

Weeds and Herbicides Control Guide - 1

SureFire

WEED IDENTIFICATION & TREATMENT GUIDE

www.pctrual.com.au
Tel: 1800 630 877

Note: product dilution rates shown in this guide are indicative only. Always refer to the product label or permit for specific mixing rates.

APPLE OF PERU— *nicandra physalodes*



Distribution:
Occurs in all States and Territories in Australia, although predominately along the coastal areas, from SE Qld through to Central NSW.

Key Features:
Native to South America. It has become a weed of crops, disturbed sites, waste areas, roadsides, gardens, riparian zones, and forests. Sometimes kept as an ornamental plant. An important weed of maize crops in northern Qld. Some suspicion of being poisonous to stock.

Control Method:
Light tillage, hoeing or cutting can effectively control small plants.

Herbicide control using SureFire products:
WeedPro 540: glyphosate
60mL / 10L water
Starox 400: fluroxypyr
25mL / 10L water
Gamma: glufosinate-ammonium
30mL / 10L water

ASPARAGUS FERN - *asparagus virgatus*



Distribution:
Occurs in coastal and sub-coastal Queensland and is especially common in the south-east. Also, in the Sydney area.

Key Features:
Non-native invasive plant, it competes with native ground cover and understory plants by forming dense infestations that smother other species and prevent their germination and establishment. Fruit are spread by birds, reptiles and animals.

Control Method:
Mechanical removal of all plant parts, incl. all roots.

Herbicide control using SureFire products:
Metsulfuron Methyl: metsulfuron methyl
1-2g per 10 L of water plus a non-ionic surfactant.
Glyphosate 360: glyphosate
200mL / 10L water

AUSTRALIAN SEDGE— *carex longebrachiata*



Distribution:
Common in coastal areas of southern Qld, throughout NSW and Vic, in the ACT and Tasmania.

Key Features:
Produces large amounts of heavy seed that remains viable for 3-5 years and that falls close to the parent plant, creating a thick layer of germinating seedlings and maturing plants. Forms dense infestations and excludes native grasses in natural areas. Unpalatable to stock, and in pastoral areas with poor grass cover it grows thickly.

Control Method:
Exclude stock from infested pasture. Recheck area each year for new seedlings and regrowth and spray as needed.

Herbicide control using SureFire products:
Glyphosate 360: glyphosate
100-150mL / 10L water

BAMBOO - *phyllostachys spp., bambusa spp.*



Distribution:
Bamboo species have spread into many parts of SE Queensland and northern New South Wales.

Key Features:
A clumping plant with hollow greenish-yellow canes. Dense stands grow to exclude other vegetation. There are over 100 species of *Bambusa*, with three native to northern Australia. It spreads by producing shoots from the ends of its rhizomes. Dumped garden waste is another means of spread.

Control Method:
Mechanical removal is possible for smaller clumps, often involving an excavator / backhoe.

Herbicide control using SureFire products:
Glyphosate 360: glyphosate
200mL / 10L water (spot spray)
1.0L / 1.5L water (cut stump)
100mL / 10L water (foliar)
Flupropanate: flupropanate
20mL / 10L water (Permit 83165 Qld Only)

BARNYARD GRASS - *echinocloa spp.*



Distribution:
A very widely distributed grass that is most common throughout the northern and eastern areas of Australia.

Key Features:
Native to Europe & India. A single plant can set up to 40,000 seeds. A number of generations may occur in a single season. It is extremely competitive, reducing crop yields significantly. Potential toxicity to stock.

Control Method:
Fallow management, farm hygiene, crop rotation. Some resistance to glyphosate has been noted.

Herbicide control using SureFire products:
WeedPro 540: glyphosate
100mL / 10L water
Cannonade: fluzafop-p
50mL / 10L water + Wetter 600

BINDII - *soliva sessilis*



Distribution:
Widely distributed in all states of Australia, and found in lawns, parks, footpaths, gardens, pastures, roadsides, etc.

Key Features:
Native of South America, produces a seed capsule protected by spines, making it unpleasant to walk on a badly infested lawn in bare feet.

Control Method:
Mechanical removal is possible for smaller clusters.

Herbicide control using SureFire products:
Dicamba M: dicamba, MCPA **67mL / 10L water / 150M²**
Buffalo (S7 only): bromoxynil & MCPA
60mL / 10L water / 100M²
Multi-turf MCPA, clopyralid, diflufenican
50mL / 10L water / 100M²

BLACKBERRY - *rubus fruticosus agg*



Distribution:
Currently infests about 9 million ha of land in Australia, flourishes in temperate, wet areas, can grow in drier areas if it has access to water.

Key Features:
Weed of national significance. Quickly infests large areas, forming dense thickets which restrict stock movement. Overtakes pastures but is unpalatable to most livestock. Seeds spread by birds & animals feeding on berries & by water.

Control Method:
Mechanical removal & good pasture management.

Herbicide control using SureFire products:
Metsulfuron Methyl: metsulfuron methyl
1gm + Wetter 600 / 10L water
Raizon: triclopyr - picloram
35 - 50mL / 10L water
Glyphosate 360: glyphosate
100 - 130mL / 10L water

BLACKBERRY NIGHTSHADE - *solanum nigrum*



Distribution:
Widely distributed in all states of Australia, and found in lawns, parks, footpaths, gardens, pastures, roadsides, etc.

Key Features:
A herbaceous plant growing up to 1.25m tall. Non-native invasive plant. The fruit are globular, green ripening to become black or dark purple. The ripe fruit are soft and edible and contain numerous small seeds. Seeds can have high germination rates (>90%) and germination is usually staggered.

Control Method:
Physical removal is possible for smaller clusters.
Herbicide control using SureFire products:
Starox 400: fluroxypyr
25mL / 10L water
Amine 625: 2,4-D
30mL / 10L water
Metsulfuron Methyl: metsulfuron methyl
1g / 10L water + Wetter 600
Raizon: triclopyr - picloram
40mL / 10L water

SureFire Weeds and Herbicides Control Guide - 2

BLADY GRASS - *imperata cylindrica*



Distribution:
Blady grass occurs in all Australian states and the Northern Territory, usually in coastal and subcoastal areas, and is particularly common near the east coast.

