



KeyStrepto™ User Guide

September 2016



NOTE: This document provides guidelines for the use of KeyStrepto™ to assist in the control of PsA-V.

Background

KeyStrepto™ is registered in New Zealand for use against PsA-V. Bactericides are registered for use in Canada, United States and New Zealand against a range of bacterial diseases in horticulture, including fire blight in apples and pears. They have registration for PsA control in a number of Asian countries.

Bactericides are considered to be one of the most effective tools for protection against PsA-V in New Zealand. For information on efficacy refer to: www.kvh.org.nz/product_testing.

The active ingredient in KeyStrepto – streptomycin – is a bactericide used for disease prevention on fruit trees including apples, pears and kiwifruit in a number of countries. It is registered in New Zealand for use on apples, tomatoes and stonefruit.

While the Agricultural Compounds and Veterinary Medicines Group (ACVM) granted a Limited Label Claim for KeyStrepto for the control of PsA-V on kiwifruit vines, Zespri restricted its use to allowed under **Justified Approval (JA) only in 2016**.

Permission to use these products **ONLY AS A FOLIAR SPRAY** has been granted by ACVM with strict use conditions in KVH-approved regions – presently all North Island regions. Information on how to meet the

requirements for use is outlined in this document. Failure to comply with **all** requirements may result in compliance action. Applicators and growers may be subject to audits to check compliance with the requirements. To reduce residue risk and allay beekeeper concerns, KeyStrepto **cannot be used when vines are flowering** (male or female).

Zespri maintains a zero-residue policy for bactericide residues on fruit. Zespri will continue to run a comprehensive residue testing programme on every supplying orchard to ensure all fruit submitted into its inventory meets this requirement.

Using these products outside the controls and conditions of use outlined in this document and on the label may have adverse trade implications.

Infected plant material with secondary symptoms should be removed prior to spraying. Leaving secondary infection in place and spraying infected blocks will increase the risk of bacterial resistance.

Zespri is working to reduce industry reliance on bactericides and ensure use of these products is managed as part of an integrated pest and disease management (IPM) strategy. As a result, **KeyStrepto was removed from the Zespri Crop Protections Standard for the 2016/2017 season**.

GROWERS ARE RESPONSIBLE FOR REVIEWING, UNDERSTANDING AND COMPLYING WITH ALL APPLICABLE REQUIREMENTS FOR USE OF BACTERICIDES. INJECTION OF ANY BACTERICIDE IS NOT PERMITTED.

The orchard owner/manager/applicator is responsible for management and use of the products. Failure to comply with requirements may result in compliance action.

- **KeyStrepto is not allowed except under Justified Approval (JA) only.**
- Zespri is introducing an IPM approach to PsA management and the person must complete an [Orchard PsA IPM Strategy](#) before applying KeyStrepto and register an [Intent to Spray](#) for each application.
- No more than two consecutive applications of a PsA protectant product should be applied without using a different product.
- Best used in high-risk PsA-V spread situations, e.g. prior to prolonged leaf wetness or directly after rain and wind.
- Most efficacious when applied immediately before or after a high-risk weather event. Moderately rainfast, can be enhanced with specialist adjuvants.
- KeyStrepto leaves persistent residues and **must not** be applied when open flowers or fruitlets are present.
- Applications of KeyStrepto is permitted in the bud-phase under **JA only**.
 - **Producing and non-producing vines** – KeyStrepto can be used on producing and non-producing vines **from budbreak until seven days before flowering (male or female) under JA only**.
- **All nozzles with a suitable drift-reducing adjuvant must** be used until canopy closure.
- **Must be applied at the label rate** (for concentrate spraying adjust rates accordingly). Refer to the [Spray Tech Box](#) on the Canopy for sprayer setup and calibration setting.
- May only be applied as a foliar spray by ground-based methods – i.e. not aerial application. **No other methods of application are allowed; this includes no injection of any kind, e.g. no trunk injection or drip injection.**
- Must not be used in blocks which are accessible by livestock or have crops other than kiwifruit present.
- Open flowers should be kept to an absolute minimum in the sward by mowing and/or applying herbicides if required.
- Wear personal protective equipment when applying KeyStrepto (refer to Material Data Safety Data Sheet or product label).
- A re-entry period of **24 hours** applies to KeyStrepto.

