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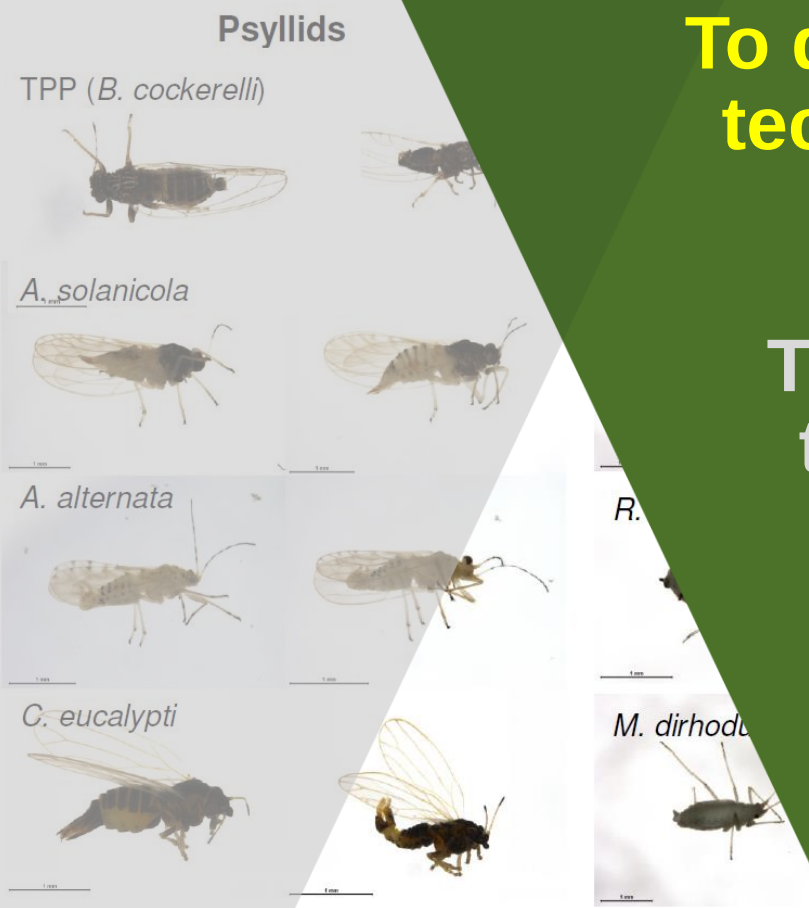

To develop and evaluate a rapid technique for the identification of the exotic Tomato Potato Psyllid (TPP),

The number 1 exotic threat to the Victorian potato industry

Mark Blacket

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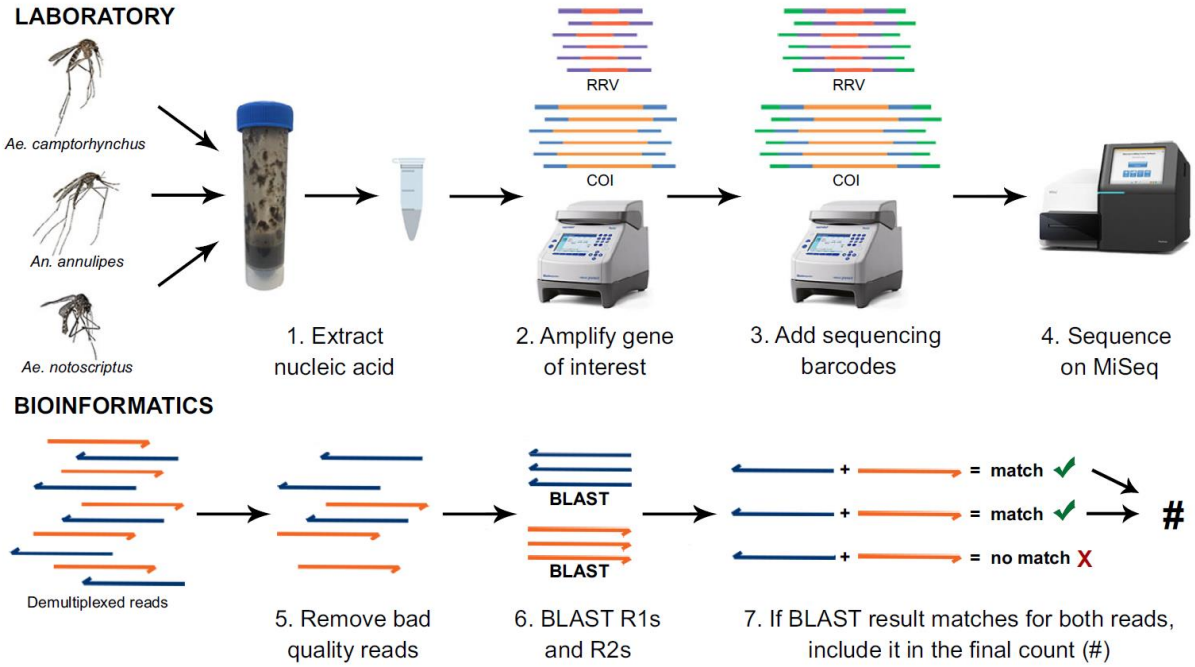
Invertebrate Identification – Metabarcoding (Mosquitoes)



