



**Kiwifruit Plant Certification Scheme**

 **Orchard Plants Manual**

**Version 1.0**

**1 April 2022**

**For the movement of kiwifruit plants between orchards**

**Name:**

**Date:**



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***Updates***

The Kiwifruit Plant Certification Scheme (KPCS) has been set up to produce plant material free from high-risk biosecurity pests and diseases. The standards are based on the 2011 Kiwifruit Nursery Standards that were developed in response to the Psa-V incursion and have been revised to embody the knowledge developments in the kiwifruit industry, objectives set out in the National Psa-V Pest Management Plan, and incorporate a high health that is much wider than Psa-V.

Revisions will be ongoing with the most recent version of the standard being available from the KVH website (www.kvh.org.nz/kpcs).

***Disclaimer***

While this standard’s objective is to allow certification of plant material that has been produced under a system which aims to produce high health material there remains the possibility a proportion of plants may contain biosecurity pests and diseases including Psa. KVH accepts no liability for claims regarding the presence of biosecurity pests or diseases being present in the budwood from any certified suppliers. While the objective of this standard and guidelines is to minimize the potential risk pest and disease transfer, no party can guarantee that adherence to these standard and guidelines will reduce such risk to zero.

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1. Purpose

The purpose of this document is to provide guidance for growers wishing to move mature orchard plants between orchards to achieve certification under the Kiwifruit Plant Certification Scheme (KPCS) and a place for them to document how they will meet the requirements.

1. Introduction to the Kiwifruit Plant Certification Scheme

Growers should have a high degree of confidence in the biosecurity status of all plant material being moved into an orchard, and suppliers/distributors should be able to demonstrate how they are managing biosecurity risk.

The movement of plant material (budwood, rootstock, mature plants, shelter belt plants, and pollen) presents the greatest risk of moving new pests and diseases around our industry. The kiwifruit industry has already made significant progress in managing biosecurity risk across the rootstock pathway with the Kiwifruit Plant Certification Scheme (KPCS).

The Kiwifruit Certification Scheme is now extended to cover mature plants and aims to manage risk associated with this movement by focusing on monitoring and testing of supplying orchards. This applies across New Zealand to every person moving mature plants as industry risk organisms can be inadvertently and rapidly spread through this activity between orchards and across growing regions.

 2.1 Scope

The kiwifruit industry is undergoing rapid growth and some growers who have double or triple planted vines to get quick canopy cover may consider removing some of these vines to increase footprint and optimise orchard performance. These plants may be used by growers of existing orchards wanting to plant on new licensed areas. There is a high risk associated with the movement of plants as kiwifruit industry risk organisms can be rapidly spread between orchards by this means.

This biosecurity standard applies to the movement of mature plants between orchards and provides an avenue for those supplying mature plants to demonstrate compliance to the National Pest Management Plan and the Pathway Management Plan, subject to any movement controls in place.

Those plants that meet the requirements of this standard will be eligible for certification. KVH will enforce grower compliance under the Pathway Plan and through kiwifruit industry supply requirements such as GAP (Good Agricultural Practice).

2.2 Kiwifruit Industry Biosecurity Regulations

 **National Psa-V Pest Management Plan (NPMP)**

 The NPMP supports growers working collectively to minimise the impacts of Psa-V within their orchards and growing regions, as well as doing what is necessary to keep Psa-V out of areas where it hasn’t yet been identified. It also brings together and unites the efforts of key organisations in the kiwifruit industry and associated industries, to take a consistent and coordinated approach to management of Psa-V. Key elements of the plan involve movement controls, monitoring, reporting, incursion response and managing the disease, along with a continued focus on awareness, education, and research.

**National Kiwifruit Pathway Management Plan (Pathway Plan)**

The kiwifruit industry has introduced new legislation to better manage biosecurity risk to the kiwifruit industry. Instead of focusing on a single pest, like Psa, the Plan focuses on protection against the full range of biosecurity threats to our industry and provides for a consistent and pragmatic approach to managing pathway risks such as young plants, budwood, pollen, orchard equipment and other items moved by people.

The Pathway Plan is equivalent to the current Psa-V National Pest Management Plan (NPMP) but is more fit-for-purpose and makes sure all the right settings are in place so that we can detect anything new quickly enough to stop its spread, limit impacts, and aim for eradication.

