Bathurst burr

Xanthium spinosum

Native to South America, Bathurst burr was first introduced into Australia in the early 1800s as a result of contaminated grain or livestock imports. It is a common invasive plant in many parts of the world and reduces agricultural productivity.

Heavy infestations occur where the ground has been disturbed, such as on roadsides, old cultivation paddocks and irrigated pastures or watercourses.

Bathurst burrs contaminate wool, necessitating heavy skirting and increasing processing costs.

This invasive plant also competes successfully with many summer crops and can act as a host for some fungal diseases of horticultural plants. Seedlings are poisonous to domestic stock animals, causing death in some circumstances.

Queensland Government

Legal requirements

Bathurst burr is not a prohibited or restricted invasive plant under the *Biosecurity Act 2014*. However, by law, everyone has a general biosecurity obligation (GBO) to take reasonable and practical measures to minimise the biosecurity risks associated with invasive plants under their control.

Local governments must have a biosecurity plan that covers invasive plants in their area. This plan may include actions to be taken on bathurst burr. Some of these actions may be required under local laws. Contact your local government for more information.

Description

Bathurst burr is an erect, multi-branched annual herb, growing up to 1 m high (but usually 30–60 cm).

Leaves are dark green on the upper surface, a paler green on the under surface, up to 7 cm long and usually three-lobed.

Stems are branched with one or two three-pronged yellow spines at the base of each leaf stalk.

Flowers are creamy green and small, developing into straw-coloured burrs that are 1–1.5 cm long and have numerous yellow hooked spines. Each burr contains two seeds.

Life cycle

Bathurst burr usually germinates during late spring to early summer, produces burrs in February and dies in early winter. However, some seeds can germinate out of season and mature plants can be found at any time of the year.

Of the two seeds present in each burr, only one will germinate in a single season. The other seed will remain dormant for two or three years (sometimes longer).

The hooked spines of Bathurst burr will readily attach to the fur or wool of animals and other fibrous material (such as clothing), making burrs easy to disperse. Burrs are also able to float and can spread along watercourses.

Distribution

Bathurst burr is widespread in Queensland, occurring in southern, western and central areas. It is seldom seen in the tropics as it prefers drier areas, such as well-drained contour banks and lighter soils.

Control

Control methods include cultivation, which is effective in the seedling stage, or spraying with suitable herbicides (see Table 1 below).

Spraying is most effective on young plants and should occur before any burrs form to prevent seeding. Once removed, establishing competitive, healthy pastures or crops will help stop bathurst burr from re-establishing.

There are numerous biological control agents, such as the bathurst burr seed-fly (*Euaresta bullans*) and the rust *Puccinia xanthii*, which have limited effectiveness.

More information

For more information contact your local government or visit biosecurity.qld.gov.au.

Table 1. Herbicides for the control of bathurst burr

Situation	Herbicide	Rate	Comments
Rights-of-way, non crop areas, commercial and industrial areas	MCPA 500 g/L (e.g. MCPA 500)	2 L/ha 200 mL/150 L water/1000 m^2 20 mL/10 L water/100 m^2	Boom spray. Spot spray (hand gun). Spot spray (knapsack). Young seedlings only Refer to label for critical comments.
	Glyphosate-trimesium 480g/L (e.g. Innova Glyphosate-Trimesium 480)	2 L/ha to 3 L/ha (boom) or 500 mL to 700 mL/100 L water (spot spray)	Spray to the point of run-off. Use the lower rate on actively growing plants up to 15 cm high, use the higher rate on plants that are not stressed and greater than 15 cm high or when conditions are dry or cold with ongoing overcast conditions.
	2,4-D amine 300 g/L + picloram 75 g/L (e.g. Tordon® 75-D)	1 L/ha	Aircraft or boom application. DO NOT apply two months prior to sowing winter cereals.
	2,4-D amine (various formulations)	Consult label for correct rate for your formulation	Spot spray. Apply to young, actively growing plants, ensuring thorough coverage.
	Fluroxypyr 200 g/L (e.g. Flagship 200)	75 mL/100 L water	Apply only to young, actively growing plants up to 40 cm high. Spray to the point of run-off.
	Fluroxypyr 333 g/L (e.g. Starane Advanced)	45 mL/100 L water	
	Fluroxypyr 400 g/L (e.g. Comet 400)	38 mL/100 L water	
	Ametryn 800 g/kg	300 g/100 L water + 120 mL non-ionic surfactant	Spot spray (handgun)
		47 g/15 L water + 17 mL non-ionic surfactant	Spot spray (knapsack). Spray young actively growing plants up to 60 cm high.
	Bromacil 800 g/kg (e.g. Bromacil 800 WP)	3.5–6.5 kg/ha plus wetting agent at label rate	Use high rate on heavy soils. Low rate will control plants in low rainfall (250 mm or less) areas.

