E2-21: Response of the coconut pest, *Rhynchophorus ferruqineus* (Coleoptera:Curculionidae) to alcohols: electroantennogram assay

Neelakanthi E Gunawardena
(Dept of Chemistry, Univ of Kelaniya)

Rhynchophorus ferruqineus is a serious pest on the coconut palm in Sri Lanka and there is a lack of satisfactory methods to control this pest. This study attempts to develop an attractant baited trap for possible trapping of this in the field.

Attractiveness of the coconut pest *Rhynchophorus ferruqineus*, to the coconut sap which consists predominantly of lower alcohol has been shown by a previous behavioural study. Following this finding, the electrophysiological responses of male and female antennae to the 4 alcohol constituents found in the coconut sap, ethyl, n-propyl, n-butyl and n-pentyl alcohols were recorded. Pentanol, a major constituent of the coconut sap elicited far greater response in the antennae of both male and female R. ferruqineus (EAG/EAG_{max} = 0.85 SE, + 0.16) and this response was significantly different ($P < 0.05$, ANOVA, Scheffer's test) from those of propanol, (EAG/EAG_{max} = 0.52, SE + 0.15) ethanol and butanol (EAG/EAG_{max} 0.24 and 0.32 respectively).

To compare the activities of these alcohol with those of other alcohols in the n-alcohol series (i.e. from C-6 to C-10), EAGs of these alcohols were also recorded under similar conditions. Results showed that the activity of pentanol was still the highest in the series, although that of hexanol (EAG/EAG_{max} 0.83, SE 0.16) was not significantly different from it, $P < 0.05$ (ANOVA, Scheffer's test). The other higher straight chain alcohols elicited lower responses in the range of EAG/EAG_{max} 0.19 - 0.52 while that of the control was 0.06, SE + 0.06).

The high EAG potency of n-pentanol in combination with its presence in large proportions in the coconut sap suggests that it could be an important component in luring *R. ferruqineus* to the wounded coconut palm.

The Fellowship from Alaxander von Humboldt Foundation, Germany is acknowledged.