Key Features:

A tufted perennial, invasive, with leaves and culms up to approx. 1 meter high, spreading by rhizomes and capable of forming extensive dense mats. Easily propagated by division of the rhizomes. Poor fodder value to cattle.

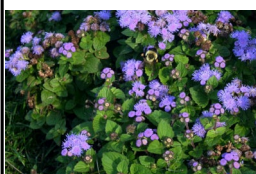
Control Method:

Repeated slashing & cultivation.

Herbicide control using SureFire products:

Gamma: glufosinate-ammonium
40mL / 10L water
Glyphosate 360: glyphosate
134mL / 10L water

BLUE BILLYGOAT WEED - *ageratum houstonianum*



Distribution:
This species is widely naturalised in the coastal districts of eastern Australia, especially in Queensland and New South Wales).

Key Features:

Native to Central America. Regarded as an environmental weed in Queensland and New South Wales, being particularly invasive along waterways, and is a common weed in sugar cane crops.

Control Method:

Potential to be managed by tillage & to contribute to soil fertility as a waste mulch.

Herbicide control using SureFire products:

Starox 400: fluroxypyr
30mL / 10L water + Wetter 1000
Amine 625: 2,4-D
30mL / 10L water
Dicamba M: dicamba, MCPA
60mL / 10L water

BRACKEN FERN - *pteridium esculentum*



Distribution:
Found in open forest, in most temperate areas in Australia, especially coastal areas & tablelands of NSW.

Key Features:

A native perennial fern found in open forest. It can also occur on cleared land where it can form extensive populations and become difficult to manage. Regenerates rapidly after fire & may dominate burnt areas. Spores can be carried long distances by wind.

Control Method:

Cultivation, slashing, crushing & burning.

Herbicide control using SureFire products:

Metsulfuron Methyl: metsulfuron methyl
1g / 10L water
Glyphosate 360: glyphosate
150mL / 10L water

BURR MEDIC - *medicago polymorpha*



Distribution:
Widely naturalised throughout most of the country, but most common in southern and eastern Australia.

Key Features:

Exotic weed of crops, pastures, riparian vegetation, parks, footpaths, gardens, lawns and other turfed areas. A short-lived herbaceous plant with creeping or spreading stems. Affects new born lambs, & may cause bloat in cattle.

Control Method:

Prevent the movement of burrs to uninfested areas. Slashing & hand weeding are useful.

Herbicide control using SureFire products:

Amine 625: 2,4-D
30mL / 10L water plus a non-ionic surfactant.
Metsulfuron Methyl: metsulfuron methyl
3g per 10 L of water plus a non-ionic surfactant.

CAMPHOR LAUREL - *cinnamomum camphora*



Distribution:
Widely naturalised in Australia, although it is most commonly found in coast south-east Queensland and north-east New South Wales.

Key Features:

Introduced into Australia from Asia. Invades pastures and disturbed riparian systems. It tends to germinate under fences and power lines wherever birds rest and deposit the seed. As a result, it can push fences over and disrupt power facilities. It is a troublesome weed on dairy farms throughout SE Qld and northern NSW.

Control Method:

Mechanical removal is possible for smaller plants. Take particular care with complete root removal.

Herbicide control using SureFire products:

Weedpro 540: glyphosate
60mL / 10L water
Raizon: triclopyr - picloram
35-50mL / 10L water
Treeson: triclopyr - picloram
50mL / 10L water

CAPEWEED - *arctotheca calendula*



Distribution:
Widely distributed in the southern, central, and eastern regions of Australia, & to a lesser extent in Queensland.

Key Features:

A native of South Africa, and a troublesome pasture & crop weed, autumn germinating & short lived, capeweed thrives in sandy, well-drained soil, and is often found on bare ground & heavily grazed pastures.

Control Method:

Mechanical removal is possible for smaller clusters. Cultivation and grazing is useful.

Herbicide control using SureFire products:

Metsulfuron Methyl: metsulfuron methyl
0.5g metsulfuron methyl + 140mL Surefire Buffalo / 10L water
Amine 625: 2,4-D
140mL / 10L water
Decimate: bromoxynil/diflufenican
50-100mL / 10L water
Multi-turf: MCPA, clopyralid, diflufenican
50mL / 10L water

CATS CLAW CREEPER - *dolichandra unguis-cati*



Distribution:
Widespread and common in coastal areas of NSW north of Sydney especially along coastal and hinterland streams in northern NSW.

Key Features:

Weed of National Significance. A woody vine that invades forests and riparian zones, killing trees and understory plants. Produces numerous seeds with papery wings that aid dispersal, particularly by water and wind. Established plants can reproduce vegetatively from tubers and creeping stems.

Control Method:

Remove seedlings and treat isolated plants or clumps.

Herbicide control using SureFire products:

Raizon: triclopyr - picloram
40mL / 10L water
Glyphosate 360: glyphosate
200mL / 10L water

CAUSTIC CREEPER - *chamaesyce* spp.



Distribution:
Widely naturalised in Australia, although it is most commonly found in the eastern states, SA & the NT.

Key Features:

Short-lived plants, with infestations establishing each year from seed in the soil. They are rapid colonisers of bare areas in gardens, turf, footpaths, and roadsides. Milky sap that exudes from the stems and leaves when they are broken is caustic and contact with it can severely irritate skin and eyes.

Control Method:

Plants can usually be removed by hand quite easily, as most have a shallow root system.

Herbicide control using SureFire products:

Weedpro 540: glyphosate
60mL / 10L water
Glyphosate 360: glyphosate
700mL / 10L water
Slayer: nonacnoic acid
700mL / 10L water

CHICKWEED - *stellaria media*



Distribution:
Widely naturalised in Australia, particularly in the wetter southern parts of the country.

Key Features:

Regarded as an environmental weed in most states of Australia, prefers temperate climate, spread by seeds. A competitive weed found in crops, pastures, river flats & urban bushland. Often appreciated for its edibility and medicinal qualities.

