E2-22: Selective antennal responsiveness of the coconut pest, *Rhynchophorus ferruqineus* F. (Coleoptera: Curculinoidae) to organic compounds

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Receptor sensitivity of *Rhynchophorus ferruqineus* (commonly known as the red weevil), to the aliphatic alcohols has been investigated previously. Electroantennogram (EAG) potency of some other classes of compounds was evaluated in the present study.

EAG responses of male and female *Rhynchophorus ferruqineus* (Coleoptera: Curculionidae) to 19 odorants belonging to 3 different classes were recorded. These included simple aromatics (substituted and unsubstituted), long chain aliphatic compounds (saturated and unsaturated) and monoterpenes. The chemoreceptive sensitivity of *R. ferruqineus* was shown to be selective for certain classes of compounds. Comparisons of EAG activities between classes (by class means) and within classes (means of compounds) were made.

Simple aromatics such as phenol, substituted phenols, indol etc. had low EAG potency (class mean 11.13) which was not significantly different from that of long chain aliphatic compounds (class mean 11.76). Antennal responses of *R. ferruqineus* for E and Z long chain olefins (e.g., 5-dodecenyl acetate and 5-decenal) did not show any difference.

As a class, monoterpenes elicited potent EAG response (class mean = 18.56) which was significantly different ($P < 0.001$) from all other classes of compounds assayed including those of the straight chain aliphatic alcohols reported earlier.

Within the terpene class ipsdienol (EAG 23.00) and myrcene (EAG 19.09) which had the unique diene moiety, were the highest EAG stimulants. β-Ionone which also had diene moiety in the structure was a moderate EAG stimulant (17.36) while nereol (14.73) and neral (15.91) which lacked a diene moiety in the molecule performed poorly.

It is likely that antennal receptors of *R. ferruqineus* favour conjugated diene moiety in association with a -OH group in the molecule.

Fellowship from Alexander von Humboldt Foundation, Germany is acknowledged.