

Temporal variation of RAPD-PCR phenotype composition of the grain aphid *Sitobion avenae* (Hemiptera: Aphididae) on wheat: The role of hydroxamic acids

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Hydroxamic acids (Hx) contained in wheat are active mutagens which play an important role in the defence of the plant against aphids. Random amplified polymorphic DNA-polymerase chain reaction (RAPD-PCR) dominant markers were used to assess genetic variability in the aphid *Sitobion avenae* (Fabricius) in relation to hydroxamic acid levels in their host-plants. Colonies of aphids belonging to a single RAPD-PCR profile were grown on different host-plants differing in their Hx content under greenhouse conditions. The RAPD-PCR phenotypic pattern showed the appearance of two new RAPD-PCR variants after four to five generations of exposure to wheat cv. Chagual (high Hx levels), one after exposure to wheat cv. Huayún (low Hx levels), and none after exposure to oat (lacking Hx). Differential appearance of new RAPD-PCR aphid phenotypes also occurred on field-grown wheat. While the overall phenotypic 'richness' diminished during the season, the number of RAPD-PCR phenotypes decreased on cv. Huayú