

Bees hit a purple patch

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A bee's favourite colour can help them to find more food from the flowers in their environment, according to new research from Queen Mary, University of London.

Dr Nigel Raine and Professor Lars Chittka from Queen Mary's School of Biological and Chemical Sciences studied nine bumblebee (*Bombus terrestris*) colonies from southern Germany, and found that the colonies which favoured purple blooms, were more successful foragers.

Dr Raine explains: "In the area we studied, violet flowers produced the most nectar - far more than the next most rewarding flower colour (blue). Inexperienced bees are known to have strong colour preferences, so we investigated whether the bumblebee colonies with a stronger preference for violet flowers foraged more successfully in their local flora."

The team first observed the colour preferences of naïve bees (those which had never before seen flowers) using violet (bee UV-blue) and blue (bee blue) artificial flowers in the laboratory. They then observed the rate at which bees from the same colonies collected nectar from real flowers in the wild.

The results showed that the colonies who preferred violet to blue flowers in the laboratory, harvested more nectar from real flowers under field conditions. In fact the colony with the strongest preference for violet (over blue) brought in 41 per cent more nectar than the colony with the least strong bias.

The team's findings, which will be published online in the journal PLoS ONE, suggest that bumblebees have developed their favourite colour over time, to coincide with the most profitable, nectar-rich, flowers available.

It has been long accepted that animals show an innate preferences when selecting a mate, but little research has been carried out on how such sensory biases affect foraging habits. The researchers believe their work could have implications for other species.

“A straw poll of friends always reveals many personal differences in 'favourite colour'. Some human societies also have very different colour preferences,” explains Raine. “In our work on bees we actually show there is some useful purpose to having such favourite colours. These innate sensory biases seem to play an important role in helping naïve animals to find food.”

Citation: “The Adaptive Significance of Sensory Bias in a Foraging Context: Floral Colour Preferences in the Bumblebee *Bombus terrestris*” will be published online in PLoS ONE on Wednesday, 20 June, 2007: www.plosone.org/doi/pone.0000555 .

Source: Queen Mary, University of London

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