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Redberry mite update 2018

Key Points

- **The redberry mite lifecycle** follows that of the blackberry plant.
- **A new 'shake and wash' method** speeds up monitoring of redberry mite
- **Winter bud monitoring** may help predict redberry mite numbers in blackberry crops
- **Collect 10 winter buds/block** to assess mite numbers

Lifecycle and monitoring

Redberry mite is a tiny mite that infests blackberries in Australia and many other blackberry producing countries. Redberry mite is believed to be the primary cause of redberry disease, a disorder which causes incomplete, delayed or uneven ripening of blackberry drupelets so that some stay hard and red while others are fully black and ripe. This makes the fruit unsaleable for fresh market.

We describe the redberry lifecycle and methods used to extract and count redberry mites in blackberry fruit and buds.

TIA is a joint venture of the University of Tasmania and the Tasmanian Government

Hort Innovation Strategic levy investment

RASPBERRY AND BLACKBERRY FUND

Red berry mite lifecycle

1. Mites overwinter in bud scales or deep in buds.

2. In spring, the mites move onto the developing shoots. The cane growth moves them through the canopy

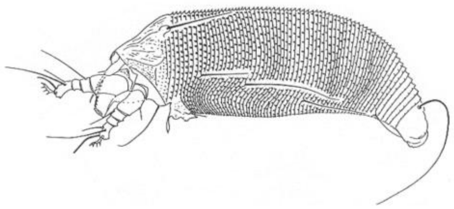
3. Mites are found under bracts on stems and beneath flowers

5. During ripening, mites move into the developing drupelets, generally under the calyx and around the core

4. As flower buds appear, the mites work their way into the buds

Redberry mite sampling

Redberry mites are tiny, whitish in colour and only half a mm long and look a bit like a worm with legs at one end of a long body. This makes monitoring a challenge and you will need a lens with 20X magnification



The old method
Green fruit are placed on strips of upturned sticky tape stapled to black card. The fruit is then incubated at 25° C for 3 to 4 weeks before counting mites trapped on the sticky tape. ***This is very slow and does not provide an accurate measure of mite numbers!***

The new faster 'shake and wash' method
TIA honours student Hui Law developed a new faster method for extracting and counting redberry mite that extracts more than double the number of mites and predators.

Fruit are placed in a vial containing 70% ethanol and shaken for 1 minute. The ethanol is poured on to a petri dish over black card for counting using 20 X magnification.

What to sample?
Redberry mites tend to be very spread out throughout the blackberry crop . Analysis of fruit samples showed that it is hard to detect redberry mite with a high degree of accuracy. For a susceptible variety 10 fruit need to be sampled to detect with 50% certainty.

Sampling winter buds to predict redberry mite populations
Hui's research found redberry mites are more concentrated in winter buds. Up to 7 times as many were detected in buds than in fruit.
Dissect 10 buds then wash in 70% ethanol for 1 minute and count as above.

Contact

Dr Steve Quarrell
Tasmanian Institute of Agriculture
stephen.quarrell@utas.edu.au