

## Fact Sheet

# Parthenium

## Restricted Invasive Plant

Parthenium is a restricted invasive plant under the *Biosecurity Act 2014*. It must not be given away, sold or released in the environment without a permit. All residents have a General Biosecurity Obligation (GBO) under the Act. The GBO requires a person to take reasonable and practical steps to minimise the risks posed by parthenium. More information is available in the City of Ipswich Biosecurity Plan 2018-2023 at [ipswich.qld.gov.au](https://www.ipswich.qld.gov.au).

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### Scientific names

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- *Parthenium hysterophorus*

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### Other names

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- Bitter-broom
- Carrot grass
- Congress grass
- False camomile
- False ragweed

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### Description

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- Leaves are pale green, up to 2 millimetres long and covered in fine, soft hairs.
- Small creamy white flowers occur on the tips of the numerous stems.
- Each flower contains four to five black seeds that are wedge-shaped.
- Annual herb that grows one to one and a half metres tall.

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### Life cycle

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- Germinates in spring and early summer, and dies around late autumn.
- Produces flowers and seeds throughout its whole life cycle.
- In summer, plants can flower and seed within four weeks of germination, particularly if stressed.
- With suitable conditions (e.g. rain, moisture and mild temperatures), plant can grow and produce flowers at any time of the year.

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### Local habitat and distribution

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- Habitation in the local Ipswich area has been detected in the Ripley Valley and around Marburg.
- Seeds will spread by water, vehicles, machinery and stock.
- Drought conditions aid the spread of seed with increased movement of stock fodder and transporting.
- Can also be spread by feral and native animals.



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## Management strategy

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- Management of this species falls under the eradication management strategy.
- The objective of this strategy is to stop the extension of its spread.
- Control activities should be co-ordinated, including across other land tenures and properties.
- The General Biosecurity Obligation for this species should involve:
  1. reporting to Council within 24 hours of becoming aware of a new infestation of the pest species.
  2. developing a plan for the eradication of the species
  3. determining the most appropriate level of control to effectively eradicate the infestation over a 1-3 month period
  4. implementation of restricted matter hygiene such as wash down procedures
  5. undertaking routine inspections.
- More information on the citywide management strategies for Ipswich (prevention, eradication, containment and asset-based protection) can be found in the City of Ipswich Biosecurity Plan 2018-2023.

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## Impact

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- Parthenium invades pastures and reduces beef production.
- It competes with crops for nutrients and space, and invades disturbed bare areas along roadsides, heavily stocked areas, and yards and watering points.
- Parthenium contains potent allergens that can cause reactions such as dermatitis and hay fever.



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## Control

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### Physical control

- Hand pulling of small areas is not recommended due to the health hazard from allergic reactions.
- Hand pulling can also increase the risk of mature seeds dropping off and can increase the area of infestation.
- Grazing management is the most useful physical control method of controlling large-scale parthenium infestations.
- High grazing pressure can decrease the vigour and competitiveness of pastures and allows the entry and spread of parthenium. In situations of serious infestation, pasture spelling is essential.
- Pastures maintained with high levels of grass cover will limit parthenium colonisation.
- Fencing can be used to great effect to break up large paddocks, allowing more flexible management such as pasture spelling or herbicide application.
- Burning is not promoted as an effective control strategy, although research suggests that burning for pasture management should not result in an increased infestation if the pasture is allowed to recover prior to the resumption of grazing.

### Biological control

- There are a number of insect species and rust pathogens that have been introduced to control parthenium:
  1. Stem galling moth (*Epiblema strenuana*)
  2. Stem weevil (*Listronotus setosipennis*)
  3. Leaf beetle (*Zygogramma bicolorata*)
  4. Seed weevil (*Smicronyx lutulentus*)
  5. Stem galling weevil (*Conotrachelus albocinereus*)
  6. Leaf feeding moth (*Bacculatrix parthenica*)
  7. Root feeding moth (*Carmentia ithacae*)
  8. Sap feeding plant hopper (*Stobaera concinna*)
  9. Leaf rust (*Puccinia abrupta* var. *partheniicola*)
  10. Leaf rust (*Puccinia xanthii* var. *parthenii-hysterophorae*)
- The stem galling moth is well established in all parthenium affected areas. It stunts the plants growth and reduces competitiveness and seed production.
- The combined effects of biological control agents will reduce parthenium's density and vigour, and increase grass production.

