

# Bumblebees differentiate flower types when arranged horizontally but not vertically

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Image credit: Wikipedia.

Bumblebees trained to go to feeders labeled with a certain color or pattern cue but avoid differently labeled alternative feeders did so when feeders were arranged horizontally but didn't when arranged vertically. Researchers believe this could be because groups of flowers arranged horizontally, like those in a meadow, often include several different species, while those arranged vertically, such as in blossoming trees are likely to all be the same species.

It is well known that bumblebees and other pollinators can tell the difference between plants that will provide them with nectar and pollen and those that won't. However, until now little has been known about how the arrangement of [flowers](#) affects their decision making.

Researchers from the School of Biological and Chemical Sciences at Queen Mary University of London, taught bumblebees to distinguish between two visually clearly different feeder types, one type containing food while the other did not. They found that bees were able to quickly learn the feeder types containing food when the feeders were arranged horizontally. However, the bees failed to distinguish these feeder types when these were

distributed vertically on a wall and significantly more often chose the wrong feeder type.

The researchers are sure that the bees were equally able to discriminate between the two presented feeders in both arrangements but simply chose not to waste the brain power doing so on vertically arranged feeders. They believe that this is because in a meadow typically rewarding and unrewarding flowers of different species grow side-by-side and bees benefit from visiting only flowers similar to the ones that have previously rewarded them. In contrast, vertically clustered flowers, such as on flowering bushes or trees, the flowers in the arrangement are typically the same and paying close attention to the flower features may not be needed.

Dr Stephan Wolf, co-author of the research, said: "This is a rare example of a pollinator being able to tell the difference between different flowers but simply choosing not to do so.

"Further illustrating the impressive learning abilities of mini-brained [bees](#), this study also shows that these capabilities may be applied in very surprising ways in different natural foraging situations".

Provided by Queen Mary, University of London

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