Kiwifruit Plant Certification Scheme

Overview Paper

There are two parts to this paper:

1. **Introduction to the Kiwifruit Plant Certification Scheme**
2. **How the Kiwifruit Plant Certification Scheme works**

1. Introduction to the Kiwifruit Plant Certification Scheme

Long term growth and success of the kiwifruit industry requires biosecurity risks to be managed right across the supply chain. The kiwifruit industry has introduced the Kiwifruit Plant Certification Scheme (KPCS) to reduce the risk of pests and diseases being spread through the nursery trade and the associated impacts. In addition, the scheme will provide nurseries with greater certainty necessary for long term business decisions, which has been challenging since the outbreak of Psa-V in 2010. By selling certified plants, nurseries will be recognised for the professional standard they operate to.

1.1. Goal and benefits

The goal of the Kiwifruit Plant Certification Scheme is:

To enable growers to purchase kiwifruit plants of known plant health status[1], supporting long term success and future growth of the New Zealand kiwifruit industry.

[1] levels of freedom from specified pests or diseases

The benefits the kiwifruit industry is seeking to achieve through the KPCS include:

- Minimising the risk that any new to New Zealand high risk pests or diseases (including new strains of Psa-V) are rapidly spread, to give the best chance of successful response with least possible impacts;
- Minimising the spread of specified established diseases, including Psa-V, between kiwifruit growing regions;
- Increasing the prospects of successful vine establishment in a Psa-V environment (i.e. by starting with healthy plants of known pest and disease status);
- Allowing efficient movement of cultivars throughout New Zealand;
- Supporting movement of cultivars to offshore commercial opportunities;
- Recognising nurseries operating to professional standards; and
- Reducing nursery business risk and uncertainty, by providing a clear and enduring framework on which business decisions can be based.

1.2. Scope

The KPCS applies to the nursery production of all *Actinidia* species grown for commercial sale or use within New Zealand or for export. A 'nursery' is defined for the purpose of this scheme as 'any entity that grows *Actinidia* plant species to any age for sale or movement outside of the property'.

The scheme was implemented on 1 October 2016, after a transition period of two and a half years To ensure all nurseries are meeting the biosecurity responsibilities, only KPCS certified kiwifruit plants may be bought or sold, although growers are still able to produce their own plants for use on their own property or move up to 1000 plants between their own properties within the same Psa-V region. Three options exist for growers to source kiwifruit plants, listed below (and described further in Section 2.4);

1) **KPCS "Full Certification"** – certified plants that meet all the testing requirements of all target organisms including Psa-V. These can be moved between Psa-V regions in accordance with KVH movement controls.

2) **KPCS "Restricted Certification"**– plants produced under the KPCS Standard, and certified freedom from all target organisms, except the "common" NZ strain of Psa-V. These plants are tested with the

"alternative Psa testing regime" and can only be moved to Psa-V positive orchards in accordance with KVH movement controls.

3) **"Grow for own use"** – growers may produce their own plants for use on the same property. They may also produce up to 1000 plants a year for movement between their own properties within the same Psa-V region. These plants do not need to meet the requirements of the KPCS but any plants being moved between properties must met some risk management requirements (see the "*Grow for your own use*" information sheet for details, www.kvh.org.nz/kpcs)

The scope of the Kiwifruit Plant Certification Scheme excludes research organisations growing and using plants for scientific research purposes; KVH and the Ministry for Primary Industries work with research organisations to confirm adequacy of risk management procedures and permit plant movements.

2. How the Kiwifruit Plant Certification Scheme works

The KPCS Standard sets out:

- Basic requirements (e.g., personnel training, traceability, record keeping);
- Site requirements (physical requirements to ensure production areas remain free of pests and diseases);
- Minimum requirements to control biosecurity hazards; and
- Monitoring, testing and audit requirements.

To make it as efficient as possible to meet the Standard, a corresponding Nursery Manual is available. This provides a simple format that a nursery must complete to capture how it meets the Standard (see Section 2.2 for Nursery Manual details).

To be part of the Scheme a nursery must be able to demonstrate it meets the KPCS Standard (see Section 2.6 'Certification Process').

Plants produced under a certification standard can be labelled accordingly (see Section 2.9 for labelling requirements).