## Herbicide control

- In non-crop areas, parthenium should be sprayed early before it can seed.
- Small and/or isolated infestations should be treated immediately.
- Extensive infestations will require herbicide treatment in conjunction with pasture control.
- Controlling parthenium in cropping areas requires selective herbicide use and/or crop rotations.
- Before using any herbicide, always read the label carefully and apply strictly in accordance with the directions on the label.



Situation	Herbicide	Rate	Information
Pastures, rights-of-way and industrial land	2,4-D as amine 625 g/L (e.g. Ken-Amine 625)	320 mL/100 L water	<ul style="list-style-type: none"> <li>▪ Spot spray</li> <li>▪ Apply to young actively growing plants, ensuring thorough coverage</li> </ul>
	2,4-D as amine 700 g/L (e.g. Amicide Advance 700)	285 mL/100 L water	
Non-agricultural areas (native pastures), commercial and industrial areas, rights-of-way	Aminopyralid 375 g/kg + metsulfuron-methyl 300 g/kg (e.g. Stinger)	10 g/100 L water plus wetting agent, consult label	<ul style="list-style-type: none"> <li>▪ Spray to thoroughly wet all foliage but not to cause run-off</li> </ul>
Fields and fallow, various crops (see label)	Atrazine 500 g/L (e.g. Kenso Atrazine 500)	3.6-6 L/ha. Rate varies with situation, consult label	<ul style="list-style-type: none"> <li>▪ Boom spray. Pre and post emergent application, restrictions apply</li> <li>▪ Consult label for details of specific conditions.</li> <li>▪ Max 3 kg a.i./ha/yr</li> </ul>
Roadside and rights-of-way		6 L/ha	
Fields and fallow, various crops (see label)	Atrazine 900 g/kg (e.g. Atradex WG)	2-3.3 kg/ha Rate varies with situation Consult label	<ul style="list-style-type: none"> <li>▪ Boom spray. Pre and post emergent application, restrictions apply.</li> <li>▪ Consult label for details of specific conditions.</li> <li>▪ Max 3 kg a.i./ha/yr</li> </ul>
Roadside and rights-of way		3.3 kg/ha	
Non-crop areas, commercial and industrial areas, pastures and rights-of-way	2,4-D 300 g/L + picloram 75 g/L (e.g. Tordon 75-D)	125 mL/100 L	<ul style="list-style-type: none"> <li>▪ Spot spray during rosette stage</li> <li>▪ Use at least 3,000 L/ha in dense infestations</li> <li>▪ Consult label</li> </ul>
		3 L/ha	

Situation	Herbicide	Rate	Information
Native pastures, rights-of-way, commercial and industrial land	metsulfuron methyl 600g/L (e.g. Associate)	5 g/100 L water + wetter	<ul style="list-style-type: none"> <li>Hand gun.</li> <li>Spray to thoroughly wet all foliage but not to cause runoff</li> </ul>
		7 g/ha + wetter	<ul style="list-style-type: none"> <li>Boom spray.</li> <li>For pastures only.</li> <li>Treat in rosette stage.</li> <li>Consult label for details</li> </ul>
		5–7 g/h	<ul style="list-style-type: none"> <li>Boom spray.</li> <li>Lower rate up to 4-leaf stage, higher rate 4-leaf stage to rosette</li> </ul>
Native pastures, rights-of-way, commercial and industrial land	Triclopyr 75 g/L + metsulfuron-methyl 28 g/L (e.g. Zelan Brush Weed)	125 mL/100 L water	<ul style="list-style-type: none"> <li>Spot spray plants from rosette to flowering Consult label for critical comments</li> </ul>
Commercial and industrial areas, rights-of-way, around agricultural buildings	Hexazinone 750 g/kg (e.g. Velpar DF)	1 kg/ha 2 g/10 L/20m <sup>2</sup>	<ul style="list-style-type: none"> <li>Boom spray or spot spray</li> </ul>
Around agricultural buildings	Hexazinone 250 g/L (e.g. Velpar L)	3.5 L/ha or 7 L/10 L/20m <sup>2</sup>	<ul style="list-style-type: none"> <li>Boom spray or spot spray</li> </ul>
Grass pastures, fallows, various crop and non-crop situations (consult label for details)	Dicamba 500 g/L (e.g. Kamba 500)	Rates vary with situation, consult label	<ul style="list-style-type: none"> <li>Boom spray or spot spray</li> <li>Consult label for details and critical comments</li> </ul>
	Dicamba 700 g/kg		



Images Source: The State of Queensland (through the Department of Agriculture and Fisheries)[2019]  
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