Control Method:

Physical removal, preventing seed set.

Herbicide control using SureFire products:

Decimate (S7 only): bromoxynil
10mL / 10L water
Dicamba M: dicamba, MCPA
70-100mL / 10 water

SureFire Weeds and Herbicides Control Guide - 3

CLIMBING BUCKWHEAT - *fallopia convolvulus*



convolvulus

Distribution:

Widely occurring in eastern parts of Australia. It is very common in SE Qld, eastern parts of NSW, the ACT, Victoria and Tasmania.

Key Features:

Native to Europe. A major weed of southern and central Queensland and northern New South Wales. Up to 1000 seeds per plant, which exhibit high dormancy (Only ~2.5% of seeds germinate per season). Can be particularly troublesome in fallow. Seeds may be toxic to stock.

Control Method:

Carefully dig out isolated plants, Cultivate before flowering.

Herbicide control using **SureFire** products:

Dicamba M: dicamba, MCPA

140mL / 10L water

Multi-turf MCPA, clopyralid, diflufenican

50mL / 10L water

CLOVER - *trifolium repens*



Distribution:

The white clover zone extends from south-eastern Qld along the coast and adjacent tablelands of NSW and Vic to Mt Gambier in SA - in irrigated regions of

south-west WA and high rainfall areas of the Australian Alps and most of Tasmania.

Key Features:

Native to Europe. A creeping perennial, broadleaf weed. It is a hardy weed that is cold and frost tolerant. It is highly palatable so can be grazed by livestock. It is a particular problem in turf grass as it grows at a different rate to grasses and is a different texture.

Control Method:

Removal by hand is possible for small infestations. Prevention of seed movement (cattle or equipment) is essential. Exclude stock to prevent dispersal of seed.

Herbicide control using **SureFire** products:

Dicamba M: dicamba, MCPA

60mL / 10L water

Buffalo (S7 only): bromoxynil & MCPA

30mL / 10L water

Multi-turf MCPA, clopyralid, diflufenican

50mL / 10L water

COBBLERS PEGS - *bidens pilosa*



Distribution:

Found in all Australian mainland states incl WA. In NSW found on the coast, slopes & plains and has invaded remnant grassy vegetation.

Key Features:

A short-lived exotic herbaceous plant that grows in a wide variety of habitats. It reproduces only by seed, which readily become attached to clothing and animals. The seeds are recognised by their characteristic top of two or three barbed awns.

Control Method:

Physical removal is possible, especially for young plants.

Herbicide control using **SureFire** products:

Starox 400: fluroxypyr

25mL / 10L water

Amine 625: 2,4-D

30mL / 10L water

Gamma: glufosinate-ammonium

50mL / 10L water

CREeping INDIGO - *indigofera spicata*



Distribution:

Widely naturalised in the coastal districts of SE-QLD, especially in the Moreton district. Also found in the coastal districts of central and northern QLD.

Key Features:

A short-lived herbaceous plant with creeping or scrambling stems. Native to Africa. This species reproduces by seed which can be spread by water & animals.

Control Method:

Mechanical removal is possible for smaller clusters.

Herbicide control using **SureFire** products:

Amine 625: 2,4-D

20mL / 10L water

WeedPro 540: glyphosate

60mL / 10L water

DOCKS - *rumex spp.*



Distribution:

Found in eastern NSW, Vict and Tas, in south-eastern SA and in the coastal districts of south-western WA.

Key Features:

Worldwide distribution. Often found in moist to wet ground with poor drainage and intermittent waterlogging. Some varieties are edible plants.

Control Method:

Establishing healthy perennial pasture can help with control. Hoeing or cultivation not recommended as the plant will tend to regrow from the root crown.

Herbicide control using **SureFire** products:

Dicamba M: dicamba, MCPA

140mL / 10L water

FAT HEN - *chenopodium album*



Distribution:

Found in a broad band from SE Qld thru NSW, Vic and Tas, in south-eastern SA and in the coastal districts of south-western WA.

Key Features:

Originated from Europe. A heavily seeding summer annual weed, well known to vegetable farmers. Seeds may remain viable for decades.

Control Method:

Tillage, crop planting density, good farm hygiene for minimising seed spread, hand weeding & slashing / mowing.

Herbicide control using **SureFire** products:

Dicamba M: dicamba, MCPA

140mL / 10L water

FIREWEED - *senecio madagascariensis*



Distribution:

Widely distributed in coastal areas of south-eastern Australia to central Queensland, and isolated areas of inland NSW.

Key Features:

Native of South Africa. Weed of national significance, thrives in overgrazed pastures. Wind spreads the light, fluffy seeds around readily. Poisonous to livestock.

Control Method:

Pasture improvement is a proven strategy.

Herbicide control using **SureFire** products:

Decimate (S7 only): bromoxynil - diflufenican

50mL / 10L water

Amine 625: 2,4-D

32mL / 10L water

Metsulfuron Methyl: metsulfuron methyl

1g + Wetter 600 / 10L water

FLEABANE - *conyza spp.*



Distribution:

Widely naturalised throughout Australia, especially in south-eastern Queensland and northern NSW.

Key Features:

Fleabane is a major crop weed in southern Qld and northern NSW. It is also emerging as a problem in other cropping regions of Australia. It is a prolific seed producer and seeds can disperse long distances.

Control Method:

Strategic tillage will suppress weed germination. It has been confirmed as glyphosate resistant.

Herbicide control using **SureFire** products:

Dicamba M: dicamba, MCPA

60mL / 10L water

Buffalo (S7 only): bromoxynil & MCPA

30mL / 10L water

Amine 625: 2,4-D

30mL / 10L water plus a non-ionic surfactant.

Gamma: glufosinate-ammonium

30-50mL / 10L water

FUMITORY - *fumaria spp.*



Distribution:

Plant is present in the temperate areas of eastern Australia, extending from lower SA thru Tas, Vic, NSW and into SE Qld.