Metabarcoding:
Simultaneous molecular identification of insects (DNA barcoding) through high throughput DNA sequencing (NGS) of bulk insect samples.

Batovska, Lynch, Cogan, Brown, Darbro, Kho & Blacket (2018)
Ecology & Evolution

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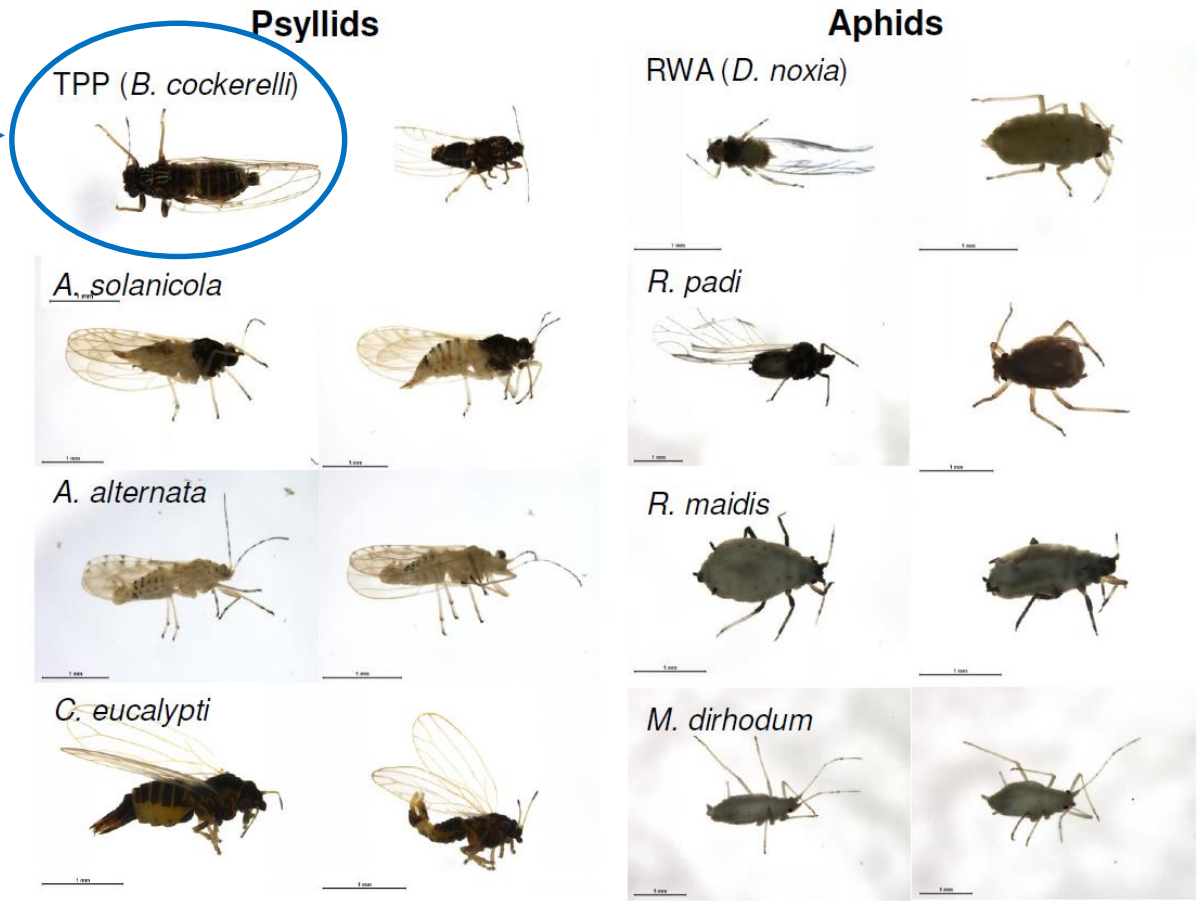
Invertebrate Identification – Hemiptera Metabarcoding



