

Venezuelan pitcher plant uses wettable hairs to make insects slip into its deadly traps

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Heliophora nutans. Credit: Wikipedia.

An insect-trapping pitcher plant in Venezuela uses its downward pointing hairs to create a 'water slide' on which insects slip to their death, new research reveals. The research was published today, 19 December, in the journal *Proceedings of the Royal Society B*.

Hairs on plants, called trichomes, are typically used to repel water. However, the Cambridge researchers observed that the hairs on the inside of *Heliophora nutans* pitcher plants were highly wettable, prompting them to test whether this phenomenon is related to the trapping of insects.

They found that wetting strongly enhanced the slipperiness of the trap and increased the capture

rate for [ants](#) almost three-fold - from 29 per cent when dry to 88 per cent when wet. Upon further examination, they found that the wetting affected the insects' adhesive pads while the directional arrangement of the hairs was effective against the claws.

Dr Ulrike Bauer, lead author of the paper from the University of Cambridge, said: "When the hairs of the plant are wet, the ants' adhesive pads essentially aquaplane on the surface, making the [insects](#) lose grip and slip into the bowl of the pitcher. This is the first time that we have observed hairs being used by plants in this way, as they are typically used to make leaves [water repellent](#)."

They also found that the plant used a wicking method during dryer times to pull moisture from the bowl of the pitcher up to the hairy trapping surface, enabling them to capitalise on this aquaplaning effect even when there is no rain.

Dr Bauer added: "This very neat adaptation might help the plants to maximise their nutrient acquisition."

The *Heliophora nutans* [pitcher plant](#) lives on the spectacular table mountains of the Guyana Highlands in Southern Venezuela, between altitudes of 2000-2700m. The [pitchers](#) can grow up to 18 cm tall and 7 cm wide and trap mainly ants.

More information: The paper 'Insect aquaplaning' on a superhydrophilic hairy surface: how *Heliophora nutans* Benth. pitcher plants capture prey' will be published in the 19 December edition of *Proceedings of the Royal Society B*.

Provided by University of Cambridge

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