schmehl DR, Ellis J (2013) Common name: European honey bee. scientific name: Apis mellifera and subspecies Linnaeus (Insecta: Hymenoptera: Apidae) Introduction - Distribution - Description - Biology - Life Cycle - Economic Impact - Management - Selected References Entomology and Nematology Department, University of Florida, Featured Creatures. https://entnemdept.ufl.edu/creatures/misc/BEES/euro_honey_bee.htm

8. Hristov P, Shumkova R, Palova N, Neov B (2021) Honey Bee Colony Losses: Why Are Honey Bees Disappearing?. Sociobiology 68(1): e-5851.

9. Antúnez, K, Invernizzi C, Mendoza Y, Van Engelsdorp D, Zunino P (2017) Honeybee colony losses in Uruguay during 2013-2014. Apidologie 48: 364-370.

10. Bahreini R, Currie RW (2015) The influence of Nosema (Microspora: Nosematidae) infection on honey bee (Hym.: Apidae) defense against Varroa destructor (Mesostigmata: Varroidae). Journal of Invertebrate Pathology 132: 57-65.

11. Botías C, Martín Hernández R, Barrios L, Meana A, Higes M (2013) Nosema spp. infection and its negative effect on honey bees (Apis mellifera iberiensis) at the colony level. Veterinary Research 44: 25.

12. Mostafa SM, El Agroudy NM, Shafiq FA, El-Din Hassan MB (2018) Economics of Honey Bee in Egypt. J Appl Sci 8(3): 820-826.

13. Crane E (1999) The world history of beekeeping and honey hunting. London: Duckworth pp: 720.

14. Yahya Al Naggar (2018) Beekeeping and the Need for Pollination from an Agricultural Perspective in Egypt. Bee World 95(4): 107-112.