

Kochia (*Bassia scoparia*)



Declaration

(Code: C= City; S=Shire; T=Town)

Category : P1; P2

Location : For the whole of the State

Standard Control Codes (these may vary for individual plants)	
<p>P1 REQUIREMENTS Prohibits movement</p>	<p>The movement of plants or their seeds is prohibited within the State.</p> <p>This prohibits the movement of contaminated machinery and produce including livestock and fodder.</p>
<p>P2 REQUIREMENTS Aim is to eradicate infestation</p>	<p>Treat all plants to destroy and prevent propagation each year until no plants remain. The infested area must be managed in such a way that prevents the spread of seed or plant parts on or in livestock, fodder, grain, vehicles and/or machinery.</p>

Control Method

<p>Recommended herbicides</p>	<p>:</p> <ul style="list-style-type: none"> • Small seedlings Diquat + paraquat Bladex® Chlorsulfuron Bromoxynil Glyphosate Diuron • Spring-summer : seedlings to adult plants Glyphosate + Diuron + 2,4-D ester • 2,4-D amine
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Herbicide	:	Glyphosate + Diuron + 2,4-D ester
Active ingredient & Group	:	360 g/litre glyphosate (Group M) + 500 g/litre diuron (Group C) + 600/680 g/litre 2,4-D LV ester (Group I)
Amount of product per 10 litres water	:	7.5 mL glyphosate+ 15 mL diuron + 7.5 mL 2,4-D ester
Rate of product per hectare	:	0.75 L glyphosate + 1.5 L diuron+ 0.75 L 2,4-D ester
Wetting agent dilution	:	Under hot conditions add 1% crop oil.
Time of application	:	Spring to summer, seedlings to adult plants.
Remarks	:	Saltbushes will be killed. An APVMA permit is required to apply 2,4-D ester (80%) from 1 September until 1 May.
More Information and control methods	:	Other formulations of glyphosate are available eg 450, 490,500,540 g/L and 680 and 840 g/kg.

Herbicide	:	2,4-D amine (various trade names - AVPMA site)
Active ingredient & Group	:	a) 500 g/litre 2,4-D amine Group I b) 625 g/L 2,4-D amine Group I
Rates of dilution for spot spraying	:	a) 1:500 b) 1:625
Amount of product per 10 litres water	:	a) 20 mL b) 16 mL
Rate of product per hectare	:	a) 2.0 L b) 1.6 L
Wetting agent dilution	:	1:400
Time of application	:	Spring to summer, seedlings to adult plants.
Remarks	:	Saltbushes will be killed.

Herbicide	:	Diquat + paraquat (various trade names - AVPMA site)
Active ingredient & Group	:	135 g/litre paraquat + 115 g/litre diquat (Group L)
Rates of dilution for spot spraying	:	1:500
Amount of product per 10 litres water	:	10 – 20 mL
Rate of product per hectare	:	1 – 2 litres
Wetting agent dilution	:	1:400
Time of application	:	Small seedlings
Remarks	:	Higher rates 3-5 litre needed for larger bushes and to treat flowering bushes to prevent seed formation.

Herbicide	:	Bladex®
Active ingredient & Group	:	500 g/litre Cyanazine (Group C)
Amount of product per 10 litres water	:	10 mL
Rate of product per	:	1 litre



hectare		
Wetting agent dilution	:	1:400
Time of application	:	Small seedlings
Remarks	:	Saltbush (wavy leaf) will not be killed.

Herbicide	:	Chlorsulfuron (various trade names - AVPMA site)
Active ingredient & Group	:	750 g/kg Chlorsulfuron (Group B)
Rates of dilution for spot spraying	:	1 g/50 litre
Amount of product per 10 litres water	:	0.2 g
Rate of product per hectare	:	20 g
Wetting agent dilution	:	1:400
Time of application	:	Small seedlings

Herbicide	::	Bromoxynil (various trade names - AVPMA site)
Active ingredient & Group	:	200 g/litre bromoxynil (Group C)
Rates of dilution for spot spraying	:	1:2000
Amount of product per 10 litres water	:	5 mL
Rate of product per hectare	:	0.5 litre
Wetting agent dilution	:	1:400
Time of application	:	Small seedlings

Herbicide	:	Glyphosate (various trade names - AVPMA site)
Active ingredient & Group	:	360 g/litre glyphosate* (Group M)
Rates of dilution for spot spraying	:	1:2000
Amount of product per 10 litres water	:	5 mL
Rate of product per hectare	:	0.5 litre
Time of application	:	Small seedlings
Remarks	:	Other concentrations of glyphosate available. These can be substituted for the 360 concentration by adjusting the rates. Eg. 360/concentration g/L X rate for 360

Herbicide	:	Diuron (various trade names - AVPMA site)
Active ingredient & Group	:	500 g/litre diuron (Group C)



Amount of product per 10 litres water	:	25 mL
Rate of product per ha	:	2.5 litres
Wetting agent dilution	:	1:400
Time of application	:	Small seedlings

Weed Description

Family : **Chenopodiaceae**
Form : **Herbaceous – Annual**
Status : **Eradicated from WA**

Kochia, also known as burning bush, summer cypress, mock cypress is a summer growing plant native to eastern Europe and western Asia. It was introduced to salt affected areas in WA in 1990/91 but spread rapidly to non salt affected areas and roadsides. Considered a threat to cropping because it is an allelopath (produces substances that suppress plant growth) reducing pasture and crop production. Notorious for its large size (shading developing crop plants) and its ability to spread fast. Is resistant to insect attack.

Shoots of kochia have been shown to be toxic to a variety of grazing animals, due to high levels of oxalate (up to 4.7 percent soluble and 11.4 percent total), nitrate (up to 2.2 percent) and alkaloid (up to 1.2 percent). Plants that accumulate more than 1.5 percent by dry matter of nitrate are potentially toxic.

There are many reports from the USA of clinical diseases in sheep and cattle that consumed kochia (signs included depression, dehydration, weight loss, muscular weakness, photosensitisation, runny eyes and a crusty muzzle).

Kochia is an erect annual, growing 20-150 cm tall. As the plant ages, its colour often changes to pale yellow, pink and dull brown. Dead plants break off at ground level and are blown (as tumbleweeds) by the wind over large distances, scattering seeds as they travel.

- Stems** : It usually has a main stem that bears many branched, upwardly-curving side stems that give the plant a dense, compact appearance. The young shoots are often hairy.
- Leaves** : Flat and elongated, up to 50 mm long and 8 mm wide, with three longitudinal veins on the underside.
- Flowers** : Small indistinct flowers are borne on short dense spikes in axils of upper branches or at ends of branches; base of flower surrounded by 5-lobed calyx with horizontal wings that persist around spherical fruit.
- Fruit** : Small (2 mm across), star shaped and contains a single seed.

Kochia resembles several other summer-growing weeds including stinkwort, amaranths and roly-poly.

Other relevant information related to this topic:

- [Quarantine WA](#)
- [Permitted and quarantine species list](#)
- [Permit for minor off-label-use of a registered agvet chemical product](#)
(Permit number – per9655)
- [Off-label permit \(olp\) for use of a registered agvet chemical product](#)
(Permit number - per4590)
- [Off-label permit \(olp\) for use of a registered agvet chemical product](#)
(Permit number – per4594)