



CENTRE FOR  
INVASIVE SPECIES SOLUTIONS

## BEST PRACTICE MANAGEMENT FOR THE CONTROL OF rubber vine (*Cryptostegia grandiflora*)

ADDENDUM TO THE WEEDS OF NATIONAL SIGNIFICANCE RUBBER VINE MANAGEMENT MANUAL



## **weeds.org.au**

This publication is licensed under a Creative Commons Attribution 4.0 International license, except for photographic and graphical images contained within it. Photographs and other graphical material must not be acquired, stored, copied, displayed and printed or otherwise reproduced — including by electronic means — for any purpose unless prior written permission has been obtained from the copyright owner.

Copyright of photographs and other illustrations is variously owned by Invasive Animals Ltd, individuals and corporate entities. For further details, please contact the Communications and Marketing Manager, Centre for Invasive Species Solutions.

The Creative Commons Attribution 4.0 International license allows you to copy, distribute, transmit and adapt material in this publication, subject to the exception for photographic and other graphic material set out above, and provided you attribute the work as shown below. The license does not transfer ownership of the copyright. A summary of the license terms is at: <https://creativecommons.org/licenses/by/4.0/>

© Invasive Animals Ltd

**Citation:** Wild Matters (2023). *Best practice management for the control of rubber vine (Cryptostegia grandiflora); Addendum to the Weeds of National Significance rubber vine management manual*. A Weeds Australia publication, report to Centre for Invasive Species Solutions.

Print ISBN: 978-1-922971-63-0

Web ISBN: 978-1-922971-62-3

**Published by:** Centre for Invasive Species Solutions

The Centre for Invasive Species Solutions gratefully acknowledges the funding support for this publication through the Australian Government Department of Agriculture, Fisheries and Forestry.

The Centre also acknowledges Wild Matters as the primary author and thanks those who made technical contributions and reviewed the publication, including:

- Dr Wayne Vogler, Principal Scientist, Tropical Weeds Research Centre, Biosecurity Queensland
- Dr Shane Campbell, Senior Lecturer, Pasture Science and Agronomy, School of Agriculture & Food Sciences, The University of Queensland
- Andrew Storrie, Agronomo Consulting
- Royce Holtkamp, Ecological Horizons, Chair NSW Biocontrol Taskforce
- Kerinne Harvey

**Disclaimer:** The information contained in this publication has been prepared with care and is based on knowledge and understanding at the time of writing (2023). Some of the information in this document is provided by third parties, and all information is provided “as is”, without warranty of any kind, to the extent permitted by law. After publication, circumstances may change and before relying on this information the user needs to take care to update as necessary.

**NO PRODUCT PREFERENCES:** The product trade names in this publication are supplied on the understanding that no preference between equivalent products is intended and that the inclusion of a product name does not imply endorsement over any equivalent product from another manufacturer.

**ALWAYS READ THE LABEL:** Users of agricultural chemical products must always read the label and any permit, before using a product, and must strictly comply with the directions on the label and the conditions of any permit. Users are not absolved from compliance with the directions on the label or the conditions of the permit by reason of any statement made or not made in this publication.

This publication was funded by



**Australian Government**

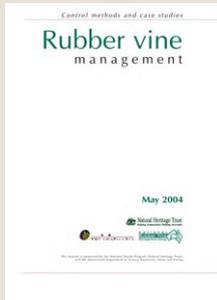
**Department of Agriculture,  
Fisheries and Forestry**

## **Cover images**

Front — Rubber vine. Image by Joe Vitelli © Department of Agriculture and Fisheries (Queensland).

Back — Mechanical control. Image by Joe Vitelli, Department of Agriculture and Fisheries (Queensland).

# How to use this addendum



The [rubber vine management manual](#) (PDF, 9.2 MB) was published in 2004 and provides information on the weed and best practice management options. The manual has since been reviewed to ensure currency of best practice management advice and information. Any updates to the information contained within the manual are included in this addendum and should be taken as the most current source of information.

***Note: the addendum is not a standalone document and should be read in conjunction with the 2004 manual.***

The addendum focuses on updates to control options, including mechanical, chemical and biological control methods. It also includes updates on available herbicides and where to go to find additional information on rubber vine and its management.

When new or additional information is provided in the addendum, page numbers reference the related text in the original manual.

## Section 2: Managing rubber vine

### Reducing the risk of infestation

**Page 8** — Managing grazing to maintain soil cover and land condition is important and will also suppress rubber vine seedling emergence and survival. Maintenance of land condition limits soil erosion and allows for land-management options (such as the use of fire) to be considered.

### Planning

**Page 9** — Revegetation generally is recommended component of a best practice weed management program (to assist with future suppression of weed regrowth), but it is not normally practical in the extensive rangelands situations where rubber vine occurs. It may still be practical in situations where sensitive environments are threatened by rubber vine infestations that are small but dense.

