# The palatability, and potential toxicity of Australian weeds to goats

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## Preface

This book is directed at Australian goat producers, veterinarians and educators so as to increase their awareness of the many potential poisonous weeds that they may encounter. The weeds are listed by both common and botanical names, their relative palatability is graded and the poisonous compounds that they contain are named, suggestions on control strategies are given and finally the health and production problems that may result from the ingestion of each weed are outlined. For further details about individual weeds, readers are referred to more detailed text book accounts.

Many of the weeds dealt with have been declared noxious* by state authorities and as a consequence are required to be controlled by landholders. Grazing with goats can be a useful part of an integrated weed control strategy but owners should familiarise themselves with the potential toxicity risk associated with grazing some weeds. Toxic weeds are those that can cause any upset to the health and productivity of an animal. Toxic does not automatically imply lethal but some toxic plants can be lethal.

The book has been divided into two sections, the first covers the weeds known to be highly or moderately toxic to goats and the second covers weeds associated with low toxicity. A brief description of signs or symptoms produced by each toxic weed is provided but no details of treatments. In cases of plant poisoning the treatments used are generally symptomatic and veterinary assistance should be sought in this regard.

* Noxious weed - a weed which poses a threat to agriculture, the environment or the community.

## A Comment on Weed Control

This publication contains comments on possible weed control methods but does not attempt to provide detailed advice. However, it does include mention of palatability of each weed to goats for this can assume importance in avoiding poisoning and alternatively, using goats to control the weed. The remainder of this section describes methods of weed control and specifically introduces discussion on plant palatability to ruminants so that the reader can appreciate the complexity of the subject and a possible role for livestock manipulation.

### *Methods of Weed Control*

The main approaches to the control of weeds are: (a) direct destruction; and (b) altering the environment by either cultural or ecological methods. These include both livestock and agronomic procedures (Holst 1993) such as:

- Changes in livestock management - through manipulation of stocking rates, timing of livestock moves or their combinations.
- Changing livestock species or using their combinations.
- Cultural practices such as physical removal, cultivation, cropping, pasture renovation and pasture species.
- Use of herbicides - alone or in combination with some of the above.
- Biological means (insects; pathogens) - alone or in combination with some of the above.

Most weeds can be controlled using one or more of these methods. Where possible the coordinated use of several methods is encouraged as it can be cost effective, practical and reduces the reliance on herbicides. In Australian agriculture goats can be a useful livestock species for weed control and occasionally eradication because their diet includes many plants not readily eaten by sheep or cattle but excludes significant amounts of the annual legumes.

### *Dietary Preferences*

All animals have dietary preferences so that one species, say goats, may eat a variety of plants and shrubs that other species (cattle, sheep) may avoid or include in their diet in a greater or lesser amount. In some cases, such as drought or droving, livestock are forced to eat toxic plants that they would otherwise avoid.

Preferential selection (palatability) of plants or parts of plants by animals is affected by plant - and animal-based factors. Animal-based factors may be categorised

into five classes: (1) the senses, (2) species and breeds, (3) individual variation, (4) previous experience and (5) physiological condition. The actual ability of goats to utilise a variety of vegetation types is attributed to their dexterity, narrower mouth, mobile upper lip, prehensile tongue and propensity to stretch upward on the hind legs to reach forage. Plant-based factors include (1) species, (2) intra specific variation, (3) chemical composition, (4) morphology or physical traits and (5) succulence or maturation. Examples of the interaction of these factors are provided in Allan and Holst (1996).

The palatability to goats of some of the more common non-toxic Australian weeds allowed Allan, Holst and Campbell (1999) to formulate weed management plans based on goats:

- preventing the weed from flowering and dispersing seed,
- preferentially grazing the weed and so placing it at a disadvantage,
- ringbarking or structurally weakening some shrub species.

Including goats in a weed control program can be effective, economic and ecologically sound but their inclusion should not be assumed for each situation. To include goats, the weed has to be non-toxic; palatable or attractive to goats; and the goats and associated livestock species have to be contained and managed.

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**The potential toxicity of weeds to goats.**

+++ high risk; ++ moderate risk; + low risk; ~ no known risk.

| Botanical name | | Botanical name | |
|---|---|---|---|
| Acacia aneura | ~ | Atriplex spp | + |
| Acacia escelsa | ~ | Atropa belladonna | +++ |
| Acacia farnesiana | ~ | Avena spp | ~ |
| Acacia georginae | +++ | Baccharis halimifolia | + |
| Acacia glaucescens | ++ | Bambusa spp | ~ |
| Acacia karoo | ~ | Bidens spp | + |
| Acacia mearnsii | ~ | Brachychiton populneus | + |
| Acacia nilotica | ~ | Brassica spp | + |
| Acacia homalophylla | ~ | Brugmansia candida | + |
| Acacia paradoxa | ~ | Bryophyllum spp | ++ |
| Acaena ovina | ~ | Bursaria spinosa | ~ |
| Acetosa sagittata | ~ | Buxus spp | + |
| Aconitum napellus | +++ | Caesalpinia spp | ++ |
| Acroptilon repens | ~ | Calandrina spp | + |
| Adonis microcarpa | ++ | Calicotome spinosa | ~ |
| Aesculus spp | + | Callitris columellaris | ~ |
| Agapanthus spp | ~ | Callitris endlicheri | ~ |
| Agave spp | + | Calotropis procera | ++ |
| Ageratina adenophora | + | Cannabis sativa | + |
| Ageratum houstonianum | ~ | Capparis mitchellii | ~ |
| Ageratum riparia | ~ | Capsella bursa-pastoris | ~ |
| Agrostis avenacea | + | Cardaria draba | + |
| Ailanthus altissima | ~ | Cardiospermum spp | ~ |
| Alhagi pseudalhagi | ~ | Carduus nutans | + |
| Allium spp | + | Carduus pycnocephalus | + |
| Alocasia macrorrhiza | + | Carex spp | ~ |
| Alternanthera pungens | ~ | Carthamus lanatus | ~ |
| Amaranthus spp | + | Carthamus leucocaulos | ~ |
| Amaryllis belladonna | ++ | Cassia artemisioides | ++ |
| Ambrosia artemisiifolia | + | Cassia barclayana | ++ |
| Ambrosia confertiflora | + | Cassia eremophila | ++ |
| Ambrosia psilostachya | + | Cassia floribunda | ++ |
| Ambrosia tenuifolia | + | Cassia occidentalis | ++ |
| Ammi majus | + | Cassinia arcuata | ~ |
| Amsinckia spp | ++ | Cassinia quinquefaria | ~ |
| Andropogon virginicus | ~ | Castanospermum australe | +++ |
| Angophora spp | ~ | Casuarina cristata | ~ |
| Anredera cordifolia | ~ | Cenchrus spp | + |
| Anthemis cotula | + | Cestrum spp | +++ |
| Apophyllum anomalum | ~ | Chamaecytisus proliferus | ~ |
| Araujia hortorum | + | Cheilanthes spp | ++ |
| Arctotheca calendula | + | Chenopodium spp | + |
| Argemone mexicana | + | Chloris spp | + |
| Aristida spp | ~ | Chondrilla juncea | ~ |
| Asclepias spp | + | Chrysanthemoides | |
| Asclepias curassavica | ++ | monilifera | ~ |
| Asphodelus fistulosus | ~ | Cichorium intybus | ~ |
| Atalaya hemiglauca | + | Cineraria lyrata | ~ |

| Botanical name | | Botanical name | |
|---|---|---|---|
| Cinnamomum camphora | ~ | Erythrina spp | + |
| Cirsium arvense | + | Erythrophleum spp | +++ |
| Cirsium vulgare | + | Erythroxylum coca | ~ |
| Citrullus colocynthis | + | Eucalyptus albens | ~ |
| Citrullus lanatus | + | Eucalyptus cladocalyx | ++ |
| Codonocarpus spp | ~ | Eucalyptus melliodora | ~ |
| Conium maculatum | +++ | Eucalyptus polyanthemos | ~ |
| Consolida ambigua | +++ | Eucalyptus populnea | ~ |
| Convallaria majalis | ++ | Euphorbia spp | + |
| Convolvulus arvensis | ~ | Fallopia convolvulus | ~ |
| Conyza albida | ~ | Ficus rubignosa | ~ |
| Coreopsis lanceolata | ~ | Foeniculum vulgare | ~ |
| Cortaderia spp | ~ | Froelichia floridana | ~ |
| Cotoneaster spp | ~ | Galenia pubescens | ~ |
| Cotula australis | ~ | Gastrolobium spp | +++ |
| Craspedia spp | ~ | Gaura parviflora | ~ |
| Crataegus spp | ~ | Geijera parviflora | ~ |
| Crotolaria spp | ++ | Gelsemium sempervirens | +++ |
| Cryptostegia grandiflora | +++ | Genista linifolia | ~ |
| Cucumis myriocarpus | + | Genista monspessulana | ~ |
| Cuscuta spp | ~ | Gleditisia triacanthos | ~ |
| Cycas spp | ~ | Gloriosa superba | +++ |
| Cynara cardunculus | ~ | Gnaphalium spp | + |
| Cynodon spp | + | Gomphocarpus spp | ++ |
| Cyperus aromaticus | ~ | Gomphrena globosa | + |
| Cyperus rotundus | ~ | Gorteria personata | ~ |
| Cytisus scoparius | ~ | Haloragis aspera | ~ |
| Danthonia spp | ~ | Heliotropium amplexicaule | ++ |
| Daphne spp | +++ | Heliotropium europaeum | ++ |
| Datura stramonium | +++ | Helleborus niger | +++ |
| Delphinium spp | +++ | Heterodendrum oleifolium | ++ |
| Dieffenbachia spp | +++ | Hibiscus trionum | ~ |
| Digitalis purpurea | +++ | Hirschfeldia incana | ~ |
| Diplotaxis tenuifolia | ~ | Homeria spp | ++ |
| Dipsacus fullonum | ~ | Hordeum leporinum | ~ |
| Dittrichia graveolens | ~ | Hydrangea spp | + |
| Dodonaea attenuata | ~ | Hyparrhenia hirta | ~ |
| Dodonaea viscosa | ~ | Hypericum androsaemum | ++ |
| Duboisia spp | +++ | Hypericum perforatum | ++ |
| Duranta repens | ~ | Hypericum tetrapterum | ++ |
| Ecballium elaterium | ~ | Hypericum triquetrifolium | ++ |
| Echium plantagineum | ++ | Hypochaeris radicata | ~ |
| Echium vulgare | ++ | Ibicella lutea | ~ |
| Emex australis | + | Ilex spp | ~ |
| Eragrostis australasica | ~ | Imperata cylindrica | ~ |
| Eragrostis curvula | ~ | Ipomoea lonchophylla | ++ |
| Eremocarpus setiger | + | Ipomoea plebeia | ++ |
| Eremophila longifolia | ~ | Ipomoea purpurea | ++ |
| Eremophila mitchellii | ~ | Ipomoea spp | ++ |
| Eremophila sturtii | ~ | Iva axillaris | ~ |
| Erodium spp | ~ | Ixiolaena brevicompta | ++ |

