

POSTER PRESENTATION

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Pheromone-plant interaction in *Heliothis virescens*

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Insects are exposed to a complex environment consisting of a wide range of different odors. The information content of a certain odor bouquet, which is perceived by an insect, is essential for preventing predators, finding oviposition sites, navigation, foraging and mating. In the latter case, pheromone detection and processing is crucial for an insect to find its conspecific sexual partner. Because of their extremely specialized pheromone detection appendages, the antennae, moths are the most used model organisms to investigate the function of the pheromone system. In the noctuid moth, *Heliothis virescens*, we could demonstrate that plant volatiles interfere with pheromone responses at the level of the olfactory sensory neurons (OSN). By *in vivo* calcium imaging we stimulated simultaneously with the major sex pheromone component of *H. virescens*, Z11-16:Ald, and plant-related odorants. The results show that plant odorants significantly suppress Z11-16:Ald-evoked activity in the magroglomerular complex, where Z11-16:Ald-tuned OSNs terminate. These findings indicate that the effect of an odor background is important for the complex mechanism of pheromone detection and coding.

Furthermore, we aim to decipher how a plant odor background influences pheromone-guided flight behavior. We are in the process of performing wind tunnel experiments to analyze the interaction of pheromone components and plant volatiles at the behavioral level in order to mimic the natural situation.

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