

# Simple in-field test to detect pyrethroid resistance in redlegged earth mites



Cesar Australia

Redlegged earth mites (RLEM) pose a growing threat to Australian crops and pastures due to their expanding resistance to chemical insecticides, including synthetic pyrethroids. Resistance may appear as reduced chemical effectiveness or complete failure in the field. Ongoing monitoring is important to detect emerging issues.

If you experience chemical control failures or suspect insecticide resistance to synthetic pyrethroids, a simple in-field test is available. This test, utilising easily obtainable materials and requiring no special training, allows you to check if your RLEM population is resistant to pyrethroids.



Before testing, ensure you have correctly identified RLEM. They can often be mistaken with other mite species such as blue oat mite or the Balaustium mite. [Click here for more information on different mite pests.](#)

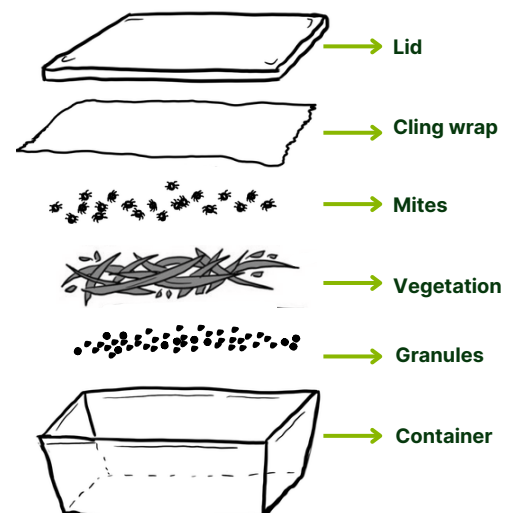


## What you need

- Insecticide granules containing 2g/kg Bifenthrin (e.g. David Grays Antex granules, Richgro Ant Killa insecticide granules) which can be purchased from your local supermarket or hardware store.
- A disposable plastic food storage container (approximately 17cm long, 12cm wide)
- A tea spoon
- Cling wrap
- Vegetation (e.g. lucerne, clover, capeweed, or grass for moisture)

## What to do

1. Add one teaspoon of the insecticide granules to the container. Distribute the granules around the base of the container.
2. Place a small amount of vegetation in the container, equivalent to approximately a single branch of lucerne or 4-5 clover stems.
3. Collect approximately 30 RLEM from the paddock by tapping mite-infested vegetation over the plastic container, allowing the mites to fall inside. If mites are on the soil surface, try scooping them up with the spoon.
4. Cover the container with cling wrap, extending it beyond the edges to create a seal preventing the mites from escaping or getting trapped between the lid and the container. Secure the lip on top.
5. Place the container in a cool, shaded area.
6. After 1 hour, examine mites to check if they are either (1) alive and moving freely, or (2) dead or showing no movement over 5 seconds. Tap the container to confirm the mites' status.



# Simple In-Field Test

Detect pyrethroid resistance in redlegged earth mites



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## How to determine resistance

- Susceptible population: If your RLEM population is not resistant, all mites will be dead or showing limited movement after 1 hour.
- Resistant population: If multiple RLEM are alive and moving freely after 1 hour, your population is resistant.
- Retest: If a single mite is alive after 1 hour, the test is inconclusive so retest.

This test will detect moderate to high levels of resistance only; it cannot detect low levels of resistance in RLEM. If in any doubt, contact us directly.

Note: Do not introduce more than 50 RLEM into the container; doing so can increase the risk of false positives in susceptible populations.



## Next steps

If you have detected a resistant RLEM population, you will need to rethink management options for this pest.

Refer to the RLEM Resistance Management Strategy for guidance. You can access the strategy [here](#) or scan the QR code.



For any questions, please get in touch with us:  
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