| Botanical name | | Botanical name | |
|---|---|---|---|
| Jatropha curcas | + | Oxalis latifolia | + |
| Juncus acutus | ~ | Oxalis pes-caprae | + |
| Juncus spp | ~ | Papaver somniferum | + |
| Laburnum spp | +++ | Parietaria judaica | ~ |
| Lactuca serriola | + | Parkinsonia aculeata | + |
| Lantana camara spp | ++ | Parthenium hysterophorus | ~ |
| Lathyrus odoratus | ++ | Peganum harmala | ++ |
| Laurel spp | ~ | Pennisetum spp | + |
| Lavandula stoechas | ~ | Pentzia suffruticosa | ~ |
| Lepidium spp | ~ | Persea americana | ++ |
| Leucaena spp | +++ | Persicaria spp | ~ |
| Leucanthemum vulgare | ~ | Phalaris spp | + |
| Ligustrum lucidum | + | Phragmites australis | ~ |
| Ligustrum sinense | + | Phyla canescens | ~ |
| Linaria dalmatica | ~ | Physalis virginiana | ~ |
| Lolium perenne | + | Physalis viscosa | ~ |
| Lolium rigidum | ++ | Phytolacca octandra | ~ |
| Lomandra longifolia | ~ | Picnomon acarna | ~ |
| Lonicera japonica | ~ | Pimelea curviflora | ++ |
| Ludwigia peruviana | ~ | Pinus halepensis | + |
| Lycium ferocissimum | ~ | Pinus radiata | + |
| Macfadyena unguis-cati | ~ | Poa labillardieri | ~ |
| Macrozamia spp | ++ | Polygonum aviculare | ~ |
| Maireana spp | + | Polypogon monspeliensis | + |
| Malva parviflora | + | Portulaca oleracea | + |
| Malvella leprosa | ~ | Proboscidea louisianica | ~ |
| Marrubium vulgare | ~ | Prosopis spp | + |
| Marsilia drummordii | ++ | Prunus persica | ++ |
| Melia azedarach | + | Pteridium esculentum | ++ |
| Melianthus comosus | + | Pyracantha spp | ~ |
| Melilotus albus | ~ | Ranunculus spp | + |
| Mentha pulegium | ~ | Raphanus raphanistrum | + |
| Muehlenbeckia spp | ~ | Rapistrum rugosum | ~ |
| Myagrum perfoliatum | ~ | Reseda luteola | + |
| Myoporum spp | ++ | Rhododendron spp | +++ |
| Myrsiphyllum asparagoides | ~ | Ricinus communis | + |
| | | Robinia pseudoacacia | + |
| Nassella neesiana | ~ | Romulea rosea | ++ |
| Nassella trichotoma | ~ | Rosa canina | ~ |
| Nerium oleander | +++ | Rosa rubiginosa | ~ |
| Nicandra physalodes | ~ | Rubus fruiticosus | ~ |
| Nicotiana glauca | + | Rumex acetosella | + |
| Olea europaea | ~ | Rumex brownii | + |
| Olearia elliptica | ~ | Rumex conglomeratus | + |
| Onopordum acanthium | ~ | Rumex crispus | + |
| Onopordum acaulon | ~ | Rumex obtusifolius | + |
| Onopordum illyricum | ~ | Rumex pulcher | + |
| Opuntia inermis | ~ | Salpichroa origanifolia | ~ |
| Opuntia stricta | ~ | Salsola kali | + |
| Orobanche spp | ~ | Salvia reflexa | + |
| Owenia acidula | ~ | Schinus spp | ~ |

| Botanical name | | Botanical name | |
|---|---|---|---|
| Sclerolaena birchii | + | Typha spp | + |
| Sclerolaena muricata | + | Ulex europaeus | ~ |
| Scolymus hispanicus | ~ | Urochloa panicoides | + |
| Senecio jacobaea | ++ | Urtica incisa | ~ |
| Senecio madagascariensis | ++ | Urtica spp | ~ |
| Senecio pterophorus | ++ | Ventilago viminalis | + |
| Senecio quadridentatus | ++ | Verbascum thapsus | ~ |
| Senecio vulgaris | ++ | Verbena spp | ~ |
| Sida acuta | ~ | Verbena tenuisecta | ~ |
| Sida cordifolia | ~ | Verbesina encelioides | ++ |
| Sida rhombifolia | ~ | Watsonia bulbillifera | ~ |
| Silene vulgaris | ~ | Xanthium occidentale | ++ |
| Silybum marianum | + | Xanthium orientale | ++ |
| Sisymbrium officinale | ~ | Xanthium spinosum | ++ |
| Solanum carolinense | + | Zantedeschia aethiopica | + |
| Solanum cinereum | ++ | Ziziphus mauritania | ~ |
| Solanum elaeagnifolium | + | | |
| Solanum hermannii | + | | |
| Solanum laciniatum | + | | |
| Solanum marginatum | ~ | | |
| Solanum mauritianum | + | | |
| Solanum nigrum | ++ | | |
| Solanum rostratum | + | | |
| Solanum sturtianum | + | | |
| Solanum torvum | + | | |
| Soliva pterosperma | ~ | | |
| Sonchus spp | + | | |
| Sorghum halepense | ++ | | |
| Sorghum spp | ++ | | |
| Sorghum x almum | ++ | | |
| Sporobolus caroli | ~ | | |
| Sporobolus indicus | ~ | | |
| Sporobolus pyramidalis | ~ | | |
| Stachys arvensis | ++ | | |
| Stypandra glauca | ++ | | |
| Stevia eupatoria | ~ | | |
| Stipa caudata | ~ | | |
| Stipa spp | ~ | | |
| Swainsona spp | +++ | | |
| Tagetes minuta | ~ | | |
| Taxus baccata | +++ | | |
| Terminalia oblongata | + | | |
| Thevetia peruviana | +++ | | |
| Thunbergia grandiflora | ~ | | |
| Toxicodendron radicans | ~ | | |
| Toxicodendron succedaneum | ~ | | |
| Trachyandra divaricata | + | | |
| Trema aspera | +++ | | |
| Tribulus terrestris | ++ | | |
| Trifolium spp | ~ | | |

## ACACIA GEORGINAE

### Alternative Name:
Gidgee

### Toxicity to Goats:
Toxic, high risk

### Toxicity to Other Species:
Toxic to sheep, cattle, horses and donkeys

### Palatability:
Seldom eaten

### Poisonous Principle:
Fluroacetates, (1080 poison)

### Effects:
*Signs and symptoms;* Rapid, weak, arrhythmic heart beat and difficulty in breathing. Excitement or depression, stagger then fall, with muscle tremors progressing terminal convulsions.

*Health and production problems;* Death within minutes, or up to an hour after ingestion. Occasionally animals will recover, with no long-term production problems.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
Some animals appear normal until mustered, and then they suddenly drop dead, or become recumbent and refuse to travel.

Similar in appearance to *A. cambage*i (gidyea) in southern Queensland, with broad curled pods and disc shaped seeds. A large, straggly shrub or small tree, growing to about 5 metres tall, generally with several trunks and crooked branches.

The flowers are small and yellow, forming globular clusters in the forks of the leaves. Both species smell of rotten onions when the air is damp.

Found in Queensland and the Northern Territory.
Native animals have developed some tolerance to this plant. The animals most affected are usually the strongest and most aggressive in the mob.

Intermittently toxic in many areas, although not predictable which areas, and which seasons. Trees are normally browsed as a source of green feed, but the high tannin content prevent them from being first choice for livestock.

Trials of genetically modified rumen bacteria to be used for the protection of cattle and sheep against fluroacatate poisoning are being carried out, and are nearing completion. Safety issues concerning livestock and native wildlife are a major concern.

# ACACIA GLAUCESCENS

## Alternative Name:
Coastal myall, sally wattle

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to cattle, sheep and pigs

## Palatability: Moderate

## Poisonous Principle:
Cyanogenetic glycocides, (cyanide/prussic acid)

## Effects:
*Signs and symptoms;* Collapse, struggle to get up, shiver and shake. Then develop a rapid pulse and experience difficulty in breathing.

*Health and production problems;* Die within hours.

## Integrated Control Strategy:
Controlled burns at 3-4 year intervals.
Basal bark or cut stump treatment with herbicide.
Be aware of potential stock problems.

## Comments:
Wilted leaves are the most toxic. Rain immediately after a dry spell will temporarily increase the plants' toxicity. Drinking water immediately after eating the leaves will also increase their toxicity. Young shoots are also toxic.

A native tree with multiple stems, growing to 17 metres or more with a thick furrowed bark and drooping ashy/coloured foliage. The tree will live for 20 to 30 years.

The leaves are 10 – 16 cms long, slightly sickle shaped and with 3 – 5 prominent parallel veins. The flowers are yellow and in dense spikes. Reproduces by seeds and suckers.

The tree is found on the east coast, southern and central tablelands and southern and central west slopes of NSW.

Goats may nibble at Coastal myall with impunity, but it should never be lopped, otherwise poisoning may occur.

Acacias at 4 years or older are very susceptible to fire. Unfortunately, fire stimulates wattle seed germination, so secondary burns when the seedlings are about a metre high are necessary to control new regrowth.

No 59 *Acacia glaucescens*
RB TROUNCE

# ACONITUM NAPELLUS

## Alternative Name:
Monkshood, wolfsbane. aconite

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability:
Not known to be eaten

## Poisonous Principle:
Polycyclic diterpenoid alkaloides, eg. aconitine

No 201 *Aconitum spp*
CORNELL UNIVERSITY

## Effects:
*Signs and symptoms;* Restlessness, salivation, bloating, belching, repetitive swallowing. Profound weakness leading to recumbency, cardiac arrhythymia, very weak pulse and shallow respiration.

*Health and production problems;* Death within hours.

## Integrated Control Strategy:
GARDEN PLANT.
Do not feed these garden clippings to any livestock. Use herbicide, or weed out into disposable bags.

## Comments:
Roots, leaves, flowers and seeds are all poisonous. Stock losses are usually only encountered when animals are given access to garden plants and clippings.

A genus of perennials, with a thick black poisonous rootstock and upright stems, growing to about one metre high, and bearing hooded flowers varying from pink through to purple.

Toxins can also be absorbed through cuts. The plant has sedative and pain killing properties, but there is extreme danger from overdosing.

*A. vulparia* (wolfsbane) was a bait poison, and was also an effective arrow poison in eastern Asia. These flowers are a pale yellow.

# ADONIS MICROCARPA

## Alternative Name:
Red camomile, small fruited pheasant's eye

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Potentially toxic to all grazing animals

## Palatability:
Not known to be eaten

## Poisonous Principle:
Adonidin, a glycocide of phenanthrene

## Effects:
*Signs and symptoms;* Gastro-enteritis.

*Health and production problems;* Occasionally death within 12 hours of clinical signs due to cardio-respiratory failure.

## Integrated Control Strategy:
Cultivation, fertilisers. Broad leaf herbicides Group C.

This is a declared “Noxious Weed” in South Australia.

## Comments:
Can be toxic as either the fresh plant, or when it is dried, in hay.

An annual, branched, erect herb growing up to 60 cms high. The bright red flowers appearing from August to November, make it very conspicuous. Reproduces by animals dispersing seed, germinating in autumn.

It is now naturalised on the north-west and central slopes of NSW, where it competes with medic pastures. Also a weed of cereal crops in South Australia.

The plant is probably unpalatable to most stock, so ensure alternative feed is available.

## AMARYLLIS BELLADONNA

### Alternative Name:
Belladonna lily

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to many animal species

### Palatability: Low

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Severe gastro-enteritis.

*Health and production problems;* Rapid death in many cases.

### Integrated Control Strategy:
GARDEN PLANT OR ESCAPEE
Losses may be encountered if stock are given access to garden plants and clippings.
Use herbicide, or weed out into disposable bags.

### Comments:
The bulbous parts of these plants appear to contain the poisonous principle.

Bulbous, perennial, ornamental pink lily, spread by division and seed. Flowers in autumn, dies back, and the leaves sprout in spring.

As with all such bulbs, leaves may be eaten occasionally, but the bulbs are highly toxic.
Other varieties are *Crinum, Narcissus.*

# AMSINCKIA SPP

## Alternative Name:
Iron weed, tar weed, fiddleneck
yellow burrweed, amsinckia

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to horses, pigs, cattle and to a lesser extent, sheep

## Palatability: Seldom eaten

## Poisonous Principle:
Pyrrolizidine alkaloids

## Effects:
*Signs and symptoms;* Chronic weight loss, or sometimes acute jaundice with or without photosensitization, or sometimes sudden death with no other signs.

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced long term productivity. Chronically damaged livers in some ruminants are inclined to accumulate excessive amounts of copper, which can ultimately be released and kill the animal in the process.

## Integrated Control Strategy:
Pre-emergent application of herbicide is the best control method. Wick wipe or spot spray with herbicide after germination (Group B or C).

Hand pull into disposable bags where possible. This species must be controlled in the early stages of growth as several generations will grow in a season.

This is a declared "Noxious Weed" in Victoria and parts of South Australia, West Australia and NSW.

## Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season. By this stage some animals may start to loose weight and become ill-thrifty, others which appear to be in very good condition, may suddenly become jaundiced or die.

Found mainly in crops, or along roadsides. The spread seems to be mainly from agricultural machinery and from animal coats.

An erect winter growing annual forb covered with stiff hairs, up to one metre high, and spread by seed. Small trumpet shaped yellow flowers are densely packed along one side of the stem, which is curved like a young fern frond, giving a "fiddle neck" appearance. The plant dies off in summer and germinates after autumn rain. Several generations can grow during winter to spring. There are three species and several hybrids known in Australia.

It is a weed of cereal crops competing for nutrient, and may also cause a taint and discolouration to flour.
The seeds cause "vegetable fault" in wool.

This weed occurs over a wide area of NSW especially on the western slopes, and in southern Queensland.