The Pathway Management Plan will come into effect on1 April 2022, and it will replace the current Psa-V NPMP (due to expire on 17th May 2023) as it will retain the important elements needed for Psa protection (e.g., controlling movements of high-risk pathways to the South Island) but also provide much wider benefits such as:

* better protection
* more value for money
* increased simplicity around rules and regulations
* right settings for early detection of new threats
* consistent and pragmatic.

2.3 High-risk organisms (refer KVH website)

There are already risk management requirements for plant movements under the National Psa-V Pest Management Plan (NPMP), however these are specific to Psa. The Pathway Plan continues to provide protections for growers and regions without Psa and has a Psa testing requirement.

Currently there is not a proposal to add diagnostic testing requirements for any additional high-risk organisms other than Psa, however if a high-risk organism emerges that could have significant potential impacts to the industry, additional monitoring or testing requirements for this specific organism may be introduced. If there is a significant cost associated with this, KVH will consult with the industry.

2.4 KPCS Requirements for Mature plants

Mature plants moving between orchards are required to be KPCS certified if they meet the requirements specified below.

**KPCS Mature Plant Certification**

* Register with KVH prior to 31 March.
* Must meet the requirements of the KPCS Mature Plant Standard
* Complete the KPCS Mature Plant Manual documenting how the KPCS Standard requirements are met and submit to KVH.
* Complete monitoring and testing requirement. (Psa testing and only for Not Detected orchards).
* Be audited to confirm compliance.
* Mature plants certified to this Standard can be moved as specified in the table below:

|  |  |
| --- | --- |
|   **FROM** |  **TO** |
| **South Island** | **North Island** **Not Detected Orchard** | **North Island** **Psa positive orchard**  |
| North IslandNot Detected orchard | **PROHIBITED** | Allowed for certified Mature plants | Allowed for certified Mature plants |
| North Island Psa positive Orchard | **PROHIBITED** | **PROHIBITED** | Allowed for certified Mature plants |
| South Island Not Detected Orchard | Allowed for certified Mature plants | KVH authorisation required | KVH authorisation required |

# Definitions and List of abbreviations

**The definitions provided below are to help navigation of this Standard, for legal definitions please see the interpretation section of the NPMP and Pathway Plan.**

**Batch or lot**

Plant material from a single source that is treated as one group for the purposes of propagation in the orchard. This could be a variety or a block.

**Biosecurity Act 1993**

An Act of Parliament that lists the laws relating to pests and diseases that are capable or potentially capable of causing unwanted harm to any natural and physical resources or human health.

**Cultivar**

The classification / name given to a distinct kiwifruit and the resultant plant material.

**Effective crop protection product**

Effective crop protection products are those with proven efficacy against the target pest or disease. To be an effective crop protection product for Psa-V control, ACVM must have issued a label claim stating the products approved for use in control of Psa-V. KVH maintain a list of ‘effective crop protection products’ on the KVH website and specific advice on best practice in management guides.

**Kiwifruit plant**

A plant or plants of any *Actinidia* species or cultivar.

**KPIN**

Kiwifruit Property Identification Number, used to identify a property on which kiwifruit is produced.

**KPCS**

Kiwifruit Plant Certification Scheme, of which this Standard is part of.

**KVH**

Kiwifruit Vine Health.

**National Psa-V Pest Management Plan (NPMP)**

A national pest management strategy under the Biosecurity Act 1993.

**Orchard**

means an area of land used or previously used, if kiwifruit remains present, for the cultivation of kiwifruit, or kiwifruit flowers or pollen, and including headlands and shelter belts immediately adjacent to kiwifruit plants.

**Pathway Management Plan**

An Order in Council under the Biosecurity Act 1993 for managing the risk of spreading biosecurity risk organisms across the kiwifruit industry.

**Pest**

Any biosecurity threat to the kiwifruit industry which may be a pathogen (virus, bacteria, fungi or other), insect or weed. Biosecurity pests include the target organisms, but also include all other “regulated pests” as categorised by the Ministry for Primary Industries.

**Psa-V**

A genetically distinct high virulence form of *Pseudomonas syringae* p.v. *actinidiae.*

**Registration**

Growers who are intending to move budwood off their orchard must register with KVH on an annual basis.

