National Wild Kiwifruit Vine Control Programme

GOOD PRACTICE GUIDELINES FOR WILD KIWIFRUIT VINE CONTROL

Recommended methods, equipment, and herbicides

KVH
KIWIFRUITVINEHEALTH

CONTENTS

1. ABOUT THIS DOCUMENT

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This document should be read in conjunction with:
WorkSafe - Hazardous substances
WorkSafe - Working safely with chemicals and fuels on farms

This document is a guideline and all work carried out must comply with:
Health and Safety at Work Act 2015
Health and Safety at Work (Hazardous Substances) Regulations 2017

2. INTRODUCTION

Wild kiwifruit vines are defined as any plant of the *Actinidia* genus growing on private or public land that has established through self-propagation.

Where fruit is discarded by humans, or where birds deposit seeds, wild kiwifruit can germinate. Birds commonly feed on kiwifruit that is left out on vines, in reject bins or on paddocks for stock feed. They then spread the seed that grows into wild kiwifruit vines in areas of native bush, forestry plantations, and gullies and shelterbelts near orchards or farms.

The reason wild kiwifruit vines are a biosecurity risk to New Zealand's kiwifruit industry is that they act as a vector for *Pseudomonas syringae pv. Actinidiae* (Psa) and other kiwifruit pests and diseases. The wild population can act as a reservoir for biosecurity threats, undermining eradication, and control efforts on commercially productive vines. Psa has serious economic implications for the kiwifruit industry and the economies of areas that are heavily reliant on it for jobs and income.

Wild kiwifruit vines are vigorous climbers, and if left uncontrolled, it can form dense heavy blankets of vines that strangle trees, causing them to die or collapse. Vines can also smother forestry plantations and New Zealand's native bush.

Two main methods are used to control wild kiwifruit vines. The preferred and most effective method is stump treatment, this is best suited to infestations where stems can be located, and vines are growing up trees. For large infestations where individual vines are difficult to locate, cutting, rolling and spraying vines is an effective treatment.

These guidelines have been developed to share over 20 years of experience of wild kiwifruit vine control in the Bay of Plenty region of New Zealand. The intention is to work towards a consistent national approach to effectively manage and reduce the wild population of kiwifruit vines.

3. MATERIALS

3.1 Equipment recommendations

Equipment type	Recommendations	Important considerations
Cutting	Machete, loppers, secateurs, handsaw, or chainsaw.	Ensure appropriate training is available to staff for all equipment.
Herbicide application	A bottle fitted with an applicator brush; or A handheld sprayer; or A backpack applicator; or A spray unit	All application equipment must comply with the Health and Safety at Work (Hazardous Substances) Regulations 2017.
Personal Protective Equipment	If using loppers or secateurs: • Boots with ankle support that are appropriate for the terrain • Safety glasses • Gloves If using a machete or handsaw: • Long pants or knee length gators • Boots with ankle supports that are appropriate for the terrain • Safety glasses • Gloves If using a chainsaw: • Chaps or chainsaw protective pants	Always follow guidance on the Safety Data Sheet (SDS). Note: This list is not exhaustive, always consider site specific risks and use appropriate equipment suited to the individual site's environment.

	• Chainsaw resistant boots with steel-capped toes • Face visor/safety glasses • Hearing protection • Safety Helmet • Radio communication When handling, mixing, or applying herbicide, or when cleaning associated equipment: • Safety glasses • Chemical resistant gloves • Waterproof boots • Cotton overalls fastened up to the neck and wrist (if spraying herbicide) • Mask or respirator	
Other	A fire extinguisher for chainsaw operators only. A first aid kit with saline eye wash and two large wound dressings.	Wherever the fire risk is above 'low' on the Fire Danger Class System, fire extinguishers should be carried.

4. HERBICIDE USE

4.1 Training

General instruction, supervision and training requirements are provided in the Health and Safety at Work (General Risk and Workplace Management) Regulations. The Hazardous Substances Regulations go further to state what a business needs to do to ensure that every worker who uses, handles, manufactures or stores a hazardous substance has the knowledge and practical experience to do so safely.

Employers have a duty to train employees (or make sure someone who is trained supervises them) so they can do their work safely. The site lead, or equivalent role, must make sure that everyone using chemicals is appropriately trained.

4.2 Recommended herbicide

Herbicides containing the active ingredient Picloram as a minimum are recommended for use in the control of wild kiwifruit vines. Note, a Growsafe Standard Certification is required for any worker using herbicides containing Picloram.

Prior to application always refer to and follow the directions of the products Safety Material Data Sheet.

