



Feral honey bees, Varroa and pollination risk: what Tasmanian fruit growers should know

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Tasmanian fruit growers currently benefit from both managed honey bee hives and background pollination from insects already present in the landscape. Background pollination may include feral honey bees, honey bees from nearby managed hives, bumblebees, flies and other insects.

A recently completed Tasmanian Institute of Agriculture (TIA) project investigated the extent to which Tasmanian fruit, berry and vegetable seed crops rely upon background pollination services. The work was conducted in response to the spread of Varroa mite on mainland Australia. The full report can be accessed [here](#).

The challenge

Varroa mite may affect the number, strength and reliability of managed and feral hives available for pollination.

Feral honey bee colonies are unmanaged and will not receive monitoring or treatment should Varroa become established in Tasmania. Informed by international experience, an estimated 90 per cent of feral hives could potentially disappear within four years of Varroa mite arriving here.

Managed hives are less at risk as beekeepers can monitor mite levels and apply miticide treatments. However, management is not a “set and forget” scenario. The need for ongoing monitoring to prevent Varroa mite populations reinfesting and rebuilding, along with chemical resistance prevention will result in additional costs to Tasmanian beekeepers. These added costs are then passed onto growers, as Australian mainland horticultural industries have experienced.

What did the project do?

The project used grower survey data to compare managed hive use with published benchmark hive-stocking rates.

In simple terms, we asked: ***how many managed hives are growers currently using, and how does that compare with the recommended rate of each crop?***

Where growers reported using far fewer managed hives than expected, this may indicate that crops are receiving important pollination from background sources, potentially including feral honey bees.

As managed and feral honey bees cannot be visually distinguished in the field, this approach does not definitively evidence the extent to which pollination is coming from feral honey bees. It does, however, provide a practical approach to identify the crops and regions where background pollination is likely important and determine “ballpark” estimates of the importance of background pollination.

Apples showed the clearest signal

The strongest evidence of potential reliance on background pollination was found in apples, particularly in the Huon Valley.

Across the surveyed apple records, the average managed hive stocking rate was **0.67 hives per hectare (ha)**, compared with a benchmark rate of about **3.5 hives/ha**. This means surveyed apple blocks were stocked at approximately **20 per cent of the benchmark rate on average**.

Nine of the 14 surveyed apple records reported **no managed hives** being placed in the crop.

These results do not mean apple crops are not being pollinated. It does suggest, however, that there is a level of apple production currently supported by background pollination services. These services may be a combination of feral honey bees, spill-over from managed hives placed nearby (i.e. in cherries), and other insects.

What about cherries and berries?

Cherry, blueberry, raspberry and blackberry crops were determined to be nearer to published benchmark rates than apples, suggesting they may be more directly reliant on managed hives and potentially less exposed to feral honey bee pollination losses. However, the other Varroa mite related risks of hive availability, strength, reliability and cost discussed above may still apply.

What should growers do now?

The key message is that growers should understand their current level of reliance on managed hives versus background pollination and start planning for a future where feral honey bees may be less abundant.

Apple growers, particularly those currently using few or no managed hives, may wish to review their pollination strategy. This could include checking recommended hive stocking rates, talking with pollination providers about future hive availability and costs, and considering whether additional managed hives could be sourced if background pollination declined.

All growers who use managed hives should speak with their pollination providers about Varroa preparedness. Useful questions include:

- How would Varroa affect your ability to supply strong hives?
- How might hive availability and pollination costs change?
- How will hive strength and quality be assessed before hives are placed in crops?
- Could additional hives be supplied if background pollination declined?

The take-home message

Varroa mite could affect Tasmanian fruit production in two main ways.

Firstly, it could reduce feral honey bee populations and the background pollination services they provide. This appears most relevant to apples, especially where growers currently use few or no managed hives.

Secondly, it could increase pressure on managed hive supply, cost and quality. This is relevant to all pollination-dependent fruit and berry crops.

Growers can reduce risks by reviewing their current pollination arrangements, talking early with beekeepers, and planning for how their crop would be pollinated if background honey bee activity declined.

Funding

The work was undertaken by the Tasmanian Institute of Agriculture (TIA), University of Tasmania. The Tasmanian Institute of Agriculture is a joint venture between the University of Tasmania and the Tasmanian Government.