No 52 *Amsinckia spp*

## ASCLEPIAS CURASSAVICA

### Alternative Name:
Red-head cotton bush

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Cattle, sheep, horse, donkey, pigs

### Palatability: Not eaten

### Poisonous Principle:
Cardiac glycocides, notably the cardenolide gofruside

### Effects:
*Signs and symptoms;* Depression, diarrhoea, slow irregular heart beat and eventually heart block.

*Health and production problems;* Rapid death in some cases, but little effect in others.

### Integrated Control Strategy:
GARDEN ESCAPEE
Weed out into disposable bags, especially the pods. Spot spray the area with herbicide.
Glyphosate, or "Group I" type.
Do not feed these clippings to any livestock.

### Comments:
Ruminants, such as the goat, are more tolerant of this type of plant than horses and donkeys. Plants of this genus are generally only eaten during droughts.

A perennial woody herb growing to about a metre high. It produces latex when damaged. Reproduces by wind blown seed. The stems are rigid, green at the base and usually reddish towards the top. The leaves are long, narrow and dark green, tapering to a point at both ends.

Bunches of red/yellow flowers grow at the ends of the branches. The fruiting pods release many flat seeds, which have long silky hairs at one end, from late summer to autumn.

A weed of the central and north coast of NSW, and coastal Queensland, but also occurs in other states. A weed of pastures and roadsides. It is relatively unpalatable to all livestock.

This plant is a host to the "Wanderer", or Monarch butterfly.

No 221 *Asclepias spp*
CORNELL UNIVERSITY

# ATROPA BELLADONNA

## Alternative Name:
Deadly nightshade

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability:
Not known to be eaten

## Poisonous Principle:
Tropane alkaloides, notably atropine, scopolamine and hyoscyamine

## Effects:
*Signs and symptoms;* Constipation and infrequent urination. Some initial excitation and later depression, muscle trembling and weakness leading to an unsteady gait and finally recumbency. Dilated pupils, dry mouth and nose, and increased heart rate but a weak pulse. Loss of rumen sounds and laboured respiration. Some cases may progress further to either coma or terminal convulsions.

*Health and production problems;* Death in some cases within twelve hours of first signs, but many cases recover.

## Integrated Control Strategy:
GARDEN ESCAPEE
Use herbicide as a spot spray, or hand pull. into disposable bags.
Do not feed to any livestock.

## Comments:
A fairly commonly encountered plant in cooler climates, but appears to be rarely eaten hence cases of poisoning are few. Animal flesh may pass on the poison.

A perennial, erect, branched herb up to one and a half metres high. Stems are slightly downy, branched at intervals. Leaves are large, stalked and egg-shaped, growing in pairs, one much larger than the other. Flowers are reddish purple inside, and bell shaped, with a broad tubular corolla. Single flowers on single stalks.

The berries are purple to black and shiny and as large as a cherry.

Usually only found in the cooler southern states, being a native of Europe, and common on the chalk downs in England.



No 202 *Atropa belladonna*
CORNELL UNIVERSITY

## BRYOPHYLLUM SPP

### Alternative Name:
Mother of millions, kalanchoe tubiflora, mission bells, christmas bells

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to cattle, sheep, horses and donkeys

### Palatability:
Seldom eaten

### Poisonous Principle:
Bufadienolide cardiac glycocides

### Effects:
*Signs and symptoms;* Depression, diarrhoea, slow irregular heart beat and eventually heart block.

Health and production problems; Rapid death in many cases.

### Integrated Control Strategy:
GARDEN ESCAPEE
Spot spray with 2,4-D amine, and a wetting agent.
Dig out very carefully into disposable bags, and remove.
Do not feed these plants to any livestock.

This is a declared “Noxious Weed” in parts of eastern NSW and Queensland.

### Comments:
It is generally only a problem between late autumn and early spring when the plant is flowering. Ruminants, such as the goat, display more tolerance for this type of poisonous plant than do horses and donkeys.

An erect perennial plant up to sixty cms high, with thick, fleshy succulent leaves of various shapes, and spikes of bell-shaped orange flowers. Usually very conspicuous when flowering in winter.

There are two main varieties with tubular, or V-shaped cross-section of the leaves.

Propogation is by plantlets attached to the edges of the leaves, and shed by the parent plant. Thus a whole mat of the weed grows over large areas.

# CAESALPINIA SPP

## Alternative Name:
Bird of paradise, wait-a-while,
whoa back, mysoe thorn

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to most livestock species

## Palatability:
Not known to be eaten

## Poisonous Principle:
Unknown

## Effects:
*Signs and symptoms;* Diarrhoea.

*Health and production problems;* Recovery is usually rapid.

## Integrated Control Strategy:
Spot spray with herbicide and a wetting agent.

## Comments:
The green pods of these plants are very irritating to the gastro-intestinal tract.

A woody scrambling shrub up to three metres high with long thorny branches and hooked spines. Usually found in rain or open forest. It has attractive yellow spidery flowers and reproduces by seed, which may have a long dormancy.

*C.gilliesii*, a related spp known as "Bird of Paradise Plant", is a garden plant with yellow flowers, red stamens and delicate feathery foliage, but no thorns.

No 46 *Caesalpinia spp*

## CALOTROPIS PROCERA

### Alternative Name:
Rubber bush, kings crown, rubber tree, calotrope

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to cattle, sheep, horses, donkeys

### Palatability:
Seldom eaten

### Poisonous Principle:
Cardiac glycocides, notably convallotoxin

### Effects:
*Signs and symptoms;* Depression, diarrhoea, slow irregular heart beat and eventually heart block.

*Health and production problems;* Rapid death in some cases, but little effect in others until mustered, when they may drop dead unexpectedly.

### Integrated Control Strategy:
Hand pull seedlings, spray with herbicide and wetter, or grub out.
Basal bark or cut stump treatment with herbicide.
Try goats – with caution.

This plant is a declared "Noxious Weed" in Queensland.

### Comments:
Ruminants, such as the goat, are much more tolerant of this type of plant poison than are horses and donkeys. Problems may arise if the plant is fed in a mixture of garden clippings or if it is present as a contaminant in hay.

A spreading medium sized shrub 2-4 metres high, with a waxy appearance, milky sap and reproducing by seed or suckers. It is native to tropical Asia and Africa.

Cattle and goats graze this plant during the dry season with no observed ill effect. It is probable that the bio-types found in Australia are not toxic. It is not palatable to livestock as a rule.

This plant is a larval food of the "Wanderer" butterfly.

## CASSIA ARTEMISIOIDES

### Alternative Name:
Silver cassia, senna artemisioides, dense cassia

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to all livestock species

### Palatability: Low

### Poisonous Principle:
Anthraquinone glycocides and an unidentified toxin

### Effects:
*Signs and symptoms;* Diarrhoea initially, then difficulty in walking, a stiff gait and a reluctance to walk. Dark brown or red urine, recumbency, increased heart rate and difficulty in breathing.

*Health and production problems;* Causes damage to the muscles of the skeleton and the heart. Can give rise to inappetance and weight loss, and can cause rapid death in some cases.

### Integrated Control Strategy:
Basal bark or cut stump treatment with a selective herbicide.
Be aware of potential stock problems.

### Comments:
Plants bearing seed pods are the most poisonous.

An upright spreading silvery shrub up to 3 metres high. The leaves are very variable, whitish to grey-green. Some leaflets are very short lived, leaving bare petioles.

Bright yellow flowers grow in short racemes in the leaf axils, as long as new growth is being produced.

This is an important weed of rangelands in northern NSW, and forms dense stands. It prefers a sunny site with well drained soil, is quick growing but short lived, and reproduces by seed.

This plant probably contains high levels of protein and phosphorus, but little fibre.

This plant has now become a problem weed in the region. It is browsed at times by sheep, but it is not palatable to cattle.

# CASSIA BARCLAYANA

## Alternative Name:
Pepper leaved senna, senna barclayana

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability: Moderate

## Poisonous Principle:
Anthraquinone glycocides and an unidentified toxin

## Effects:
*Signs and symptoms;* Diarrhoea initially, then difficulty in walking, a stiff gait and a reluctance to walk. Dark brown or red urine, recumbency, increased heart rate and difficulty in breathing.

*Health and production problems;* Causes damage to the muscles of the skeleton and the heart. Can give rise to inappetance and weight loss, and can cause rapid death in some cases.

## Integrated Control Strategy:
Slash or use selective herbicides.
Treat regrowth as necessary.
Take care with grazing strategy.
Use goats.

## Comments:
Plants bearing seed pods are the most poisonous.

An annual or perennial, erect to semi-erect shrub, up to about 1 metre high. The leaves are about 10 cms long, with 4 – 7 pairs of leaflets. The flowers are bright yellow.

This is a weedy type of plant found on the inland plains districts, often in colonies or in spreading patches.

A useful plant for apiarists.

# CASSIA EREMOPHILA

## Alternative Name:
Desert cassia, punty bush, scented cassia

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability:
Not known to be eaten

## Poisonous Principle:
Anthraquinone glycocides and an unidentified toxin

## Effects:
*Signs and symptoms;* Diarrhoea initially, then difficulty in walking, a stiff gait and a reluctance to walk. Dark brown or red urine, recumbency, increased heart rate and difficulty in breathing.

*Health and production problems;* Causes damage to the muscles of the skeleton and the heart. Can give rise to inappetance and weight loss, and can cause rapid death in some cases.

## Integrated Control Strategy:
Basal bark or cut stump treatment with herbicide.
Be aware of potential stock problems.

## Comments:
Plants bearing seed pods are the most poisonous.

A bushy to erect shrub with variable leaves. The flowers are yellow and buttercup shaped, appearing late winter and spring.

It occurs throughout the region and is now a problem weed, which may be due to overstocking or lack of fires.

This is a short lived species, up to 10 years life span. A prolific seeder, and the seeds can germinate after adequate rain. Most cassia/senna species are susceptible to fire.

This plant is rarely browsed by any form of livestock, but pods are utilised by sheep and goats. All varieties contain useful amounts of protein and phosphorus, but are low in fibre.

Goats will effectively remove this weed, but to maintain shrub free paddocks would be counter productive in a sheep and cattle enterprise.

No 60 *Cassia eremophila*
RB TROUNCE

# CASSIA FLORIBUNDA

## Alternative Name:
Smoth cassia, arsenic bush

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability: Moderate

## Poisonous Principle:
Anthraquinone glycocides and an unidentified toxin

## Effects:
*Signs and symptoms;* Diarrhoea initially, then difficulty in walking, a stiff gait and a reluctance to walk. Dark brown or red urine, recumbency, increased heart rate and difficulty in breathing.

*Health and production problems;* Causes damage to the muscles of the skeleton and the heart. Can give rise to inappetance and weight loss, and can cause rapid death in some cases.

## Integrated Control Strategy:
Basal bark or cut stump treatment with herbicide.
Be aware of potential livestock problems.

## Comments:
Plants bearing seed pods are the most poisonous.

An erect, branching, rounded shrub up to 2 metres high, occurring in coastal NSW, up to Queensland. It sometimes forms dense stands along stream banks. May be found in gardens as a specimen plant, or in bushland.

The leaves are compound, with 3 or 4 pairs of leaflets. Clusters of bright yellow, buttercup flowers grow at the ends of the branches on and off throughout the year, producing long nobby pods which turn black when ripe.

# CASSIA OCCIDENTALIS

## Alternative Name:
Coffee senna, ant bush, arsenic bush, sickle pod, C. obtusifolia

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability: High

## Poisonous Principle:
Anthraquinone glycocides and an unidentified toxin

## Effects:
*Signs and symptoms;* Diarrhoea initially, then difficulty in walking, a stiff gait and a reluctance to walk. Dark brown or red urine, recumbency, increased heart rate and difficulty in breathing.

*Health and production problems;* Causes damage to the muscles of the heart and skeleton. Can give rise to inappetance and weight loss, and can cause rapid death in some cases.

## Integrated Control Strategy:
Basal bark or spot spray treatment with selective herbicide.
Be aware of potential stock problem.

## Comments:
Plants bearing seed pods are the most poisonous.

A vigorous annual or short lived perennial, reproducing only by seed, found in the tropics, and around Brisbane.

A weed of tropical crops, and also tends to grow in thickets, reducing grazing areas. The pod is sickle shaped and very indented.

There is a marked circadian rhythm in the leaf orientation, which may be useful when using spray on herbicides.

# CASTANOSPERMUM AUSTRALE

## Alternative Name:
Black bean, moreton bay chestnut

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Sheep, cattle, horses

## Palatability:
Not known to be eaten

## Poisonous Principle:
Unknown

## Effects:
*Signs and symptoms;* Gastro-enteritis causing severe diarrhoea, with associated weight loss and depression.

*Health and production problems;* Affected animals either die or become ill thrifty.

