FRUITS & VEGGIES

Bees Bite Plants to Speed Up Their Flowering, Say Surprised Scientists

By bestfolkmedicine · 05/06/2021 · 3 min read



Bumblebees are doing more than just bumbling around our gardens-they're assessing plants and checking out which flowers are the richest with pollen and nectar.

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The relationship between flowers and pollinators goes back some 130 million years.

When checking out plants, these insects leave behind scent marks that inform them which blooms they've already passed.

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And, a recent study discovered that they also force plants to flower by making small incisions in their leaves.

This discovery amazed bee scientists, including Neal Williams, a bee biologist at the University of California, Davis.

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He says his first reaction was 'Wow.' He also wondered how they all missed out this.

Bees Bite Plants to Speed Up the Flowering, Discover Scientists

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Consuelo De Moraes, a chemical ecologist at the Swiss Federal Institute of Technology in Zurich reacted the same way Williams did when one of her students, Foteini Pashalidou, noticed that the buff-tailed bumblebees make small cuts into the leaves of plants.

And, they didn't seem to carry off the bits to their nests or consume them. They suspected this was done to induce the flowering so they decided to make an experiment.

According to the results, when the sources of pollen are scarce, like in a greenhouse or in early spring, the bumblebees have the power to force the blooming up to a month earlier than they usually do.

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Why Is this Discovery a Promising One?

The research is promising because of two things.

First, it's a strong suggestion of bumblebees' capacity to manipulate flowers, a very useful skill with the warming temperatures globally causing pollinators to appear before the plants have bloomed.

These insects depend almost exclusively on pollen as food for them and their larvae in early spring.

The other benefit is a possible improvement in the human food supply. Namely, if the agriculturalists can make crops to bloom earlier, food production of some plants may be enhanced.

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Bumblebees: the Master Gardeners

For the purposes of the research, De Moraes, Pashalidou (the study's lead author) and their colleagues put flowerless tomato and black mustard plants in mesh cages with colonies of buff-tailed bumblebees deprived of pollen.

The next step was removing the plants after the bees have made five to ten holes into them.

These small incisions made the black mustard flower two weeks earlier and the tomato ones a month earlier.

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What's more, the scientists also put pollen-fed and pollen-deprived bumblebee colonies in mesh cages with the flowerless plants in order to compare their attitudes.

The working bees from the colonies that were fed with pollen rarely damaged the plants whereas the other deprived ones did.

They Had to Ensure the Results Weren't a Cause of the Artificial Lab Conditions

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In order to find out if this was a result of the lab conditions or not, they put bumblebees and several flowerless plants on their rooftop in Zurich in March of 2018.

Despite being free to forage as far as they wanted, the bees were focused on damaging the leaves on all of the non-flowering plants that were the closest to their hives.

Consequently, towards the end of April, more local flowers bloomed and thus, showed that the leaf-biting attitude is caused by the pollen availability.

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The next step is to see if this attitude is also common in other species of bumblebees that are around 250 globally.

Sources:

NATIONAL GEOGRAPHIC

SCIENTIFIC AMERICAN

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