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Conditions of use and orchard best practices:

	Required actions	Orchard best practice
Pre-Spraying	<ul style="list-style-type: none"> ● If you do not have a KPIN, contact KVH on 0800 665 825 or info@kvh.org.nz to discuss the conditions of use. ● Ensure the applicator has a current GROWSAFE certificate and the sprayer is appropriately set up and calibrated. ● Complete an Orchard Psa IPM Strategy and submit to Zespri by 1st October 2016. <ul style="list-style-type: none"> ○ If not completed online, submit to Zespri via email, fax or mail (details are listed on the form). ● Review your need to apply bactericides using the KVH Psa Risk Compass ● Complete a Justified Approval (JA) form and submit to Zespri for approval. 	<ul style="list-style-type: none"> ● Apply as part of a Psa control programme with other proven agrichemicals and cultural control tools. Using different modes of action will improve control. Refer to the most recent KVH <i>Psa-V Best Practice Guide</i> (www.kvh.org.nz/seasonal_advice). ● Best applied as a preventive spray before symptoms are seen. ● Remove secondary symptom material from vines that have Psa-V infection (see KVH <i>Cutting and Removal</i> factsheet at www.kvh.org.nz/vine_removal)

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	Required actions	Orchard best practice
Preparing for Spraying	<ul style="list-style-type: none"> ● Notify neighbours at least 12 hours (preferably 48 hours) before spraying or in compliance with your local regional air plan requirements. ● Open flowers in the sward should be minimised prior to each application. <ul style="list-style-type: none"> ○ If herbicides are likely to be required, plan ahead and apply early to remove nectar-bearing buttercup/clover from the orchard floor. ○ Check the Crop Protection Standard (CPS) for permitted herbicides – a Justified Approval (JA) is required for herbicides not listed in the CPS, including those required for broadleaf weeds. ● Open flowers in the shelter must also be minimised including weeds and creepers. ● If significant numbers of flowers are present on non-target plants such as shelter or sward, KeyStrepto must not be used. ● Ensure the applicator has read and understood the KeyStrepto User Guide. ● Only mature fruit post-harvest (e.g. reject fruit) from vines treated in accordance with the allowed use pattern may be used as stock feed. ● Ensure no other crops are present within blocks to be sprayed at the time of application (e.g. no inter-row cropping is allowed). ● AgFirst will randomly audit KPINs applying this agrichemical targeting spring applications. ● Fill out Part A of the Site Inspection Record (available at the end of this document) before each KeyStrepto application. Records must be retained for a minimum of four years. ● Once the Part A of the Site Inspection Record is complete, register your Intent to Spray on the Canopy or KVH website. <ul style="list-style-type: none"> ○ Note – by registering your intent to spray, you confirm you have adhered to the ACVM conditions of use, including eliminating flowers from sward/shelter and that there are no kiwifruit flowers open in the canopy. ○ Orchards may be selected for random audit to ensure ACVM conditions of use are met. 	<ul style="list-style-type: none"> ● If any open male or female kiwifruit flowers are present, KeyStrepto must not be applied. <i>KeyStrepto can only be applied until 7 days before the first flowers, male or female, appear.</i> ● Mowing the orchard to minimise flowers in the sward is strongly recommended. ● Open flowers in the shelter including weeds and creepers must also be minimised. ● Apply before high-risk weather events. ● Refer to the latest KVH Psa-V Best Practice Guide and Best Practice Spraying Guidelines. ● Ensure sprayer will achieve complete coverage. ● Signs must be out 24 hours prior to spraying. ● Where there is no/incomplete shelter; a buffer zone of at least 30 metres should be observed. ● Ensure AI nozzles are fitted to the sprayer