## Integrated Control Strategy:
Usually a Parks and Gardens specimen tree.
Weed clippings and seeds into disposable bags.
Do not feed this plant to any livestock.

## Comments:
Poisoning appears to be associated with the ingestion of fallen seeds in spring and early summer.

A medium to large rain forest tree, the leaves are glossy green on the upper surface. The flowers are pea-shaped and reddish/yellow, and the fruits are large woody inflated pods.

The timber is hard and dark brown, ideal for cabinet making.

Poisoning occurs in dry seasons when fodder is scarce. Some cattle develop a preference for the seeds.

## CESTRUM SPP

### Alternative Name:
Green cestrum, orange cestrum, night cestrum, lady of the night, green poisonberry, chilean cestrum.

### Toxicity to Goats:
Toxic, high risk

### Toxicity to Other Species:
Toxic to all livestock

### Palatability:
Seldom eaten

### Poisonous Principle:
Possibly a carboxyatractyloside

### Effects:
*Signs and symptoms;* Depression, abdominal pain, sometimes diarrhoea. Irritability, weakness then recumbency, eventually coma or convulsions.

*Health and production problems;* Causes acute liver necrosis and death, sometimes within hours, and within three days at the latest.

### Integrated Control Strategy:
GARDEN ESCAPEE

Cut stump and treat with herbicide. Glyphosate and or metsulfuron methyl. The root system must be destroyed. Leave for six months for the herbicide to translocate. Fence off the area, since the dead leaves and branches are still toxic. Completely incinerate to remove toxins.

This plant is declared “Noxious” in Victoria and Queensland, and parts of NSW.

### Comments:
All parts of the plant, especially the berry fruits, are poisonous - even to children.

A perennial shrub up to three metres high. The leaves are shiny and green, pointed at both ends, about ten cms long. They have a foul smell when crushed. The flowers are yellow and trumpet-shaped, growing in clusters, appearing from spring to autumn. Berries are slightly oval, glossy and turn black when ripe. The plant reproduces by rhizomes and bird dispursed seed.

Commonly involved in plant poisonings, especially in coastal NSW, most of which occur when feed is scarce.

No 44 *C. parqui*

## CHEILANTHES SPP

### Alternative Name:
Rock fern, mulga fern

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to cattle, sheep, horses and pigs

### Palatability: Seldom eaten

### Poisonous Principle:
Thiaminases, together with norsesquiterpene glucocides, notably ptaquiloside

### Effects:
*Signs and symptoms;* Two different outcomes are possible.

Either depression, confusion, disinterest in surroundings, apparent blindness, head pressing and eventually recumbency with episodic convulsions.

Alternately, animals may develop an anaemic condition that shows up best when they are forced to exercise, and results in their sudden collapse with laboured respiration.

They may also display evidence of blood in nasal discharges, faeces or urine, together with small haemorrhages of the sensitive skin around the nose, mouth, rectum and vagina.

*Health and production problems;* The first condition results in death within days. The second condition results in chronic anaemia and ill thrift with apparent sudden death if forced to exercise.

### Integrated Control Strategy:
Metsulfuron methyl and a wetting agent.
Improve soil and fertilise.
Be aware of potential stock problems.

### Comments:
These plants are generally avoided, but there is a tendency for them to be eaten in drought periods when it may be the only green herbage available. Casual ingestion is safe, but the more protracted ingestion of significant amounts is dangerous.

Small dainty, tufted, perennial ferns with erect dark green leaves. Under dry conditions the fronds curl up and may look dead, but they usually expand after rain.

Found from Tasmania to north Queensland, and coastal areas to central Australia.
They may occur in exposed positions in woodlands, pastures and rocky areas and can form dense carpets.

Experimental evidence suggests that fern infested paddocks can be grazed safely if animals are removed after about 10 days and rested in fern-free paddocks for about three weeks.

# CONIUM MACULATUM

## Alternative Name:
Hemlock, carrot fern

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to sheep, cattle, horses and pigs

## Palatability:
Moderate

## Poisonous Principle:
Piperidine alkaloids, notably coniine

## Effects:
*Signs and symptoms;* Initially diarrhoea, then constipation and urinary incontinence. Trembling of the limb muscles, stiff uncoordinated gait, and dilated pupils. Initial excitement is followed by depression and eventually a profound weakness leading to recumbency.

*Health and production problems;* Most affected animals will recover, but affected pregnant animals may later give birth to offspring with deformities of the skeleton, notably, twisted limbs, enlarged joints, flexed knees and elbows and curvatures of the spine.

## Integrated Control Strategy:
GARDEN ESCAPEE
Hand pull wearing rubber gloves.
Slashing, just before flowering may be effective, but new growth may occur from the root base.
Chemical control from seedling to flowering stage. Herbicide Group I.

This plant is declared “Noxious" in Tasmania, Victoria, parts of NSW and in Queensland.

## Comments:
This plant tends to be avoided, but sometimes may be eaten as a contaminant in garden clippings, or in hay, or may be eaten when alternative fodder is scarce.

It is relatively unpalatable, but avoid grazing stock on the young plant before flowering, and at seeding time.

An annual or biennial plant growing up to 3 metres high, preferring moist positions. The stems are strong, hairless and hollow except at the nodes. They have purple blotches, and emit an offensive odour of mice when crushed. The leaves are fern, or carrot-like and are often mistaken for parsley. The flowers are tiny and white and form a dense cluster. The roots are long, white and fleshy.

## CONSOLIDA AMBIGUA

### Alternative Name:
Larkspur

### Toxicity to Goats:
Toxic, high risk

### Toxicity to Other Species:
Toxic to all livestock species

### Palatability:
Not known to be eaten

### Poisonous Principle:
Polycyclic diterpenoid alkaloids

### Effects:
*Signs and symptoms;* Restlessness, salivation, bloating, belching, repetitive swallowing, profound weakness leading to recumbency, cardiac arrhythymia. Very weak pulse and shallow respiration.

Health and production problems; Death within hours.

### Integrated Control Strategy:
GARDEN ESCAPEE.
Use herbicide, or weed into disposable bags.
Do not feed these plants to any livestock.

### Comments:
Roots, leaves, flowers and seeds are all poisonous. Stock losses are usually only encountered when animals are given access to garden plants and clippings.

An annual, fast growing, upright, branching garden plant with feathery mid-green leaves. In spring to summer they produce tall spikes of rounded, spurred, double pink, blue or white flowers.

Propagation is by seed.

# CONVALLARIA MAJALIS

## Alternative Name:
Lily of the valley

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Cattle, sheep, horses and donkeys

## Palatability: Not known to be eaten

## Poisonous Principle:
Cardiac glycocides, notably convallatoxin

## Effects:
*Signs and symptoms;* Depression, diarrhoea, slow irregular heart beat and eventually heart block.

*Health and production problems;* Rapid death in some cases, but little effect in others until mustered when they may drop dead unexpectedly.

No 203 *Convallaria majalis*
CORNELL UNIVERSITY

## Integrated Control Strategy:
GARDEN PLANT
Dig out carefully into disposable bags and remove. Dispose of cuttings carefully.
Do not feed to any livestock.

## Comments:
A low-growing rhizomatous perennial, with strap-like leaves. Sprays of small, white, fragrant, pendant, bell-shaped flowers open in Spring. This plant prefers cooler climates.

Ruminants, such as the goat, are much more tolerant of this type of plant poison than are horses and donkeys.

## CROTOLARIA SPP

### Alternative Name:
Rattlepods

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to horses, pigs, cattle, and to a lesser extent sheep

### Palatability:
Seldom eaten

### Poisonous Principle:
Pyrrolizidine alkaloids

### Effects:
*Signs and symptoms;* Sometimes chronic weight loss, or sometimes acute jaundice with or without photosensitization, or sometimes sudden death with no other signs.

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced long term productivity. Chronically damaged livers in some ruminants are inclined to accumulate excessive amounts of copper, which can ultimately be released and kill the animal in the process.

### Integrated Control Strategy:
Variable. Some species are ornamental, some are fodder, yet others are toxic.
Do not feed garden clippings to any livestock.
Be aware of potential stock problems.

### Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season. By this stage some animals may start to loose weight and become ill thrifty and others, which appear to be in very good condition, may suddenly become jaundiced or die. Chronic liver damage in horses, and to a lesser extent in cattle, can result in secondary brain damage.

Of the 37 species, native or naturalised in Australia, about 16 are toxic to livestock. The leaf shapes are variable, but the flowers are all pea-shaped, and mostly yellow. The ripe seeds become loose in the pods and rattle when shaken.

Found in NSW, Queensland and the Northern Territory.

## CRYPTOSTEGIA GRANDIFLORA

### Alternative Name:
Rubber vine

### Toxicity to Goats:
Toxic, high risk

### Toxicity to Other Species:
Cattle, sheep, horse and donkey

### Palatability: Low

### Poisonous Principle:
Cardiac glycocides, notably the cardenolide cryptograndoside

### Effects:
*Signs and symptoms;* Depression, diarrhoea, slow irregular heart beat and eventually heart block.

*Health and production problems;* Rapid death in some cases, but little effect in others until mustered when they may drop dead unexpectedly.

### Integrated Control Strategy:
Bulldoze and burn, but take care as it is very flamable when green!
Herbicides are very slow acting, but try basal bark treatment and spot spraying. Sow to a competitive pasture.

This is a declared "Noxious Weed" in parts of Queensland, the Northern Territory and Western Australia.

### Comments:
Ruminants, such as the goat, are more tolerant of this type of plant than horses and donkeys.

A rampant woody climber, found in semi-arid tropical areas, which exudes a milky sap when damaged.

The flowers are large, trumpet shaped, lilac to purple pink, turning white with age, at the ends of branches.

The seeds germinate with the first rains, and become a very invasive plant which smothers everything.

Some claims have been made that goats have achieved success in controlling rubber vine.

# DAPHNE SPP

## Alternative Name:
Daphne

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
All livestock species

**Palatability:** Not known to be eaten

## Poisonous Principle:
Macrocyclic diterpenes, notably daphnetoxin and mezerein, together with dicoumarol glycocides, notably daphnin

## Effects:
*Signs and symptoms;* Vomiting, diarrhoea sometimes haemorrhagic, extreme weakness and depression.

*Health and production problems;* Rapid death.

## Integrated Control Strategy:
GARDEN PLANT
Prune out carefully into disposable bags.
Do not feed this plant to any livestock.

## Comments:
All parts of the plant are toxic, but especially the berries and bark.

Use gloves, as this plant can cause a rash on the skin of unwary humans.

Historically used in the treatment of venereal and scrofulous diseases.

# DATURA STRAMONIUM

## Alternative Name:
Thornapple, false castor oil, jimson weed

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to cattle, sheep, horses, pigs and poultry

## Palatability:
Not known to be eaten

## Poisonous Principle:
The tropane alkaloides, hyocine, scopalamine, and atropine

## Effects:
*Signs and symptoms;* Constipation and infrequent urination. Some initial excitation with later depression, muscle trembling, weakness leading to an unsteady gait and eventual recumbency. Dilated pupils, dry mouth and nose, an increased heart rate but a weak pulse, loss of rumen sounds and laboured respiration. Some cases may progress further to either coma or terminal convulsions.

*Health and production problems;* Death in some cases within 12 hours of first signs, but many cases may recover with no long term effects on their productivity.

## Integrated Control Strategy:
Biological controls are being tested.
Wick wipe with herbicide (Group I), before flowering.
Cultivate before seeding, as most varieties are annuals.

This is a declared "Noxious Weed" in Victoria, Tasmania, Western Australia and Queensland.

## Comments:
These plants are generally avoided, but hungry stock, or stock new to an area may eat them. They may turn up as contaminants in hay, or their toxic seeds may contaminate feed grain.

An erect, annual forb with pale green stems and spreading branches, growing over a metre high. The leaves are ovate, green or purple, with serrated edges. The flowers are trumpet-shaped, usually white or purple, on a short stalk and appear late in spring and early summer. In autumn the prickly seed capsule dries off and spreads seeds, which can remain dormant for up to 20 years.

A serious weed in summer crops and pastures, depriving other plants of moisture, nutrients and light.

The plant has a strong bitter taste and an offensive odour, which deters grazing animals. Humans can also be affected, and may develop dermatitis from the leaves, flowers and fruits.

No 236 *Datura spp*
UNIVERSITY OF ILLINOIS

# DELPHINIUM SPP

## Alternative Name:
Delphinium, larkspur

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to cattle, sheep and horses

## Palatability:
Not known to be eaten

## Poisonous Principle:
Polycyclic diterpenoid alkaloids, notably delphinine

## Effects:
*Signs and symptoms;* Restlessness, salivation, bloating belching, repetitive swallowing, constipation, profound weakness – leading to an unsteady wide-based stance, and longer and longer periods of recumbency. Cardiac arrhythmia, vomiting and subsequent choking sometimes occur.

