Can mate-choice enhance or inhibit genetic rescue in commercially reared parasitoid biocontrol agents?

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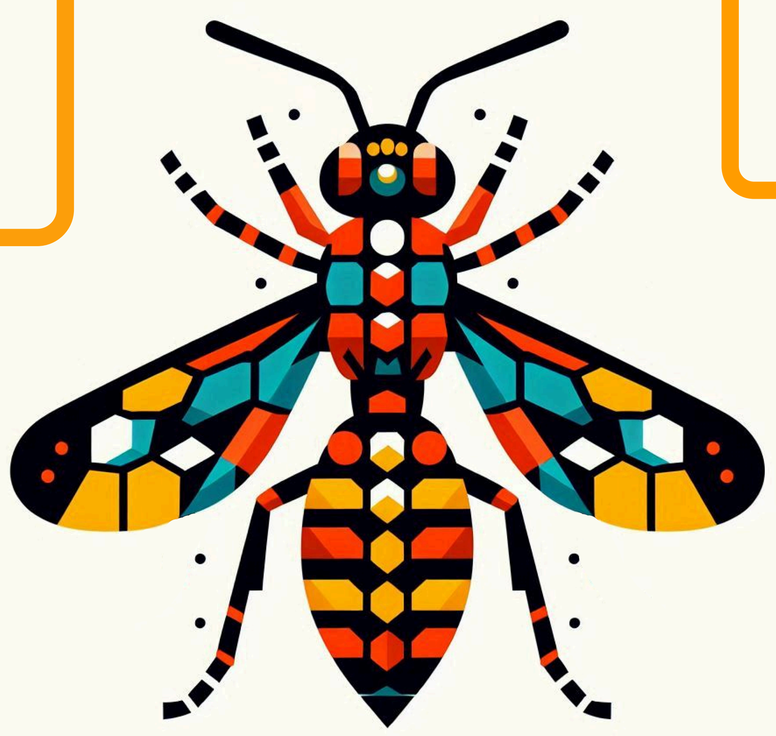
1

Biocontrol can fail when pests evolve traits to resist parasitism, while commercially reared parasitoids are 'left behind'

Commercially reared parasitoids are not subject to ongoing co-evolution with their hosts in the field

Biocontrol companies often use 'genetic rescue' to help overcome this



Millions of parasitoid wasps are commercially reared every year to control a variety of agricultural pests

Mate choice could affect the success of genetic rescue, **enhancing** it if wild-types are preferred but **inhibiting** it if not

2

We tested whether female aphid parasitoids from 2 commercially reared species, *Aphidius ervi* and *Aphidius colemani* show a preference for males reared on parasitoid susceptible or parasitoid resistant hosts.

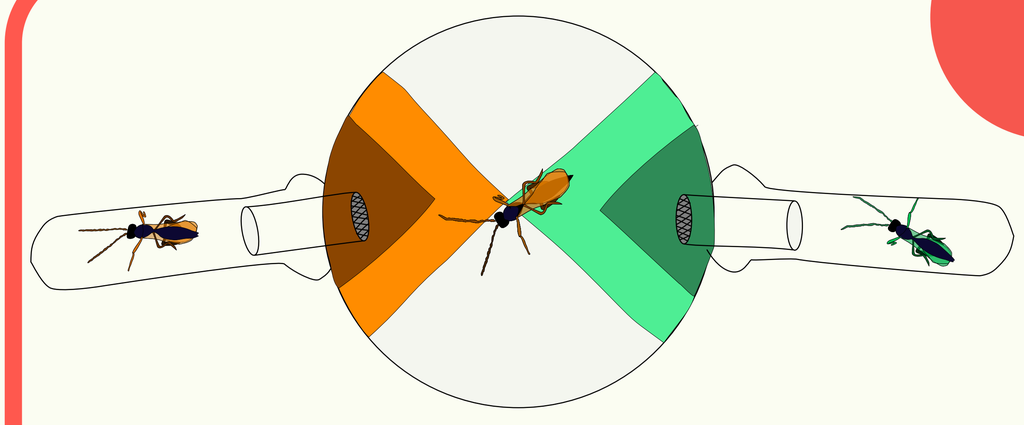


Fig 1 The location of a freely moving female wasp (centre) with respect to two male conspecfics which emerged from a resistant aphid host (left) or a susceptible aphid host (right) was recorded every 5 minutes for 30 minutes.

Fig 2 proportion of time females spent in proximity to males that emerged from parasitoid resistant (left ■) and susceptible aphid hosts (right ■)

Females spent more time in proximity to males from parasitoid resistant hosts than males from parasitoid susceptible hosts

3

Next step: test whether this preference translates to increased mating success for males that emerge from resistant hosts

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