



Experience-based modulation of behavioural responses to plant volatiles and other sensory cues in insect herbivores

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Résumé en anglais	<p>Plant volatiles are important cues for many herbivorous insects when choosing a suitable host plant and finding a mating partner. An appropriate behavioural response to sensory cues from plants and other insects is crucial for survival and fitness. As the natural environment can show both large spatial and temporal variability, herbivores may need to show behavioural plasticity to the available cues. By using earlier experiences, insects can adapt to local variation of resources. Experience is well known to affect sensory-guided behaviour in parasitoids and social insects, but there is also increasing evidence that it influences host plant choice and the probability of finding a mating partner in herbivorous insects. In this review, we will focus upon behavioural changes in holometabolous insect herbivores during host plant choice and localization of mating partners, modulated by experience to sensory cues. The experience can be acquired during both the larval and the adult stage and can influence later responses to plant volatiles and other sensory cues not only within the developmental stage but also after metamorphosis. Furthermore, we will address the neurophysiological mechanisms underlying the experience-dependent behavioural adaptations and discuss ecological and evolutionary aspects of insect behavioural plasticity based upon experience.</p>
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