*Health and production problems;* Death within hours usually, but some animals may recover over several days.

## Integrated Control Strategy:
GARDEN PLANT
Use herbicide, or weed out into disposable bags.
Do not feed these clippings to any livestock.

## Comments:
All parts of the plant are poisonous, especially the seeds and young leaves. Stock losses may be encountered when animals are given access to garden plants and clippings.

A genus of perennials and annuals with roots in tuberous clusters. Leaves are alternate and deeply lobed. Flowers are in long clusters of irregularly cup-shaped, sometimes hooded and spurred, white, blue or purple, flowering in spring.

May be palatable, and is most toxic in the young stages, and when the plant goes to seed. It remains toxic even when it is dried.

# DIEFFENBACHIA SPP

## Alternative Name:
Dumbcane. philodendron

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Probably all animal species

**Palatability:** Not known to be eaten

No 211 *Dieffenbachia spp*
PURDUE UNIVERSITY

## Poisonous Principle:
Unknown

## Effects:
*Signs and symptoms;* Causes intense irritation and burning to the mouth, tongue and lips. Swelling of these parts and excessive salivation follows, which interferes with swallowing and breathing.

*Health and production problems;* Some signs and symptoms will persist for many days before recovery begins.

## Integrated Control Strategy:
GARDEN PLANT
Prune or weed into disposable bags.
Do not feed to any livestock.

## Comments:
Only the stems of these plants are toxic.

A genus of over 2000 evergreen annuals or perennials commonly grown as indoor plants, in pots, for their foliage. The plants grow up to 2 metres high, are erect with stout stems, marked by horizontal leaf stems. All have attractive leaves, and the flowers are usually a spathe, enclosing a fleshy spadex, either green or yellow-white. Berries are brightly coloured.

Some plants have needle-like crystals of calcium oxalate, which can puncture the skin, causing pain. Similar plants are *monstera* and *calandrina.*

Historically “Dumbcane” was used to prevent humans from talking, by causing the tongue to swell.

# DIGITALIS PURPUREA

## Alternative Name:
Foxglove

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Cattle, sheep. horse and donkey

## Palatability:
Not known to be eaten

## Poisonous Principle:
Cardiac glycocides, notably digitoxin

## Effects:
*Signs and symptoms;* Depression , diarrhoea, slow irregular heart beat and eventually heart block.

*Health and production problems;* Rapid death in some cases, but little effect in others until mustered when they may drop dead unexpectedly.

## Integrated Control Strategy:
GARDEN PLANT
Spot spray with herbicide, or weed out into disposable bags.
Do not feed to livestock.

## Comments:
Ruminants, such as the goat, are generally more tolerant of this type of plant poison than are horses and donkeys, but digitoxin is a more powerful cardiac toxin in all animal species than other cardiac glycocides. Problems may arise if the plant is fed in a mixture of garden clippings or if it is present as a contaminant in hay.

This is a genus of biennials or perennials, some of which are evergreen. Plants are similar to comfrey in their first year. The leaves are soft, hairy, toothed and ovate to lance-shaped in a basal rosette in the first year. Flowering occurs in the second year, purple to white, spotted, thimble-like and drooping.
The upper leaves are more toxic than the lower leaves, and are most toxic before the seeds ripen.

They need little soil to survive, grow in crevices of walls, hilly pastures and roadsides, and are spread by seed. Fresh plants are unpalatable to livestock.

No 39 *Digitalis purpurea*

## DUBOISIA HOPWOODII

### Alternative Name:
Pitjuri

### Toxicity to Goats:
Toxic, high risk

### Toxicity to Other Species:
Toxic to cattle, sheep, horses, camels and pigs

### Palatability:
Not known to be eaten

### Poisonous Principle:
Pyridine alkaloids, notably nicotine

### Effects:
*Signs and symptoms;* Initially diarrhoea, then constipation, urinary incontinence, trembling of the limb muscles, stiff uncoordinated gait, and dilated pupils. Initial excitement is followed by depression and eventually a profound weakness leading to recumbency.

*Health and production problems;* Most affected animals will recover, but affected pregnant animals may give birth to offspring with deformities of the skeleton, notably, twisted limbs, enlarged joints, flexed knees and elbows and curvatures of the spine.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
This plant is generally avoided, but hungry stock, or stock new to the area may eat it, or it may turn up as a contaminant in hay.

A widely distributed and common plant found in arid regions. Grows in South Australia, NSW, Queensland, Western Australia and Northern Territory. The toxicity seems to vary with locality and stage of growth.

A medium to tall shrub with corky, brownish yellow to purple bark, drooping branch tips and dark green leaves.

The flowers are white with purple stripes, and the berries are black, globular and fleshy.

The Aborigines chewed the powdered leaves to produce a narcotising effect, and to assuage hunger.

These plants are grown commercially in Queensland for production of alkaloids for drug manufacture.

## DUBOISIA SPP

### Alternative Name:
Corkwood

### Toxicity to Goats:
Toxic, high risk

### Toxicity to Other Species:
Toxic to cattle, sheep, horses, camels and pigs

### Palatability:
Not known to be eaten

### Poisonous Principle:
The tropane alkaloids, hyoscyamine, scopolamine and atropine

### Effects:
*Signs and symptoms;* Constipation and infrequent urination, some initial excitation with later depression, muscle trembling, weakness leading to an unsteady gait and eventual recumbency. Dilated pupils, dry mouth and nose, an increased heart rate but a weak pulse, loss of rumen sounds and laboured respiration. Some cases may progress further to either coma or terminal convulsions.

*Health and production problems;* Death in some cases within 12 hours of first signs, but many cases may recover with no long term effects on their productivity.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
These plants are generally avoided, but hungry stock, or stock new to an area, may eat them, or they may turn up as contaminants in hay, or their toxic seeds may contaminate feed grain.

These are shrubs or small trees up to about 8 metres high, with a corky bark. The flowers are whitish, appearing about late winter, and the fruits are black round berries.

# ECHIUM PLANTAGINEUM

## Alternative Name:
Paterson's curse, murrumbidgee bluebell, salvation jane

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to horses, pigs, cattle and to a lesser extent sheep

## Palatability:
Moderate at flowering

## Poisonous Principle:
Pyrrolizidine alkaloids

## Effects:
*Signs and symptoms;* Sometimes chronic weight loss, or sometimes acute jaundice with or without photosensitization, or sometimes sudden death with no other signs

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced long term productivity. Chronically damaged livers in some ruminants are inclined to accumulate excessive amounts of copper, which can ultimately be released and kill the animal in the process.

## Integrated Control Strategy:
Cultivation, and spot spray with herbicides at the rosette stage in autumn and spring.
Use goats to reduce seeding.
A combination of biological agents, spray grazing, and resowing to perennial pasture, but ensure biological agents are not lost.

This is a declared "Noxious Weed" in Victoria, parts of NSW, South Australia and Western Australia.

## Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season.

By this stage some animals may start to loose weight and become ill thrifty and others, which appear to be in good condition, may suddenly become jaundiced or die.

An annual, occasionally biennial forb, with a high seeding rate. These seeds can live for up to 7 years, and germinate at any time with good rain. Most plants over-winter as rosettes and produce purple flowers in late spring.

Found on sandy loam soils, on development sites and on over grazed pasture. It is dispersed by stock movement and in fodder.

Goats will graze the flowers first, preventing seed set, then eat the leaves as a small proportion of their diet.

No 03491 *Echium plantagineum*
NSW AGRICULTURE

# ECHIUM VULGARE

## Alternative Name:
Viper's bugloss

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to pigs, horses, cattle and to a lesser extent sheep

## Palatability:
High at flowering

## Poisonous Principle:
Pyrrolizidine alkaloids

## Effects:
*Signs and symptoms;* Sometimes chronic weight loss, or sometimes acute jaundice with or without photosensitization, or sometimes sudden death with no other signs.

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced long term productivity. Chronically damaged livers in some ruminants are inclined to accumulate excessive amounts of copper, which can ultimately be released and kill the animal in the process.

## Integrated Control Strategy:
Pasture improve, spray graze using goats.
Biological controls are being tested, but take care not to destroy the organisms in the process of spray grazing.

This is a declared "Noxious Weed" in Victoria, parts of NSW and Tasmania.

## Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season. By this stage some animals may start to loose weight and become ill thrifty and others, which appear to be in very good condition, may suddenly become jaundiced and die.

A biennial, sometimes perennial rosette forb with basal leaves, stalkless and spear shaped. The leaves have a warty appearance, and the leaf veins are longitudinal, not branched as in paterson's curse.

The flowers are on a pronounced spike, and are long lasting, small, and pale to dark blue.

No 03522 *Echium vulgare*
NSW AGRICULTURE

# ERYTHROPHLEUM SPP

## Alternative Name:
Cooktown ironwood, camel poison

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability: Not eaten

## Poisonous Principle:
Alkaloidal esters and amides of diterpenoid acids

## Effects:
*Signs and symptoms;* Increased heart sounds and an irregular heart rhythm, pale mucous membranes and laboured respiration. In some cases abdominal straining and diarrhoea, often staring eyes with possible blindness.

*Health and production problems;* Frequently results in death within 48 hours, or alternately, sickness for several weeks accompanied by excessive weight loss.

## Integrated Control Strategy:
Be aware of potential stock problems.

## Comments:
Goats should never be allowed access to this tree, or its suckers, or its dry fallen leaves.

This tree grows to about 15 metres high. It has dark grey to black bark, and alternate compound leaves and leaflets, which are dark green and leathery. The young leaves or sucker shoots may be a pale pink in colour. The flowers are small and pale yellow, on long spikes. Seed pods are thin and flat.

Travelling stock are most likely to be affected.

Unfortunately clearing generates regrowth which can be very dangerous to livestock.

# EUCALYPTUS CLADOCALYX

## Alternative Name:
Sugar gum

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to all grazing livestock

## Palatability:
Seldom eaten

## Poisonous Principle:
Cyanogenetic glycocides (cyanide/prussic acid)

## Effects:
*Signs and symptoms;* Fall down, struggle to get up, shiver and shake, develop a rapid pulse and experience difficulty in breathing.

*Health and production problems;* Death within hours.

## Integrated Control Strategy:
Grub out, spot spray if possible.
Be aware of potential stock problems.

## Comments:
Young leaves from suckering shoots are the most toxic. Rain immediately after a dry spell will temporarily increase the plants' toxicity.

A tall erect tree growing up to 35 metres high. The bark is white or yellowish after the outer bark has peeled off. It is cultivated as a shade or ornamental tree.

Sugar gum and red box are probably the only toxic eucalypts – both are cyanogenetic.

The round leaves from the suckers are more toxic than the long leaves from the mature branches.

## GASTROLOBIUM SPP

### Alternative Name:
Desert poison bush, heart-leaf poison, wallflower poison

### Toxicity to Goats:
Toxic, high risk

### Toxicity to Other Species:
Toxic to sheep, cattle, horses and donkeys

### Palatability:
Seldom eaten

### Poisonous Principle:
Fluoroacetates (1080 poison)

### Effects:
*Signs and symptoms;* Rapid, weak, arrhythmic heart beat and difficulty in breathing. Excitement or depression, stagger then fall, with muscle tremors progressing to terminal convulsions.

*Health and production problems;* Death within minutes or up to an hour, occasionally recovery with no long term production problems.

### Integrated Control Strategy:
Grub and burn all lignotubers. Fence off and apply herbicide. Most species can be controlled by cutting off at ground level. Some species can still sucker from the remaining roots.

### Comments:
Some animals appear normal until mustered and then they suddenly drop dead, or become recumbent and refuse to travel.

Leafy shrubs growing up to 2 metres high. They usually have several stems growing from lignotubers, although they are also spread by seed. Usually found in the more arid areas of Australia.

The leaves, flowers and seeds are all toxic, and the plant is palatable. Animals are affected in the paddock, or while travelling.

These plants are intermittently toxic in many areas, although it is not predictable which areas, and which season. This species, and *F. oxylobium*, are the most toxic plants in Australia.

The plants are browsed as a source of green feed, but not as first choice.

Trials of genetically modified rumen bacteria to be released for the protection of cattle and sheep against fluroacetate poisoning are being carried out, and are nearing completion.