**Sanitiser**

A KVH approved antibacterial with proven efficacy against Psa-V. A list of these is maintained on the KVH website ([www.kvh.org.nz/hygiene](http://www.kvh.org.nz/hygiene)).

**Source block**

The block from which the budwood was taken for propagation.

**Target organisms**

Target pests and diseases specified for the KPCS Standard. This list is likely to evolve as our knowledge of risk organisms evolves.

**Testing**

For the purposes of this document means to test for target organisms specified in the KPCS Standard and conducted in a KVH approved laboratory.

1. The KPCS Orchard Plant Standard

 The KPCS Mature Plant standard is divided into two parts.

 **Part A – Orchard Details**

This section describes the supplier or distributor and general information about the source orchard.

 **Part B - Risk Management**

This section includes risk management principles which are designed to reduce biosecurity risks.

NB: Some of the required information may be recorded in the Orchard Biosecurity Plan – if this is the case a cross reference to that document is acceptable rather than duplicating information.

 Please register any intended movement on the KVH website

1. Part A – Orchard Essentials

|  |
| --- |
| **5.1 Source Orchard Details** |
|  |
| Source KPIN: |  | Destination KPIN |  |
| Orchard Name: |  |  |
| Orchard Address: |  |  |
| Orchard Psa status: |  |  |
| Kiwifruit growing region: |  |  |
| Person responsible for orchard: |  |  |
| Phone: |  |  |
| Email: |  |  |

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| --- |
| **5.2 Source Blocks** |
|  |
| Blocks where plants have been identified for movement need to be recorded in advance of collection so that monitoring and testing requirements can be met. |
| Block names or numbers | Variety being collected. | Number of vines |
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| **5.3 Multiple sites** |
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| Where mature plants are being moved from multiple source orchards complete Appendix 4. |
| KPIN | Block | Variety being collected | Number of vines | Destination orchard KPIN |
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| **5.4 Orchard Maps – please attach.** |
|  |
| The map must show the numbers, letters or names that are used to designate blocks. This information will be used in the inventory system to track plant movement. |
| [ ]  Source orchard | [ ]  Destination orchard  |

1. Part B – Risk Management

The manual must include risk management principles which are designed to reduce biosecurity risk.

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| **6.1 Monitoring**  |
|  |
| Monitoring needs to be completed during a period of active growth on all blocks from where mature plants will be taken for relocation. Any unhealthy or symptomatic vines to be tagged during these rounds and not selected for removal (refer to KVH Target Organisms and symptom guides). Records to be maintained and kept on file (see Appendix1). |
| Describe your monitoring process, timing/ frequency, identification or tagging process for unhealthy vines and staff responsible for monitoring. |  |
| State where monitoring records are maintained. |  |
| Record number of vines tagged. |  |

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| **6.2 Sampling and Testing** |
|  |
| All **Psa Not Detected** orchards must have leaf samples taken from each source block used for mature plant collection if moving to a Psa Not Detected orchard. Samples should be taken in March/April (while there are suitable leaves for sampling). Refer to KVH procedure (appendix 5). Each variety being supplied needs to be include in the block sample.Suspected presence of a biosecurity pest or disease or any unusual vine symptoms must be reported to **KVH on 0800 665 825.** (A template for recording sampling and testing can be found in Appendix 3). |
| Record blocks sampled and where testing records are filed. |  |

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| **6.3 Crop Protection**  |
|  |
| * A regular crop protection programme must be in place for any High-Risk pests
 |
| Evidence of regular protective spray programme for source orchard.  |  |
| If orchard is Psa positive Copper spray to be applied to blocks prior to removal of plants. |  |

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| **6.4 Hygiene**  |
|  |
| * Any tools used must be cleaned of soil and plant material and sanitised at least between blocks.
* Wounds must be protected.
 |
| Describe tool hygiene process and wound protection methods |  |

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| **6.5 Vine Removal Process**  |
|  |
| Staff must be trained in hygiene procedures. Only plants that are symptom free, including free of Psa secondary symptoms at time of dispatch shall be moved. |
| Describe process. | [ ]  KVH notified plants ready to move on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Date)[ ]  Plants lifted by ripping.[ ]  Roots shaken and very little soil remaining.[ ]  Covered transport. |