# Section 3: The toolbox

## Control methods

Page 14

Table 1. Suggested strategies for the control of rubber vine as at September 2023

SITUATION	INITIAL TREATMENT	FOLLOW-UP	COMMENTS
Scattered infestations	Basal bark/cut stump	Follow-up with basal bark/cut stump as necessary	Cut-stump method preferred where possible
	Foliar spray	Follow-up basal bark/cut stump/foliar spray as necessary	Only foliar spray when there is nil-to-little rust on the leaves of the plants
	Stem injection with encapsulated herbicide	Follow-up basal bark/cut stump/foliar spray/stem injection as necessary	Apply the correct number of capsules based on the stem circumference. Inject capsules below any major branching points.
	Fire	Follow-up basal bark/cut stump/foliar spray as necessary	For scattered infestations, usually recommended only if: <ul style="list-style-type: none"> <li>herbicides not desired</li> <li>other weeds are present that can be controlled by fire</li> <li>fire is used to improve pastures</li> </ul>
Medium infestations	Repeated slashing		
	Foliar spray	Use fire if sufficient fuel load with basal bark/cut stump/foliar spray.	Fire and follow-up with basal bark/cut stump/foliar spray as necessary
	Stem injection with encapsulated herbicide	Follow-up basal bark/cut stump/foliar spray/stem injection as necessary	Apply the correct number of capsules based on the stem circumference. Inject capsules below any major branching points.
	Fire	Fire 1-2 years later and follow-up basal bark/cut stump/foliar spray as necessary	If fuel load is sufficient <b>CAUTION:</b> There are some native tree species which are susceptible to fire — check before burning.
Dense infestations in previously cleared areas	Repeated slashing		
	Stick rake or blade plough	Sow pasture – basal bark/foliar spray – fire and basal bark/cut stump/foliar spray as necessary.	First treatment clears bulk of rubber vine and kills roots; any regrowth or seedlings can then be treated; when grass growth allows fuel build-up, fire used as control and individual plants can be treated later
	Fire	Fire 1-2 years later and follow-up basal bark/cut stump/foliar spray as necessary	If fuel load is sufficient <b>CAUTION:</b> There are some native tree species which are susceptible to fire — check before burning.
	Aerial spray	Fire 1-2 years later or follow-up with basal bark spray	Bulk of rubber vine killed with aerial spray; allow build-up of fuel for fire or treat remaining plants with basal bark spray. In Queensland only, phone Department of Agriculture and Fisheries customer service centre on 13 25 23 before use of this method. Where situation and soil type are suitable
	Graslan®		

SITUATION	INITIAL TREATMENT	FOLLOW-UP	COMMENTS
Dense infestations along creeks and rivers	Basal bark/cut stump	Fire or basal bark/cut stump/foliar spray	When bulk of rubber vine killed, allow fuel build-up for fire or treat remaining plants individually.
	Stem injection with encapsulated herbicide	Follow-up basal bark/cut stump/foliar spray/stem injection as necessary	Apply the correct number of capsules based on the stem circumference. Inject capsules below any major branching points.
	Fire and sow pasture	Fire one year later and follow-up basal bark/cut stump/ foliar spray as necessary	If there is a sufficient fuel load to carry a fire, it can open up dense infestations. <b>CAUTION:</b> There are some native tree species which are susceptible to fire — check before burning.

Source: based on the rubber vine fact sheet from the Department of Agriculture and Food, Qld (2020), [www.daf.qld.gov.au/\\_data/assets/pdf\\_file/0020/52544/rubber-vine.pdf](http://www.daf.qld.gov.au/_data/assets/pdf_file/0020/52544/rubber-vine.pdf)

### Seed and seedling survival

Due to the high rate of viability of rubber vine seed (95%) and low-level seed dormancy, the seed bank of rubber vine in the soil is relatively short lived (< 12 months) under average rainfall conditions, which produces conditions conducive to seed germination.

An opportunity exists during a control program to focus on techniques that prevent seed input to the soil seed bank. These include:

- for scattered plants or low-density infestations, collection and destruction (by burning *in situ*) of all seed pods from vines treated by mechanical or chemical methods
- infection by the rubber vine rust (*Maravalia cryptostegiae*), which will reduce the number of seed pods produced
- use of a hot fire for sufficient duration to kill both loose seed and seed in pods on the soil surface or under the leaf litter.

In wetter years or high-rainfall areas, rubber vine seedlings may produce seed pods in less than one year. In these conditions, follow-up control of seedling regrowth will be needed within one year of initial treatment.

In drier years or lower-rainfall areas, it may take longer for plants to grow to maturity. Control of regrowth can then be scheduled for 18 months or longer after initial treatment. In these conditions the seed bank will persist for longer in the soil.



Figure 1. Dense seedlings infected with the rubber vine rust  
(Source: Department of Agriculture and Fisheries, Queensland)

## Biological control

### Rubber vine moth

**Page 16** — The rubber vine moth (*Euclasta whalleyi*) was initially found to be quite effective in defoliating large patches of rubber vine; however, several factors have since reduced its effect. More recent monitoring at field sites concluded that, although the moth is relatively widespread throughout north Queensland, the rubber vine moth caused almost no damage and is now considered a minor agent.

### Rubber vine rust

**Page 16–17** — Rubber vine rust (*Maravalia cryptostegiae*) is having a significant impact on the defoliation and consequent control of rubber vine. Due to the rust being widespread throughout the distribution of rubber vine plants, rearing or redistribution activities are not required.

### Biocontrol Hub

Information-sharing is vital to the success of biological control of weeds. Recording what weed species you are controlling and the locations of agent-release sites can assist others obtaining access to the right agents for the infestation they seek to control.

The Atlas of Living Australia (ALA) is a national online biodiversity database that helps information-sharing. The Australian Biocontrol Hub is a portal within the ALA that acts as a one-stop shop for data and information-sharing on biological control of weeds.