	Picloram gel form	**Picloram liquid form**	**Adjuvant**
Situation of Use	All *Actinidia* species. Follow label recommendations for application use.		Reduce spray drift and increase plant cover.
Active ingredient strength	43g/kg picloram or stronger.	100g/litre picloram or stronger .	Not applicable.
Recommended mixing	No mixing required, apply neat directly from bottle.	Follow recommended label rates for handheld applicator, knapsack, and spray unit.	Check for compatibility in the first instance and follow label rates.

5.STUMP TREATMENT METHOD

5.1 Timing

This is the preferred method of control and the most effective at controlling infestations.

The stump treatment method can be used throughout the year. For best results it is recommended that control is undertaken from Spring to Autumn while vines are actively growing, to maximise herbicide uptake and translocation.

5.2 Methodology

<u>CUTTING</u>

- Expose stump and roots by clearing surrounding soil and ground litter.
- For smaller vines cut the stump using a handsaw, loppers or secateurs. For larger vines use a chainsaw.
- Cut the stump as close to the ground as possible, ideally no higher than 10cm, although this may not be possible on steep terrain.
- Try to achieve a clean cut. Cut the stumps so they are approximately level to facilitate uniform coverage of the herbicide mixture.
- After cutting the stump, scrape outer bark of roots to expose flesh for herbicide application.

Image: Roots and stump dug out and exposed

Image: Outer bark of roots removed to expose flesh for herbicide application.

HERBICIDE APPLICATION

- Remove any sawdust from stumps before applying herbicide to maximise uptake.
- Apply herbicide immediately after cutting.
- The preferred application is using a pressurised backpack sprayer at very low pressure or a spray bottle to apply the herbicide mixture. A herbicide gel product with a brush top that directly applies the herbicide to the cut stump can alternatively be used.
- Apply herbicide to the cambium layer just inside the bark and the remaining bark to the ground line, including the root collar and any exposed roots.
- For stems smaller than 8cm in diameter, treat the entire stump surface. For larger stems, apply the herbicide to the outer 20% of the stump. The cambium area next to the bark is the most vital area to cover with herbicide.
- If regrowth occurs, follow up treatment should include any living parts of a treated stump, exposed roots and re-sprouted stems.

Image: Herbicide being applied to an exposed root system using a handheld spray bottle.

STACKING

- The purpose of stacking is to prevent cut vines from regrowing and setting root.
- Clear an area to stack the cut vines off the ground as best as possible. Terrain will often dictate the practicality of stacking.

Images: Cut and stacked vines which will prevent regrowth

6. CUT, CLEAR & SPRAY METHOD

6.1 Timing

This is a method reserved for large infestations of matted vines where locating and treating individual vines one by one is impractical.

Spraying is recommended to be undertaken while vines are actively growing from Spring to Autumn to maximise herbicide uptake and translocation. Avoid broadcast spraying during the vines winter dormancy period, June to August.

Field observations have shown that spraying is not as effective as the stump treatment method. Warning: Spraying is known to clear space for other weed species to invade, making follow up control more difficult.

6.2 Methodology

<u>CUTTING & CLEARING</u>

- Use a chainsaw to cut vines in large, matted areas to clear for spraying. As area is cleared, roll the vines into a ball, and continue to cut and roll until the entire area is cleared.
- Cut stumps as close to the ground as possible, ideally no higher than 10cm, although this may not be possible on steep terrain.
- Try to achieve a clean cut. Cut the stumps so they are approximately level to facilitate uniform coverage of the herbicide mixture.

Image: A large, matted infestation being cleared prior to herbicide application.

HERBICIDE APPLICATION

- Remove any sawdust from stumps before applying herbicide to maximise uptake.
- Apply herbicide immediately after cutting vines to the general area and to vines which have been rolled into piles.
- The preferred application is using a pressurised backpack sprayer at very low pressure. A spray unit can also be used to apply the herbicide. Warning: be mindful of spray drift, especially when working in close proximity to orchards. And always check for waterways prior to broadcast spraying.
- Apply herbicide to the cambium layer just inside the bark and the remaining bark to the ground line, including the root collar and any exposed roots.
- For stems smaller than 8cm in diameter, treat the entire stump surface. For larger stems, apply the herbicide to the outer 20% of the stump. The cambium area next to the bark is the most vital area to cover with herbicide.
- If regrowth occurs, follow up treatment should include any living parts of a treated stump, exposed roots and re-sprouted stems.

Image: A matted infestation site cleared and ready for herbicide application. See the vines rolled into a pile to the right.

7. REFERENCES

Bay of Plenty Regional Council (February, 2022), *Pests of the Bay of Plenty – A user guide to the Bay of Plenty Regional Pest Management Plan 2020-2030*. https://atlas.boprc.govt.nz/api/v1/edms/document/A4085091/content.

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