2.1. Elements of the Scheme in more detail

The KPCS Standard is aligned with HACCP methodology (Hazard Analysis and Critical Control Points) to provide a systematic framework to identify and manage risk within the nursery production process (see Box 1 for an explanation of HACCP).

Box 1: What is HACCP?

HACCP is systematic and preventative approach to managing risk that is widely used in many industries and has been adopted as the standard risk management tool for food safety. The key principles of the HACCP approach are to identify all potential hazards in a production system and identify points of control where these hazards can be controlled, prevented or reduced. This preventative approach to hazard management is proven to be successful in any production industry and has been adapted to provide a framework for the KPCS Standard.

2.2. Nursery Manual

The Nursery Manual is a template that nurseries must complete to demonstrate how they meet the plant certification Standard. The exception to this (where a Nursery Manual is not a pre-requisite to certification) is where KVH recognises 'equivalence' (covered under Section 2.7 below).

The Nursery Manual is designed to make the certification process as simple as possible; it is fully aligned with the Standard, includes prompts that guide the user to identify how relevant compliance criteria are met, and provides a simple format to enter this information. To minimise duplication for nurseries, where a nursery maintains documented operating procedures that describe how compliance criteria is met, a Nursery Manual can simply refer to the relevant section of that document (provided all relevant documents are made available and easy to follow during the external audit).

Once systems outlined in a Nursery Manual have been developed and implemented, and certification approved, they must be maintained; for example, the Nursery Manual must be amended when the nursery introduces new products or procedures.

2.3. Target organisms

The KPCS was launched by the kiwifruit industry as a biosecurity standard for kiwifruit nurseries. Psa-V was the first target organism of the scheme, with a provision for other target organisms to be added over time as our understanding of biosecurity risks to the kiwifruit industry evolves.

In October 2016 additional target organisms were added to the scheme, to achieve a balance between organisms present within New Zealand and offshore biosecurity threats, and make the scheme as meaningful as possible for growers purchasing plants while improving industry preparedness for future biosecurity threats.

Target organisms of the scheme include the following;

- Virus[1] (Cherry leaf roll virus), Actinidia seed-borne Latent Virus (previously known as Betaflexiviridae)
- Soil borne pathogens (*Ceratocystis fimbriata,* Verticillium wilt, *Phytophthora* sp.)
- Soil invertebrates (Root knot nematode)
- Bacteria (Psa, all forms)

The list of target organisms and associated controls is based on technical advice provided by Plant and Food Research.

Psa is included as a target organism and to prevent infection many nursery operators have opted to grow undercover. While covered systems are not required under the KPCS Standard, the current reality for nurseries located in close proximity to orchards with Psa-V, is that growing undercover is the most effective means to prevent Psa-V from entering their nursery and meet testing requirements. Covered nurseries, and those isolated from high levels of Psa-V inoculum are likely to opt for full certification by testing plants for all forms of Psa using the routine monitoring and testing procedure (described in the KPCS Standard). This is the cheapest testing option for nurseries and provides the greatest level of confidence in the health status of the plants. For more detail, see KVH best practice advice factsheet "the benefits of cover" (www.kvh.org.nz/vdb/document/100457).

To provide growers with the option of sourcing outdoor grown plants within a Recovery region an alternative Psa-V testing and monitoring option is available for movements "Restricted Certification" (see Section 2.5 below).

2.4. Monitoring and diagnostic testing

The KPCS Standard requires all nurseries to maintain a place of production free of all target organisms. Monitoring is an essential component of the scheme as it provides the operator with verification that controls are effective or if not an early indicator of a systems failure. For many organisms, early detection is critical to the likelihood of a successful eradication.

The KPCS Standard requires nurseries to conduct their own monitoring of plants on a regular basis. In addition, all nurseries will undergo annual independent monitoring that includes visual inspection (and in most circumstances diagnostic testing) to verify freedom from target organisms and associated symptoms. The list of target organisms for the Standard will be dynamic and evolve in parallel with our understanding of risk organisms. KVH will co-ordinate the independent monitoring and diagnostic testing components of the Scheme. Details are provided in the KPCS Standard.

2.5. "Restricted certification" (an alternative Psa-V testing option)

The KPCS "W*ithin Region Only*" option has been introduced as a result of industry feedback, to provide nurseries with a means of producing outdoor, field-grown plants in Recovery Regions. This option has been made possible through advances in testing capability; the ability to differentiate between the "common" form of Psa and other strains of more serious concern to the industry.