# GELSEMIUM SEMPERVIRENS

## Alternative Name:
Yellow jasmine, carolina jessamine

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability:
Not known to be eaten

## Poisonous Principle:
Strychnine-like indole alkaloids

## Effects:
*Signs and symptoms;* Depression, weakness, staggering gait, recumbency, tremors, dilated pupils, respiratory distress, darkening of the mucous membranes.

*Health and production problems;* Death from respiratory failure within 48 hours of first signs.

## Integrated Control Strategy:
GARDEN PLANT
Weed into disposable bags.
Do not feed cuttings to any livestock.

## Comments:
All parts of the plant are poisonous. This is another potentially poisonous plant found in garden clippings.

An evergreen twining climber, grown for its bright yellow flowers. Reproduces by seed.

# GLORIOSA SUPERBA

## Alternative Name:
Glory lily, climbing lily

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to all livestock species

**Palatability:** Not known to be eaten

No 37 *Gloriosa superba*


## Poisonous Principle:
Colchicine–like alkaloids

## Effects:
*Signs and symptoms;* Violent diarrhoea, weakness leading to recumbency, and progressive respiratory failure

*Health and production problems;* Death within hours of ingestion, or for very small intakes of the plant, death within several days.

## Integrated Control Strategy:
GARDEN PLANT
Use herbicide, or weed out into disposable bags.
Do not feed these clippings to any livestock.

## Comments:
A deciduous, perennial, tendril climber with tuberous roots.

The stems are prostrate or climbing, and the leaves are rather succulent and bright green. They are attached directly to the stem, and tapered to a tendril at the tip with which it climbs. Flowers are very showy, and a bright orange to red.

Plants die back in autumn, or the tropical dry season, to a dormant tuber. In the tropics it may be viewed as a garden escapee.

# GOMPHOCARPUS SPP

## Alternative Name:
Cotton bush, balloon cotton, bladder cotton bush narrow-leaf cotton bush, duck bush

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Cattle, sheep, horse, donkey and pigs

## Palatability:
Not known to be eaten

## Poisonous Principle:
Cardiac glycocides, notably the cardenolide gofruside

## Effects:
*Signs and symptoms;* Depression, diarrhoea, slow irregular heart beat and eventually heart block.

*Health and production problems;* Rapid death in some cases, but little effect in others.

## Integrated Control Strategy:
Hand pull before flowering, and remove as much of the root as possible, to prevent suckering.
Wick wipe with herbicide Group I.

## Comments:
Ruminants, such as the goat, are much more tolerant of this type of plant than horses and donkeys. Plants of this genus are only eaten during droughts.

An erect, slender, perennial plant, up to 2 metres high, exuding latex when damaged. The root is very aromatic when crushed. Leaves are narrow and dull green, flowers are creamy white, small and bell-shaped, and the fruits are inflated pods covered with soft bristles. The mature fruits taper to a pointed beak and hang on a curved stem.

This plant occurs in all mainland states, in wasteland, roadsides, pastures and wooded areas. Originally it was a garden plant, and now an escapee.

It reduces grazing capacity, and maybe is the cause of deaths of sheep and cattle in NSW.
The acrid latex makes it very unpalatable to grazing animals in a fresh state. It can be toxic in hay or chaff.

No 35 or 36 *Gomphocarpus spp*

# HELIOTROPIUM AMPLEXICAULE

## Alternative Name:
Blue heliotrope, purple top, wild verbena

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to horses, pigs, cattle and to a lesser extent sheep

## Palatability:
Seldom eaten

## Poisonous Principle:
Pyrrolizidine alkaloids

## Effects:
*Signs and symptoms;* Sometimes chronic weight loss, or sometimes acute jaundice with or without photosensitization, or sometimes sudden death with no other signs.

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced long term productivity. Chronically damaged livers in some ruminants are inclined to accumulate excessive amounts of copper which can ultimately be released and kill the animal in the process.

## Integrated Control Strategy:
Spring cultivation to kill the seedlings, and herbicides at other times. (Group C)
Pasture improvement with perennials.

This is a declared "Noxious Weed" in parts of NSW.

## Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season. By this stage some animals may start to loose weight and become ill thrifty and others, which appear to be in very good condition may suddenly become jaundiced or die.

A hairy, prostrate, perennial forb with many branched stems. Summer growing, and reproducing from seed and root buds, it dies back in winter and regrows from the tap root or seeds in spring.

The leaves give off an offensive odour when crushed. Blue heliotrope has purple or lilac flowers with yellow centres, in spring and autumn.

Found mainly along roadsides, in fallows, degraded pastures and a variety of soil types. Does not compete well with pastures in summer.

Grows in the central and northern districts of NSW. Livestock tend to avoid the plant and it is rarely grazed. Young animals appear to be more susceptible to the toxins.

No 04631 *Heliotropium amplexicaule*
NSW AGRICULTURE

## HELIOTROPIUM EUROPAEUM

### Alternative Name:
Common heliotrope, caterpillar weed, potato weed

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to horses, pigs, cattle, and to a lesser extent sheep

**Palatability:** Not known to be eaten

### Poisonous Principle:
Pyrrolizidine alkaloids

### Effects:
*Signs and symptoms;* Sometimes chronic weight loss, or sometimes acute jaundice with or without photosensitization, or sometimes sudden death with no other signs

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced long term productivity. Chronically damaged livers in some ruminants are inclined to accumulate excessive amounts of copper, which can ultimately be released and kill the animal in the process.

### Integrated Control Strategy:
Use herbicides in the fallows, and crop rotation of at least two or three years to allow for more use of herbicides (Group I).
Biological control agents are being tested.

### Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season. By this stage some animals may start to loose weight and become ill thrifty, and others which appear to be in very good condition, may suddenly become jaundiced or die.

A hairy, bushy, spring and summer growing annual forb. Reproduction is by seed. The leaves are oval and a greyish green, and the white flowers grow along a curved spike, or fiddle-neck in summer to autumn. The fresh leaves and stems produce an offensive odour when crushed.

It is found mainly in south eastern Australia, in degraded winter pastures, fallows and areas dominated by winter growing annuals. This plant is very drought tolerant.

Common heliotrope and paterson's curse often occur together, and the toxic effects can be cumulative.

No 34 *Heliotropium europaeum*

## HELLEBORUS NIGER

### Alternative Name:
Black hellebore, christmas rose, winter rose

### Toxicity to Goats:
Toxic, high risk

### Toxicity to Other Species:
Toxic to all livestock species

### Palatability:
Not known to be eaten

### Poisonous Principle:
Cardiac glycocides, notably hellebrin

### Effects:
*Signs and symptoms;* Depression, recumbency, diarrhoea, slow irregular heart beat and eventual heart failure.

*Health and production problems;* Death after several days of signs.

### Integrated Control Strategy:
GARDEN PLANT
Use herbicides, or weed out into disposable bags.
Do not feed these garden clippings to any livestock.

### Comments:
Small amounts fed out in garden refuse are potentially lethal.

A genus of rhizomatous perennials, only some of which are evergreen. The rootstock is short and black. They are grown for their flowers which are very low-growing. Reproduces by seeds and cuttings.

Flowers are large nodding showy heads, on single red-spotted stalks. The fruit is a follicle with bright red berries. This species thrives in the shade, is durable and cold hardy.

Most deciduous species retain their old leaves. Reproduces by seeds or cuttings. Some species can cause dermatitis in humans.

Many gardeners mow the patch to accentuate the flower heads and the trash may become mixed with lawn clippings. The toxins in the leaves and rhizomes are not destroyed by drying or storage.

Traditionally used as an external treatment for lice, a vermifuge, as an abortant and as a local anaesthetic. Christmas decor seems to have been an afterthought.



No 206 *Helleborus niger*
CORNELL UNIVERSITY

# HETERODENDRUM OLEIFOLIUM

## Alternative Name:
Rosewood, boonery, bullock bush

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to all grazing livestock

## Palatability:
High at all stages

## Poisonous Principle:
Cyanogenetic glycocides (cyanide/prussic acid)

## Effects:
*Signs and symptoms;* Fall down, struggle to get up, shiver and shake, develop a rapid pulse and experience difficulty in breathing.

*Health and production problems;* Death within hours of first signs.

## Integrated Control Strategy:
Be aware of potential stock problems.

## Comments:
Young leaves from suckering shoots are the most toxic. Rain immediately after a dry spell will temporarily increase the plants' toxicity. Highest levels of cyanide occur during the summer months.

A small to medium sized tree up to 9 metres high. It has narrow grey-green leaves similar in shape to the olive tree, and small insignificant flowers.

Grows on the western slopes and plains of NSW, but is now found all over Australia.

There are two forms of leaf shape, and colour. The very narrow, green-grey colour – and the wider variety, which is blue-grey.

Commonly regarded as good fodder. The leaves contain protein and phosphorus. Suckers readily if roots are exposed or damaged.

## HOMERIA SPP

The whole plant is poisonous even when dried.

### Alternative Name:
Cape tulip

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to cattle, sheep, horses and donkeys

### Palatability:
Seldom eaten

### Poisonous Principle:
Cardiac glycocides (bufadienolide type)

### Effects:
*Signs and symptoms;* Depression, diarrhoea, slow irregular heart beat and eventually heart block.

*Health and production problems;* Rapid death in some cases, slower deaths in others and little effect in many.

### Integrated Control Strategy:
Can be hand-pulled before flowering, into disposable bags, since cormils still remain attached to the plant at this stage.
Group B or I, Herbicides, before flowering.

This is a declared "Noxious Weed" in Western Australia, South Australia, Tasmania, Victoria and parts of NSW.

### Comments:
Ruminants, such as the goat, are more tolerant of this type of plant than horses and donkeys. Plants of this genus are generally only poisonous to recently introduced animals or animals consuming excessive amounts during droughts.

An erect perennial forb, with a solitary leaf, or two leaves, which are grass like and ribbed. The flowers are pale pink to reddish, on a single zig-zag stem, which is stiff erect and angular, occurring in spring.

These species are important and widespread weeds of pastures and winter crops in all southern states.

No 33 *Homeria spp*

## HYPERICUM ANDROSAEMUM

### Alternative Name:
Tutsan, sweet amber

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to horses, cattle and sheep

### Palatability:
Seldom eaten

### Poisonous Principle:
Hypericin and pseudohypericin

### Effects:
*Signs and symptoms;* Mild diarrhoea, restlessness, depression, skin irritation especially around the head, reddening of the skin and eventually swelling of the face and ears. Hind limb weakness hence an unsteady gait, recumbency. A rapid heart rate, a marked rise in body temperature, excessive panting and salivation.

*Health and production problems;* Affected animals tent to avoid sunlight by standing in the shade. They rub their itchy and swollen faces and ears up against fixed objects and in the process rub themselves raw, which results in considerable scab formation. This plant poisoning does not normally kill an animal but it leads to chronic ill thrift and loss of productivity.

### Integrated Control Strategy:
Capable of control by cultivation.
Grub out and plough before autumn, sow to competitive pasture. Use Group I Herbicides on the steep slopes.

This is a declared "Noxious Weed" in Victoria.

### Comments:
Coloured goats are more tolerant of this plant than white goats, and the plant is much more toxic during its summer flowering stage than it is during its less obvious winter growing stage.

Animals grazing this plant should only be allowed access to it between late autumn and early spring, and should be provided with ready access to shade during this grazing period.

An erect shrub growing to about 1.5 metres high and reproducing by seed. The stems are reddish, emerging from a woody crown, and the leaves are green, but tinged with a reddish pigment especially in autumn. It looses most but not all of its leaves in autumn, and new growth occurs in spring. The stems and leaves have an aromatic smell when crushed.

The flowers are yellow and fluffy, and the fruits change from green, to red, to black when ripe.

This plant was a garden escapee from the early settlement days. It occurs in semi-improved areas with very overgrazed pasture, and competes strongly with native species.

No 32 *Hypericum androsaemum*

## HYPERICUM PERFORATUM

### Alternative Name:
St john's wort, goat weed

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to horses, cattle and sheep

**Palatability:** Moderate before flowering

### Poisonous Principle:
Hypericin and pseudohypericin

### Effects:
*Signs and symptoms;* Mild diarrhoea, restlessness, depression, skin irritation especially around the head , reddening of the skin and eventually swelling of the face and ears. Hind limb weakness hence an unsteady gait, recumbency, a rapid heart rate, a rapid rise in body temperature, excessive panting and salivation.

*Health and production problems;* Affected animals tend to avoid sunlight by standing in the shade. They rub their itchy and swollen faces and ears up against fixed objects and in the process rub themselves raw, which results in considerable scab formation. This plant poisoning does not normally kill an animal but it leads to chronic ill thrift and loss of productivity.