One year project

2017/2018

PBCRC #2153

&

Horticultural Innovation Fund (Vic)

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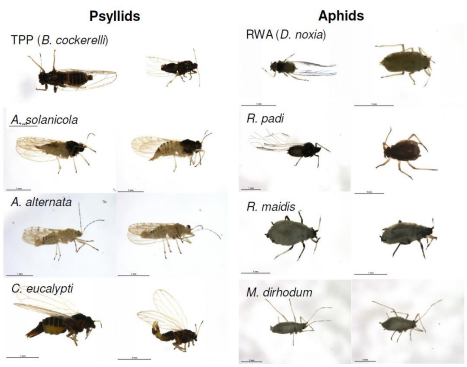
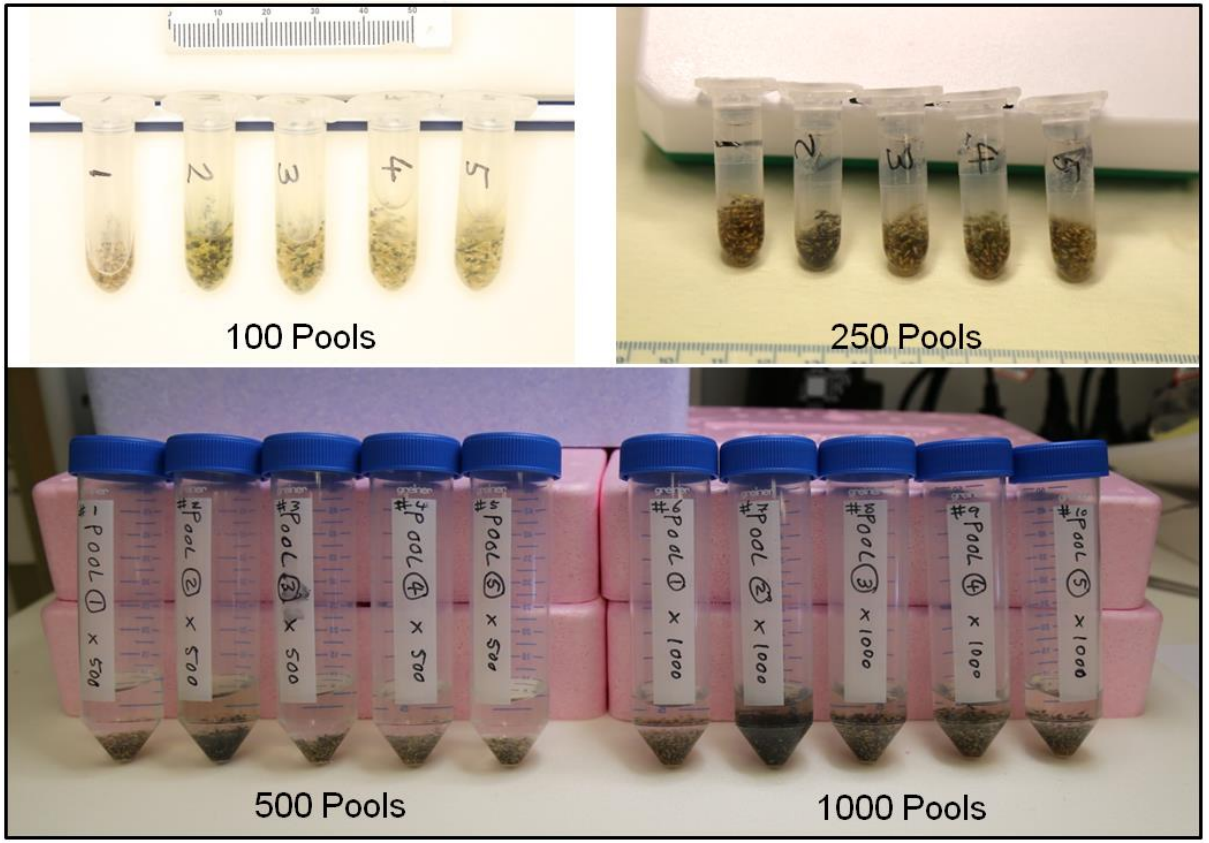
Invertebrate Identification – Hemiptera Metabarcoding