[1] Other viruses may also be added over time if found to be present in New Zealand and there is benefit to the industry in limiting their distribution.

These research developments provide an opportunity to refine the scheme and give growers more choice when sourcing plants, yet still manage our biosecurity risks across the supply chain.

Requirements for nurseries wishing to grow KPCS "Restricted Certification" plants;

- Meet all requirements of the KPCS Standard including internal and independent testing and monitoring requirements for other target organisms of the KPCS as these are developed.
- No requirement for absence of the "common" New Zealand strain of Psa-V;
- Must be absent of other Psa strains of concern to the industry. This includes Psa strains not known to exist within New Zealand and strains resistant to streptomycin or copper. As with all target organisms of the scheme, these may change over time to reflect changes in strain distribution, the emergence of new strains, and developments in testing capability.
- Plants are for movements to Psa-V positive orchards only. Testing costs are more expensive under this alternative option as there are a greater number of tests required than the routine testing procedure to verify absence of all forms of Psa. Exact pricing will vary depending on the number of tests required (the outcome of each test determines if further testing is required).

Nurseries choosing this certification option must be aware of the associated risk. Nurseries with outdoor, field production systems have little control over pests and pathogens. This is particularly true for those located in close proximity to kiwifruit orchards who are likely to be vulnerable to any biosecurity challenges that orchard is facing. Therefore, if a neighbouring orchard has a resistant or new form of Psa, an outdoor nursery in close proximity will have a difficult time keeping this threat out and maintaining their certification.

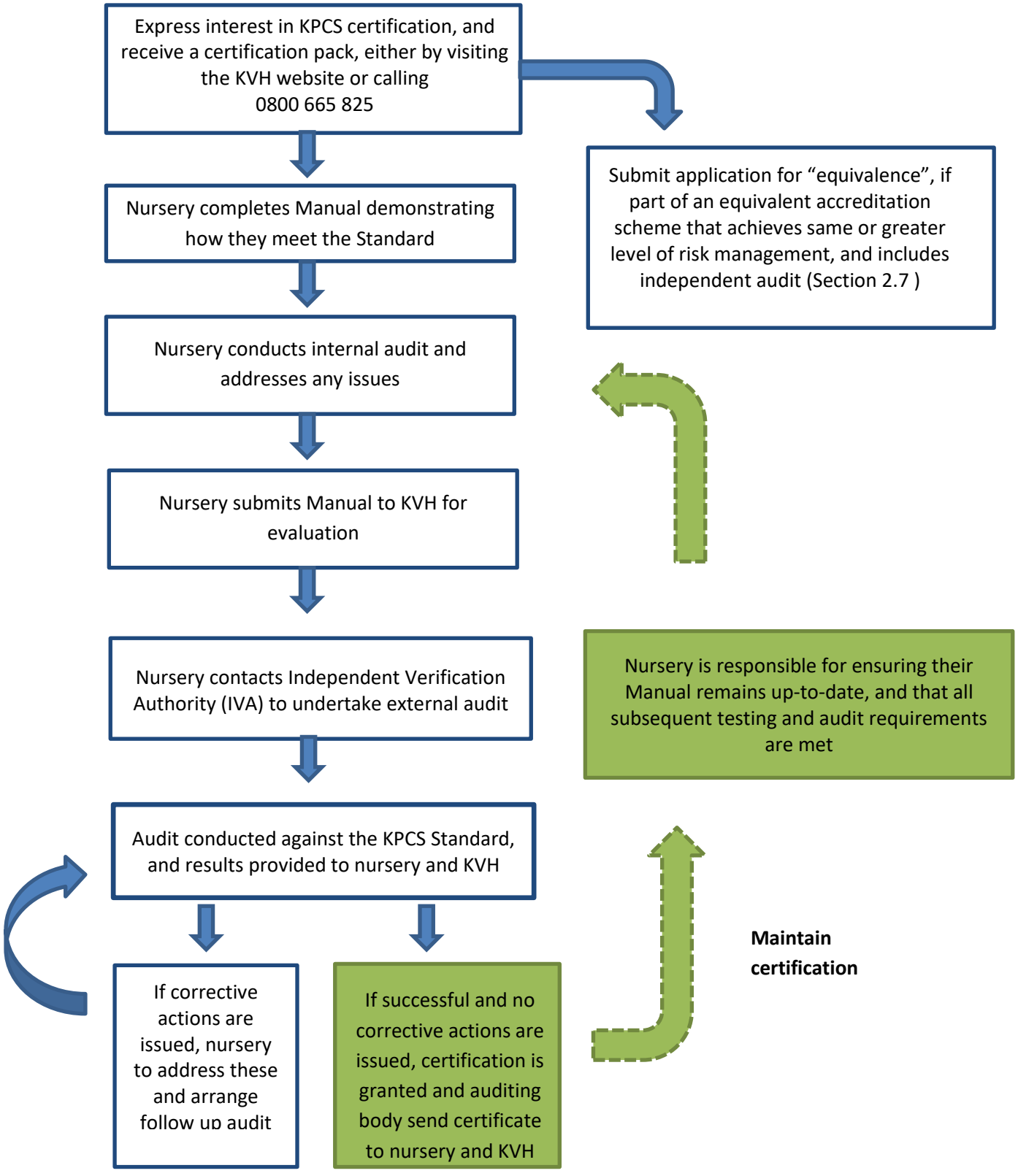
For this reason, KVH recommends growing KPCS "*Full Certification*" plants, as this option provides nurseries with the greatest control over risk. Nurseries that have the necessary protection, through isolation or cover, to produce plants free of all target organisms including Psa are in a good position to manage other biosecurity threats the industry might be challenged with, including new forms of Psa.

