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Using electroantennograms to analyze olfactory responses of *Manduca sexta*

The olfactory system is essential for survival and reproduction of moths. It allows them to locate food and find oviposition sites. The olfactory organ that directly encounters odors is called an antenna. The goal of my research was to develop a method for making electrophysiological recordings (called electroantennograms, or EAGs) from the antenna of *Manduca sexta*. We selected a variety of volatile compounds that occur in the solanaceous host plants of *M. sexta*, including cis-jasmone, methyl salycilate, linalool, nananol, geraniol and benzaldehyde. The goal was to generate concentration-response curve with each volatile compound. To this end, we made serial dilutions of each compound with mineral oil, creating a total of 5 concentrations. Once an antenna was removed from a moth, the cut ends were connected to an electrode, and the volatile stimuli were presented as a series of 1 s puffs, separated by 30 s of fresh air. We found that the magnitude of the EAGs increased with concentration of each chemical, although the magnitude of the increase differed across compounds.