### Integrated Control Strategy:
Use herbicides and superphosphate at high rates.
Coloured goats will control this weed in native pasture, allowing sheep and cattle to be run.

Biological control agents are being used. Take care not to destroy them with grazing and herbicides.

This weed is declared a "Noxious Weed" in parts of NSW, Tasmania, Victoria, and Western Australia.

### Comments:
A hairless, rhizomatous, perennial forb with yellow daisy-like flowers, growing to about I metre tall. The leaves are small and elongated, with copious oil glands. The feed value of the leaves is quite high, and goats will readily eat the tough stalks.

The most practical time to graze this weed is in the winter, when there is minimum biomass of the weed. This is well before flowering when it is at its most toxic.

This weed is found along roadsides and stock routes, as well as in pastures.

No 04649 *Hypericum perforatum*
NSW AGRICULTURE

## HYPERICUM TETRAPTERUM

### Alternative Name:
St peter's wort, square stemmed hypericum

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to horses, cattle and sheep

### Palatability: Moderate

### Poisonous Principle:
Hypericin and pseudohypericin

### Effects:
*Signs and symptoms;* Mild diarrhoea, restlessness, depression, skin irritation especially around the head, reddening of the skin and eventually swelling of the face and ears. Hind limb weakness hence an unsteady gait, recumbency, a rapid heart rate, a rapid respiratory rate, a marked rise in body temperature, excessive panting and salivation.

*Health and production problems;* Affected animals tend to avoid sunlight by standing in the shade. They rub their itchy and swollen faces and ears up against fixed objects and in the process rub themselves raw, which results in considerable scab formation. This plant poisoning does not normally kill an animal but it leads to chronic ill thrift and loss of productivity.

### Integrated Control Strategy:
Capable of control by cultivation.
Goats will eat this weed.
Do not spray herbicides into the waterways, only onto the weed.

This is a declared "Noxious Weed" in Victoria.

### Comments:
Coloured goats are more tolerant of this plant than white goats, and the plant is much more toxic during its summer flowering stage than it is during the less obvious winter growing stage.

Animals grazing this plant should only be allowed access to it between late autumn and early spring, and should be provided with ready access to shade during this grazing period.

A hairless rhizomatous perennial herb with yellow daisy-like flowers, but only grows near water. Reproduces by seed.

This plant forms dense stands, and is very competitive on stream banks.

## HYPERICUM TRIQUETRIFOLIUM

### Alternative Name:
Waxy leaf st john's wort, tangled hypericum

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to horses, cattle and sheep

### Palatability: Moderate

### Poisonous Principle:
Hypericin and pseudohypericin

### Effects:
*Signs and symptoms;* Mild diarrhoea, restlessness, depression, skin irritation especially around the head, reddening of the skin and eventually swelling of the face and ears. Hind limb weakness hence an unsteady gait, recumbency, a rapid heart rate, a rapid respiratory rate, a marked rise in body temperature, excessive panting and salivation.

*Health and production problems;* Affected animals tend to avoid sunlight by standing in the shade. They rub their itchy and swollen faces and ears up against fixed objects and in the process rub themselves raw, which results in considerable scab formation. This plant poisoning does not normally kill an animal but it leads to chronic ill thrift and loss of productivity.

### Integrated Control Strategy:
Do not cultivate as this weed is spread by root pieces. Use herbicides, and goats to eat the weeds.

This is a declared "Noxious Weed" in Victoria.

### Comments:
Coloured goats are more tolerant of this plant than white goats, and the plant is much more toxic during its summer flowering stage than it is during its less obvious winter growing stage.

Animals grazing this plant should only be allowed access to it between late autumn and early spring, and should be provided with ready access to shade during this grazing period.

This is a perennial weed of open woodlands. It has twining stems, and both stems and leaves have many black oil glands. The yellow flowers grow on short stalks in clusters on the ends of branches.

The main means of spread appears to be by dragging pieces of lateral rhizomes by farm machinery.

# IPOMOEA SPP

## Alternative Name:
Cow vine, bell vine, wier vine,
morning glory, convolvulus

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Potentially toxic to sheep and cattle

## Palatability: Moderate

## Poisonous Principle:
Probably indole alkaloids

## Effects:
*Signs and symptoms;* Chronic limb weakness, knuckling of fetlocks, depression, frequent urination and muscle twitches.

*Health and production problems;* Affected animals can experience chronic weight loss and profound depression.

## Integrated Control Strategy:
Fence off, or cultivate.
Use a broad-leaf herbicide, (Group C)
For less toxic species, use goats.

## Comments:
Problems arise when plants of this genus are eaten in large amounts over many weeks. All parts of the plant, and all stages of growth, are poisonous.

Annual or perennial creepers, with light green heart-shaped leaves, showy flowers and globular hairless seed capsules.

Wier vine only grows in a limited area in Queensland. Vigorous growth from woody rootstock, has pink flowers and is very toxic.

Morning glory, is a widespread nuisance weed, large purple flowers, and is much loved by goats.
Other varieties may have white flowers, and are nuisance weeds in sub-tropical cropping areas.

No 30 *Ipomoea purpurea*

# IXIOLAENA BREVICOMPTA

## Alternative Name:
Flat billy buttons, plains plover daisy

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Potentially toxic to sheep

## Palatability:
Not known to be eaten

## Poisonous Principle:
Unsaturated fatty acids (crepenynic acid type)

## Effects:
*Signs and symptoms;* Muscle weakness, hence limb weakness, irregular heart action, increased temperature and respiration.

*Health and production problems;* Full recovery is possible within 10 days, but animals that continue to ingest the plant become ill thrifty and may die over days or weeks.

## Integrated Control Strategy:
Herbicides, and cultivation.
Be aware of potential stock problems.

## Comments:
Only the mature seedling stage of this plant is poisonous.

An erect many branched annual, or short lived perennial forb, growing to about 45 cms tall. The stems are usually covered with loose woolly hairs, the leaves are green and narrow, with no stalk. Yellow flowers occur singly on a long stalk, mainly in spring.

Widely distributed in Queensland, NSW and South Australia.

# LABURNUM SPP

## Alternative Name:
Golden chain, laburnum

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability:
Not known to be eaten

## Poisonous Principle:
Quinolizidine alkaloids, notable cytisine

## Effects:
*Signs and symptoms;* Weakness, confusion, and staggering, eventually recumbency followed by either convulsions or coma.

*Health and production problems;* Death within hours or recovery over several days are equally possible.

No 02220 *Laburnum spp*
NSW AGRICULTURE

## Integrated Control Strategy:
GARDEN PLANT
Use herbicides.
Place cuttings or small plants into disposable bags.
Do not feed these garden clippings to any livestock

## Comments:
The seeds of this garden shrub are particularly toxic. The poison is excreted in the milk of goats that ingest this plant and may cause signs and symptoms in animals that drink this milk.

A genus of deciduous trees up to 3 metres high. Grown for its profuse, golden, pendant flowers, grown in late spring.

# LANTANA CAMARA

## Alternative Name:
Lantana

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to cattle and sheep

## Palatability: High

## Poisonous Principle:
Triterpene compounds, notably lantadene

## Effects:
*Signs and symptoms;* Inappetance, frequent urination, constipation or transient foul smelling diarrhoea, dehydration, eventually jaundice with subsequent photosensitization on non-pigmented body areas.

*Health and production problems;* Death within days of ingestion or only after several weeks, sometimes partial recovery with ongoing ill thrift due to permanent liver and kidney damage.

## Integrated Control Strategy:
Goats will control this weed, but if new to lantana, they may take a while to develop the taste and adapt to the environment.
Biological control agents are being tested.
Hand pull small plants into disposable bags, when the soil is wet.
Burn regularly, spot spray or cut stump.
Herbicide Group I.

This is a declared “Noxious Weed” in parts of NSW and Queensland.

## Comments:
Many different biotypes of lantana occur and these vary greatly in their potential toxicity, some are harmless.

A rambling shrub that often forms into dense thickets up to 2 metres high. The leaves are bright green, with curved toothed edges. Stems are square, with backward curving prickles. Flowers can appear at any time of the year in compact heads. The colours range from cream to yellow, pink, orange, red, lilac and purple.

The plant reproduces by bird and animal dispersed seed.

Toxicity of lantana to livestock depends on the kind of lantana, rather than the situation or seasonal conditions. Therefore, flower colour is not a reliable guide to toxicity.

No 04634 *Lantana camara*
NSW AGRICULTURE

# LATHYRUS ODORATUS

## Alternative Name:
Sweet pea, pea, vetch

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability:
Not known to be eaten

## Poisonous Principle:
Toxic amino acids

## Effects:
*Signs and symptoms;* Either chronic irreversible nervous paralysis of the hind legs, or chronic irreversible skeletal deformations.

*Health and production problems;* Affected animals get progressively worse and eventually die.

No 208 *Lathyrus spp*
CORNELL UNIVERSITY

## Integrated Control Strategy:
GARDEN PLANT
Use herbicides, or weed out into disposable bags.
Do not feed these clippings to any livestock.

## Comments:
Ingestion of this plant and related *Lathyrus* species, will only cause problems if they form a large part of the diet for long periods.

A genus of annuals and perennials, many of which are climbers. Grown for their racemes of attractive flowers, followed by long thin pods. Propagated by seed.

Seeds of several species are used for human and animal food. “Lathyrism” is a complex disease caused by these seeds.

Neuro lathyrism, irreversible paralysis of the legs, and occasional death in famine conditions.
Osteo lathyrism, a severe skeletal deformation, mainly in livestock.

# LEUCAENA SPP

## Alternative Name:
Leucaena

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to cattle, sheep, horses and pigs

## Palatability: Moderate

## Poisonous Principle:
Mimosine (a non-protein amino acid)

## Effects:
*Signs and symptoms;* Inappetance, lethargy, shedding of hair coat, erosions of the mouth, goitre, infertility and sometimes cataracts.

*Health and production problems;* Since problems develop slowly but progressively over weeks and months, productivity is greatly affected.

## Integrated Control Strategy:
Be aware of potential stock problems.

## Comments:
An anti-toxin oral bacterial inoculum is available to protect ruminants grazing large amounts of this plant. These bacteria can persist in the rumen while *leucaena* is a large part of the diet.

Usually found as a multi stemmed shrub, with alternate compound leaves, and many branchlets.
The flowers are whitish pom-poms on short stalks at the ends of the branches, during summer. Fruits are flattened pods.

Found in coastal Queensland, Northern NSW and the Northern Territory.

This is regarded as being a “fodder tree” in some tropical countries. The rumen bacteria must be in place, in the herd, for this plant to be regarded as safe.

# LOLIUM RIGIDUM

## Alternative Name:
Annual rye grass

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Potentially toxic to sheep, cattle, horses, and pigs

## Palatability:
High at all stages

## Poisonous Principle:
Corynetoxins, Ergot toxins

## Effects:
*Signs and symptoms;* Corynetoxins can cause episodic convulsions together with general signs of a motor nervous disorder.

Ergot toxins can cause hyperthermia together with growth, lactation and reproduction problems.

*Health and production problems;* Both forms of poisoning can be lethal.

## Integrated Control Strategy:
Be aware of potential stock problems.

## Comments:
This plant is only affected by either of these problems in particular geographic areas, and then only in some years. It is the seed head of the plant that can become poisonous. In many situations this plant is grazed without causing problems.

A valuable annual, pasture grass, with a tufted inflorescence, winter and spring growing. Can be a weed of cereal crops.

The poisons are due to a parasitic fungal toxin, rather than the grass itself. If the animals can be moved to a safe paddock, they generally recover.

# MACROZAMIA SPP (Bowenia spp and Cycas spp)

## Alternative Name:
Wild pineapple, zamia palm, zamia fern, burrawang

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to cattle, sheep, horses and pigs

## Palatability:
Not known to be eaten

## Poisonous Principle:
Two different types, one is a methylazoxymethanol azoglycocide, and the other remains unknown

## Effects:
*Signs and symptoms;* Two different possibilities, either inappetance, diarrhoea, and chronic weight loss due to chronic liver damage, or alternately, a slowly developing, irreversible, nervous paralysis of the hind legs.

*Health and production problems;* Initially animals become ill thrifty and unproductive, they then become susceptible to secondary health problems and eventually die.

## Integrated Control Strategy:
Be aware of potential stock problems.

## Comments:
Only causes a problem when they form a significant amount of the diet for a protracted period, both the leaves and the fruits of the plant are poisonous.

Part of an ancient group of plants known as cycads. This plant is endemic to Australia. The dark green leaves arch out from a central trunk, up to 2 metres high. They are very slow growing.

