

# Nonvolatile Chemical Cues Affect Host-Plant Ranking by Gravid *Polygonia c-album* Females

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In a multiple-choice test, the preference of egg-laying *Polygonia c-album* (comma butterfly) females was studied for oviposition on plants bearing surrogate leaves treated with crude methanol extracts obtained from leaves of seven host-plant species: *Humulus lupulus*, *Urtica dioica*, *Ulmus glabra*, *Salix caprea*, *Ribes nigrum*, *Corylus avellana*, and *Betula pubescens*. The ranking order of surrogate leaves treated with host-plant extracts corresponded well to that reported on natural foliage, except *R. nigrum*. Thus, host-plant choice in *P. c-album* seems to be highly dependent on chemical cues. Moreover, after two subsequent fractionations using reversed-phase chromatography the nonvolatile chemical cues residing in the most polar water-soluble fractions evidently provided sufficient information for egg-laying females to discriminate and rank between the samples of more and less preferred plants, since the ranking in these assays was similar to that for natural foliage or whole methanol extracts, while the physical traits of the surrogate leaves remained uniform.

**Key words:** Host Plant, Preference Hierarchy, Oviposition, Stimulant