

Chilean needle grass

Nassella neesiana



Chilean needle grass is a Weed of National Significance and is considered to be one of the worst weeds in Australia because of its invasive nature, potential for spread, and economic and environmental impacts. Named for its sharp, pointed seeds, it affects pastures and native grasslands in south-eastern Australia through to north-eastern New South Wales. The grass has been found on the Darling Downs in southern Queensland.

Heavy infestations displace desirable pasture species and the productivity of infested pastures in southern states has decreased by as much as 50%. The long, sharp seeds can cause injury to animals and downgrade lamb and sheep meat, wool, skins and hides. Chilean needle grass reduces natural biodiversity by replacing native species within native grasslands, grassy woodlands and riparian areas. It tolerates drought, heavy grazing and periodic inundation.



**Queensland
Government**

Legal requirements

Chilean needle grass is a category 3 restricted invasive plant under the *Biosecurity Act 2014*. It must not be given away, sold, or released into the environment. The Act requires everyone to take all reasonable and practical steps to minimise the risks associated with invasive plants under their control. This is called a general biosecurity obligation (GBO).

At a local level, each local government must have a biosecurity plan that covers invasive plants in its area. This plan may include actions to be taken on chilean needle grass. Some of these actions may be required under local laws. Contact your local government for more information.

Nationally, chilean needle grass is a prohibited species and is therefore not allowed to be brought into Australia.

Description

Chilean needle grass is a spear grass. Native to South America, it is a perennial tussock grass that grows in dense clumps, sometimes together with other grass species. It can also form pure stands. When not grazed or mowed, the erect foliage can grow up to 1 m tall. Leaves are 1–5 mm wide, flat and strongly ribbed on their upper surface, with leaf edges that are rough to touch. Before flowering, the grass is very hard to differentiate from many other tussock grasses.

Visible flowers develop on long stalks above the foliage. Grazed and mowed plants will develop shorter flowering stems. New flowering heads have a 60 mm long pale green awn (tail) at the end of the seed and a windblown horizontal appearance. New flowers also have a characteristic dark red colour produced by the bracts (glumes) encasing the seeds. On closer inspection the awn is curved or bent and the seed has a characteristic raised reddish corona between the body of the seed and the awn.

The 8–10 mm long seeds are pale brown when mature. The dried straw-coloured flowering head can remain on the plant even after seed has dropped.



The chilean needle grass seed has a sharp, pointed tip; a long, bent awn or tail; and a distinctive red crown or corona where the seed joins the awn



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Life cycle

Flowering generally occurs during November to December but the grass has the capacity to flower year-round if conditions are favourable.

The grass reproduces from seeds that are produced high on the flowering stems and also from self-fertilised seeds at the joints and base of the flowering stem. The 'stem seeds' (cleistogenes) account for up to 50% of annual seed production and enable the plant to reproduce despite grazing, slashing or burning. Stem seeds can be produced very early in the life of the plant. This grass species can produce more than 20 000 seeds per square metre. The resulting soil seed-bank can persist for many years. Seedlings have a high survival rate and they can flower and produce seeds in their first season.

Methods of spread

Chilean needle grass, unlike many other weeds, has little ability to spread on the wind.

The main method of spread is human-assisted. Chilean needle grass seed:

- adheres to clothing, livestock, vehicles and farm machinery
- can be found in contaminated seeds or fodder
- is transported by slashers and earth-moving equipment.

The grass can also be spread in floodwater that moves seed downstream and over floodplains.

Habitat and distribution

Infestations of the grass have been recorded in a limited area of the Darling Downs region of Queensland. The grass is climatically suited to South East Queensland and has the potential to become a major pest in cooler parts of southern Queensland, primarily areas around Stanthorpe, Warwick and Toowoomba.

Chilean needle grass has the potential to spread further in sub-humid, cooler parts of South East Queensland.

Control

Managing chilean needle grass

The GBO requires a person to take reasonable and practical steps to minimise the risks posed by chilean needle grass. This fact sheet provides information and some options for controlling chilean needle grass.

Prevention and early detection

Good hygiene can be effective in preventing human-assisted spread of chilean needle grass. Cleaning of vehicles, machinery, equipment and other material are very important in preventing further spread, as is controlling the movement of livestock from infested to clean areas. Slashers and mowers can transport seed from infested to non-infested sites. Machinery modifications that restrict the build up of seed on slashers and mowers, including guards and fans, assist in preventing the spread of the weed particularly along roadsides.

Feed stock in controlled areas to minimise the risk of seed spread and to limit the area requiring control.

Research suggests that if the grass is detected early and acted upon with a great deal of persistence over several years, it can likely be controlled.

Unfortunately, chilean needle grass is difficult to detect in the field and some degree of skill is required to differentiate it from other grasses, particularly when not in flower. Report suspected infestations to your local government or Biosecurity Queensland who will advise on action to take. If you think you may have found a plant of chilean needle grass, please send a sample to the Queensland Herbarium for positive identification. The process for collecting and sending plant specimens can be found on the Queensland Herbarium website.

Land management

Chilean needle grass, like many weeds, is symptomatic of prolonged grazing, which tends to eliminate palatable plant species and allow unpalatable species to multiply without restriction. Sustainable land management practices result in systems that are naturally more resilient to weed infestation.

Physical control

Small infestations should be manually removed before they flower and set seed, and then destroyed by incineration. Flowering or seeding plants should be bagged on removal to avoid spreading seed. Slashing or mowing before the grass sets seed will remove the bulk of the seed but will not remove basal seeds.

Herbicide control

Some of the herbicides registered or permitted for chilean needle grass control in Queensland are listed in Table 1 and Table 2.

