

# Sweet bribes for ants are key to crops bearing fruit, study shows

June 23 2017

---



Ants are shown on bud and fruits of a passionflower following a study which found that flowering crops such as beans, cotton and passionfruit offer their sweetest nectar to recruit colonizing ants -- their strategy balances their need for defense and to reproduce. Credit: Nora Villamil-Buenrostro

Flowering crops such as beans and cotton offer their sweetest nectar to recruit colonising ants in a strategy that balances their need for defence and to reproduce, research suggests.

So-called ant-plants carefully manage the amount and sweetness of nectar produced on their flowers and leaves, a study shows.

This enables them to attract [ants](#)—which aggressively deter herbivores—while also luring insects that will spread pollen.

The findings could inform the commercial farming of produce from ant-plants, which also include pumpkins, courgettes, passionfruit and acacia honey.

Researchers from the University of Edinburgh studied the nectar secreted by a plant from the passionfruit family during flower and [fruit](#) development.

They sought to understand how such plants produce nectar on their flowers, fruits and leaves, to feed ants and pollinators.

Scientists were surprised to find that the greatest volume of sweetest nectar was produced surrounding flowers, to attract ants.

This may ensure that flowers, with their valuable pollen and potential fruits, are well defended from herbivores, while encouraging ants to stay away from the open flowers themselves.

Researchers had expected high secretions of nectar at buds and fruits to lure ants, but not at [flowers](#), in order to avoid conflicts between ants and pollinators. The study, published in *Biotropica*, was funded by the National Autonomous University of Mexico.



A herbivore grasshopper is deterred by colonizing ants feeding on passionflower nectar, following a study which found that flowering crops such as beans, cotton and passionfruit offer their sweetest nectar to recruit such ants -- their strategy balances their need for defense and to reproduce. Credit: Nora Villamil-Buenrostro

Nora Villamil-Buenrostro, of the University of Edinburgh's School of Biological Sciences, who led the study, said: "Offering sweet bribes in the form of [nectar](#) may be a strategy used by ant-plants to avoid conflict between ants and pollinators. This allows a trade-off in which plants are well defended by bodyguard ants, without these scaring away [pollinators](#)

."

Provided by University of Edinburgh

Citation: Sweet bribes for ants are key to crops bearing fruit, study shows (2017, June 23)  
retrieved 23 April 2024 from <https://phys.org/news/2017-06-sweet-bribes-ants-key-crops.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.