

Conference or Workshop Item

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Variation in life history and flight morphological traits in Speckled Wood (*Pararge aegeria*) butterflies infected with a baculovirus

Helen Hesketh, Melanie Gibbs, Casper J. Breuker, Hans Van Dyck, Emma Turner and Rosemary S. Hails

Sub-lethal impacts are known to affect the insect-host relationship and have an important role in describing host dynamics. The impact of sub-lethal infections of pathogens on life history traits of affected hosts has been understudied in natural or semi-natural systems. The Speckled Wood (*Pararge aegeria*) is a satyrine butterfly that is common in temperate zones and has been extensively used as a model system for evolutionary ecology studies. It is known that the deployment of the immune system within this species, as with other invertebrates, is energetically costly and may result in trade-offs with fitness-related traits. In this study, we investigated the sub-lethal effect of exposure to *Autographa californica* multiple nucleopolyhedrovirus (AcMNPV) on life history and flight morphological traits of *P. aegeria*.

Larvae were inoculated with increasing doses of AcMNPV and measurements made of life history and flight morphology traits. Generally, larvae exposed to virus took longer to develop to pupae and larval mass acquisition per day was significantly reduced in viral exposed larvae. However, viral exposed larvae were able to attain the same pupal mass and their duration as pupae was the same as controls. Forewing length, forewing aspect ratio, dry thorax mass and forewing loading were related to sex and bioassay differences but there was no evidence of any viral impact on these measures. Adult male butterflies had significantly less basal wing melanisation when exposed to virus compared to control males but there was no difference between females. Implications for population dynamics of *P. aegeria* are discussed.