Collecting & sending invertebrates

Invertebrates required

Mites (page 2)

- Red-legged earth mites (*Halotydeus destructor)*

Aphids (page 3)

- Potato aphid (*Macrosiphum euphorbiae*)
- Green peach aphid (*Myzus persicae)*
- Blue green aphid (*Acyrthosiphon kondoi)*
- Oat aphid (*Rhopalosiphum padi)*
- Russian wheat aphid *(Diuraphis noxia)*
- Pea aphid (*Acyrthosiphon pisum)*
- Faba-bean aphid (*Megoura crassicauda)*

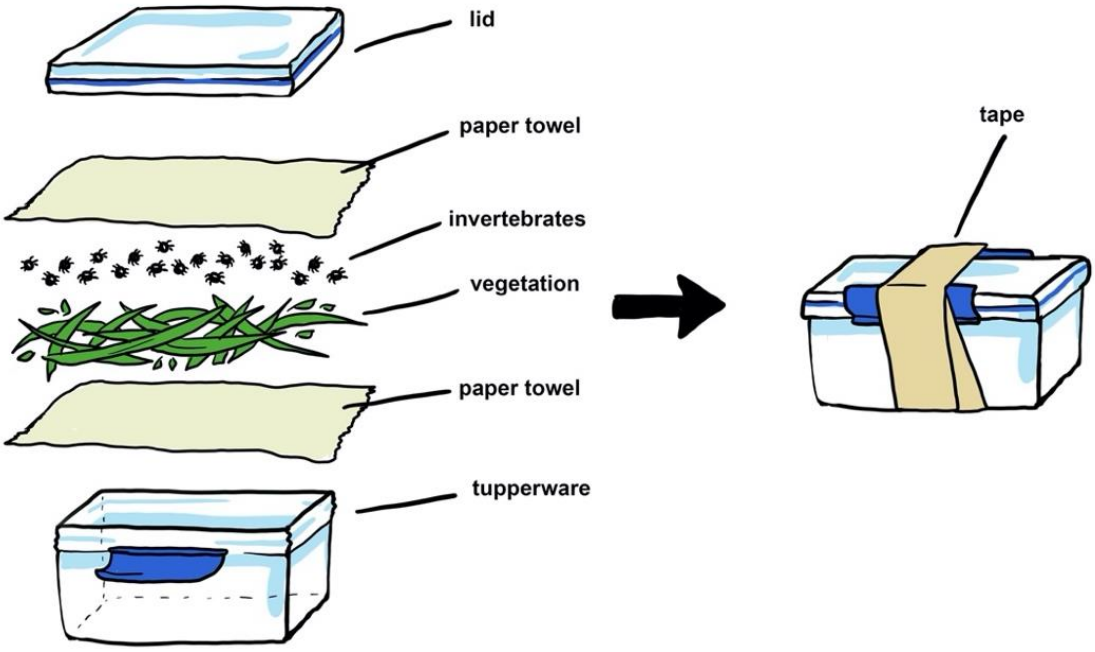
Moths and their parasitoids (page 4)

- Cabbage white (Pieris rapae) and the parasitoids *Cotesia rubecula* and *C. glomerata*
- Diamondback moth (Plutella xylostella) and the parasitoid *Diadegma semiclausum*
- Corn earworm (Helicoverpa armigera) and the parasitoid *Netelia producta*
- Light brown apple moth and the parasitoid *Dolichogenidea tasmanica*.