Key Features:

Native to Europe and western Asia. Usage of this plant as medicine is well documented. Suspected of poisoning stock. It successfully competes with coexisting vegetation, including crop plants, causing significant yield losses.

Control Method:

Growing competitive crops, grazing, burning crop residues & mowing—slashing all have some use.

Herbicide control using **SureFire** products:

Buffalo (S7 only): bromoxynil & MCPA

30mL / 10L water

Dicamba M: dicamba, MCPA

60mL / 10L water

SureFire Weeds and Herbicides Control Guide - 4

GALENIA - *galenia pubescens*



Distribution:
Scattered throughout many sites in NSW, Vic, SA and WA. It is of particular concern through the Hunter Valley and Liverpool Plains regions of NSW.

Key Features:

Native of South Africa. Drought and salt tolerant, it grows over and smothers existing vegetation, including pastures, by forming a thick dense mat. Can be toxic to stock since it can produce toxic levels of nitrates and soluble oxalates if grown in fertile soils.

Control Method:

Can be mechanically removed by ploughing, chipping or grubbing. All the root material must be removed to prevent resprouting. Remove weed by hand when still in small numbers.

Herbicide control using **SureFire** products:

Raizon: triclopyr - picloram
35-50mL / 10L water

GIANT DEVILS FIG— *solanum chrysotrichum*



Distribution:
Commonly grows in the coastal areas of northern and central New South Wales, Queensland, and to a lesser extent in Victoria.

Key Features:

Native of Central America. Spread by seed, found in riparian areas, forests, roadsides, parks, gardens, disturbed sites, and waste areas. Herbicide spraying will not kill the seeds in fruit, which must be collected & disposed of separately.

Control Method:

Seedlings and small plants can be dug out with a mattock. Larger plants can be cut down and the roots dug up.

Herbicide control using **SureFire** products:

(Note: under permit only)

Metsulfuron Methyl: metsulfuron methyl
1g metsulfuron methyl + 200mL glyphosate / 10L water
Raizon: triclopyr - picloram
35-50mL + 10g metsulfuron-methyl/ 10L water

GIANT PARRAMATTA GRASS - *sporobolus*



fertilis
Distribution:
Spread in Australia from Cape York to the southern coast of NSW, with isolated infestations in Vic and the NT.

Key Features:

A native to tropical Asia. It can dramatically decrease economic viability of grazing land and lower land values. It invades pastures and replaces more productive types of grass, especially after overgrazing or soil disturbance.

Control Method:

Maintain dense vigorous pastures. Take great care to prevent dispersal by vehicles, implements and hay.

Herbicide control using **SureFire** products:

Glyphosate 540: glyphosate
60mL / 10L water
Flupropanate flupropanate
200mL / 100L water

GIANT RATS TAIL GRASS - *sporobolus*



pyramidalis
Distribution:
Widely distributed in the eastern parts of Australia. Most common in the coastal districts of southern Qld and northern New South Wales.

Key Features:

Non-native invasive plant, it can overtake native grasslands, open woodlands, conservation reserves and wetland areas. Low palatability to livestock, reducing the productivity of agricultural land by completely displacing desirable pasture species. Large numbers of seeds are produced, become sticky when wet, which encourages dispersal to un-infested areas.

Control Method:

Remove and destroy seed heads before spot-spraying in low-density paddocks. Be aware of the transfer of seeds with stock movement.

Herbicide control using **SureFire** products:

Glyphosate 360: glyphosate
600mL / 10L water
Flupropanate flupropanate
200mL / 100L water

GROUNDSEL BUSH - *baccharis halimifolia*



Distribution:
Widely distributed in coastal areas from South East Qld to central NSW.

Key Features:

Non-native invasive plant often forms thick stands, which inhibit the movement of stock & reduces the productivity of agricultural land. Reproduces by seeds spread by wind, water, and human activity. Suspected to be poisonous to livestock.

Control Method:

Mechanical removal, slashing, goat grazing.

Herbicide control using **SureFire** products:

Amine 625: 2,4-D
32mL / 10L water
Raizon: triclopyr - picloram
35mL / 10L water
Glyphosate 360: glyphosate
70mL - 100mL / 10L water

JOHNSON GRASS - *sorghum halepense*



Distribution:
Widely naturalised, particularly in the wetter parts of mainland Australia. It is most prominent in the coastal and sub-coastal regions of NSW and in SE Qld.

Common in the other states.

Key Features:

Native to Asia & North Africa. A clumping perennial grass up to 2m tall. It invades cropping land and is a host of crop pests and diseases. Can be toxic to livestock. Reproduces by abundant seeds & rhizomes.

Control Method:

Removal by hand is possible for small infestations. Prevention of seed movement (cattle or equipment) is essential. Exclude stock from contaminated areas to prevent dispersal of seed.

Herbicide control using **SureFire** products:

Glyphosate 360: glyphosate
600mL / 10L water
Flupropanate flupropanate
200mL / 100L water

KHAKI WEED - *alternanthera pungens*



Distribution:
Widely distributed throughout all the mainland states and territories of Australia, where it grows in all but the driest environments.

Key Features:

A small, perennial, creeping, herbaceous plant with stem up to 60 cm long. This species often forms a dense mat of prickly vegetation over the ground surface. Reproduces mainly by seed, although stem fragments may also take root. Seeds are prickly, and the plant is problematic to livestock.

Control Method:

Pasture improvement is a proven strategy.

Herbicide control using **SureFire** products:

Raizon: triclopyr - picloram
200L / 10L water
Amine 625: 2,4-D
110-220L / 10L water
Dicamba M: dicamba, MCPA
67mL / 10L water

LANTANA - *lantana camara*



Distribution:
Widely distributed in tropical and sub-tropical areas of Australia, and to a lesser extent in temperate & semi-arid areas.

Key Features:

Non-native invasive plant, often forms dense thickets, reproduces by seeds frequently transported by birds or animals, or by nodes on branches when in ground contact. Poisonous to livestock. Fire can often encourage denser regrowth.

Control Method:

Mechanical removal is possible for smaller clusters.

