

## BACKGROUND

Kasumin® is a bactericide registered for the control of Psu-V on kiwifruit vines in New Zealand. The active ingredient in Kasumin® - kasugamycin - is used only on plant-based bacteria and fungi and has no applications in human or veterinary health. It is used in 20 countries on crops including tomatoes, paprika, eggplants, rice and potatoes against a range of bacterial diseases in horticulture.

The Agricultural Compounds and Veterinary Medicines Group (ACVM) granted a Full Label Claim and permission to use Kasumin® only as a foliar spray with strict use conditions in KVH-approved regions - presently all North Island regions.

## MINIMISING USE

Zespri is working to reduce industry reliance on bactericides and ensure use is managed as part of an integrated pest and disease management (IPM) strategy. As a result, a maximum of two bactericide applications are permitted per season. Also, only one Kasumin application is allowed in the Crop Protection Standard (CPS), so a second Kasumin application of Kasumin may only be used under Justified Approval (JA).

After years of research and development we have a toolbox of products for managing Psu, and our understanding of appropriate plant husbandry has progressed significantly. Research projects, reports and case studies are available [here](#).



[LABEL](#) [TECHNOTE](#)  
[SDS](#) [HAZNOTE](#)

## PROCESS OVERVIEW (Click to open website links)

### PLAN

- ✓ Monitoring rounds
- ✓ Orchard hygiene
- ✓ Use various products and cultural controls
- ✓ [Psa risk model](#)
- ✓ Justified Approval (2<sup>nd</sup> application)
- ✓ [OPIS survey and Intent to Spray](#)
- ✓ Allow for spray date 21+days before flowering

### PREPARE

- ✓ Remove infected material
- ✓ Minimise flowers in shelter and sward
- ✓ No other crops or livestock
- ✓ Site Inspection Record Part A
- ✓ Notify neighbours and signs out before spray (check regional requirements for timing and content)
- ✓ [Agchem management checklist](#)
- ✓ Applicator is qualified, read and understands all use conditions and Property Spray Plan.

### SPRAY

- ✓ 21days before 1<sup>st</sup> flowers open
- ✓ Label rate
- ✓ Minimise drift: AI nozzles and drift-reducing adjuvant
- ✓ Good coverage

- ✗ No injection
- ✗ No flowers in sward, shelter or canopy

### POST-SPRAY

- ✓ Site Inspection Record Part B
- ✓ Record in Spray Diary within 7 days
- ✓ Signs down 5 days after REI ends
- ✓ Notify Zespri if drift or tank contamination occurred
- ✓ Clean the tank
- ✓ Zespri random orchard audit

## ACCOUNTABILITY

The GAP Management System Owner and applicator are responsible for understanding and complying with all conditions of use in this document and on the label. Failure to comply with all requirements may result in compliance action and adverse trade implications. Zespri randomly audits KPINs after bactericide applications, and applicators may be subject to audits to check compliance with requirements.

Zespri maintains a zero-residue policy for bactericide residues on fruit. Every supplying orchard receives an antibiotic residue test and fruit that does not meet this requirement will not be accepted into Zespri inventory. To reduce residue risk and allay beekeeper concerns, Kasumin® cannot be used 21 days before the first male or female kiwifruit flowers open in or near to producing blocks.

## MANAGING RESISTANCE RISK

Bactericides must only be used in high-risk Psu-V spread situations, e.g. prior to prolonged leaf wetness or directly after rain and wind. There must be a comprehensive Psu-V management programme, with cultural controls and products that have different modes of action.

Monitor vines regularly and remove Psu-V infected material to prevent excessive Psu-V inoculum build-up. Doing this before applying a bactericide reduces the risk of resistance developing.

Kasumin® must be applied at label rates, ensuring good spray coverage is achieved. If lack of efficacy is suspected, contact KVH and/or Zespri who can arrange testing to check for product resistance.

