

Attractant Volatiles Released by Female and Male *Triatoma infestans* (Hemiptera: Reduviidae), a Vector of Chagas disease: Chemical Analysis and Behavioral Bioassay

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Volatiles emitted by male and female *T. infestans* before and during copula were collected on Porapak-Q filters, desorbed with dichloromethane, and analyzed by gas chromatography and gas chromatography-mass spectrometry after confirmation of attractiveness in an arena bioassay. Chemical analysis confirmed the presence of (*R,S*)-2- and 3-methylbutan-1-ol in a 2:1 ratio; short chain acids (ethanoic to nonanoic acid); long chain acids decanoic to (*Z*)-9-octadecenoic acid; aliphatic aldehydes (hexanal to nonanal), benzaldehyde and dipropylsulphide from insects in copula. Electroantennographic studies conducted with a homologous series of aliphatic aldehydes on female and male *T. infestans* showed that, for a given dose, EAG responses elicited from both sexes increased with increased chain length up to nonanal, after which EAG-activity declined. Attractiveness of non-acidic trace components identified in the volatiles were tested on male and female *T. infestans*, in an arena bioassay using a video tracking method. Aliphatic C₆ to C₁₀ aldehydes were tested: hexanal (1–100 µg) and heptanal (10 µg) were attractive to female *T. infestans*, high doses of octanal and nonanal (1–100 µg) were unattractive to male and female *T. infestans* but low doses of nonanal (0.01–0.1 µg) were attractive to male *T. infestans*. Benzaldehyde was highly attractive to female *T. infestans* at low doses (0.05–0.1 µg). 3-methylbutan-1-ol was attractive to male *T. infestans* at high dose (1,000 µg). (*S*) or (*S,R*) 2-methyl-butane-1-ol were unattractive to males or females (1–1,000 µg). Blends of hexanal and benzaldehyde (20:1 and 40:1) showed an additive effect on attraction compared with hexanal alone, when tested on female *T. infestans*. The study has demonstrated the presence of a number of electrophysiologically and behaviorally active compounds in volatiles emitted by *T. infestans* in copula that may have a role in the postulated copulation pheromone.