Herbicide control using **SureFire** products:

Metsulfuron Methyl: metsulfuron methyl
4g metsulfuron methyl + 40mL glyphosate / 10L water
Amine 625: 2,4-D
32mL / 10L water
Raizon: triclopyr - picloram
50 - 70mL / 10L water
WeedPro 540: glyphosate
60mL / 10L water
Starox 400: fluroxypyr
50mL / 10L water

MADEIRA VINE - *anredera cordifolia*



Distribution:
Widely distributed in coastal, summer-rainfall-dominant areas of NSW, including edges of rainforests. Present in SE Qld & Atherton Tableland.

Key Features:

A native of South America, a vigorous climber that can produce thousands of aerial tubers along its stem. It is a serious environmental weed which can smother trees & shrubs and can grow as a ground cover. Tubers may remain viable for several years.

Control Method:

Physical removal is possible, but viable tubers need to be collected carefully.

Herbicide control using **SureFire** products:

Metsulfuron Methyl: metsulfuron methyl
1-5g metsulfuron methyl/10L water
Starox 400: fluroxypyr
25mL / 10L water
Glyphosate 360: glyphosate
100mL / 10L water
Raizon: triclopyr - picloram
40mL / 10L water

SureFire Weeds and Herbicides Control Guide - 5

MARSHMALLOW - *malva parviflora*



Distribution:
Widely distributed in the temperate areas of eastern Australia, particularly in SA, Vic & NSW, although it can occur across a variety of climatic regions incl. rainfall.

Key Features:

An annual sprawling herb, native to the Mediterranean region. It is considered one of the most significant weeds of the Australian vegetable industry, reducing crop yield and quality, particularly if the plants emerge before the crop. It can serve as a host for several crop viruses. The weed can emerge year-round in some regions.

Control Method:

Repeated tillage is effective when feasible. Hand weeding is expensive, not suited to wide-scale infestations, due to long taproot.

Herbicide control using **SureFire** products:

Decimate (S7 only): bromoxynil

20mL / 10L water

Starox 400: fluroxypyr

30mL / 10L water

MOTHER-IN-LAWS TONGUE - *sansevieria*



trifasciata
Distribution:
Widely naturalised in eastern Australia, throughout eastern Queensland and in the coastal districts of northern New South Wales.

Key Features:

Invasive plant, a native of Nigeria. A common garden plant that if dumped as garden waste will survive in bushland, crowding out low growing native plants. Spreads by rhizomes, prefers well-drained soils in shady areas.

Control Method:

Carefully dig out isolated plants, making sure that all fragments of the substantial rhizome system are removed.

Herbicide control using **SureFire** products:

Glyphosate 360: glyphosate

100mL / 10L water

Metsulfuron Methyl: metsulfuron methyl

1g metsulfuron methyl / 10L water + Wetter 600

MOTHER-OF-MILLIONS - *bryophyllum*



delagoense (& others)
Distribution:
A problematic weed on the coast and the north-west slopes and plains of NSW and to some extent in SE Queensland.

Key Features:

Native of South Africa, it has the ability to reproduce vegetatively in large numbers, making it hard to eradicate. Produces numerous seeds which can survive in the soil for a number of years before germinating. Poisonous to cattle.

Control Method:

Mechanical removal, fire & site rehabilitation.

Herbicide control using **SureFire** products:

Metsulfuron Methyl: metsulfuron methyl

1g metsulfuron methyl + 20mL glyphosate / 0L water

Amine 625: 2,4-D

40mL / 10L water

Raizon: triclopyr - picloram

50mL / 10L water

Starox 400: fluroxypyr

30mL / 10L water + Wetter 1000

NOOGOORA BURR - *xanthium occidentale*



(pungens)
Distribution:
Widely distributed in coastal areas of eastern Australia. In Queensland, occurs in tropical regions and the central & western regions of the state.

Key Features:

An invasive plant, found along river and creek flats, on roadsides and in pastureland. Noogoora burr spreads by seed in the burrs, which attach to animals, clothing, and bags. Burrs can also float on water.

Control Method:

Since noogoora burr is an annual, infestations will be reduced if seeding can be prevented.

Herbicide control using **SureFire** products:

Starox 400: fluroxypyr

38mL / 10L water + Wetter 1000

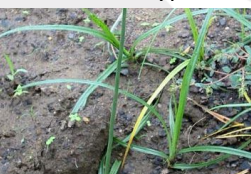
Amine 625: 2,4-D

90mL / 10L water

Glyphosate 360: glyphosate

100mL / 10L water

NUTGRASS - *cyperus rotundus*



Distribution:
Widely distributed in coastal areas of eastern Australia. In Queensland, it is particularly common in the Bowen, Bundaberg and Gatton vegetable growing regions.

Key Features:

Competes vigorously with most crops for soil moisture and nutrients, resulting in crop yield reductions of between 10 and 90%. The plant features a network of bulbs, roots, rhizomes, and multiple tubers in chains, making control problematic.

Control Method:

Repeated tillage is effective when feasible. Hand weeding is expensive, not suited to wide-scale infestations, and with a need to ensure that all viable tubers are removed.

Herbicide control using **SureFire** products:

Tempra 750 WG: halosulfuron-methyl

1.3gm / 10L water + Wetter 600

Glyphosate 360: glyphosate

67mL / 10L water

ONION WEED - *asphodelus fistulosus*



Distribution:
A very widely naturalised species, that is particularly common in the southern parts of Australia, incl. Tasmania.

Key Features:

A native of southern Europe, a small plant with onion-like leaves and white or pale pink flowers. Seeds can germinate most of the year, making control difficult.

Control Method:

Mechanical removal is possible, especially before seeding. Larger infestations should be controlled by cultivation.

Herbicide control using **SureFire** products:

(Note: under permit only).

