KVH PROTOCOL

Harvest, Packing and Reject Fruit

Background

Movement of any risk items that potentially constitute, harbour or contain kiwifruit vine material create a risk of the spread of Psa or other biosecurity threats. Psa can also 'hitchhike' through direct contamination (e.g. on clothing), and potentially by contaminated soil or water.

People can also spread Psa through movement of the following risk items:

- Kiwifruit plant material (including 'budwood', and 'rootstock').
- Orchard infrastructure and equipment.
- Fruit bins that could be contaminated with plant material.

Good hygiene practices during harvest and packing may limit, or prevent, the spread of Psa from vine to vine and between orchards.

Scope

This protocol covers the requirements for harvest and packing activities, transport, and handling, of reject fruit for animal feed and bulk disposal to minimise risk associated with these activities. These protocols apply to product suppliers, growers and transport operators freighting product. For reject fruit being sent to fruit processors, please see *KVH Protocol: Processors*. For movement of fruit bins within and between regions during harvesting see *KVH Protocol: Fruit Bins*. If moving orchard equipment refer also to *KVH Protocol: Orchard Equipment and Infrastructure.*

Harvest and Packing

- Packhouses involved in harvesting activities are considered higher risk because of the movement of people and machinery between large numbers of orchards.
- Harvest and packing activities should be reviewed to ensure they minimise the risk of transferring Psa infection within, and between, orchards through the movement of plant material. Refer to *KVH Best Practice: Orchard Hygiene*.
- Growers who control the harvest activities on their own orchards should ensure that their staff and contractors follow the orchard hygiene protocols as described in their Psa/Biosecurity Orchard Management Plan and *KVH Best Practice: Orchard Hygiene* to minimise the transfer of Psa infected material.
- Each packhouse must include a Psa /Biosecurity Risk Management Plan in their Documented Quality System (DQS). (refer later in this document for the requirements for these plans.)
- This plan must be signed off annually by KVH prior to the commencement of harvest.
- All harvest bins must be sanitised before each use and maintained free of plant material.

Reject Fruit

- Reject fruit awaiting action must be securely stored to prevent leaf dispersal and to minimise availability to birds.
    - birds feed on soft fruit and spread seed through their droppings.
    - Seed may germinate and result in further wild kiwifruit infestations
- All reject fruit must be handled to minimise any associated plant material (leaf matter) and fruit being lost to the environment during transport, animal feeding, composting or processing and during storage.
- All product travelling to, through and from Exclusion and Containment regions must be fully covered during transport. It is recommended that all product in Recovery regions is also covered. Fruit must not be lost in transit (e.g. by rolling out from overloaded bins, etc) and possibly creating a wild kiwifruit problem (refer NZTA truck loading code).
- Reject fruit for composting can only be moved to KVH approved compost manufacturers (refer *KVH Protocol: Disposal Options*

- The following table covers the movement of reject fruit destined to be unloaded into the environment without any further biosecurity controls—e.g. fed out to animals.

NB: Where reject fruit is being sent to a location outside a Recovery, Containment or Exclusion region, it must not be unloaded closer than 10kms from the nearest kiwifruit orchard.

Reject Fruit Movement Controls

Source Region	**Destination Region**—status of movement and conditions that apply		
	Recovery	**Containment**	**Exclusion**
Recovery	Fruit should never be unloaded closer than **200 metres** from the nearest kiwifruit property.	* Fruit should never be unloaded closer than **10 kms** from the nearest **Not Detected** kiwifruit property	**PROHIBITED**
Containment	Fruit should never be unloaded closer than **200 metres** from the nearest kiwifruit property.	* Fruit should never be unloaded closer than **10 kms** from the nearest **Not Detected** kiwifruit property.	**PROHIBITED**
Exclusion	Fruit should never be unloaded closer than **200 metres** from the nearest kiwifruit property.	Fruit should never be unloaded closer than **200 metres** from the nearest kiwifruit property.	*KVH authorisation required*

***For status of orchards contact KVH on 0800 665 825 or email** info@kvh.org.nz**)**

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

Minimising the spread of wild kiwifruit

Stock feed

In supplying reject fruit for stock feed, post-harvest suppliers should be advising farmers about best practice to prevent the spread of wild kiwifruit.

Bay of Plenty Regional Council recommend the following best practice methods:

- Cover stockpiles of reject kiwifruit and feed out stock consumption amounts at daily or regular intervals.
- Piles of reject kiwifruit are easily covered by 3.66 wide lengths of windbreak and secured at the edges. Two 12-metre-long lengths, sewn together will conveniently cover a 10 to 15 tonne truck load. This material "breathes" and will not hasten fruit ripening.
- Feed out from the stockpile at one or two day intervals. This will avoid large quantities of fruit being available for mass feeding by birds. Leachate from kiwifruit stockpiles must not enter any waterways.