The Biocontrol Hub can:

- facilitate recording of biological control agent release and establishment data
- capture observations of biological control agent spread
- ensure biological control agent distribution data is readily accessible
- provide access to biological control extension material.

For further information on how to contribute to or use information on the Australian Biocontrol Hub, visit the website: [biocollect.ala.org.au/biocontrolhub](http://biocollect.ala.org.au/biocontrolhub)

## Control using fire

**Page 19–22** — A steady grass-based fire tends to keep the heat closer to the base of rubber vine plants and kill more of them. A higher-intensity, fast-moving fire that scorches the crown or towers of the rubber vine plants and surrounding trees as the heat escapes upwards may not kill the plant but can open up dense infestations for future control activities. A steady fire will also be effective in killing seeds on the surface but not necessarily those below ground that are insulated by the soil.

# Chemical control

Page 23

## Herbicide labels and legislation

The Australian Pesticides and Veterinary Medicines Authority (APVMA) regulates the availability of all pesticides, which includes herbicides. Herbicides are registered with the APVMA for specific applications, as stated on the label. State governments regulate the use of pesticides after sale. A herbicide label is a legal document that defines where, when and how a herbicide can be used on which weed species and at what rate.

*Note: not all registered herbicides are commercially available. Often, companies improve herbicide formulations and only market the new formulation. For example, many herbicides are being marketed in higher concentrations. This reduces transport, storage and container-disposal costs.*

In addition to herbicides being registered and described 'on-label' for specific weeds and situations, herbicides can sometimes be used through permits or 'off-label' use. These situations are described below.

### Minor use and emergency use permits

APVMA may issue minor use and emergency use permits for herbicide applications that are not otherwise registered for that particular use. Minor use permits are sometimes referred to as 'off-label' permits. Minor use and emergency permits are valid ('in force') for a limited time. See the [APVMA website](#) to find current permits.

Some states also have permits for the control of 'declared' weeds and may not specifically list the weed species to be controlled. These permits will often list a range of herbicides that can be used for the control of declared or environmental weeds. To find these permits for your state:

- go to the [APVMA permits database](#) search
- enter 'declared weeds' or 'environmental weeds' in the SEARCH box
- click the search term 'Pest/purpose'
- click 'Search'.

It is also recommended that if you are unsure which herbicides can legally be used on a particular weed in your state, contact the relevant biosecurity section of your state department of agriculture. When using herbicides in aquatic situations, only use those that are registered or permitted for use in and around aquatic areas.

Any minor use permits relevant to rubber vine at time of publication are listed in Table 7.

### Off-label use

Off-label use is the use of a registered chemical to address a specific issue that is not covered by the APVMA-approved label. Off-label use is to:

- control a different weed (or pest)
- apply at a different rate (only lower)
- apply in a different manner (not allowed in ACT, NSW and Tasmania).

Off-label use is permitted in all states and territories; however, conditions vary in each jurisdiction (Table 2).

**Table 2. Where to find specific rules relating to herbicide use, including off-label use, in each state and territory**

STATE/ TERRITORY	WEBSITE AND FURTHER INFORMATION
<b>ACT</b>	Agvet chemical use <a href="https://www.accesscanberra.act.gov.au/s/article/pest-and-weed-control-tab-Agvet-chemical-use">https://www.accesscanberra.act.gov.au/s/article/pest-and-weed-control-tab-Agvet-chemical-use</a>
<b>NSW</b>	Pesticides <a href="https://www.epa.nsw.gov.au/your-environment/pesticides/pesticides-nsw-overview">https://www.epa.nsw.gov.au/your-environment/pesticides/pesticides-nsw-overview</a> Weed control and identification <a href="https://www.dpi.nsw.gov.au/biosecurity/weeds/weed-control">https://www.dpi.nsw.gov.au/biosecurity/weeds/weed-control</a>
<b>NT</b>	Chemical use <a href="https://nt.gov.au/industry/agriculture/farm-management/using-chemicals-responsibly">https://nt.gov.au/industry/agriculture/farm-management/using-chemicals-responsibly</a>
<b>Qld</b>	Chemical use <a href="https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/aquaculture/chemicals/registered">https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/aquaculture/chemicals/registered</a>
<b>SA</b>	Rural chemicals <a href="https://pir.sa.gov.au/biosecurity/rural_chemicals">https://pir.sa.gov.au/biosecurity/rural_chemicals</a> Weed control handbook <a href="https://www.pir.sa.gov.au/_data/assets/pdf_file/0020/232382/WEB_8867_PIRSA_Weed_Control_Handbook_2018.pdf">https://www.pir.sa.gov.au/_data/assets/pdf_file/0020/232382/WEB_8867_PIRSA_Weed_Control_Handbook_2018.pdf</a> (PDF, 4.2 MB)
<b>Tas</b>	Agricultural and veterinary chemicals <a href="https://nre.tas.gov.au/agriculture/agvet-chemicals">https://nre.tas.gov.au/agriculture/agvet-chemicals</a> Weeds <a href="https://nre.tas.gov.au/invasive-species/weeds">https://nre.tas.gov.au/invasive-species/weeds</a>
<b>Vic</b>	Off-label chemical use <a href="https://agriculture.vic.gov.au/farm-management/chemicals/offlabel-chemical-use">https://agriculture.vic.gov.au/farm-management/chemicals/offlabel-chemical-use</a>
<b>WA</b>	Using pesticides safely <a href="https://ww2.health.wa.gov.au/Articles/U_Z/Using-pesticides-safely">https://ww2.health.wa.gov.au/Articles/U_Z/Using-pesticides-safely</a>

## Safety and training

Personal protective equipment (such as protective clothing, eye or face shields, and respiratory protection) must be used in accordance with the recommendations stated on the herbicide label or permit. Chemical-use training is required for people using herbicides as part of their job or business. Training is recommended for community groups and may be required if working on public land. Training courses are run by ChemCert, AusChem and TAFE in each state. Other training courses may be available through state agencies (e.g. AgTrain in Victoria, SMARTtrain in NSW), local councils or non-government organisations.