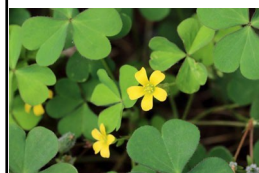
Metsulfuron Methyl: metsulfuron methyl

1.5g metsulfuron methyl / 10L water

Glyphosate 360: glyphosate

100-130mL / 10L water

OXALIS - *oxalis corniculata*



Distribution:
Widely naturalised throughout Australia, Cosmopolitan weed, found chiefly in and around populated areas, often in gardens and parks.

Key Features:

Creeping oxalis is a major weed in turf, ornamental plantings, gardens, and nurseries. Once established, it is very competitive because it grows all year.

Control Method:

Physical removal of plant & controlling the germination of seeds (light is required for successful seed germination).

Herbicide control using **SureFire** products:

Dicamba M (S7 only): dicamba, MCPA

50mL / 10L water

Buffalo: bromoxynil & MCPA

30mL / 10L water

Multi-turf MCPA, clopyralid, diflufenican

50mL / 10L water

PARTHENIUM - *parthenium hysterophorus*



Distribution:
Found mainly in the coastal and sub-coastal districts of central Qld. It is also relatively common in parts of northern Qld and present in SE Qld, inland New South Wales

and the Northern Territory.

Key Features:

Native to Central America. A vigorous species that colonises weak pastures with sparse ground cover. Contact with the plant or the pollen can cause serious allergic reactions such as dermatitis and hay fever. Unpalatable and toxic to cattle and sheep.

Control Method:

Removal by hand not recommended. Prevention of seed movement (cattle or equipment) is essential.

Herbicide control using **SureFire** products:

Dicamba M: dicamba, MCPA

14mL / 10L water + Wetter 600

Amine 625: 2,4-D

320mL / 100L water

Metsulfuron Methyl: metsulfuron methyl

0.5g metsulfuron methyl / 10L water + Wetter 600

PASPALUM - *paspalum dilatatum*



Distribution:
Mostly found in the southern and eastern parts of Australia. It is common in eastern QLD & NSW, the ACT, Vic, Tas, south-eastern SA and south-western WA.

Key Features:

Native to South America. It is an environmental weed in many states. Common weed of gardens, lawns, footpaths, parks, roadsides, disturbed sites, waste areas, crops & pastures.

Control Method:

Can be removed by hand, will re-emerge in thin lawn areas. Drought & waterlogging tolerant - can survive submersion for several months. Frost sensitive.

Herbicide control using **SureFire** products:

Cannonade: fluazifop-p

75mL - 400mL / 10L water

Gamma: glufosinate-ammonium

50mL / 10L water

Glyphosate 360: glyphosate

100mL / 10L water

Flupropanate flupropanate

500mL / 100L water

SureFire Weeds and Herbicides Control Guide - 6

PATERSONS CURSE - *echium plantagineum*



Distribution:
Occurs in all States and Territories in Australia. However, the most serious infestations occur in pastoral regions of New South Wales, Victoria & South Australia.

Key Features:

A winter annual herb, it is a major weed in winter pastures throughout southern Australia and can be a problem in areas of natural vegetation. Seeds may remain dormant in the soil for up to five years. Considered to be toxic to livestock.

Control Method:

Prevent the movement of seeds to uninfested areas. Slashing, hand weeding & burning are useful.

Herbicide control using **SureFire** products:

Amine 625: 2,4-D
170—220mL / 10L water
Metsulfuron Methyl: metsulfuron methyl
0.5 g per 10 L of water plus a non-ionic surfactant.
Glyphosate 360: glyphosate
50mL - 70mL / 10L water

PENNYWORT - *centella asiatica*



Distribution:
Native to the coastal and sub-coastal districts of southern, eastern and northern Australia. Found in south-western WA, south-eastern SA, Vic, eastern NSW, eastern Qld, and the northern parts of NT.

Key Features:

A long-lived herbaceous plant with creeping stems that regularly produce roots at the joints. Common in wetlands and damp habitats in grasslands, open woodlands, pastures, and lawns. It quickly exploits localised soil disturbance to establish in riparian zones. Spreads by seed and vegetatively via its creeping stems.

Control Method:

Carefully dig out isolated plants, making sure that all fragments of the substantial stem system are removed.

Herbicide control using **SureFire** products:

Dicamba M: dicamba, MCPA
60mL / 10L water

PETTY SPURGE - *euphorbia peplus*



Distribution:
Common in southern Qld, throughout NSW and Vic, in the ACT and Tas, in many parts of SA and in the south-western and southern parts of WA.

Key Features:

Native to northern Africa, occasionally cultivated for its medicinal properties. Skin contact with sap can cause intense pain and blistering. Eye contact may cause intense pain and severe swelling. Regarded as an environmental weed, Toxic to stock but rarely causes problems because it is unpalatable.

Control Method:

Readily removed by hand, or by raking over the weed to remove the base and associated root system.

Herbicide control using **SureFire** products:

Glyphosate 360: glyphosate
100-150mL / 10L water

PIGWEEED - *portulaca oleracea*



Distribution:
Widely naturalised throughout all states except Tasmania.

Key Features:

An Australian native, generally regarded as a weed, but it is an edible

plant. It has invasive tendencies and often forms dense mats competing with pasture & crops. Beware of toxicity in large quantities to sheep & cattle

Control Method:

Prevent seed set, and increase grazing intensity,

Herbicide control using **SureFire** products:

Amine 625: 2,4-D
30mL / 10L water plus a non-ionic surfactant.
Metsulfuron Methyl: metsulfuron methyl
4g per 10 L of water plus a non-ionic surfactant.
Dicamba M: dicamba, MCPA
60mL / 10L water + Wetter 600
Starox 400: fluroxypyr
25mL / 10L water
Gamma: glufosinate-ammonium
30mL / 10L water
Glyphosate 360: glyphosate
50-67mL / 10L water

RAGWEED - *ambrosia artemisiifolia*



Distribution:
Grows in Queensland, New South Wales, Victoria, South Australia and Western Australia. Only the NT and Tasmania have no recorded growth of ragweed.

