

Electrophysiological responses of Codling moth populations from different host-plants to (E,E)-8,10-dodecadien-1-ol and ethyl (2E,4Z)-2,4-decadienoate and peripheral interactions in their perception.¹

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EAG recordings were made from both virgin and mated males and females of *Cydia pomonella* (L.) on stimulation with the main component of its sex pheromone (E,E)-8,10-dodecadien-1-ol (E8E10-12:OH) and ethyl (2E,4Z)-2,4-decadienoate (Et-2E,4Z-DD), a ripe pear-derived volatile attractant. Codling moths of 7 Italian populations living on different host-plants (3 apple, 3 walnut, 1 pear) were used. The dose-response curves to the volatile compounds (9 doses) were calculated and differences in olfactory sensitivity of virgin and mated males and females of the different populations are discussed. As general tendency, females were much less sensitive than males to E8E10-12:OH but showed a similar response to the higher doses of Et-2E,4Z-DD. EAG amplitudes were not significantly different among virgin and mated adults, as well as between two populations collected in a chemical treated apple orchard and an organic farm, respectively. The males of the walnut populations showed a lightly higher sensitivity to E8E10-12:OH.

Recordings from single antennal olfactory cells (surface contact technique) showed the presence of different cells responding only to E8E10-12:OH or Et-2E,4Z-DD but also to the 2 compounds.

Differential saturation experiments (DS-EAG) showed that the antennae of *C. pomonella* clearly reduce their response to Et-2E,4Z-DD when continuously stimulated with E8E10-12:OH.

These observations have to be highly considered when setting up mixtures of E8E10-12:OH and Et-2E,4Z-DD to monitor diverse Codling moth populations.

Key words: EAG, SCR, DS-EAG, semiochemicals, attractants.

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