*By law, you must read the label (or have it read to you) before using any herbicide product. Always follow the label or permit.*

## Chemical user certification

Commercial weed-control operators need to be licenced in most states (Table 3). It should also be noted that there is now shared responsibility between landholders and their contractors for any breaches of laws and regulations (such as herbicide drift).

Table 3. Chemical-user certification by state and territory

STATE/ TERRITORY	WEBSITE
ACT	<a href="http://www.accesscanberra.act.gov.au/s/article/pest-and-weed-control-tab-Agvet-chemical-use">www.accesscanberra.act.gov.au/s/article/pest-and-weed-control-tab-Agvet-chemical-use</a>
NSW	<a href="http://www.epa.nsw.gov.au/your-environment/pesticides/licences-and-advice-for-occupational-pesticide-users">www.epa.nsw.gov.au/your-environment/pesticides/licences-and-advice-for-occupational-pesticide-users</a>
NT	<a href="http://nt.gov.au/industry/agriculture/farm-management/using-chemicals-responsibly/spray-applicator-licences">nt.gov.au/industry/agriculture/farm-management/using-chemicals-responsibly/spray-applicator-licences</a>
Qld	<a href="http://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/land-management/chemical-controls/commercial-operators">www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/land-management/chemical-controls/commercial-operators</a>
SA	<a href="http://www.sa.gov.au/topics/business-and-trade/licensing/building-and-trades/pest-control-licence">www.sa.gov.au/topics/business-and-trade/licensing/building-and-trades/pest-control-licence</a>
Tas	<a href="http://nre.tas.gov.au/agriculture/agvet-chemicals/licences-and-certificates/ground-spraying-and-pest-management-licences">nre.tas.gov.au/agriculture/agvet-chemicals/licences-and-certificates/ground-spraying-and-pest-management-licences</a>
Vic	<a href="http://agriculture.vic.gov.au/farm-management/chemicals/licences-and-permits/commercial-operator-licence-for-contractors">agriculture.vic.gov.au/farm-management/chemicals/licences-and-permits/commercial-operator-licence-for-contractors</a>
WA	<a href="https://www.health.wa.gov.au/articles/n_r/pest-industry-licensing-and-registration">https://www.health.wa.gov.au/articles/n_r/pest-industry-licensing-and-registration</a>

## Effective use of herbicides

Successful herbicide control is dependent on the right herbicide for the target species, growth stage of the target species, weather conditions during and after spraying, how thoroughly the herbicide is applied, and the herbicide mix and application rate.

For spraying, wind speeds should be low (< 15 km/h) with no rain expected in the following six hours.

Do not apply herbicide to plants that are under any sort of stress, as herbicide will not be absorbed and translocated effectively, resulting in a reduced level of control. Plants may be stressed due to:

- dry soil
- low humidity
- air temperatures above 30 °C
- frost.

Effectiveness of herbicides can be maximised further by:

- mixing dye with the herbicide to help minimise missed areas and prevent overspraying (double spraying)
- using an adjuvant – an additive that improves herbicide uptake (always read the adjuvant’s product labels to ensure that they are compatible with the particular herbicide and there are no restrictions on their use; e.g. most adjuvants should not be used near waterways)
- ensuring spray equipment is correctly calibrated and maintained, including being thoroughly cleaned between uses.

## Spraying in sensitive areas

Herbicide users have a legal obligation to avoid spray drift damage and to ensure that the chemicals applied stay within the target area. Target-weed infestations are often located in areas of native vegetation, so great care should be taken to avoid spraying surrounding foliage and soil. Do not use high pump/sprayer pressures that create small droplets which float in the air. Adjust the nozzle settings to produce coarser droplet sizes.

## Using herbicides near water

Never spray herbicides over bodies of water or plants standing in water. Some herbicides are formulated to be a lower risk when used near water (e.g. Roundup® Biactive). NEVER add unregistered adjuvants to herbicides that will be used near water. Some states have publications explaining the safe use of herbicides near water (Table 4).

Table 4. Safe use of herbicides near water by state and territory

STATE/ TERRITORY	WEBSITE
South-eastern Australia	<a href="https://archive.dpi.nsw.gov.au/_data/assets/pdf_file/0011/319448/riparian-habitat-management-guide.pdf">archive.dpi.nsw.gov.au/_data/assets/pdf_file/0011/319448/riparian-habitat-management-guide.pdf</a> (PDF, 1.1 MB)
Qld	<a href="https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/sustainable/chemical/ground-distribution-herbicide/laws">https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/sustainable/chemical/ground-distribution-herbicide/laws</a>
SA	<a href="https://www.epa.sa.gov.au/files/477387_pesticide_water.pdf">https://www.epa.sa.gov.au/files/477387_pesticide_water.pdf</a> (PDF, 1.7 MB)
Tas	<a href="https://nre.tas.gov.au/Documents/herbicide_guidelinesFINAL2012.pdf">https://nre.tas.gov.au/Documents/herbicide_guidelinesFINAL2012.pdf</a> (PDF, 689 kB)
WA	<a href="https://www.water.wa.gov.au/_data/assets/pdf_file/0016/3355/12149.pdf">https://www.water.wa.gov.au/_data/assets/pdf_file/0016/3355/12149.pdf</a> (PDF, 113 kB)

## Regulations and permits for works in riparian zones

Areas on or near the bank of a river or other body of water (riparian zones) are sensitive habitats, and in some states a licence is required to conduct weed-control works (Table 5).