Mites

Collecting mite samples

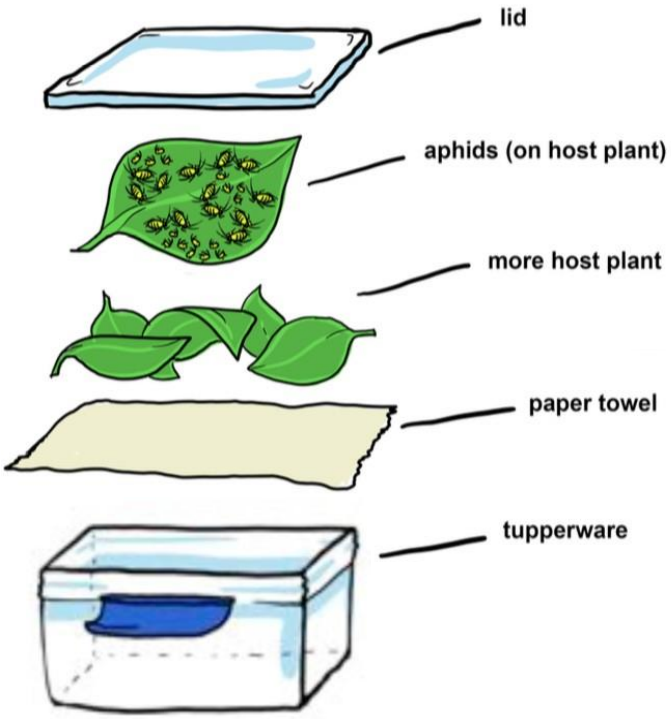
- If possible, collect a bulk of >50 individual mites per paddock/area.
- Use a hard rigid plastic container (e.g., Sistema Klip it container). A container with a screw lid is best. To order a collection kit (container, labels and postage pack), contact Aston Arthur at aarthur@cesaraustralia.com or 0427 875 0404.
- Place a layer of paper towel at the base of the plastic container.
- Place a small amount of vegetation on top of the paper towel so that it is roughly covered.
- Collect the mites from the paddock/area by tapping mite infested vegetation over the plastic container so that the mites fall into the container. If they are on the soil surface, you could try and scoop them up with a spoon.
- Take a piece of paper towel and position it over the opening of the plastic container, and securely close the lid on top of the paper towel. Make sure the paper towel is larger than the container to create a seal between the lid and the container, otherwise mites may escape.
- Wrap the plastic container in bubble wrap if you have some.



Aphids

Collecting aphid samples

- If possible, collect a bulk of >50 individual aphids per paddock/area.
- At each paddock/area, directly remove (cut) leaves that contain aphids, leaving the aphids undisturbed.
- Place the aphids and leaves in a non-crushable plastic container. Please do not use a take-away container or in zip lock bags as these can break or squash in the post.
- Excessive plant matter can lead to high moisture levels, which may kill the aphids. Avoid over-packing the container with plant matter and place a piece of tissue paper or paper towel into the container to absorb excess moisture.



Moths and their parasitoids

Collecting moth & their parasitoid samples

- The easiest way to collect cabbage white in the field is by collecting the egg masses from the underside of the leaf. You can collect the larvae and pupae too which can be put in with the eggs.
- For the other species, collecting a mixture of larvae, pupae, and eggs ensures high survival rates.
- If possible, collect a bulk of >20 individual larvae per paddock/area.
- Aim to collect 50+ eggs from leaves and place them in a clear, non-crushable plastic container with some leaf material in case eggs hatch during transit. (The eggs are brittle so aim to keep the egg masses on the same leaf tissue you found them on).
- You can add larval collections in the same container, just make sure there is enough vegetation for them to feed on while in transit.
- Avoid collecting adults as they will likely die during transit.
- Scrunch up some paper towel and add to the container to absorb excess moisture.
- Place a sheet of paper towel over the top of the container and close the lid over it.

Sending invertebrate samples

- Adequate collection data is essential for successful resistance testing. To assist us, please print the below 'Cesar Australia Invertebrate Field Record Sheet', fill out all the details and include this when posting your sample.
- Samples should be sent via overnight express post on Monday (most preferably) – Wednesday (latest possible). **Do not send sample toward the end of the week or over the weekend otherwise invertebrates will die in transit.**
- Once samples have been posted, please notify us via email at sward@cesaraustralia.com. This will ensure samples are processed in a timely manner.
- Samples should be addressed to:

Invertebrate sample

Samantha Ward
Cesar Australia
Level 1, 95 Albert St
Brunswick, VIC 3056

Note: *Green peach aphid samples can also be tested for chemical resistance. This will require a minimum 3-week quarantine period before testing can proceed and will likely take a minimum 5 weeks.*

Cesar Australia Invertebrate Field Record Sheet

Collection date: Collector name:

Mobile: Email:

Grower name:

Paddock name:

Address:

Latitude: Longitude:

Plant Host Details – Circle answer

Canola, Lupins, Field Peas, Wheat, Barley, Other: . . . . . .

Plant growth stage: . . . . . .

If collected from a paddock:

Paddock History – Circle answer

Last year – Pasture, Wheat, Barley, Lupins, Canola , Field peas, Other: . . . . . .

(2022)

Insecticide history – Fill in information and then circle any treatments that failed

	Pre-sowing	**Seed treatment**	**Bare earth (PSPE)**	**Seedling emergence**	**Other sprays**
	Chemical / rate / target pest	Chemical / commercial or famer treated / rate / target pest	Chemical / rate / target pest	Chemical / rate / target pest /timing	Chemical / rate / target pest /timing
This year					
2022					
2021					