

Attacking the clones: understanding aphid pests resistance to biological control



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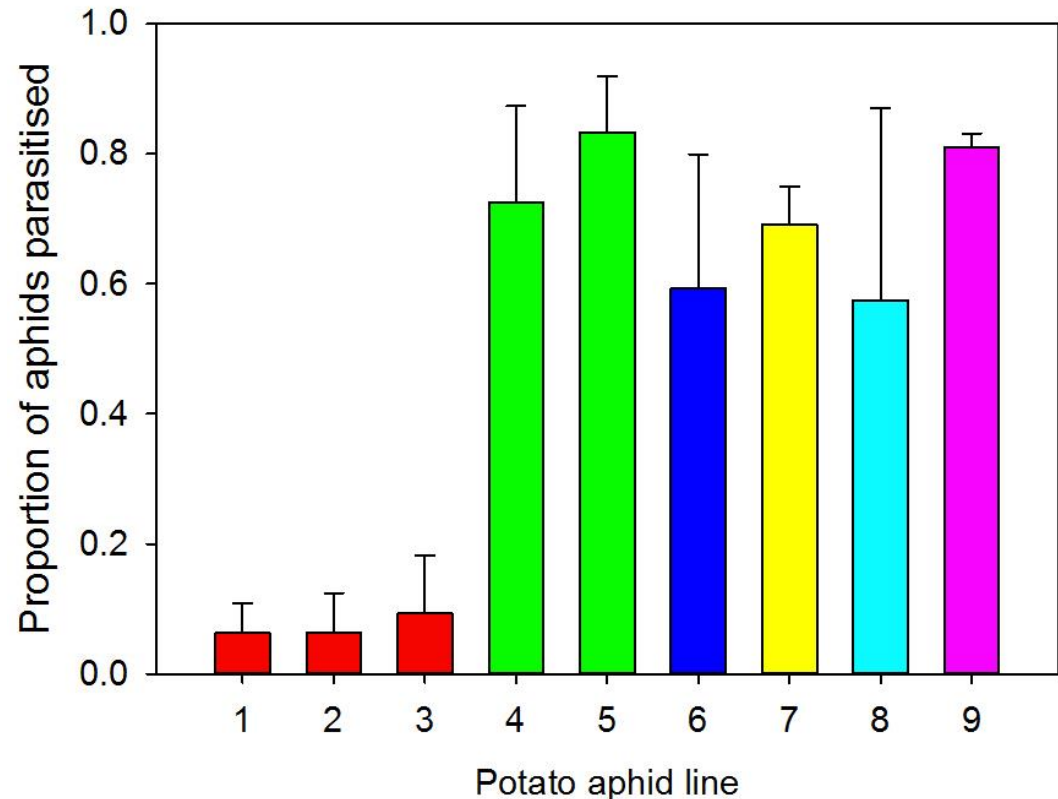
@LMM_CH

The potato aphid (*Macrosiphum euphorbiae*)

One genotype from potato crops has been described as resistant to parasitism, associated with genotype.

Genotype	Secondary endosymbionts present
● 1	<i>H. defensa</i>
● 1	<i>H. defensa</i> (+ APSE)
● 1	None found
● 2	<i>H. defensa</i> (+ APSE)
● 2	<i>H. defensa</i> (+ APSE)
● 3	None found
● 4	None found
● 6	None found
● 7	None found

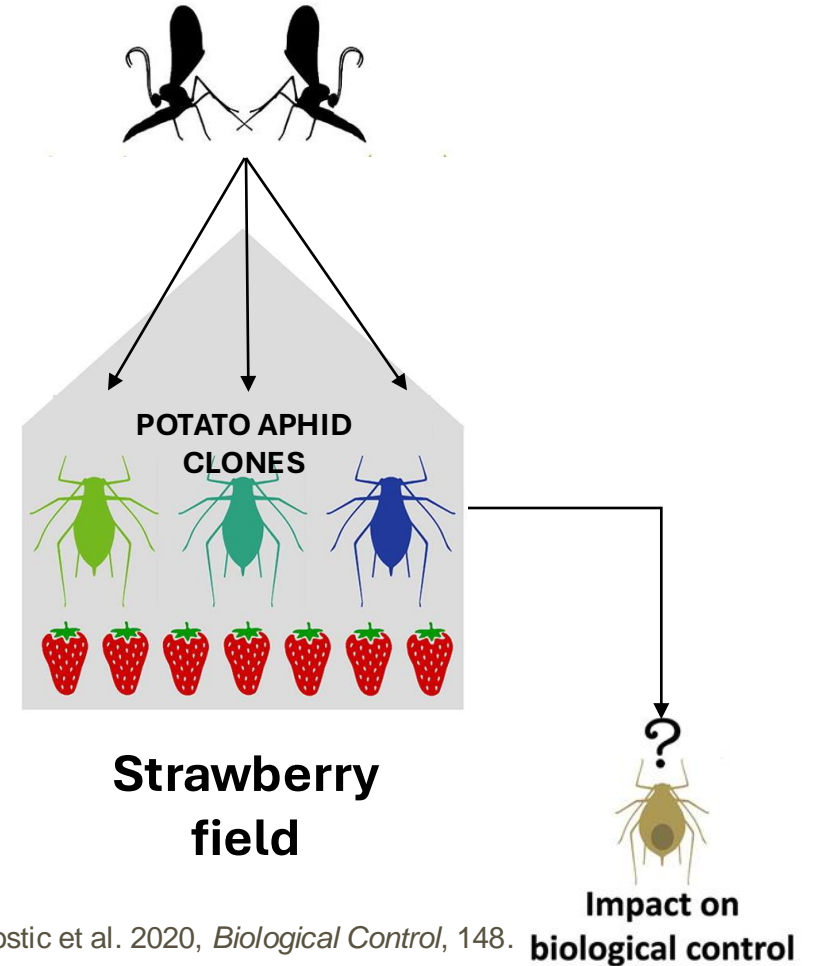
Adapted from Clarke, H.V., 2013. PhD thesis.