Table 5. Authorities who can advise about regulations and permits for works in riparian zones

STATE/ TERRITORY	DEPARTMENT	WEBSITE
NSW	NSW Department of Planning and Environment — Water	<a href="https://water.dpie.nsw.gov.au/">https://water.dpie.nsw.gov.au/</a>
SA	Landscape SA, including 8 regional boards	<a href="https://www.landscape.sa.gov.au/">https://www.landscape.sa.gov.au/</a>
Vic	Catchment management authorities Department of Energy, Environment and Climate Action — Forests and Reserves	<a href="https://viccatchments.com.au/about-us/our-cma-regions/">https://viccatchments.com.au/about-us/our-cma-regions/</a> Riparian management licences – <a href="http://www.forestsandreserves.vic.gov.au/_data/assets/pdf_file/0016/31426/Riparian-management-licences.pdf">www.forestsandreserves.vic.gov.au/_data/assets/pdf_file/0016/31426/Riparian-management-licences.pdf</a> (PDF, 160 kB)

## Chemical control of rubber vine

**Page 23** — Herbicides can be applied to rubber vine in a number of ways:

- on the leaves (foliar application)
- on the ground (soil application)
- by aircraft (aerial application)
- to the stem and bark of the plant (basal barking and stem injection)
- to the stump immediately after cutting (cut stump).

**Page 23** — Herbicides available for use on rubber vine are listed in Table 6 and Table 7.

**Table 6. Herbicides permitted for use on rubber vine under registration**

APPLICATION METHOD	CHEMICAL	COMMERCIAL PRODUCT EXAMPLES <sup>1</sup>	STATE OR TERRITORY <sup>2</sup>	RATE	COMMENT
Basal bark	triclopyr + picloram (240 + 120 g/L)	Access®	All	1 L/60 L diesel	Apply to plants up to 5 cm basal diameter.
	triclopyr (600 g/L)	Garlon® 600	All	1 L/60 L diesel	Apply to plants up to 5 cm basal diameter.
Cut stump	triclopyr + picloram (240 + 120 g/L)	Access®	All	1 L/60 L diesel	Apply immediately after cut is made to plants exceeding 5 cm diameter.
	triclopyr 3 (600 g/L)	Garlon® 600	All	1 L/60 L diesel	Apply immediately after cut is made to plants exceeding basal bark sizes.
	2,4-D amine (700 g/L)	Nufarm Amicide Advance® 700	All	145 mL/10 L water	Apply to freshly cut stump.
	2,4-D (625 g/L)	Nufarm AMINE® 625	Qld only	160 mL/10 L water	Apply to freshly cut stump.
	2,4-D (475 g/L)	Nufarm Cobber® 475	Qld only	210 mL/10 L water	Apply to freshly cut stump.
Foliar	2,4-D (300 g/L)	Nufarm Surpass® 300	Qld only	330 mL/10 L water	Apply to freshly cut stump.
	triclopyr + picloram (300 + 100 g/L)	Nufarm Conqueror®	NT, Qld and WA only	350 mL/100 L (up to 1.5 m tall at flowering) 500 mL/100 L (dense stands greater than 1.5 m tall at flowering)	Do not used if infected with rust. Spray all leaves and stems just to the point of run-off and thoroughly spray the base of the plant. With larger denser stands regrowth may appear. Subsequent control should be with basal bark application.
	aminopyralid + picloram + triclopyr (8 + 100 + 300 g/L)	Grazon® Xtra	All	350-500 mL/100 L water	Not to be used if infected with rust. Spray all leaves and stems just to the point of run-off and thoroughly spray the base of the plant. With larger denser stands regrowth may appear. Subsequent control should be with basal bark application.
	dicamba (500 g/L)	Adama Cutlass® 500	WA only	1.4 L/ha or 22 mL/15 L Knapsack	Non-crop areas Apply during April or May.

