

Chemical cues for oviposition site acceptance of grapevine moth

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The European grape berry moth, *Eupoecilia ambiguella* and the grapevine moth *Lobesia botrana* are the most serious pests in European vineyards. The larvae developed from the second generation eggs damage the grapes enabling bacteria and fungi, especially grey mould *Botrytis cinerea*, to develop more rapidly.

For oviposition site acceptance several sequences have to be fulfilled in turn or at the same time. Firstly, the gravid females get guided to the suitable environment, such as the vineyard, mostly through olfactory cues. Once the moth has landed on the plant, olfactory as well as tactile, visual and contact-chemosensory cues are contributing to the decision to oviposit.

To unravel this puzzle, the volatiles of grapes at different phenological stages have been analyzed and identified by

GC-MS. The perception of potential attractive compounds by *L. botrana* and *E. ambiguella* has been checked via elektroantennography (EAG). The structure of the egg laying substrate as well as the composition of non volatile compounds on the substrate (e.g. wax layer) facilitates oviposition. The preferred egg laying substrates as well as attractive wax extracts could be identified.

Currently sex pheromone traps are used for determining the activity of male grapevine moths but they do not generate reliable information on egg laying behavior. Unraveling the cues for oviposition site acceptance could be used in developing an oviposition monitoring tool appropriate as decision support system for exact timing of insecticide spraying and may help to reduce insecticide treatments in vineyards.