Key Features:

Annual ragweed can invade and suppress weak and overgrazed pastures, reducing productivity. Its pollen contains potent allergens that can cause hay fever and aggravate asthma. Although cattle will eat Annual Ragweed to some extent, other pasture species will be grazed in preference. It survives mowing, trampling, grazing and cultivation due to the longevity and dormancy of its seed.

Control Method:

Pull out young plants but be wary of allergens. Healthy, dense pastures will help to suppress annual ragweed germination and growth.

Herbicide control using **SureFire** products:

Dicamba M: dicamba, MCPA
60mL / 10L water

RAGWORT - *senecio jacobaea*



Distribution:
Well established on the Mornington Peninsula in Vic, Tasmania and high rainfall areas of WA.

Key Features:

Native to Europe and western Asia. A major pasture weed, poisonous to grazing animals, it competes strongly with more desirable plants and regenerates strongly from the crown & root system.

Control Method:

Hand pulling can be used to control flowering ragwort, but the flowering heads should be placed in bags to prevent spread of seeds and later burnt to prevent seed germination. Small infestations can be chipped out using a shovel or mattock. No herbicide will completely eradicate ragwort infestations in one application.

Herbicide control using **SureFire** products:

Amine 625: 2,4-D
32mL / 10L water

SCOTCH THISTLE - *onopordum acanthium*



Distribution:
Naturalised throughout the southern and eastern parts of Australia. It is very common in SE Qld, the southern and eastern parts of NSW, the ACT, Victoria and Tasmania.

Key Features:

Native to Europe, northern Africa. A weed of pastures, crops, waste areas and roadsides, though it can spread to native grasslands & open woodlands. It reproduces by seeds that are equipped with bristles that enhance dispersal by wind. Mature thistles create barriers that hinder livestock movement.

Control Method:

Carefully dig out isolated plants, making sure that all the substantial taproot is removed.

Herbicide control using **SureFire** products:

Dicamba M: dicamba, MCPA
60mL / 10L water
Amine 625: 2,4-D
30mL / 10L water
Buffalo (S7 only): bromoxynil & MCPA
30mL / 10L water
Starox 400: fluroxypyr
25mL / 10L water

SERRATED TUSsock - *nassella trichotoma*



Distribution:
Found in the Central and Southern Tablelands of NSW. There is some on the Northern Tablelands.

Key Features:

Native to South America. It has extremely low nutritional value for stock. All animals forced to graze serrated tussock will lose condition. It can completely take over new areas within 4 years and is hard to get rid of. It tolerates dry conditions, rocky areas & shallow soil.

Control Method:

Physical removal is possible, especially before flowering & seeding. Limit animal movement from infested areas. Inspect hay or fodder for weed seeds. Plant windbreaks to limit wind-borne seeds.

Herbicide control using **SureFire** products:

Glyphosate 540: glyphosate
60mL / 10L water
Flupropanate flupropanate
200mL / 100L water

SILVERLEAF DESMODIUM - *desmodium-uncinatum*



Distribution:
Found in south-eastern and northern QLD and in the coastal districts of northern and central NSW.

Key Features:

A native of South America, and an invasive plant. Introduced as a fodder crop, it has now become a weed of creekbanks, roadsides, fence lines, forest margins, disturbed sites, waste areas and plantation crops (e.g. sugarcane). Cattle graze the plant readily.

Control Method:

Cultivation, slashing, or physical removal.

Herbicide control using **SureFire** products:

Gamma: glufosinate-ammonium
30mL / 10L water
Cannonade: fluzifop-p
100mL / 10L water + Wetter 600

SureFire Weeds and Herbicides Control Guide - 7

SINGAPORE DAISY - *sphagnetcola trilobata*



Distribution:
Widely distributed in coastal areas of Queensland. It is becoming a problem by invading wetlands, irrigated areas and around drains.

Key Features:

A native of tropical America, Singapore daisy is a creeping plant. It spreads rapidly and smothers other plants. Produces variable amounts of seeds but spread by cuttings via slashing and pruning.

Control Method:

Mechanical removal is possible, especially including runners.

Herbicide control using **SureFire** products:
(Note: under permit only)

Metsulfuron Methyl: metsulfuron methyl
1.5g metsulfuron methyl + 200mL glyphosate / 10L water

SPOTTED SPURGE - *chamaesyce maculata*



Distribution:
Found in the Moreton district in SE Qld. Also in eastern NSW and present in some inland regions of southern and central Qld. Found in Victoria, the ACT, southern S and the southern parts of the NT.

Key Features:

Native to North America. A small, short-lived, herbaceous plant with creeping to semi-upright stems. Its slender stems are often reddish and contain a milky sap. A common weed of gardens, roadsides, railway lines and disturbed sites. Reproduces only by seed.

Control Method:

Physical removal is possible, especially before flowering & seeding.

Herbicide control using **SureFire** products:
Glyphosate 360: glyphosate
100mL / 10L water

STAGGERWEED - *stachys arvensis*



Distribution:
Widely naturalised in southern and eastern Australia. It is widespread in Qld, NSW, Vic and Tas, and is most common in the wetter parts of these states

Key Features:

Native to northern Africa. A strongly competitive weed of pastures, crops, cultivation, gardens, lawns, roadsides. Suspected of causing 'staggers', and in severe cases, mortality, in livestock.

Control Method:

Can be mechanically removed by ploughing, chipping or grubbing. The weed is moderately palatable to goats.

Herbicide control using **SureFire** products:

Dicamba M: dicamba, MCPA
60mL / 10L water
Gamma: glufosinate-ammonium
30mL / 10L water
Metsulfuron Methyl: metsulfuron methyl
3g per 10 L of water

SUMMERGRASS - *digitaria* spp.



Distribution:
A widely distributed weed found in the tropics, subtropical and temperate regions of Australia, but particularly common on the eastern coast areas of Qld & NSW.

Key Features:

Native of South America. An annual weed which thrives in conditions of high temperatures and humidity. Leaves are hydrophobic (very non-wetting). Eaten by stock but has little forage value.

Control Method:

Can be removed by hand but will continue to re-emerge in thin lawn areas. A hard frost can kill summer grass.

