NSW GOVERNMENT Department of Primary Industries

Harrisia cactus

Harrisia species

Harrisia cactus (Photo: B.A. Auld & R.M. Medd NSW DPI)

- Also known as: Harrisia
- This plant should not be sold in parts of NSW

Profile

How does this weed affect you?

Harrisia cacti are difficult to control as they produce thousands of viable seeds and have fleshy storage tubers. They form impenetrable thickets which:

- out compete grasses and reduce productivity of grazing land
- prevent movement of livestock
- make mustering difficult
- restrict access to watering points
- provide habitat for feral animals such as rabbits
- compete with native plants especially in acacia-wooded grasslands.

The sharp spines on harrisia cacti can:

- cause painful injuries to people, livestock, working dogs and pets
- injure and sometimes kill wildlife that get trapped in the spines
- devalue wool and hides and prevent shearing.

What does it look like?

Harrisia cacti form dense tangled mats up to 0.6 m high. The stems can also climb up other plants to a height of 2-3 m.

There are three species of Harrisia in NSW:

- *H. martinii*
- *H. tortuosa*
- *H. pomanensis*

Stems (also called pads or cladodes) are:

- green
- fleshy and spiny
- slender and branched, often tangled
- jointed every 30-45 cm
- 2-5 cm in diameter (*H. tortuosa* usually up to 5 cm and *H. martinii* up to 4 cm).

H. martinii has 4-5 ridges and prominent pyramid shaped humps along the stem.

H. tortuosa has 6-8 ridges and only slight humps along the stem.

H. pomanensis has slight humps on the stem ridges.

Stem spines

Areoles are rounded areas on the humps along the stem. Each areole produces a group of spines.

H. martinii spines consist of:

- a central spine 2-3.5 cm long
- surrounded by 1-3 spines 1.0-1.5 cm long
- and a row of spines 3-6 mm long.

H. tortuosa spines consist of:

- a central spine 3-5 cm long
- surrounded by 4-8 spines 1–3 cm long.

H. pomanensis spines consist of:

- 1-3 larger spines 1-2 cm long
- 6-8 spines up to 1 cm long held close to the stem.

Flowers are:

- white, tinged with pink
- funnel shaped with a green base
- up to 20 cm long
- open at night and whither in the morning.

Fruit are:

- red with white flesh and black seeds
- round
- 2-4 cm in diameter.

H. martinii fruit are warty with spines up to 5 mm long.

H. tortuosa fruit do not have warts and usually have a few spines.

H. pomanensis fruit do not have spines.

Roots

There are two types of roots:

- fibrous shallow roots up to 10 cm deep
- fleshy storage tubers up to 50 cm deep.

Where is it found?

H. martinii is most common in the North West region of NSW from the Queensland border to Moree. It is also found in the Central West, Western Region, Central Tablelands and Riverina.

H. tortuosa has been found in the North West, Central West and Upper Hunter in NSW.

H. pomanensis is the least common species in NSW. Plants have been found around Grawin (near Lightning Ridge) and Leichardt.

Harrisia cacti are from South America.

What type of environment does it grow in?

Harrisia cacti grow in semi-arid scrublands with summer rainfall. They prefer fertile clay soils and are common in acacia-wooded grasslands such as the brigalow forests.

How does it spread?

Harrisia cacti were originally introduced to Australia as ornamental plants.

By seeds

The plant can begin to produce seed by six months of age and from then on can continue to produce fruit almost all year round. Each fruit produces 400 – 1000 seeds. Birds eat the fleshy fruit and spread the seeds in their droppings.

By plant parts

Plants can regrow from stems fragments and root tubers. Wild pigs can spread the tubers. The stems can spread by sticking to animals, people, vehicles and machinery.

References

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Parsons, W.T. & Cuthbertson, E.G. (2001). *Noxious Weeds of Australia*, CSIRO Publishing, Collingwood.

PlantNET (The NSW Plant Information Network System). Royal Botanic Gardens and Domain Trust, Sydney. Retrieved 12 August 2020 from: http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=gn&name=Harrisia

More information

- PlantNET NSW FloraOnline, Genus Harrisia. Royal Botanical Gardens and Domain Trust. (http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=gn&name=Harrisia)

- Weed futures: Determining current and future weed threats in Australia, Harrisia martinii. Macquarie University. (https://weedfutures.net/species.php?id=1094)
- Weed futures: Determining current and future weed threats in Australia, Harrisia tortuosa. Macquarie University. (https://weedfutures.net/species.php?id=2061)

Control

When controlling harrisia cacti wear protective clothing, including gloves, boots, thick clothing and eyewear to stop injuries from spines.

Biological control

A mealybug (*Hypogeococcus festerianus*) has provided a significant level of control in the central Queensland part of the invaded range, however, in southern Queensland and adjacent New South Wales (where temperatures are cooler) the mealybug develops more slowly, especially in the shade. As a result, control is slow and alternative biological control solutions are required.

Physical removal

Use tools to remove plants and ensure all of the tubers are dug out. Take care to dispose the whole plant and check for any parts that have fallen off.

Disposal

To dispose cacti bury them at 1 m deep or burn in a hot fire. Check disposal sites regularly. Alternatively contact your local council for disposal advice.

Spraying

Apply herbicide to actively growing plants. Ensure all parts of the plant are treated. Re-treatment may be necessary, particularly with large clumps of cacti.

