What's my age again? Assessing the impact of stink bug egg mass age on host recognition by egg parasitoids *Trissolcus basalis* and *Trissolcus japonicus* (Hymenoptera: Scelionidae)

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Wasps, from the genus *Trissolcus*, are egg parasitoids that are commonly used in biological control programs targeting stink bugs. They navigate a complex environment, relying on a diverse array of biochemical and ecological cues to locate their hosts. Through this endeavour, these parasitoid wasps have to discriminate between young and old eggs as development is only achieved in the latter. In this study, we evaluated the ability of two parasitoid wasps, *Trissolcus japonicus* and *Trissolcus basalis*, on utilising short-range cues and, more specifically, volatile organic compounds emitted by stink bug egg masses to locate their hosts. We hypothesised that (1) stink bug eggs (i.e., *Halyomorpha halys* and *Nezara viridula*) emit short-range cues that are exploited by egg parasitoids (i.e., *T. japonicus* and *T. basalis*) to locate their hosts in addition to insect chemical footprints; (2) *Trissolcus* spp. have the ability to differentiate young eggs from older ones to increase their fitness (3) based on changes in the chemical profiles of the egg masses according to their age. Our behavioural assays suggested that *T. japonicus* did not respond to stink bug footprints, whereas *T. basalis* was significantly oriented toward the footprints of gravid host females. Both parasitoids preferentially oriented towards young eggs rather than footprints. The parasitism rate of *T. japonicus* was not significantly different between young and old eggs unlike *T. basalis* which preferred parasitising on young eggs. We identified γ-butyrolactone and β-funebrene in the headspace of *N. viridula* eggs and we discussed the putative role of these secondary metabolites on *T. basalis* locating their host. Behavioural, performance and VOCs collection of this study contribute to a nuanced understanding of host–parasitoid dynamics along with implications for developing effective pest management strategies.