APPLICATION METHOD	CHEMICAL	COMMERCIAL PRODUCT EXAMPLES <sup>1</sup>	STATE OR TERRITORY <sup>2</sup>	RATE	COMMENT
Foliar	dicamba (750 g/L)	Nufarm Kamba® 750	WA only	935 mL/ha or 15 mL/15 L knapsack.	Non-crop areas Apply during April or May.
			Qld and NT only	1.35–2.7 L + 3 L 2,4-D ester (680 g/L)/ha 95–185 mL + 205 mL 2,4-D ester (680 g/L)/100 L 13.5–27 mL + 30 mL 2,4-D ester (680 g/L)/15 L knapsack	Grass pastures and non-crop DO NOT apply by misting machine. Apply during April or May.
	2,4-D + picloram (300 + 75 g/L)	Tordon® 75-D	Qld only	1.3 L/100 L	Thoroughly wet leaves and also soil around the base of the plant.
	picloram (240 g/L)	Macspread Picloram®	Qld, WA, NT	145–210 mL + 250 mL triclopyr (600 g/L)/100 L water	Use higher rate for dense stands.
			Qld only	405 mL + 625 mL 2,4-D (625 g/L)/100 L	Thoroughly wet leaves and soil around base. Cut-stump treat large plants.
	aminopyralid + metsulfuron (375 + 300 g/kg)	Stinger®	Qld only	30 g/100 L water	Apply to bushes up to 3 m in height. Apply from October through April when bushes are actively growing. Ensure thorough spray coverage of all foliage and leaders. Incomplete coverage will result in regrowth.
	imazapyr (240/250 g/L)	Arsenal® Super	Qld only	0.4 L/100 L	Apply sufficient spray to wet when flowering and actively growing.
	imazapyr (750 g/kg)	Bomber® 750 SG	Qld only	1.3 g/L	Apply sufficient spray to wet when flowering and actively growing.
	metsulfuron-methyl (600 g/kg)	Nufarm Associate®	Qld only	15 g/100 L Always add 1000 g/L non-ionic surfactant at 200 mL/100 L.	Apply to bushes up to 3 m tall. Apply from October through to April when bushes are actively growing. Ensure thorough spray coverage of all foliage and leaders. Incomplete coverage will result in regrowth.

APPLICATION METHOD	CHEMICAL	COMMERCIAL PRODUCT EXAMPLES <sup>1</sup>	STATE OR TERRITORY <sup>2</sup>	RATE	COMMENT
Soil*	hexazinone (250 g/L)	Velpar® L	Qld only	2 mL spot – 3 spots per individual bush Spot gun on grid pattern – 1 mL/spot 4 mL/spot	Apply with spot gun to plants up to 2 m tall. Spots near base of plant Up to 1 m tall 1–2 m tall May require re-treatment after 2 years.
	tebuthiuron# <sup>3</sup> (200 g/kg)	Graslan®	Qld, WA and NT	1.5 g/m <sup>2</sup> by hand	Use the higher rate on dense growth. Note: there are a range of products with varying concentrations of tebuthiuron. Always read the label and use the correct rate.
Stem injection	aminopyralid + metsulfuron-methyl (93.7 g/kg + 75g/kg)	Di-Bak AM	All	1 capsule every 10 cm of circumference	Use the injecta applicator to drill a hole and deliver Di-Bak AM capsule in the sapwood layer beneath the bark. Space capsule insertions at 10 cm, centres around tree circumference below any branching, otherwise remove or treat all branches below the capsule insertion. On multiple trunk trees ensure each trunk is treated.
				ALL TREES	Apply the capsules to each tree at waist height or below.
Aerial	triclopyr + picloram (300 + 100 g/L)	Nufarm Conqueror®	Qld and NT only Helicopter only	3–5 L/ha	When flowering but not infested with rust. Use the higher rates on dense stands. Complete coverage may be difficult and follow-up control needed. Use a suitable basal-bark application on any regrowth.
	aminopyralid + picloram + triclopyr (8 + 100 + 300 g/L)	Grazon® Xtra	Qld and NT only Helicopter only	3–5 L/ha	When flowering but not infested with rust. Use the higher rates on dense stands. Complete coverage may be difficult and follow-up control needed. Use a suitable basal bark application on regrowth.
	picloram (240 g/L)	Macsread Picloram®	Qld and NT Helicopter only	1.25–2.1 L + 1.5–2.5 L/ha triclopyr (600 g/L)	When flowering but not infested with rust. Use the higher rates on dense stands. Complete coverage may be difficult and follow-up control needed. Use a suitable basal bark application on regrowth.
	tebuthiuron# <sup>3</sup> (200 g/kg)	Graslan®	Qld and NT only	7.5–15 kg/ha	Use the higher rate on dense growth or heavy clay soils. Note: there are a range of products with varying concentrations of tebuthiuron. Always read the label and use the correct rate.

1 Commercial products listed here are examples only, and many other products containing these active ingredients are registered for use on rubber vine. Search at <https://apvma.gov.au/node/10831>

2 Products may be registered for use on rubber vine in all states and territories (shown as 'All') or only in the specific states and territories listed.

3 Products containing different concentrations of the active ingredients are registered for this use. For example, registered products containing the active ingredient tebuthiuron are available with 200, 400, 600 and 750 g/kg. Check the label for application rates.

\* Do not use soil-applied herbicides within a distance of 2–3 times the mature height of wanted trees.

# Do not apply tebuthiuron within 100 m of a recognised watercourse or on land with a slope greater than 20 per cent (11 degrees).