Insect Pools: 100 to 1000 insects





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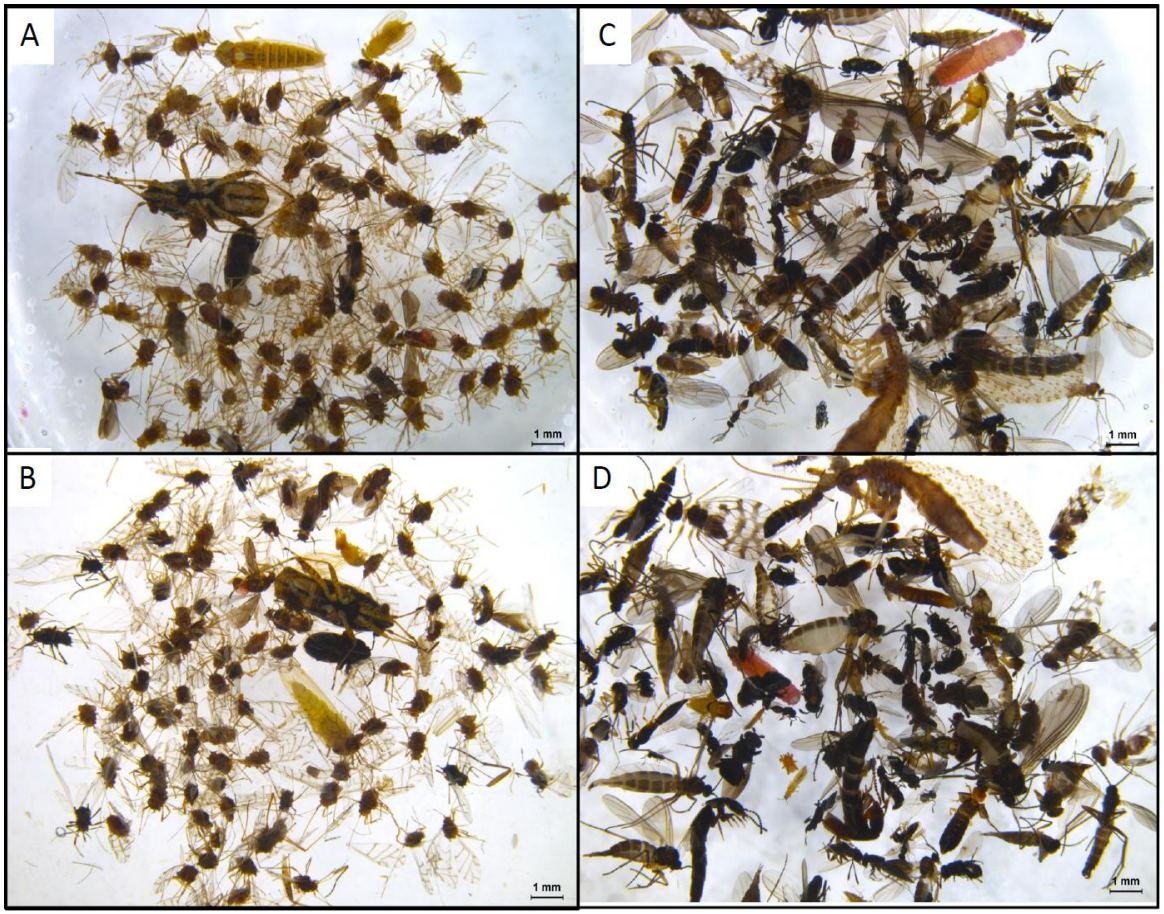
Invertebrate Identification – Hemiptera Metabarcoding

