KVH PROTOCOL

Pollination with Bees

Background

Pollination is one of the most important activities in the orchard calendar. Most kiwifruit orchards rely on the introduction of bees to ensure effective pollination takes place. The movement of pollination hives between orchards must be managed to minimise the risk of Psa spread associated with vehicle and equipment movement and potentially the movement of bees themselves.

Research has shown that pollen infected with Psa can be transferred between flowers via foraging bees. Some bee-to-bee spread of Psa can also occur within hives. (For further information refer to the Research and Development section of the KVH website).

Scope

These protocols have been designed to mitigate the potential for contamination of orchards via the use of pollination hives and apply to the movement, feeding and removal of pollination hives in all regions.

Requirements

All beekeepers providing hives for kiwifruit pollination must adhere to these protocols.

Hygiene

- Hives, pallets and vehicles must be cleaned of kiwifruit plant material and other debris before entering and leaving any orchard. Refer to KVH Best Practice Advice: Orchard Hygiene.

1. Permitted movements for hives – during pollination season

- For regional status refer to www.kvh.org.nz/maps_regional.

Hives from storage sites or temporary dump sites in this region:	First use: - can be used in these regions:	Multiple use: – after first use can be used again in these regions:
Recovery	Recovery →	Recovery
Containment	Containment →	Recovery
	Recovery →	Recovery
Exclusion and regions outside any kiwifruit growing region	Exclusion →	Exclusion
	Exclusion →	Containment
	Exclusion →	Recovery
	Containment →	Recovery
	Recovery →	Recovery

Multiple uses of hives for pollination

- Hives placed within orchards inside a Recovery region may be used again within a Recovery region, with adherence to orchard hygiene protocols.
- Hives placed within orchards inside a Containment region may be used only once within that region but may be re-used within a Recovery region.
- Hives placed within orchards inside an Exclusion region may be used again on other orchards (and in other regions) with adherence to orchard hygiene protocols.

Prohibited hive movements

- Hives must not move from a Psa Positive orchard to a Not Detected orchard.

Hives from storage sites or temporary dump sites in this region:	Movement is prohibited to these regions:
Recovery	Containment Exclusion
Containment	Exclusion
Exclusion	N/A

2. Permitted movements for hives – after pollination season

- Any hives leaving a Containment or Recovery region to go to a **Containment** or **Recovery** region, must be removed to an area at least **five** kilometres from any **flowering** kiwifruit orchard.
- Any hives leaving a Containment or Recovery region to go to an **Exclusion** region, must be removed to an area at least **ten** kilometres from any **flowering** kiwifruit orchard.

Hives have been last used for pollination in this region:	After use in this region hives need to be removed to:
Recovery	An area at least 5km from any flowering kiwifruit orchard in a Containment or Recovery region. An area at least 10km from any flowering kiwifruit orchard in an Exclusion region.
Containment	
Exclusion	An area at least 5km from any flowering kiwifruit orchard

Records

- Records must be maintained of all hive movements and kept for five years.

Recommended Best Practice

Hive placement and removal

- Hives should be placed to avoid any contact with vines and shelter and should allow easy access for sugar syrup feeding. Growers must ensure access ways are kept clear.
- At least 10% of female flowers should be open when hives are introduced. This will aid bee orientation to the orchard and reduce foraging in nearby orchards.
- A stand-down period of 9-10 days (at a location that is at least five kilometres from the nearest flowering kiwifruit orchard) is 'best practice' in beehive management for pollination. Research has shown that foraging bees can carry Psa, and that Psa may be able to survive in hives for 6-9 days. A stand down period should lead to substantial reductions in Psa within the hive.
- Where possible, temporary dump sites should not be located within a Containment or Exclusion region.

Sugar feeding

- Feeding should be carried out using a dedicated orchard vehicle if possible.
- Contractors employed to feed hives must follow orchard hygiene protocols.
- Reducing the recommended frequency of hive feeding is likely to reduce pollen collection and compromise pollination.

Auditing against the industry hive standard

- It is recommended that hive auditing against the industry standard continue provided that best practice orchard hygiene is adhered to www.kvh.org.nz/hygiene

Orchard spraying

- Orchard swards must be managed to ensure that flowers are not present when sprays are applied.
- When considering spraying, orchardists should be aware that hives may be present in neighbouring orchards that are flowering (including other crops such as avocados). It is important to avoid any possibility of spray residues being found in honey.
- Orchard shelter belts should not be sprayed while they are in flower.

Orchardists and spray contractors must adhere to best practice spray guidelines at all times.

Additional Requirements

Controlled area notices:

There are controlled area notices currently in place for some sites outside the South Island Exclusion region to which movement restrictions apply. KVH Permission is required for movement of all risk items that move into or out of these controlled areas. For further information, refer to www.kvh.org.nz/maps_regional