*Note: herbicides are not to be used for any purpose or in any manner contrary to the label unless authorised under appropriate legislation. By law, you must read the label (or have it read to you) before using any herbicide product. The same applies for minor use permits. Always follow the label and permit directions.*

*Note: Not all currently registered herbicides are commercially available. Check the company website for a current label.*

*Use of soil-applied herbicides must be in accordance with state and/or local native vegetation legislation.*

**Table 7. Herbicides permitted for use on rubber vine under minor use permits**

PERMIT NO.	EXPIRES	PERMIT HOLDER	SITUATION	PRODUCTS	RATE
<b>Qld</b>					
<b>PER82156</b>	31 May 2026	Biosecurity Queensland, DAFF	Non-agricultural areas, native vegetation and pastures	aminopyralid + picloram + triclopyr (8 + 100 + 300 g/L) e.g. Grazon® Xtra triclopyr + picloram (300 + 100 g/L) e.g. Nufarm Conqueror®	500 mL/10 L Apply using spray volume of 10 mL/m <sup>2</sup> of plant surface area
<b>NSW</b>					
<b>PER90342</b>	31 Dec 2025	NSW DPI	Domestic residences, homesteads, gardens, sheds and agricultural buildings	aminopyralid + picloram + triclopyr (8 + 100 + 300 g/L) e.g. Grazon® Xtra triclopyr + picloram (240 + 120 g/L) e.g. Access® triclopyr 600g/L	350–500 mL/100 L water High-volume spray 1 L/60 L diesel Basal bark and cut stump 1 L/60 L diesel Basal bark and cut stump

PERMIT NO.	EXPIRES	PERMIT HOLDER	SITUATION	PRODUCTS	RATE
<b>WA</b>					
<b>PER13333</b>	31 March 2025	WA Forest Products Commission	Crop and non-crop areas as specified for WA on the approved label	triclopyr + picloram (300 + 100 g/L)  triclopyr 240 g/L + Picloram 120 g/L  metsulfuron (600 g/kg)	1 L/100 L water plus wetting agent or spray oil. Or label rate for specific weed.  1 L/60 L diesel. Paint stump immediately after cutting. Or paint or spray basal bark  10 g/100 L plus wetting agent or spray oil. Or 100 g/ha plus wetting agent or spray oil. Or label rate for specific weed.  Spot spraying.
				triclopyr (600 g/L)	1 L/100 L water plus wetting agent or spray oil. Or label rate for specific weed.  Spot spray.
<b>SA and WA</b>					
<b>PER92454</b>	31 January 2025	GTE Track Spray PTY LTD	Railway tracks and corridors	Tebuthiuron <sup>1</sup> (200 g/kg)	10 – 15 kg product / hectare

1 Products containing different concentrations of the active ingredients are registered for this use. For example, registered products containing the active ingredient tebuthiuron are available with 200, 400, 600 and 750 g/kg concentrations. Check the label for application rates. Do not apply tebuthiuron within 100 m of a recognised watercourse or on land with a slope greater than 20 per cent (11 degrees).

## Aerial application

**Page 25** — Four herbicides are currently registered for aerial application to rubber vine:

- triclopyr+ picloram (e.g. Nufarm Conqueror®)
- aminopyralid + triclopyr+ picloram (e.g. Grazon® Xtra)
- picloram (e.g. Macspred Picloram®)
- tebuthiuron (e.g. Graslan®).

Aerial application of these herbicides may result in damage to non-target species. Use must be in accordance with state and local native vegetation legislation.

*Note: 2,4-D ester is no longer registered for use on rubber vine.*

## Foliar spraying

**Page 25** — Additional points to consider for foliar application are:

- Avoid spraying when it is hot and dry or windy.
- Large plants with stem diameter > 8 cm or > 2 m high may not be killed by foliar spraying.
- A wetting agent should be used with foliar herbicides.

## Splatter-gun method

The splatter-gun method is the use of a low-volume (minimal-water), high-concentration chemical mix applied to foliage in a coarse squirt. Equipment suitable for use include gas, battery-powered or manual splatter guns or the like, able to deliver a calibrated dose in a large droplet size.

Advantages of the splatter gun method include:

- a small backpack of chemical mix can cover a large area
- minimal non-target damage
- application can be fast – medium density infestations can be treated at a brisk walk
- hard-to-access plants can often be reached on foot
- both adult plants and seedlings below can potentially be controlled in one pass
- less active chemical is used per hectare.

The potential for use of splatter-gun technology on rubber vine has been shown in trials undertaken since 2014. The more effective herbicides in these trials were metsulfuron-methyl (Brush-Off®) and triclopyr/picloram/aminopyralid (Grazon® Extra). This method is approved under PER82156 for Queensland only for use of Grazon® Extra and Nufarm Conqueror®. However, trial results have been variable and may be due to a number of factors that are still to be investigated.

## Soil-applied herbicides

**Page 27** — A minimum of 50–80 mm of rainfall is required before residual herbicides are taken up by plants. Do not use soil-applied herbicides if fire is imminent or after prolonged drought when heavy rain may wash away the herbicide rather than allow it to penetrate.

## Stem injection with encapsulated herbicide

Stem injection of herbicide capsules can be used to control rubber vine infestations. Di-Bak AM is a herbicide produced in capsule form, containing a combination of aminopyralid and metsulfuron-methyl.

Capsules can be inserted into the tree using a specially designed handheld applicator. The applicator, used in conjunction with a hand held drill, first drills a hole into the tree stem and then inserts the capsule. The capsule is sealed in place with a plug.

Alternatively, drill a 25-mm-deep hole in the tree stem using an 8 mm-diameter drill bit, approximately 10–30 cm above ground level. Insert one capsule and seal with a plug immediately.

Over time, the capsule dissolves, releasing the herbicide into the plant. This process can be performed at any time of year and is a cost-effective method suitable for low-to-high-density populations.

Further information on using this technique can be found at [www.bioherbicides.com.au/about/videos-resources](http://www.bioherbicides.com.au/about/videos-resources)

## Mechanical control

**Page 28** — For dense infestations, use of slashing and mulching to cut tracks and break up the infestation can provide access for application of other control methods. If slashed material is placed in windrows, these should be burned to destroy any viable seed present.

