CHARACTERIZING FEEDING BEHAVIOR OF *ACYRTHOSIPHON PISUM* CLONES ON HOST AND NON-HOST PLANT SPECIES BY THE ELECTRICAL PENETRATION GRAPH (EPG) TECHNIQUE

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The pea aphid, *Acyrthosiphon pisum* (HARRIS), encompasses distinct races differentially specialized on plant species of the Leguminosae. This ecological specialization, which leads to the formation of what is known as “host races”, can be considered as one step towards sympatric speciation. Host fidelity (the tendency to feed and reproduce on a particular host) leading to assortative mating seems to be an important mechanism that reduces gene flow between host races. Our study aims to localize and identify plant factors which influence host fidelity and hence host race formation in *A. pisum.* We conducted a broad comparative study on several *A. pisum* clones collected from different legume host plants in France and the United Kingdom. Firstly, we characterized the performance of nine *A. pisum* clones on six legume plant species, and showed different degrees of specialization to potential host plant species. Secondly, we selected six aphid clones and monitored their feeding behavior on four plant species by the Electrical Penetration Graph (EPG) technique. The differences we found in feeding behavior can explain the different degrees of host plant specialization. Moreover we obtained several hints for the localization of plant factors influencing aphid feeding behavior in different plant tissues.