Stem injection with capsules

Capsules are injected into the stem's sapwood and then sealed. Use on actively growing plants.

Herbicide options

WARNING - ALWAYS READ THE LABEL
Users of agricultural or veterinary chemical products must always read the label and any permit, before using the product, and 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 information. To view permits or product labels go to the Australian Pesticides and Veterinary Medicines Authority website www.apvma.gov.au

See Using herbicides (http://www.dpi.nsw.gov.au/biosecurity/weeds/weed-control) for more information.

Dichlorprop 600 g/L (Lantana 600®)
Rate: 1.0 L per 60 L of water
Comments: Good soil moisture essential and spray at fruiting.
Withholding period: Nil.
Herbicide group: 4 (previously group I), Disruptors of plant cell growth (Auxin mimics)
Resistance risk: Moderate

Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg (Di-Bak AM)
Rate: 1 capsule for every 10 cm of circumference
Comments: Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
Withholding period: Nil
Herbicide group: 2 (previously group B), Inhibition of acetolactate and/or acetohydroxyacid synthase (ALS, AHAS inhibitors) + 4 (previously group I), Disruptors of plant cell growth (Auxin mimics)
Resistance risk: High/Moderate

Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L (Grazon® Extra)
Rate: 500 mL in 100 L water
Comments: Follow the label instructions as per Prickly pear (common), smooth tree pear. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
Withholding period: Where product is used to control woody weeds in pastures there is a restriction of 12 weeks for use of treated pastures for making hay and silage; using hay or other plant material for compost, mulch or mushroom substrate; or using animal waste from animals grazing on treated pastures for compost, mulching, or spreading on pasture/crops.
Herbicide group: 4 (previously group I), Disruptors of plant cell growth (Auxin mimics)
Resistance risk: Moderate

Triclopyr 240 g/L + Picloram 120 g/L (Access™)
Rate: 1.0 L per 60 L of diesel (or biodiesel such as Biosafe).
Comments: Apply as an overall spray, wetting all areas of the plant to ground level. See label for information about using biodiesel.
Withholding period: Nil
Herbicide group: 4 (previously group I), Disruptors of plant cell growth (Auxin mimics)
Resistance risk: Moderate

Triclopyr 300 g/L + Picloram 100 g/L (Various products)
Rate: 500 mL per 100 L water
Comments: Follow the label instructions as per prickly pear common. Spot spray application. Spray actively growing plants. To improve uptake add a paraffinic oil e.g. Uptake®, Titan Paraffin or Apparent Paraffinic spraying oil at the rate of 500 mL per 100 L of water.
Withholding period: Nil.
Herbicide group: 4 (previously group I), Disruptors of plant cell growth (Auxin mimics)
Resistance risk: Moderate

Triclopyr 600 g/L (Garlon® 600)
Rate: 800 mL per 60 L of diesel
Comments: Follow the label instructions as per common prickly pear (Opuntia spp.). Spray actively growing plants. Thoroughly cover all of the plant.
Withholding period: Not required when used as directed. If use is off-label check permit.
Herbicide group: 4 (previously group I), Disruptors of plant cell growth (Auxin mimics)
Resistance risk: Moderate

Biosecurity duty

The content provided here is for information purposes only and is taken from the *Biosecurity Act 2015* and its subordinate legislation, and the Regional Strategic Weed Management Plans (published by each Local Land Services region in NSW). It describes the state and regional priorities for weeds in New South Wales, Australia.

Area	Duty
All of NSW	**General Biosecurity Duty** *All pest plants are regulated with a **general biosecurity duty** to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.*
Central Tablelands	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*

Area	Duty
Central West	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Hunter	**Regional Recommended Measure** *Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.*
North West An exclusion zone is established for all lands in the region, except the core infestation area, comprising the Gwydir Shire council and Moree Plains Shire council.	**Regional Recommended Measure** *Whole of region: Land managers mitigate the risk of new weeds being introduced to their land. Within exclusion zone: Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Within core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.* **This Regional Recommended Measure applies to *Harrisia martinii* and *Harrisia tortuosa.***
Northern Tablelands An exclusion zone is established for all the lands in the region, except the core infestation area comprising lands within the: Inverell Shire Council containment zone - running north from Rocky Dam at the junction of Warialda Road and Yetman Road to the Queensland border and west from Rocky Dam to the Gwydir Shire boundary along Blue Nobby Road.	**Regional Recommended Measure** *Whole of region: Land managers mitigate the risk of new weeds being introduced to their land. Within exclusion zone: Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Within core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.* **This Regional Recommended Measure applies to all Harrisia species**
Western	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land A person should not buy, sell, move, carry, or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.*

Harrisia cactus fruit are red with white flesh and black seeds. (Photo: Bob Trounce NSW DPI)

Harrisia tortuosa has long spines. (Photo: John Hosking NSW DPI)

Harrisia cactus (Photo: John Hosking NSW DPI)

An infestation of harrisia cactus. (Photo: Royce Holtkamp)

A mealybug (Hypogeococcus festerianus) is a biocontrol agent for harrisia cactus (Photo: Royce Holtkamp)

Harrisia cactus forms dense prickly mats. (Photo: Royce Holtkamp)

Harrisia cactus with mealybugs. (Photo: Jo-Anna Skewes)

Harrisia cactus has large white flowers. (Photo: Jo-Anna Skewes)

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