Always carefully read the label or permit before using any herbicide. All herbicides must be applied strictly according to the directions on the label and in accordance with the directions and conditions stated in an APVMA permit.

Some herbicides permitted or registered for chilean needle grass control have withholding periods and significant ongoing management requirements in grazing and dairying situations. All land managers that have or may have dairy or beef cattle on their property at any stage in the future should carefully consider these requirements when determining the suitability of these herbicides for use on their property.

More information

More information is available from your local government office or visit biosecurity.qld.gov.au.

Table 1. Herbicides registered for the control of chilean needle grass

Situation	Application method	Herbicide	Rate	Comments
Urban open space, woodlands, roadsides, nature reserves and pastures	Boom spray	Flupropanate 745 g/L (e.g. Taskforce, Ezcrop Flupropanate 745)	1.5–3 L/ha	Avoid use in channels DO NOT reseed treated areas until at least 100 mm of leaching rain has fallen
	Spot spray	Flupropanate 745 g/L (e.g. Taskforce, Ezcrop Flupropanate 745)	100–300 mL per 100 L water	Higher rates give better control on more mature plants
	Spot spray (tank mix)	Flupropanate 745 g/L (e.g. Taskforce, Ezcrop Flupropanate 745) + Glyphosate 360 g/L (e.g. Roundup Biactive, Weedmaster Duo)	200 mL + 150 mL per 100 L water	Control will take up to 3–12 months depending on weather conditions and growth stage of plant High rates will kill native grasses Apply once per year Treated areas should be monitored regularly for any regrowth

Note: Many flupropanate products are not registered for chilean needle grass control in Queensland. Use only products with the correct registration.

Table 2. Herbicides for the control of chilean needle grass

Situation	Application method	Herbicide	Rate	Comments
Pasture, grazed woodlands and agricultural situations prior to sowing, tree and vine crops, lucerne and agricultural non-crop situations Wasteland, forest and conservation areas, margins of aquatic areas, roadsides and easements, rights-of-way, commercial and industrial areas and public service areas	Boom spray	Glyphosate ¹ 360 g/L (e.g. Roundup Biactive, Weedmaster Duo)	3 L/ha	Apply at start of flowering, before milky dough stage of seed May have variable results
Pasture, grazed woodlands and agricultural situations prior to sowing, tree and vine crops, lucerne and agricultural non-crop situations Wasteland, forest and conservation areas, margins of aquatic areas, roadsides and easements, rights-of-way, domestic, commercial and industrial areas, turf, playing fields, golf courses, public service areas, areas surrounding agricultural buildings	Spot spraying	Glyphosate ¹ 360 g/L (e.g. Roundup Biactive, Weedmaster Duo)	1 L product per 100 L water	Apply at start of flowering, before milky dough stage of seed May have variable results
	Wiper wick	Glyphosate ¹ 360 g/L (e.g. Roundup Biactive, Weedmaster Duo)	3.3 L/10 L water	
Legume pastures and lucerne only	Boom spray or aerial	Fluazifop-p (128 g/L) (e.g. Fusilade Forte)	1.7–3.3 L/ha	Add Supercharge 1% (1 L/100 L water) DO NOT cut or graze for at least six weeks
		Fluazifop-p 212 g/L (e.g. Fusilier)	1–2 L/ha	
Pasture, grazed woodlands and agricultural non-crop situations Wasteland, forest and conservation areas, roadsides and easements, rights-of-way, commercial and industrial areas Only in situations listed for both herbicides	Boom spray	Flupropanate 745 g/L (e.g. Taskforce, Ezycrop Flupropanate 745)	1.5–3 L/ha	DO NOT use in channels, drains or water courses DO NOT re-seed treated areas until at least 100 mm of leaching rain has fallen DO NOT spray near desirable susceptible trees DO NOT apply above 3 L/ha to steeply sloping sites Control will take up to 3–12 months depending on weather conditions and growth stage of plant High rates will kill native grasses
	Boom spray Tank mix	Flupropanate 745 g/L (e.g. Taskforce, Ezycrop Flupropanate 745) + Glyphosate ¹ 360 g/L	1.5–3 L/ha + 380–630 mL/ha	
Pasture, grazed woodlands and agricultural non-crop situations Wasteland, forest and conservation areas, roadsides and easements, rights-of-way, commercial and industrial areas, golf courses, public service areas and areas surrounding agricultural buildings	Spot spray	Flupropanate 745 g/L (e.g. Taskforce, Ezycrop Flupropanate 745)	100–300 mL per 100 L water	Apply once per year Treated areas should be monitored regularly for any regrowth
	Wiper wick	Flupropanate 745 g/L (e.g. Taskforce, Ezycrop Flupropanate 745)	500 mL/10 L water	
	Spot spray Tank mix	Flupropanate 745 g/L + (e.g. Taskforce, Ezycrop Flupropanate 745) Glyphosate ¹ 360 g/L (e.g. Roundup Biactive, Weedmaster Duo)	200 mL + 150 mL per 100 L water	

¹Read APVMA permit PER9792 for rates for products containing Glyphosate 450 g/L or Glyphosate 540 g/L. The herbicides in Table 2 are permitted under APVMA PER9297, which expires 30 November 2025. Any persons wishing to use a product in a situation other than as stated on the product label must obtain a copy of the permit; read all details, conditions and limitations relevant to that permit; and comply with the details, conditions and limitations before use. The permit is available on the APVMA website apvma.gov.au.

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

Fact sheets are available from biosecurity.qld.gov.au. The control methods recommended should be used in accordance with the restrictions (federal and state legislation, and local government laws) directly or indirectly related to each control method. These restrictions may prevent the use of one or more of the methods referred to, depending on individual circumstances. While every care is taken to ensure the accuracy of this information, the department does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.