Table 1. Herbicides for the control of bathurst burr (continued)

Situation	Herbicide	Rate	Comments
Pasture	MCPA 500 g/L (e.g. MCPA 500)	2 L/ha	Boom spray young seedlings only. Damage to legumes can occur.
	Fluroxypyr 200 g/L (e.g. Flagship 200)	75 ml/100 L water	Spray young, actively growing plants to the point of run-off.
	Fluroxypyr 333 g/L (e.g. Starane Advanced)	45 mL/100 L water	
	Fluroxypyr 400 g/L (e.g. Comet 400)	38 mL/100 L water	
	2,4-D amine (various formulations)	Consult label for the correct rate for your formulation	Spot spray. Apply to young, actively growing plants, ensuring thorough coverage.
	MCPA 340 g/L + dicamba 80 g/L (e.g. Kamba M)	2.8–4 L/ha 190–270 mL/100 L 60 mL/15 L	Boom spray Spot spray (hand gun) Spot spray (backpack) Spray when young and actively growing. Use the higher rate on larger plants.
Sown pasture containing clover or medics	2,4-DB 500 g/L (e.g. Buttress)	1–3.2 L/ha	Apply when clovers or medics are at the 1–8 trifoliate leaf stage. Grass seedlings should have three or more leaves. Consult label.
Forests	Fluroxypyr 200 g/L (e.g. Flagship 200)	75 mL/100 L water	Spray young, actively growing plants up to 40 cm high. Spray to the point of run-off.
	Fluroxypyr 333 g/L (e.g. Starane Advanced)	45 mL/100 L water	
	Fluroxypyr 400 g/L (e.g. Comet 400)	38 mL/100 L water	
	Glyphosate-trimesium 480g/L (e.g. Innova Glyphosate-Trimesium 480)	2 L/ha to 3 L/ha (boom) or 500 mL to 700 mL/100 L water (spot spray)	Spray to the point of run-off. Use the lower rate on actively growing plants up to 15 cm high, use the higher rate on plants that are not stressed and greater than 15 cm high or when conditions are dry or cold with ongoing overcast conditions.
Lawns and playing fields	2,4-D amine (various formulations)	Consult label for the correct rate for your formulation	Spot spray. Apply to young, actively growing plants, ensuring thorough coverage.
Dry channels and drains	Glyphosate-trimesium 480g/L (e.g. Innova Glyphosate-Trimesium 480)	2 L/ha to 3 L/ha (boom) or 500 mL to 700 mL/100 L water (spot spray) or 1 part product to 2 parts water (wiper)	Do not allow water to return to drains/channels within four days of application. **NOTE:** Use the lower rate on actively growing plants up to 15 cm high, use the higher rate on plants that are not stressed and greater than 15 cm high or when conditions are dry or cold with ongoing overcast conditions.
	Imazapyr 150 g/L + glyphosate 150 g/L (e.g. Arsenal Express)	5 L/ha	Restrictions apply. Consult label.
	Imazapyr 240 g/L (e.g. Arsenal Super) or Imazapyr 25o g/L (e.g. Warrant)	3 L/ha	

Read the label carefully before use. Always use the herbicide in accordance with the directions on the label.

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