

# Pollination Bee Hive Auditing

**ONE OF THE VARIABLES THAT CAN HAVE A SIGNIFICANT EFFECT ON BOTH THE QUANTITY AND QUALITY OF KIWIFRUIT PRODUCED IS EFFECTIVE POLLINATION. A COST EFFECTIVE WAY OF ACHIEVING GOOD POLLINATION IS TO USE HONEY BEES.**

A single honey bee colony in the mid to late spring can contain upwards of 35000 individuals. The colony will have an active queen that is laying around 1500 eggs per day. The developing brood requires carbohydrates (nectar), protein (pollen) and water, all collected by the forager bees. The result is the spreading of pollen between flowers and successful pollination. Beekeepers encourage greater levels of pollen foraging by feeding sugar syrup which essentially simulates a nectar flow. This encourages the queen to produce more brood and consequently creates more demand for pollen meaning better pollination.



Hives are usually supplied into mature orchards at a stocking rate of 8-10 colonies per hectare and cost in the order of \$110 to \$170 per hive depending on who places the hives around the orchard, who feeds the sugar syrup, ease of access and payment arrangements. Taking average figures of: 9 colonies per hectare and \$140 per colony, the cost of pollination per hectare is \$1260.

In 2007 approximately 13,000 hectares was planted in kiwifruit (Source: MAF Horticulture and Arable statistics). At the currently accepted stocking rates, this creates a demand for around 120,000 hives. This amounts to more than 35% of the total number of hives in New Zealand. As a result of the high demand for hives and the attraction of competing opportunities (eg: early nectar flows such as manuka), the securing of good quality hives is becoming increasingly difficult.

Determining whether or not the hives you have paid for are of a sufficient quality to provide good pollination is a good management practice which should ensure that you have this variable under control. This service is sometimes provided via groups such as the Kiwifruit Pollination Association (KPA) or the Hawkes Bay Pollination Group (HBPG) who both employ independent contractors to audit a selection of the hives that members supply to growers. However, there are also a large number of hives supplied to orchardists by beekeepers who are not members of either group. These hives will not necessarily be audited.

AsureQuality can provide this service for growers who source hives that are not subject to a group audit (such as the service provided by the KPA, HBPG or some pollination brokers). The apiary group is

made up of a small group of experienced apicultural professionals who support the beekeeping industry. The group has been involved in pollination auditing for more than 25 years and is well known and accepted by industry as an impartial third party. We also may use contractors or other AsureQuality staff to assist at peak periods.

Auditing involves opening beehives and inspecting and evaluating the colony against a standard. The standard requires counting frames of brood (eggs, larvae and pupae) and frames of bees and making other value judgements on the state of the colony such as food supplies, queen performance and so on. The number of hives audited is statistically determined and ensures that we have a 95% chance of detecting more than 10% non-conformance. Obviously alternative inspection regimes can be followed by arrangement.

If an orchardist requests hives to be audited, written permission must be obtained from the beekeeper authorising inspection of his or her colonies. The orchardist fills out a request for service outlining information on orchard location, number of hives on site etc. Orchardist will also be asked for an orchard map to aid in locating the orchard and also hives within the orchard, enabling a truly random sample to be taken. At the conclusion of the audit, a report is written and forwarded to the orchardist. However, if there are major issues, the auditor will discuss these with the orchardist as soon as is practical.



Prices for this service are dependant upon the size of the orchard (and therefore the number of hives assessed) but range from \$300-\$500 + GST per orchard. Mileage is also charged at 95c per km, but we are often able to share travel costs by doing more than one orchard in an area on the same day.

**FOR MORE INFORMATION ON POLLINATION AUDITING OR TO ARRANGE AN AUDIT PLEASE CONTACT:**

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