Herbicide control using **SureFire** products:

Cannonade: fluzifop-p
50 - 100mL / 10L water + Wetter 600
Gamma: glufosinate-ammonium
30mL / 10L water
WeedPro 540: glyphosate
60mL / 10L water

TROPICAL SODA APPLE - *solanum viarum*



Distribution:
Widely distributed in coastal regions of NSW and south-east Queensland, and inland to the New England Tableland.

Key Features:

Native of South America, a prohibited invasive plant, it prefers open disturbed sites, esp. pastures & cattle yards, and flourishes in coastal, high-rainfall habitats in tropical and subtropical areas. Reproduces from seeds. Leaves are unpalatable to livestock.

Control Method:

Mechanical removal is possible for isolated plants. Take particular care with stock movements.

Herbicide control using **SureFire** products:

Glyphosate 360: glyphosate
200mL / 10L water
Metsulfuron Methyl: metsulfuron methyl
1g metsulfuron methyl + 100mL glyphosate / 10L water
Raizon: triclopyr - picloram
1g metsulfuron methyl + 35-50mL RAIZON / 10L water

WANDERING JEW - *tradescantia fluminensis*



Distribution:
Widely naturalised in southern and eastern Australia, from Queensland to Tasmania, south-eastern South Australia and south-western Western Australia.

Key Features:

A native to South America, is a trailing succulent plant. Can be found growing in the understory of disturbed forests where they have the potential to form a dense ground cover. Easily grows from vegetative fragments & garden waste.

Control Method:

Mechanical removal, slashing, goat grazing.

Herbicide control using **SureFire** products:

Starox 400: fluoxyppyr
75mL / 10L water
Glyphosate 360: glyphosate
20mL / 10L water
Metsulfuron Methyl: metsulfuron methyl
2 g per 10 L of water plus a non-ionic surfactant.

WILD OATS - *avena* spp.



Distribution:
Found throughout all winter grain growing areas of Australia. Also occurs in margins of swamps, lakes & streams.

Key Features:

Native to Asia & southern Europe. One of Australia's most widespread and costly weeds of dryland crops. Highly competitive and when left uncontrolled can reduce wheat yields by up to 80%. Easily spread as contaminants of grain, hay, and machinery.

Control Method:

Improve farm hygiene to reduce seed transfer. Utilize crop and pasture rotation. Stubble burning can be useful in some instances. Wild oats can easily develop resistance to herbicides.

Herbicide control using **SureFire** products:

Glyphosate 360: glyphosate
50-125mL / 10L water

WILD RADISH - *raphanus raphanistrum*



Distribution:
Widespread in Australia, being found in almost all grain-growing regions, from Qld thru to Vic, SA and WA.

Key Features:

Can cause substantial crop yield reduction, seed contamination and tainting, and make combine harvesting difficult. Wild radish is relatively unpalatable to stock and can be toxic if ingested.

Control Method:

Remove weed by hand is possible for smaller areas, also mulching, hoeing and burning. It is able to adapt to herbicide and non-herbicide-based weed-control tactics, with increasing resistance to multiple herbicide modes-of-action.

Herbicide control using **SureFire** products:

Amine 625: 2,4-D
80mL / 10L water

WILD TOBACCO - *solanum mauritianum*



Distribution:
Widely distributed in the eastern parts of Australia. Most common in the coastal districts of southern Qld and northern New South Wales.

Key Features:

Non-native invasive plant, it is tolerant of various soils and moderate shade and often forms dense stands suppressing growth of other species. All parts of the plant are poisonous to humans, especially the green berries.

Control Method:

Ring bark tall plants as close to the ground as possible. Pull out seedlings in the wet season when the soil is soft.

Herbicide control using **SureFire** products:

Amine 625: 2,4-D
160mL / 10L water - cut stump
Weedpro 540: glyphosate
60mL / 10L water
Raizon: triclopyr - picloram
35mL / 10L water

WILD TURNIP - *brassica tournefortii*



Distribution:
Found in southern and central Qld, in many parts of NSW, Vic, Tas and SA, in southern and central WA, and in the south of the NT.

Key Features:
Native to southern Europe. An aggressive weed of disturbed sites, roadsides, cultivation (esp. wheat & winter crops) in mostly temperate areas.

Control Method:
Prevent seed set. Can be mechanically removed but must be done at least every 8-10 weeks.

Herbicide control using **SureFire** products:

Dicamba M: dicamba, MCPA
100–140mL / 10L water

Glyphosate 360: glyphosate
100–150mL / 10L water

Multi-turf MCPA, clopyralid,
diflufenican
50mL / 10L water

WINTER GRASS - *poa annua*



Distribution:
Occurs in coastal areas, widespread throughout Australia.

Key Features:
Probably the most widely spread, unsown component of turf areas and for many people it is considered a weed to be eliminated. Dense infestations of this weed compete with turf for sunlight, moisture, space, and nutrients, often leaving large, bare areas as they complete their life cycle, which can be re-infested by summer annual weeds such as crabgrass. Prefers moist areas, it is palatable to livestock but not beneficial.

Control Method:
Physical removal of all plant parts, incl. all roots.

Herbicide control using **SureFire** products:

Propyzamide 500: propyzamide
120mL / 10L water

Glyphosate 360: glyphosate
50–67mL / 10L water

WIREWEED - *polygonum aviculare*



Distribution:
Widespread in southern, central and eastern Australia from central Queensland down to Tasmania, South Australia & southern WA & NT.

Key Features:
A large prostrate plant, with a long, fibrous taproot and small blue-green leaves. It is regarded as an environmental weed, and is a problem in crops, pastures, disturbed sites and stock trampled ground.

Control Method:
Remove weed by hand from lawns.

Herbicide control using **SureFire** products:

Amine 625: 2,4-D
30mL / 10L water

Weedpro 540: glyphosate
68–95mL / 10L water

Starox 400: fluroxypyr
30mL / 10L water

Dicamba M (\$7 only): dicamba, MCPA
60mL / 10L water

Buffalo (\$7 only): bromoxynil & MCPA
30mL / 10L water / 100M²