Semiochemicals mediating spacing behavior of bird cherry-oat aphid, Rhopalosiphum padi feeding on cereals

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Olfactometry using an apterous individual of Rhopalosiphum padi (L.) showed an arresting effect by volatiles from a wheat seedling and a repellent effect by volatiles from a wheat seedling infested with aphids at a high population density (ca. 9 aphids/cm2). Four compounds, 6-methyl-5-hepten-2-one, (-)- and (+)-6-methyl-5-hepten-2-ol, and 2-tridecanone, were identified by GC-MS in air entrainments from the wheat seedlings with high aphid density but not from the wheat seedlings a one. The mixture of the four compounds in the natural proportion counteracted the attractivity of he volatiles from the intact uninfested wheat seedling. The likely role of these compounds in the spacing behavior of this aphid species, when present in high densities on wheat, is discussed.