## Hand pulling

**Page 28** — When undertaking a control program for scattered or isolated rubber vine, hand pulling of young seedlings is an effective means of preventing future treatment. It is, however, labour intensive and only effective when soil conditions allow the seedlings to be removed entirely with all the roots.

## Contacts

STATE/ TERRITORY	DEPARTMENT	PHONE	EMAIL	WEBSITE
<b>National</b>	Australian Pesticides and Veterinary Medicines Authority	02 6770 2300	<a href="mailto:enquiries@apvma.gov.au">enquiries@apvma.gov.au</a>	<a href="http://www.apvma.gov.au">www.apvma.gov.au</a>
<b>ACT</b>	Parks and Conservation	13 22 81	<a href="mailto:ACTBiosecurity@act.gov.au">ACTBiosecurity@act.gov.au</a>	<a href="http://www.environment.act.gov.au/parks-conservation/plants-and-animals/Biosecurity/invasive-plants">www.environment.act.gov.au/parks-conservation/plants-and-animals/Biosecurity/invasive-plants</a>
<b>NSW</b>	Department of Primary Industries	1800 680 244	<a href="mailto:weeds@dpi.nsw.gov.au">weeds@dpi.nsw.gov.au</a>	<a href="http://www.dpi.nsw.gov.au/biosecurity/weeds">www.dpi.nsw.gov.au/biosecurity/weeds</a>
<b>NT</b>	Department of Environment, Parks and Water Security	08 8999 4567	<a href="mailto:weedinfo@nt.gov.au">weedinfo@nt.gov.au</a>	<a href="http://www.nt.gov.au/environment/weeds">www.nt.gov.au/environment/weeds</a>
<b>Qld</b>	Department of Agriculture and Fisheries	13 25 23	<a href="mailto:info@daf.qld.gov.au">info@daf.qld.gov.au</a>	<a href="http://www.daf.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/plants-weeds">www.daf.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/plants-weeds</a>
<b>SA</b>	Department of Primary Industries and Regions	1300 374 731	<a href="mailto:invasivespecies@sa.gov.au">invasivespecies@sa.gov.au</a>	<a href="http://www.pir.sa.gov.au/biosecurity/weeds">www.pir.sa.gov.au/biosecurity/weeds</a>
<b>Tas</b>	Department of Natural Resources and Environment	1300 368 550	<a href="mailto:biosecurity.tasmania@nre.tas.gov.au">biosecurity.tasmania@nre.tas.gov.au</a>	<a href="http://www.nre.tas.gov.au/invasive-species/weeds">www.nre.tas.gov.au/invasive-species/weeds</a>
<b>Vic</b>	Agriculture Victoria	13 61 86	Refer to <a href="http://www.agriculture.vic.gov.au/about/contact-us">www.agriculture.vic.gov.au/about/contact-us</a> for contact options	<a href="http://www.agriculture.vic.gov.au/biosecurity/weeds">www.agriculture.vic.gov.au/biosecurity/weeds</a>
<b>WA</b>	Department of Primary Industries and Regional Development	08 9368 3333	<a href="mailto:enquiries@agric.wa.gov.au">enquiries@agric.wa.gov.au</a>	<a href="http://www.agric.wa.gov.au/pests-weeds-diseases/weeds">www.agric.wa.gov.au/pests-weeds-diseases/weeds</a>

## Further information

Research paper on splatter-gun technology for rangeland weeds. Weed Society of Queensland Pty Ltd (2019). [https://www.researchgate.net/publication/337992383\\_Advancing\\_splatter\\_gun\\_technology\\_for\\_rangeland\\_weeds](https://www.researchgate.net/publication/337992383_Advancing_splatter_gun_technology_for_rangeland_weeds)

Rubber vine management manual. Department of Natural Resources, Mines and Energy, Qld (2004). [https://invasives.com.au/wp-content/uploads/2022/04/Rubbervinemanagement\\_Controlmethodsandcasestudies\\_May2004-1-compressed.pdf](https://invasives.com.au/wp-content/uploads/2022/04/Rubbervinemanagement_Controlmethodsandcasestudies_May2004-1-compressed.pdf) (PDF, 9.2 MB)

Book chapter about biological control of rubber vine. CSIRO Publishing, Vic (2012). [https://www.researchgate.net/publication/281610623\\_Cryptostegia\\_grandifolia\\_Roxb\\_R\\_Br\\_-\\_rubber\\_vine](https://www.researchgate.net/publication/281610623_Cryptostegia_grandifolia_Roxb_R_Br_-_rubber_vine)

Rubber vine fact sheet. Department of Agriculture and Food, Qld (2020). [www.daf.qld.gov.au/\\_data/assets/pdf\\_file/0020/52544/rubber-vine.pdf](http://www.daf.qld.gov.au/_data/assets/pdf_file/0020/52544/rubber-vine.pdf) (PDF, 2.8 MB)

Weeds Australia rubber vine profile. Weeds Australia, (2019). <https://weeds.org.au/profiles/rubber-vine-rubbervine/>

**CENTRE FOR INVASIVE  
SPECIES SOLUTIONS**

Building 22, University of Canberra  
University Drive South, BRUCE ACT 2617  
T 02 6201 2887  
E [communications@invasives.com.au](mailto:communications@invasives.com.au)