Reject fruit on vines

- Remove reject fruit from vines and mulch as soon as possible. This practice would at least avoid fruit ripening and being available to birds over an extended period.
- Once fruit is dropped between rows and mulched by a mower it quickly breaks down into compost material.
- All fruit must be removed from vines by 1 July yearly.

Psa/Biosecurity Risk Management Plan Requirements

Each packhouse must include a Psa/Biosecurity Risk Management Plan in their Documented Quality System (DQS). This will include details of how the minimum criteria outlined in the requirements below will be met. This plan must be signed off by KVH prior to the commencement of harvest each year.

General Hygiene

- Where the packhouse is involved in harvesting activities there are documented systems in place to minimise risk of transferring Psa (or other) infected material. (NB: there are extra hygiene controls required for orchards which have been identified with strains of Psa that show resistance to control products and present increased risk). These are outlined in *KVH Protocol: Orchards showing resistance to Psa control products*)
- Effective hygiene practices and a training programme must be in place to ensure that all personnel entering and working in the packing facility are aware of the biosecurity risk management processes and the reasons for the requirements.

Bin Cleaning and identification

- Each packhouse must ensure all their harvest bins are sanitised (using a KVH recommended sanitizer with proven efficacy against Psa) and are free of visible plant material prior to re-use.
- This process must be documented, and records of any inspections maintained.
- All bins must have the entire bin surface completely covered with a sanitiser (coverage can be achieved by spray method or immersion into the sanitiser).
- The facility must document the method and products to be used to sanitise the bins.
- Each packhouse is to implement a system for physically segregating unclean bins arriving from an orchard from cleaned/sanitised bins.
- A process to verify the bins are free of leaf and plant material debris before loading to an orchard must be documented and records of all inspections maintained.
- If moving bins between regions document a system for identification and movement as per KVH Protocol: Fruit Bins.
- Notify KVH before moving bins between regions:
    - Recovery to Containment or Exclusion
    - Containment to Exclusion
    - Exclusion to another Exclusion region

Consolidation and transport

- Systems should be in place to ensure that bins/bearers are free of plant material at time of loading. Recommended best practice is a loading area/hardstand area.
- All truck decks should be clean and free of plant material and soil.
- All bins (full or empty) must be transported in tautliners when moving from
    - Recovery to Containment or Exclusion regions
    - Containment to Exclusion regions.
- It is recommended that all full harvest bins be transported fully covered with a dust sheet/tarpaulin (at or below the truck deck) or transported in a tautliner (curtain sider). Vehicles transporting bins between regions are required to meet the conditions detailed in KVH Protocol: Fruit Bins.
- Ensure any vehicles and equipment that leave the packhouse premises are free of kiwifruit plant and leaf material.

Plant and Fruit Debris

- All practical measures must be taken to ensure plant debris is contained—including dust extraction—during fruit packing.
- All waste products from the bins, and during the packing process (including from dust extractors) from orchards, must be collected and disposed of on site by burial or burning, or removed from a registered waste management provider. For further details see KVH Protocol: Disposal Options

Reject Fruit

- Bins of reject fruit awaiting disposal must be covered (at least the top bin) to prevent dispersal of leaf/plant material and to prevent birds feeding on reject fruit, exacerbating the spread of wild kiwifruit
- Within and between Recovery regions it is recommended that all reject fruit is fully covered or contained in sealed containers. Loading must be managed so that fruit does not spill in transit.
- Within and between Containment and Exclusion regions all loads of reject fruit must be fully covered.
- Reject fruit to be used for stock feed must comply with movement controls earlier in this protocol.
- Records must be maintained to verify the destination of reject fruit
- Packhouses must only supply reject fruit to a processor that is KVH registered.
- Have a documented process for verifying bins of fruit for processing are free of leaf and plant material and this information is provided to the processor (e.g. record on truck docket etc.)

Sea Containers

- Containers arriving at a post-harvest facility must be checked to ensure they are free of any biosecurity threat organism. See *KVH Information sheet: Sea Containers*
- Staff checking containers should be aware of pests/ biosecurity threats to kiwifruit.
- Suspect organisms must be caught/trapped/photographed.
- Contact MPI on 0800 80 99 66 and KVH on 0800 665 825 immediately.

Records and Internal audit

- The packhouse should implement an audit programme to confirm the minimum Psa and biosecurity criteria have been met. Appropriate action is to be taken (and documented) where there are any breaches of the specification.
- Records relating to Biosecurity controls must be maintained and made available to KVH on request.
  KVH will audit the facility's Psa/Biosecurity Risk Management Plan annually and KVH or a representative will complete site audits during packing to verify plans in action using the *KVH Psa/Biosecurity Risk Management Plan Site Audit Report.*