# KASUMIN® USER GUIDE

## ZESPRI & ACVM CONDITIONS OF USE AND ORCHARD BEST PRACTICES

	REQUIRED ACTIONS		BEST PRACTICE	
PLANNING	<ul style="list-style-type: none"> <li>★ If you do not have a KPIN <a href="#">or are a nursery</a>, contact KVH on 0800 665 825 or <a href="mailto:info@kvh.org.nz">info@kvh.org.nz</a> to discuss the use conditions.</li> <li>★ Consider the orchard risk of Psa then consult the <a href="#">KVH Kiwifruit PSA risk model</a> to identify upcoming Psa risk <i>due to weather</i> and assess the need to apply a bactericide.</li> <li>★ A maximum of two bactericide applications are allowed per season. These may both be Kasumin®. The second application requires approval from Zespri via a <a href="#">Bactericide Justified Approval Request form</a> (JA).</li> <li>★ Application to producing blocks must be no later than 21 days before first flowers open to minimise risk of residues. Consider likely flowering dates of target and neighbouring blocks. Application to non-producing vines throughout the season is allowed provided they are not in flower, no producing vines are in the same block (or may otherwise be exposed) and no drift onto producing vines can occur.</li> <li>★ Complete an <a href="#">OPIS Survey and Intent to Spray</a> online form. The OPIS Survey must be completed for each KPIN variety. The Intent to Spray must be completed for each bactericide application.</li> </ul>		<ul style="list-style-type: none"> <li>★ Complete monitoring rounds. Ensure appropriate hygiene practices are implemented and equipment is available. Refer to <a href="#">Psa-V Orchard Management Plan</a>.</li> <li>★ Use the <a href="#">KVH Psa risk compass</a> to develop Psa management strategies suited to your orchard.</li> <li>★ Apply as part of a comprehensive Psa-V management programme, including products with different modes of action and cultural controls. See the <a href="#">KVH Psa-V Best Practice Guide</a> and the Kiwiflier <a href="#">Spotlight on Psa: Are you Maximising your Psa programme's potential?</a></li> <li>★ Best applied as a preventive spray before symptoms are seen.</li> </ul>	
	<p><b>NOTE - By registering your intent to spray, you confirm that you have adhered to all conditions of use</b></p>			
REPARING FOR SPRAYING	REQUIRED ACTIONS		BEST PRACTICE	
	<ul style="list-style-type: none"> <li>★ Notify neighbours <a href="#">and beekeepers with hives on the property</a> at least 12 hours (preferably 48 hours) before spraying and in compliance with local requirements.</li> <li>★ Orchard signage <a href="#">must be visible at all access points to the orchard</a>, out before spraying <a href="#">and in compliance with the local requirements</a>. This will include when the signs must be displayed (e.g. 24 hours prior to spraying), spray type, date, times, safe re-entry time/date, applicator name and phone number.</li> <li>★ Open flowers in the sward must be minimised prior to each application. If using a herbicide, apply early to remove nectar-bearing buttercup/clover from the orchard floor. See the <a href="#">Crop Protection Standard (CPS)</a> for permitted herbicides.</li> <li>★ Open flowers in the shelter must also be minimised including weeds or creepers.</li> <li>★ Ensure no other crops are present within blocks to be sprayed.</li> <li>★ Ensure no livestock can access the blocks to be sprayed.</li> <li>★ <a href="#">Ensure beehives are covered/removed until spray deposits have dried</a>.</li> <li>★ Fill out Part A of the Site Inspection Record (available on page 4) before each Kasumin® application. Records must be retained for a minimum of four years.</li> <li>★ Ensure the applicator has a current GROWSAFE certificate and the sprayer is appropriately set up and calibrated. Ensure the applicator has read and understood the Kasumin® User Guide <a href="#">and the orchard's current Property Spray Plan</a> (how any adverse effects from the spray will be avoided or minimised).</li> </ul>		<ul style="list-style-type: none"> <li>★ Remove Psa infected material. See <a href="#">KVH Cutting and Removal factsheet</a>.</li> <li>★ Mowing and/or applying a herbicide is recommended.</li> <li>★ Where there is no or incomplete shelter; plan for a 30m buffer zone to be observed.</li> <li>★ <a href="#">Ensure the spray contractor or applicator has completed the Agrichemical Management Checklist</a>.</li> </ul>	

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## ZESPRI & ACVM CONDITIONS OF USE AND ORCHARD BEST PRACTICES

SPRAYING	REQUIRED ACTIONS	BEST PRACTICE
	<ul style="list-style-type: none"> <li>★ If any open male or female kiwifruit flowers are present, or significant numbers of flowers are present on non-target plants such as shelter or sward, Kasumin® must not be used.</li> <li>★ Application must be compliant with the <a href="#">Zespri Crop Protection Standard</a> (CPS) and the product <a href="#">label</a>. This includes rates which should be adjusted accordingly if concentrate spraying. Ensure good spray coverage is achieved.</li> <li>★ 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.</li> <li>★ All practical measures must be taken to minimise spray drift, including the use of AI nozzles and a suitable drift-reducing adjuvant. Refer to <a href="#">KiwiTech Bulletin N98</a>.</li> <li>★ Wear the appropriate personal protective equipment.</li> </ul>	<ul style="list-style-type: none"> <li>★ Do not spray if risk of spray drift. Use alternative products.</li> <li>★ Avoid water volumes which will result in excessive runoff.</li> <li>★ Adjust spray volume to match the canopy stage.</li> <li>★ Refer to <a href="#">Spraying Best Practice</a>.</li> </ul>
AFTER SPRAYING	REQUIRED ACTIONS	BEST PRACTICE
	<ul style="list-style-type: none"> <li>★ Notification of any breach of the controls or any incidence which may have resulted in residues to fruit (e.g. spray drift or tank contamination) must be reported immediately to Zespri. Neighbours must also be notified immediately if spray drift occurs.</li> <li>★ Ensure all tanks, lines and nozzles are thoroughly cleaned after application to reduce risk of tank contamination causing residues.</li> <li>★ There is a 48-hour Restricted Entry Interval (REI) and gloves must be worn if handling the crop in the next five days to prevent skin contact.</li> <li>★ If there is significant rain within 24 hours of a spray being applied, discuss with Zespri whether a second spray is necessary.</li> <li>★ Fill in the Part B of the Site Inspection Record (available on page 4).</li> <li>★ KPINs will be randomly audited after applying this agrichemical.</li> <li>★ All applications must be recorded in the <a href="#">Zespri Spray Diary</a> within seven days of application (including applications to non-producing vines).</li> <li>★ Evidence must be provided during GAP audit of the use of AI nozzles and drift reducing adjuvants.</li> <li>★ No grazing for 12 months after application.</li> <li>★ 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. 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.</li> </ul>	<ul style="list-style-type: none"> <li>★ Remove orchard signage 5 days after re-entry date.</li> </ul>

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# KASUMIN® SITE INSPECTION & APPLICATION RECORD

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

The site where the product is to be used is <u>Psa positive and is in the North Island Recovery region.</u>	<input type="checkbox"/>
I have read and understood the Kasumin® 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): No action required <input type="checkbox"/> Weed strip mowed <input type="checkbox"/> Herbicide sprayed <input type="checkbox"/> 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 after each application.

Note: Zespri growers to also record application in Zespri Spray Diary within 7 days of spray application.

Orchard name: \_\_\_\_\_ KPIN: \_\_\_\_\_

Orchard address: \_\_\_\_\_ Block(s): \_\_\_\_\_

Applicator name: \_\_\_\_\_ Contractor 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: \_\_\_\_\_