2.6. Certification Process

Features of the certification process include:

- Certification to the Standard is issued by KVH;
- Certification entitles a nursery to sell certified plants, labelled with the KPCS logo;
- To achieve initial certification, a nursery can either:
    - Complete the relevant Nursery Manual and implement systems and procedures in accordance with the Standard. The applicant then submits a copy of their Nursery Manual to KVH who will evaluate the Nursery Manual to ensure correct completion and highlight any aspects that require further improvement. Once KVH and the nursery are satisfied the Nursery Manual meets requirements of the Standard, the nursery can arrange an audit with an Independent Verification Agency (IVA) (a list of approved IVA's is maintained on the KVH website, www.kvh.org.nz/kpcs) ; or
    - Apply to KVH for "equivalence" where part of an equivalent scheme is recognised by KVH (refer to Section 2.7).
- To keep certification up-to-date a nursery must either:
    - maintain and implement an up-to-date Nursery Manual, including meeting testing and audit requirements, and provide a copy of testing and audit results to KVH; and
    - where KVH has recognised "equivalence", meet any testing or audit requirements required by KVH (to be assessed on case-by-case basis – refer to Section 2.7).
- Certification may be suspended by KVH where:
    - There is a significant outbreak of a high-risk pest or disease, this includes a nursery positive test for a target organism; or
    - Audit non-conformances are not rectified within the required timeframe. Details of audit non-conformances requiring corrective action and the required timeframe for completion are provided in the Standard.
    - Labelling and marketing requirements specified in Section 2.9 are breached.

The KPCS Certification Process



2.7. Recognising 'equivalence'

A nursery, or an accreditation scheme provider, can apply for KVH to recognise 'equivalence'; that is, where a nursery or nurseries are part of an alternative quality assurance scheme, which achieves the same or greater level of biosecurity risk management as the KPCS Standard, and where that scheme includes an independent audit requirement.

KVH will work with the nursery or nurseries concerned, and the scheme provider where appropriate, to compare standards and how the scheme operates to assess equivalence.

If KVH recognises "equivalence" in terms of risk management practices and site requirements, it will specifically look at the 'inspection', 'testing', 'audit' and 'site requirements' of the alternate scheme, and decide if any additional inspection, testing, audit and/or site requirements need to be met.

2.8. Audit

The KPCS Standard includes a requirement for an external audit by an Independent Verification Agency (unless otherwise agreed with KVH under an "equivalence" arrangement). Details relating to audit requirements are set out in within the Standard.

KVH will maintain integrity of the Scheme and the audit process to ensure audits deliver the outcomes expected and are consistent between nurseries. This will be achieved by either attending a number of audits alongside auditors, KVH conducting random audits or a combination of the two.

Performance based auditing for 'full certification" only
Audit frequency will be on a performance basis. After achieving certification audit frequency will be at fixed intervals for a period of two years for the nursery to establish performance history. Subject to the nurseries audit performance history, audit frequency may then be increased for poor performers or reduced for high performers.