Non-destructive DNA extractions



Before DNA extraction

After DNA extraction

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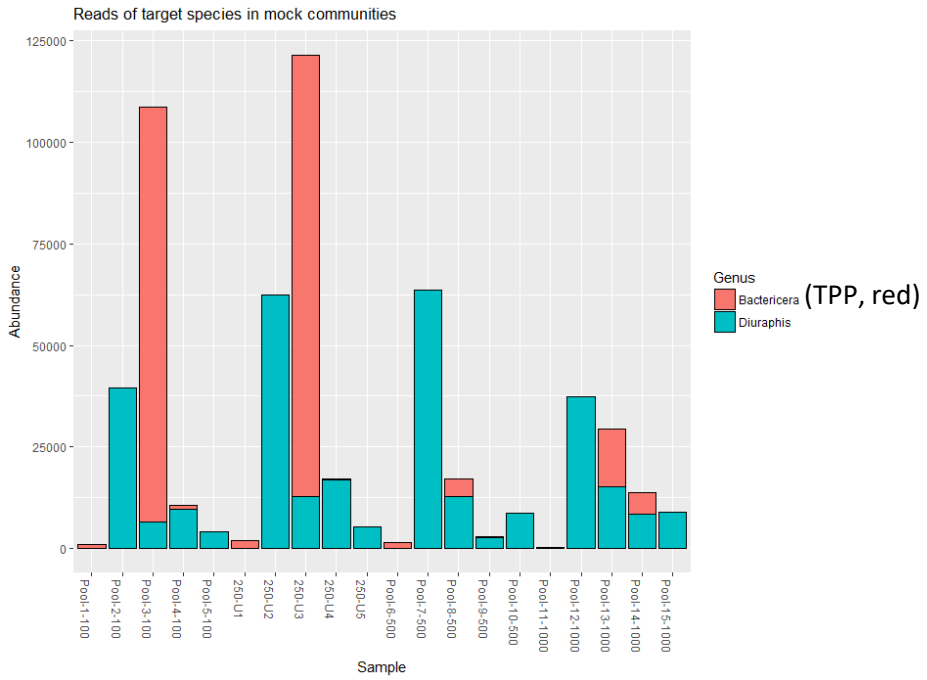
Invertebrate Identification – Hemiptera Metabarcoding

Insect Pools: DNA Sequencing

Actual %
(insects in 100 pool)

Genus	Pool 1	Pool 2	Pool 3	Pool 4	Pool 5
Acizzia	99	0	45	49	50
Bactericera (TPP)	1	0	5	1	0
Ctenarytaina	0	0	0	0	0
Diuraphis	0	1	1	5	0
Metopolophium	0	5	15	30	25
Rhopalosiphum	0	94	34	15	25



(TPP, red)

Observed target insect DNA sequences
in pooled samples

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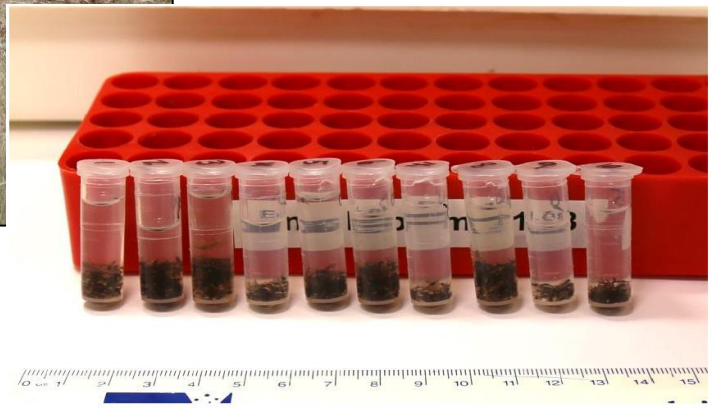
Invertebrate Identification – Hemiptera Metabarcoding

Field Samples: Collection



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