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	Required actions	Orchard best practice
Spraying	<ul style="list-style-type: none"> Ensure the application is compliant with the Zespri Crop Protection Standard. The label application rate must be used for all sprays (if concentrate spraying adjust rates accordingly). Ensure good spray coverage is achieved throughout the season. May only be applied as a foliar spray by ground-based methods. No other methods of application are allowed; this includes no injection of any kind, e.g. no trunk injection or drip injection. Must not be applied to flowers or fruit. This includes male flowers. All practical measures must be taken to minimise spray drift. <ul style="list-style-type: none"> AI nozzles with a suitable drift-reducing adjuvant must be used until canopy closure. 	<ul style="list-style-type: none"> Do not spray if drift is likely. Use alternative products if there is any risk of spray drift. Be particularly careful to avoid drift onto producing kiwifruit, avocados and other crops as drift may create serious residue issues. When applying KeyStrepto AI nozzles and a suitable drift-reducing adjuvant must be used. Later applications in the pre-flowering period should use AI nozzles as research has shown coverage is not compromised. Refer to 'Dormant and Early Season Application' KiwiTech Bulletin N98. Avoid water volumes which will result in excessive runoff. <ul style="list-style-type: none"> For non-producing vines, dilute spray volume will change as the canopy develops. Follow Zespri's Best Practice Spraying Guidelines. Refer to the Zespri CPS and KiwiTech Bulletins on best practice spraying.
Post Spraying	<ul style="list-style-type: none"> Fill in the Part B of the Site Inspection Record (available at the end of this document). All applications must be recorded in the Zespri spray diary within seven days of application (including applications to non-producing vines). There is a 24-hour Restricted Entry Interval (REI). Notify neighbours and Zespri immediately if spray drift occurs. Notification of any incidence which may have resulted in residues to fruit must be reported immediately to Zespri. No grazing for 3 months after application. In some cases, newly-grafted vines may bear a limited number of fruit. Any fruit from these vines must be destroyed and must not be used for human or animal consumption. Reduce risk of tank contamination causing residues to fruiting blocks by ensuring tanks are thoroughly cleaned after application to remove all product. 	<ul style="list-style-type: none"> Record safe re-entry date on orchard signage.

Managing resistance risk – to manage the risk of resistance developing in Psa, refer to KVH's Best Practice Advice - Management to limit resistance to Psa control products.

- Monitor vines regularly for signs of Psa infection
- Regularly remove Psa-V infected material from infected blocks to prevent excessive Psa-V inoculum build-up.
- Maintain a comprehensive Psa-V management programme all year round including cultural/non-chemical methods of Psa control
- Use a range of proven agrichemicals with different modes of action in spray programmes. Do not rely on bactericides alone.
- A tank mix with a proven copper product is acceptable.
- Use only during high-risk periods.
- Ensure good spray coverage is always being achieved.
- Always follow label recommendations.
- At the first sign of lack of efficacy, the use of KeyStrepto should be suspended until the presence or absence of resistant strains of the pathogen can be confirmed – advise KVH and/or Zespri immediately.

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KeyStrepto™ Site Inspection Record

The completion of this form is a requirement of the ACVM Group of MPI and must be completed by the person responsible for the orchard or nursery before each KeyStrepto™ application.

A record of this application must be retained for four years and may be audited by MPI. Zespri growers should retain this as part of their GAP records.

Part A – Site Inspection Record (To be completed by the Orchard Manager prior to each application)

The site where the product is to be used is within a KVH-approved region.	<input type="checkbox"/>
I have read and understood the KeyStrepto User Guide and agree to adhere to the ACVM conditions outlined for the area being sprayed including:	<input type="checkbox"/>
1. No livestock access possible.	<input type="checkbox"/>
2. No non-target crops are within the spray block (or nearby if exposure to drift is a risk).	<input type="checkbox"/>
3. Neighbours and beekeepers with hives on the property being treated will be/have been notified at least 12 hours prior to application (neighbours with hives should notify their beekeepers of your intention to spray).	<input type="checkbox"/>
4. Beehives are removed or covered until after the spray has dried.	<input type="checkbox"/>
5. All practical steps have been taken to remove flowers from the shelter and sward including (please tick applicable): <input type="checkbox"/> No action required <input type="checkbox"/> Weed strip mowed <input type="checkbox"/> Herbicide sprayed If herbicide, please record name of herbicide and date of application: Herbicide name: _____ Date of application: _____	<input type="checkbox"/>
6. No open male or female kiwifruit flowers are present.	<input type="checkbox"/>
7. Spray applications are managed to ensure no spray drift outside the block	<input type="checkbox"/>

Signed: _____ Name: _____ Date: _____

Part B – Application Record (To be completed by the person responsible for the orchard or nursery following each application – Note: Zespri growers to also record application in Zespri Spray Diary)

Orchard name: _____ KPIN: _____

Orchard address: _____ Block(s): _____

User's name: _____ Address: _____

Batch number of product used: _____

Date of application: _____ Time of application: _____

Product rate: _____ Water rate: _____

Details on measures taken to mitigate spray drift: _____

Please record any accidental misuse/non-compliances on the other side of the form (including who you contacted to advise)

Signed: _____ Name: _____ Date: _____