The problem and the questions

- Early-season aphid control problems in strawberry
- Are there resistant clones of *Macrosiphum euphorbiae* infesting strawberries?
- Is parasitoid resistance affecting biological control and IPM strategies in strawberry crops in the UK?

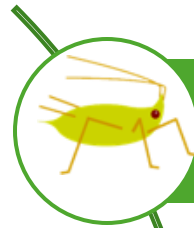
RELEASED PARASITOIDS



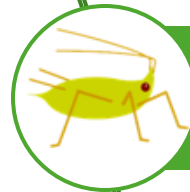
Adapted from Postic et al. 2020, *Biological Control*, 148.

Impact on biological control

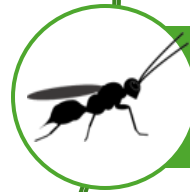
How are we approaching this?



Determine potato aphid clonal variation in strawberry crops in the UK



Understand the role of clonal variation in the interaction of the potato aphid with the parasitoid *Aphidius ervi*



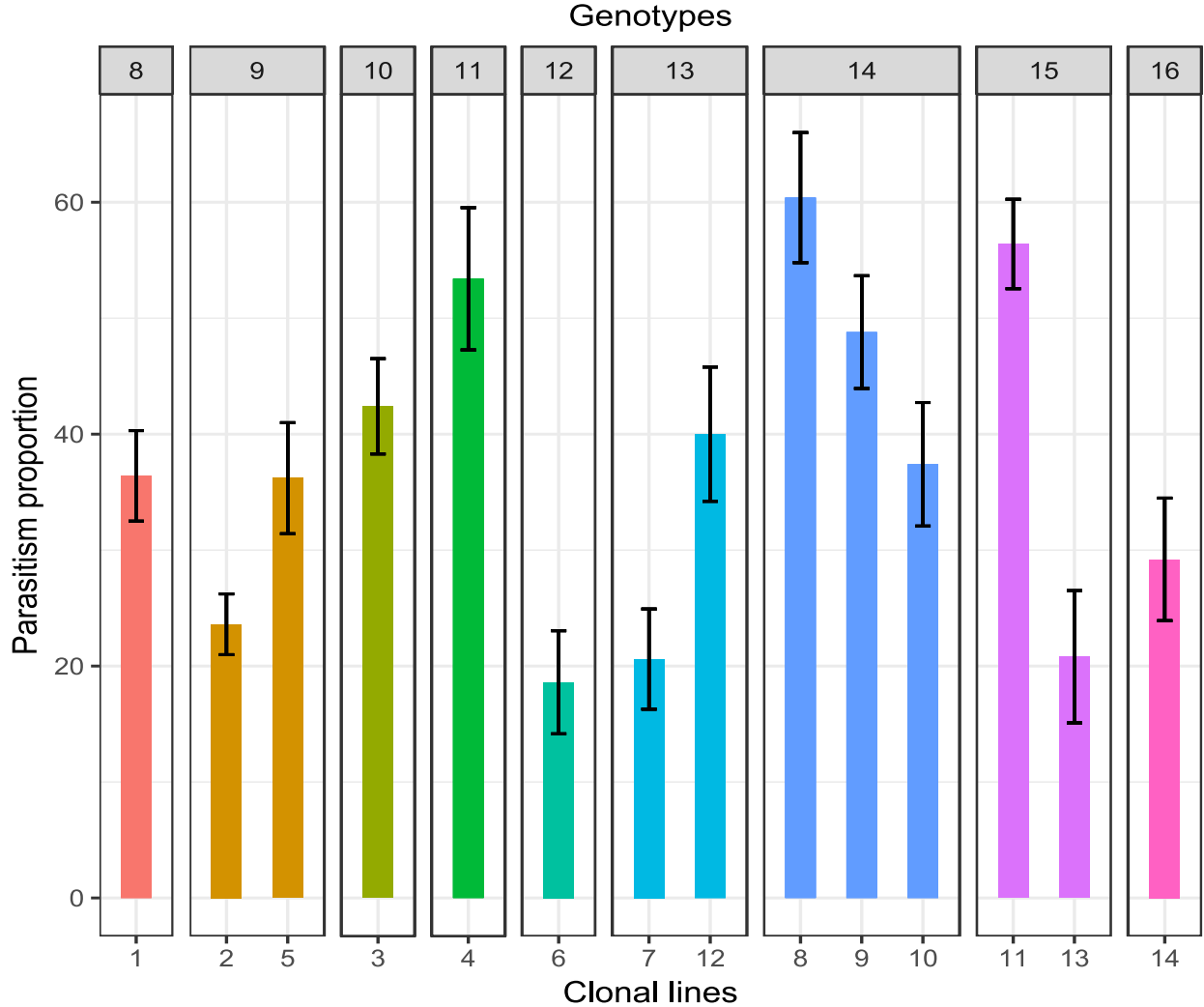
Determine the genetic diversity of the main parasitoid species *Aphidius ervi* used against the potato aphid



Determine the effect of aphid clonal variation on parasitism efficacy in field conditions

Variation in susceptibility of potato aphids from strawberry crops to parasitoids

Aphidius ervi



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