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Life

Male moths make their own perfume from flowers to attract females

Tobacco budworm moth males gather a sweet-smelling chemical from flowers and release it from hairy appendages when they are near females to make themselves more attractive

By Alice Klein

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A male tobacco budworm moth (below) uses an appendage called a hair pencil to fan perfume towards a female

Jan van Arkel

Male tobacco budworm moths collect perfume from flowers and emit it while they are courting females to make themselves more attractive.

It is well known that female moths release scented chemicals to lure males from long distances – from metres to kilometres. But less is known about how males use scents to attract females.

Coby Schal at North Carolina State University and his colleagues discovered that the males of tobacco budworm moths (*Chloridea virescens*) – a major agricultural pest – collect a plant scent called methyl salicylate and use it to increase their mating success.

Methyl salicylate is found in the flower nectar of many different plants and has a sweet, minty odour that attracts a variety of insects.

Schal and his team measured methyl salicylate levels in male moths reared on a synthetic diet in a laboratory and others collected from a soya bean field. The lab-reared males had low levels of the chemical, whereas those from the field had high levels, suggesting they had harvested it from the crop plants.

The researchers found that when the males courted females, they released the methyl salicylate from their hair pencils – hairy-tipped appendages that emit a range of chemicals for communication.

They also discovered that the antennae of female moths have two receptors that are tuned to detect methyl salicylate, and that males' mating success dropped by about 30 per cent when their hair pencils were removed.

Together, these findings suggest that the male moths use their hair pencils to emit methyl salicylate – which females are already naturally attracted to in plants – as an “aphrodisiac” to increase females’ sexual receptivity, says Schal.

Similar behaviour has also [recently been observed in orchid bees](#) (*Euglossa dilemma*), with males collecting perfume from orchid flowers and using it to attract females.

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