

**2024 Taiwan Science Exploration Fair- To do, To understand.**  
**Form of Scientific Article- College/ Social Group**

**Title of the article: If bees go extinct, will humanity survive? What would happen if all the bees die?**

**Abstract:**介紹蜜蜂在我們日常生活中的重要性,證明人類不會隨著蜜蜂的消失而滅絕的事實

**Contents:** ( 500 to 1,500 words limit )

Bees are among the most hardworking and organized insects in the insect kingdom. They are known for their production of honey together with other useful substances such as beeswax and propolis. People use honey in making food, producing cosmetic products and medicines as well. Bees are also critical pollinators for many of the crop products we use daily. Without bees, there would be critical shortage in fruits and vegetables in supermarkets and the clothing and cosmetic industries would be facing lack of raw materials. With the bees' extinction, our world will be less colorful because flowers can't blossom due to the disappearance of their main pollinators.

A good question is "if bees go extinct, will humanity survive?". Well-known theoretical physicist, Albert Einstein once quoted that human would have only 4 years of life left if all the bees died. But researches point out that it is not correct. Two-thirds of the plants we eat are pollinated by wind and do not require bees to reproduce. These plants are wheat, corn and rice on which we mainly depend to get carbohydrates. Moreover, bees are not the only insects for pollination, other insects such as beetles, ants, butterflies and moths also play their roles in pollination. So, it is unlikely for humans to go extinct if there are no bees on the earth. However, a lot of environmental and economic disasters will occur if every bee on the planet dies.

**What would happen if all the bees die?**

The most obvious case is that we will no longer able to see the honey again. Honey is the important ingredient as a natural sweetener in making foods, baking cakes, and it is also used in medical purposes such as manufacturing drugs and remedies. If there is no honey, doctors and bakers will not be pleasant.

Without bees, fruits and vegetables will get very scarce. Pollination by the bees is responsible for the production of 70% of fruits, vegetables and nuts worldwide. Fruits such as watermelons, strawberries, apples, almond nuts and many kinds of vegetables will be a lot more expensive. This will cause more difficulties for the developing countries with the insufficiency of nutrient foods.

Bees are also important in making cotton. So, with the disappearance of bees, the clothing industry will be negatively affected. We will have to say goodbye to our blue jeans, towels, mattresses and high-quality paper products.

In fact, bees are the important pollinators for flowers and plants around the world. Plants produce fruits and seeds that are eaten by the animals, and we already know that plants are the fundamental part of the food chain. Plants also provide habitats for other creatures, maintain healthy condition of soil and water, and even produce the oxygen we breathe. So, bees are responsible for maintaining our planet healthy and beautiful. So, without bees our planet will suffer from a serious environmental catastrophe.

### **The population of bees is decreasing rapidly recent years and the reason why it is happening**

**CONICET**, an Argentina scientist community made a study over 9 years of observation from 2006 to 2015. In this study, they found out that a 25% decrease in bee species compared to 1990 data. Some bee species are becoming endangered species such as rusty patched bumblebees. Why is it happening? The scientists found out that a chemical compound in a pesticide used by humans, which is known as ‘neonicotinoids’. This neurotoxic chemical affects the central nervous system of the bees, causing disorientation and they can’t return to their hives. Due to this harmful effect on the bees, the officials banned the use of this pesticide. Other factors such as climate change, insect diseases and monoculture (the cultivation of a single crop in a field) are also affecting the loss of large numbers of bees.

For conclusion, it is not true that human will be only left with 4 years after the extinction of bees. But bees are the important pollinators for colorful flowers, many kinds of fruits and vegetables, nuts and coffee beans. Without them, the world would be less colorful and less green, and our meals would be so boring. We should pay attention to preserving these lovely and important creatures before it gets too late.

## References

1. <https://justbeehoney.co.uk/blogs/just-bee-honey-blog/what-would-happen-if-all-bees-died#:~:text=If%20all%20bees%20died%20it,to%20struggle%20to%20find%20food>.
2. <https://www.nrdc.org/stories/world-without-bees-heres-what-happens-if-bees-go-extinct#:~:text=There%20are%20plenty%20of%20other,get%20a%20lot%20less%20interesting>.
3. <https://www.youtube.com/watch?v=JilYBVrFiLA&list=LL&index=2>
4. <https://www.youtube.com/watch?v=jcwJF4i3O6U&list=LL&index=3>

## Notes :

(1) Submissions without using the format of the ‘Form of Scientific Article’ on the official website **will not be reviewed.**

(2) Words that do not meet the limit of 500 to 1,500 words on the official website of the competition **will not be reviewed.**

P.S. Abstract, references and descriptions for charts and figures are not included in the word count.

(3) Suggested format :

- Chinese font: Microsoft JhengHei ; English font and numbers: Time New Roman.
- Size: 12 pt, pictures, graphics and texts in appendices should slightly less than 12 pt if necessary, but must not be less than 10 pt.
- Line spacing: should be fixed to 20 pt.
- Table titles are arranged to center above the table and align the table; Figure titles are arranged to center below the figure and align the figure.