2.9. Labelling and marketing

Certified plants are to be labelled with the KPCS "Full Certification "logo, or the "Restricted Certification" logo if produced using the alternative Psa-V testing option.

KVH will provide the relevant logo in electronic form, and this must be either included on existing physical plant labels or otherwise be physically attached to individual plants, lots or batches.

There are specific requirements for labelling, specified in the KPCS Standard. Under no circumstance shall any claim or inference be made that the nursery is itself certified, registered or endorsed by KVH.

Plants can be labelled individually or by lot or batch, provided that the method chosen prevents the possibility of confusion between KPCS "Full Certification ", "Restricted Certification" and non-certified plants (e.g. a batch physically contained in wrapping or within a container could be labelled at the batch level).

It is appropriate that the following claim be made for certified products and within region products respectively;

'*Certified to the Kiwifruit Plant Certification Scheme "full certification"* or
'*Certified to the Kiwifruit Plant Certification Scheme "Restricted Certification"*'.

This statement may be made on labels, packing slips, invoices, or similar documents. The wording shall be legible, in any font or colour, up to a maximum height of 10 millimetres.

Nurseries may use the following claim on promotional materials:

'Selected lots / batches of kiwifruit plants are certified to the Kiwifruit Plant Certification Scheme Standard'

Words similar to these may be used providing that:

- There is no doubt that in a reasonable reader's mind that certification only applies to selected / certified lots or batches; and
- There is no claim or inference that the nursery itself has been approved, certified or endorsed by KVH.

Nurseries are encouraged to check any varied use and/or wording with KVH, and to obtain written approval for the form of words proposed prior to committing to expenditure.

2.10. Compliance

All movements of kiwifruit plant material must comply with KVH protocols and movement controls, under the National Psa-V Pest Management Plan (NPMP). A summary of these can be found in the "KVH Protocol: Nursery Stock" on the KVH website (www.kvh.org.nz/indnurseries).

Serious non-compliance, or presence of a specified pest or disease within the nursery, will result in a temporary suspension of a nursery's ability to produce certified plants until the issues have been resolved.

Grower compliance when purchasing propagating materials will also be enforced through the NPMP. Following the conclusion of the transition period growers will be required to document where new propagating material has been sourced from and enforced as a GAP (Good Agricultural Practice) supply requirement.

All plant material movements must comply with KVH movement controls. These can be found on the "KVH Protocol: Nursery Stock" (www.kvh.org.nz/indnurseries).

2.11. Promoting the scheme and participating nurseries

KVH will promote the benefits of purchasing KPCS certified plants, and identify the nurseries that produce and sell certified plants, through its routine communication channels, including:

- The KVH Bulletin
- The KVH website, www.kvh.org.nz (including a list of nurseries that provide certified plants)

2.12. Revisions

Revisions to the Kiwifruit Plant Certification Scheme, including this Overview Paper and the Standard, will be on-going and KVH appreciates feedback that can be used to improve the Scheme. Those wishing to provide recommendations for change should send these in writing to Kiwifruit Vine Health or by email to info@kvh.org.nz Users should be aware that revised documents may become available in the future and ensure that they are referring to the most recent documents, available from the KVH website (www.kvh.org.nz/kpcs).

3. Glossary

Batch or lot

Plant material from a single source that is treated as one group for the purposes of production in the nursery.

Certified plants

Plants certified under the Kiwifruit Plant Certification Scheme

Cultivar

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

Target organisms

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

IVA

Independent Verification Agency.

Kiwifruit plant

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

Kiwifruit seed

Seed extracted from *Actinidia* species or cultivar for the purpose of producing rootstocks. In the broadest sense this definition includes the fruit from which the seed will be extracted**.**

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

Nursery

A nursery will be defined as any entity that grows *Actinidia* plant species to any age for sale or movement outside of the property.

Pest

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

Plant material

All seed, cuttings, scion wood, and rootstock used in the process of producing plants and the finished product

Polymerase Chain Reaction (PCR)

A technique to amplify DNA to determine whether a specific DNA sequence of interest is present in a sample

Propagative material

Includes all seeds, cuttings, scion wood and growing plants used in the propagation process

Psa-V

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

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.

You can access further information on the Kiwifruit Industry Plant Certification Scheme, including an application pack or other resources, at:

www.kvh.org.nz/kpcs