

# What makes the true armyworm, *Mythimna unipuncta*, march?

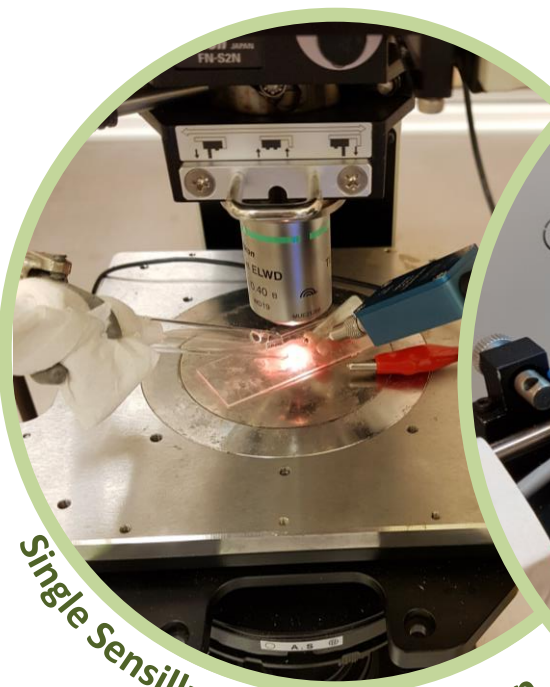
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**BACKGROUND** Throughout North America the true armyworm (*Mythimna unipuncta*) occurs in sporadic large outbreaks. During these mass infestations their caterpillars cause considerable economical damage to cereal and forage crops such as barley, oats, corn, and alfalfa. Understanding the chemical ecology of the true armyworm will help us to develop naturally-derived agents and control this agronomical pest insect.

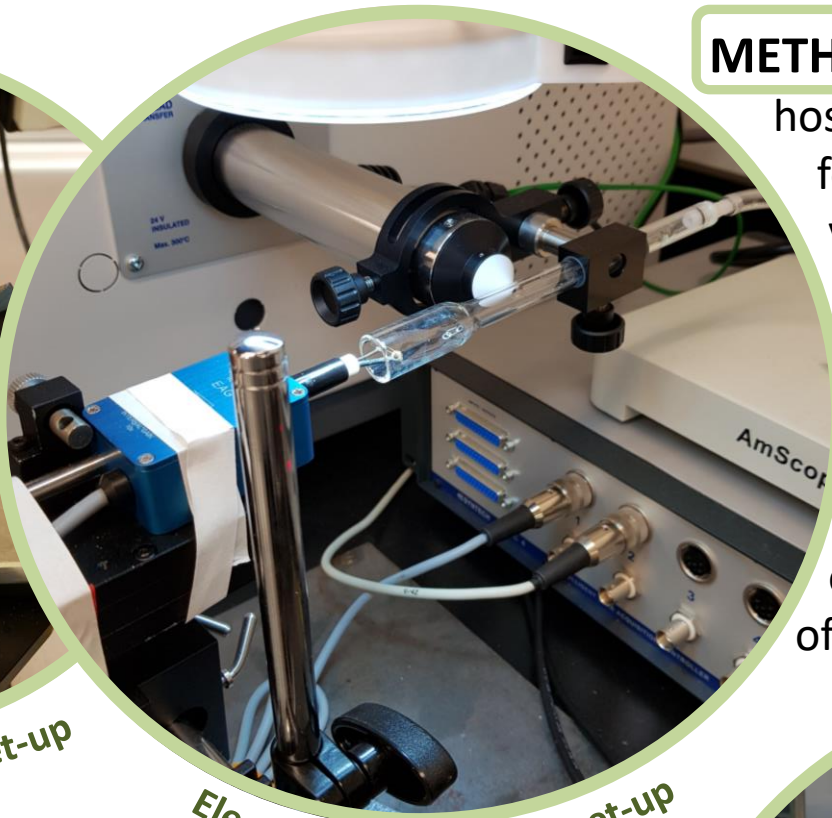


Armyworm caterpillar on barley

**RESEARCH QUESTIONS** In our research we want to find out which plant odors attract the female moths to their hosts and how the moths synchronize their egg-laying behavior which leads to the mass outbreaks.



Single Sensillum Recording set-up



Electroantennography set-up

**METHODS** In order to understand the host attraction of true armyworm females we aim to identify the volatile compounds emitted by these plants which mediate attraction behavior. For this we are using electrophysiological techniques (see images on the left) in which we study responses of neurons in the olfactory system of the moths to host odors.

## NEXT STEPS

With Gas Chromatography- Mass Spectrometry we are analyzing armyworm egg clusters for possible chemical cues deposited by females which mark plants as suitable hosts to other moths. Furthermore, we will be testing candidate attractive volatiles in bioassays, such as wind-tunnel experiments (see image on the right), for their behavioral activity.



Wind-tunnel



Postdoctoral researcher Sarah Koerte



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*M. unipuncta* female