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| **6.6 Traceability**  |
|  |
| Traceability must be maintained back to source and inputs. |
| Record rootstock and budwood sources | Rootstock type and source |
| Budwood variety and source KPIN |

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| **6.7 Records**  |
|  |
| Records must be maintained for key activities:Traceability records kept for a minimum of seven years and must be provided on request to KVH within 24 hrs.Monitoring and testing and crop protection records must be kept for a minimum of three years. |
| State where records are kept |  |
| Including but not limited to | [ ]  orchard maps of source and destination orchard showing location of vines removed and where planted.[ ]  rootstock and graft wood information[ ]  spray diary records[ ]  monitoring records[ ]  test results[ ]  record of notification to KVH |

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|  **SOURCE ORCHARDS** |
| **KPIN** | **ORCHARD NAME** | **ADDRESS** | **REGION**  | **BLOCK** |  **VARIETY** | **NUMBER OF PLANTS** |
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## **Appendix 1: Template: Multiple Source orchards**

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|  **MONITORING RECORD** |
| **KPIN:** |   |
| **Monitor name:** |  |
| **Monitoring date:** | **Location and name of block:** | **Variety:**  | **Leaf spotting or other symptoms observed?**  | **Description of symptoms observed:** | **Action taken.** **(e.g. ring KVH 0800 665 825)** | **Lab test required?** |
|   |  | | |   | YES / NO |  |  | YES / NO |
|   |  | | |   | YES / NO |  |  | YES / NO |
|   |  | | |   | YES / NO |  |  | YES / NO |
|   |  | | |   | YES / NO |  |  | YES / NO |
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## **Appendix 2: Template: Monitoring Record**

**Appendix 3: Sampling /Testing Record**

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|  **SAMPLING / TESTING RECORD** |
| **KPIN** | **Date of sampling:** | **Sampling body or sampler’s name:** | **Location of sample: Block/row/position** | **Block/Batch number** | **Variety**  | **Pest detected in laboratory test.**  | **Name of Pest or disease detected** | **Hard copy laboratory result held?** |
|  |   |  |  | | |   |  | YES / NO |  | YES / NO |
|  |   |  |  | | |   |  | YES / NO |  | YES / NO |
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| **Distribution Record** |
| **From (KPIN)** | **Psa status** | **Region** | **Variety** | **Type (M/F)** | **Number of plants** | **To (KPIN)** | **Psa status** | **Region** | **Date of Movement** |
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## **Appendix 4: Traceability/Distribution Record**

## **Appendix 5: Sampling and testing process**

## **Collect 100 leaf samples from each collection block**.

1. Collect leaves with any suspect spotting, if possible, otherwise collect leaves randomly. **Do not include stalks**. Younger leaves in active growth provide better material for testing. Choose leaves from different areas of the plant (i.e., some from the bottom, some middle, some from the top of the plant.)

2.For grafted plants – take some leaves from the rootstock and some from the grafted portion.

3. Each block will have a total of 100 leaves in the sample and can be put in a single bag. Label this bag clearly with the KPIN and sample number (e.g., Sample 1 etc)

4. If the Block contains more than one variety and plants from all varieties in the block are being moved – ensure leaves are taken from across all varieties within the 100-leaf sample.

5. Repeat the process if moving plants from more than one block so that each Block has a 100-leaf sample.

6. A maximum of 6 x 100 leaves are to be taken from an orchard.

7. If there are more than six blocks being used, then the 100 leaf samples will need to be taken across the blocks so that the sample is representative of all the blocks where plants are moving from – this may mean that one 100 leaf sample may cover more than one block i.e., Sample 1 = Block 2&3

## **Sending samples**

8. Place the sample bag(s) into one larger plastic bag ensuring air has been removed.

9. The larger outer bag should be labelled with the KPIN and date of sampling.

10. Complete the Hill Lab Kiwifruit Nursery Submission form- ensuring that the samples are labelled on the bag and on the form with the Block they were taken from.

11. Before sealing, place a copy of the completed collection sheet inside the larger plastic bag, then seal the bag.

12. Place large plastic bag(s) in a courier bag.

13. **Courier** to: Hill Laboratories

 28 Duke Street

 Frankton

 Hamilton 3204

 Attention: Psa Testing Phone 07 858 2000