Male and female cones are borne on separate plants, and look like pineapples in shape and size. The seeds have a high starch content, and must be well washed to remove toxins before cooking.

## MARSILEA DRUMMONDII

### Alternative Name:
Nardoo

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to cattle, sheep horses and pigs

### Palatability:
Not known to be eaten

### Poisonous Principle:
Thiaminases, together with norsequiterpine glucocides, notably ptaquiloside

### Effects:
*Signs and symptoms;* Two different outcomes are possible, either depression, confusion, disinterest in surroundings, apparent blindness, head pressing and eventually recumbency with episodic convulsions.
Alternately, animals may develop an anaemic condition that shows up best when they are forced to exercise, and results in their sudden collapse with laboured respiration, they may also display evidence of blood in nasal discharges, faeces or urine, together with small haemorrhages of the sensitive skin around the nose, mouth, rectum and vagina.

*Health and production problems;* The first condition results in death within days, and the second condition results in chronic anaemia and ill thrift with apparent sudden death if forced to exercise.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
This plant is generally avoided but there is a tendency for it to be eaten in drought periods when it may be the only green herbage available. Casual ingestion is safe but the more protracted ingestion of significant amounts is dangerous.

This is a fern with a short rhizome and stiff stalks, holding four clover-like leaflets. Nardoo is very variable as to the size and hairiness of the leaflets.

It is found in all the mainland states, around wet areas, in still water as well as running water.

Reproduction is by spores.

# MYOPORUM ACUMINATUM

## Alternative Name:
Boobialla, waterbush, strychnine bush

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to sheep and cattle

## Palatability:
Moderate at times

## Poisonous Principle:
Furanosesquiterpenes, notably ngaione

## Effects:
*Signs and symptoms;* Depression, bottle jaw, jaundice, laboured respiration and in some cases photosensitization.

*Health and production problems;* Death from liver failure within days of first signs.

## Integrated Control Strategy:
Be aware of potential stock problems.

## Comments:
Clinical signs may not develop until several days after the plant has been eaten. Both the leaves and the fruits are potentially toxic. Livestock that are constantly exposed to this plant seem to be unaffected by it, whereas it will kill recently introduced stock that are hungry and eat a large amount over a short period.

A shrub up to 2.5 metres high, with alternate pale green leaves that are slightly fleshy. The flowers are bell-shaped, white to pale cream, in clusters about 6 cm long. When ripe the fruits are a dull purple.

Occurs in Victoria, all of NSW, and in Queensland. Under normal conditions the plant appears unpalatable.

## MYOPORUM DESERTII

### Alternative Name:
Ellangowan poison bush, turkey bush, emu bush,
dogwood

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to sheep and cattle

### Palatability:
Moderate at times

### Poisonous Principle:
Furanosesquiterpenes, notably ngaione

### Effects:
*Signs and symptoms;* Depression, bottle jaw, jaundice, laboured respiration and in some cases photosensitization.

*Health and production problems;* Death from liver failure within days of first signs.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
Clinical signs may not develop until several days after the plant has been eaten. Both the leaves and the fruits are potentially toxic. Livestock that are constantly exposed to this plant seem to be unaffected by it, whereas it will kill recently introduced stock that are hungry and eat a large amount over a short period.

A many branched shrub with thin branches, up to 4 metres high, usually only 1.5 metres. There is considerable variation in the leaf size, usually alternate, thick and narrow. The flowers are bell-shaped, small, white to creamy white, usually occurring singly, in winter to spring. The fruit is a yellow drupe, containing a single seed.

This plant is found in all the mainland states, usually as scattered plants. There seems to be no difference between the toxic and the non-toxic plants. It is a useful fodder plant providing animals are gradually introduced to the species.

The fruit is eaten by emus and plains turkeys with no observable ill effect.

# NERIUM OLEANDER

## Alternative Name:
Oleander

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability:
Not known to be eaten

## Poisonous Principle:
Cardenolide cardiac glycocides

## Effects:
*Signs and symptoms;* Depression, diarrhoea, slow irregular heart beat and eventually heart block.

*Health and production problems;* Rapid death in many cases.

## Integrated Control Strategy:
GARDEN PLANT
Use herbicide, or weed out into disposable bags and bury deep. Do not burn as the smoke fumes are toxic. Large trees may have to be grubbed out, or have cut stump treatment, or covered with black plastic.
Do not feed these clippings to any livestock.

## Comments:
All parts of the plant are toxic, dried plant material is as toxic as fresh. Can be accidentally fed to livestock mixed with other plant material in garden clippings. Ruminants, such as the goat, display more tolerance for this type of poisonous plant than do horses and donkeys.

A commonly cultivated shrub with many slender stems. The leaves are long and lance shaped, thick, leathery, and opposite, .and exude a milky sap, which may cause dermatitis. The leaves occasionally grow in whorls. The flowers are red, white or pink, growing in clusters, giving rise to seed pods that have many seeds with long silky hairs.

The leaves are very unpalatable to stock. Dried or wilted leaves maybe more palatable, but are still toxic. This plant is found in most of Australia. The shrub is very hardy and tolerant of drought conditions, which makes it useful in street plantings.

Honey from these plants is also toxic.

No 101 *Nerium oleander*
DF STANLEY

## PEGANUM HARMALA

### Alternative Name:
African rue

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to sheep and cattle

### Palatability:
Not known to be eaten

### Poisonous Principle:
Nitrate compounds, and bets-carboline alkaloids, notably harmine

### Effects:
*Signs and symptoms;* Animals affected by nitrate poisons may show depression, a staggering, stiff, uncoordinated gait, trembling of limb muscles, excess salivation, rapid weak pulse , laboured respiration, bluish mucous membranes, recumbency and coma.

Animals affected by beta-carboline poisons may show weakness of the hind limbs with knuckling over in the hind fetlocks, which progresses to limb paralysis, and subsequent recumbency.

*Health and production problems;* Nitrate affected animals may die within hours.

Beta-carboline affected animals may eventually develop secondary health problems (as a result of being chronically recumbent) and may therefore die of thirst, pneumonia, etc.

### Integrated Control Strategy:
Dig out and burn.
Treat with herbicides.
Be aware of potential stock problems.

This is a declared “Noxious Weed” in South Australia and Western Australia.

### Comments:
Ruminants, such as goats, can adapt to high nitrate intakes and are only at risk if they are suddenly given access to nitrate rich plants when they are hungry and unaccustomed to eating them. The beta-carbolines in this plant must be ingested in moderate to large amounts over a protracted period before they will cause ill effects.

An erect, stiff stemmed, bushy perennial shrub growing to less than a metre high. It grows in arid areas, has a bitter taste, and appears unpalatable to livestock.

No 21 *Peganum harmala*

## PERSEA AMERICANA

### Alternative Name:
Avocado

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to sheep, cattle, horses and pigs

### Palatability:
Not known to be eaten

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Severe mastitis involving an oedematous udder, together with oedema of the head, neck and brisket.

*Health and production problems;* Loss of milk flow and sometimes death. Recovery takes several weeks.

### Integrated Control Strategy:
GARDEN PLANT
Do not feed these clippings to any livestock.

### Comments:
Only the Guatamalan strains are poisonous, but all parts of these plants contain the poison.

A tropical tree cultivated for its fruits. Sometimes found in gardens as a specimen tree.

# PIMELEA CURVIFLORA

## Alternative Name:
Riceflower, flaxweed, desert rice bush, pimelea

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Cattle and sheep

## Palatability:
Not known to be eaten

## Poisonous Principle:
Daphnetin type dihydroxycoumarin glycocides, and diterpenoid esters, notably simplexin

## Effects:
*Signs and symptoms;* Either acute diarrhoea as a result of gastro-enteritis, or a more chronic ill thrift syndrome, with watery swellings developing under the jaw and along the brisket as a result of congestive heart failure, or both.

*Health and production problems;* A dramatic decline in productivity, and death within weeks.

## Integrated Control Strategy:
Herbicides, cultivation and fertilisation.
Be aware of potential stock problems.

## Comments:
Plants of this genus are potentially poisonous in both their fresh green, and dried states. Inhalation of dried plant residue material hidden in the pasture litter is possible, and poisonous.

A dainty plant with many branches, growing to less than a metre high. The stems are covered with fine hairs, the leaves are narrow and alternate, and the flowers are greenish white, growing in small clusters in late spring to summer.

There are many varieties, all of which appear to cause trouble. Fortunately it seems to be unpalatable.

# PRUNUS SPP

## Alternative Name:
Apricot, almond, cherry, plum, peach, prunus

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to sheep and cattle

## Palatability: High

## Poisonous Principle:
Cyanogenetic glycocides (cyanide/ prussic acid)

## Effects:
*Signs and symptoms;* Fall down, struggle to get up, shiver and shake, develop a rapid pulse and experience difficulty in breathing.

*Health and production problems;* Death within hours.

## Integrated Control Strategy:
GARDEN PLANT OR ESCAPEE.
Use herbicides, or weed out into disposable bags.
Do nor feed the clippings to any livestock.

## Comments:
Young spring leaves and the kernel of the seed are the most toxic. Ruminants such as the goat, can tolerate reasonable levels of ingested cyanogenetic glycocides, provided they are not fed large amounts in a short period.

A perennial, deciduous, fruit tree growing up to 5 metres high. They have bright green leaves with a fine-toothed edge. The flowers are white to pink, on bare branches, in the early spring.
Spread by bird-dispersed seed.

# PTERIDIUM ESCULENTUM

## Alternative Name:
Bracken fern, common fern, austral fern

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to cattle, sheep, horses and pigs

## Palatability: Low

## Poisonous Principle:
Thiaminases, together with norsesquiterpene glucocides, notably ptaquiloside

## Effects:
*Signs and symptoms;* Two different outcomes are possible, either depression, confusion, disinterest in surroundings, apparent blindness, head pressing and eventually recumbency with episodic convulsions.
Alternately, animals may develop an anaemic condition that shows up best when they are forced to exercise and results in their sudden collapse with laboured respiration.
They may also display evidence of blood in nasal discharges, faeces or urine, together with small haemorrhages of the sensitive skin around the nose, mouth, rectum and vagina.

*Health and production problems;* The first condition results in death within days.
The second condition results in chronic anaemia and ill thrift, with apparent sudden death if forced to exercise.

## Integrated Control Strategy:
Goats eat a little and trample a lot of fronds.
Spray mature fronds with metsulfuron methyl. Dieback will take about 3 months, so do not slash. This may take two applications, but with the goats assistance the bracken will die off.

## Comments:
This plant is generally avoided, but there is a tendency for it to be eaten in drought periods when it may be the only green herbage available. Casual ingestion is safe, but the more protracted ingestion of significant amounts is dangerous.

There are several local species occurring in all states. It is difficult to control because of its ability to regrow from the extensive rhizome system after treatment of the fronds, chemically or mechanically. Herbicides must be allowed time to translocate from the fronds to the rhizomes before burning or slashing.

The rhizomes can contain 5 times more toxin than the fronds. If cattle eat the rhizomes in freshly ploughed pasture, they may die. Toxins are excreted in the milk and calves may die.
The toxins cause depression of the bone marrow activity (red and white cells and platelets), and therefore lessening of the anti-coagulant properties.

Some animals may acquire a taste for bracken. It is still toxic when dry, as in hay.

# RHODODENDRON SPP

## Alternative Name:
Rhododendron, azalea

## Toxicity to Goats:
Toxic, high risk

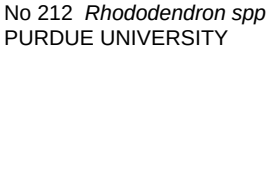
## Toxicity to Other Species:
Toxic to all livestock species

## Palatability: Occasionally eaten

## Poisonous Principle:
The tetracyclic polyol acetylandromedol

## Effects:
*Signs and symptoms;* Inappetance, repeated swallowing, excessive salivation, nasal discharge, bloating or vomiting, abdominal pain, depression, frequent defaecation, weakness leading to recumbency, and difficulty in breathing.

*Health and production problems;* Coma and death within hours or days of ingestion, or in some cases recovery.



No 212 *Rhododendron spp*
PURDUE UNIVERSITY

## Integrated Control Strategy:
GARDEN PLANT
Use herbicide, or weed out into disposable bags.
Do not feed these garden clippings to any livestock.

## Comments:
Even small amounts of rhododendron, and the related azaleas, can be poisonous.

A genus of nearly 900 species, perennial evergreen to deciduous, shrubs to trees. Grown mainly for their flowers, and propagated by cuttings. Tough, glossy smooth-margined green leaves, flowers are large and showy, in clusters at the end of branches.

The plant is still toxic in the dried state, and some pets may try out the leaves, but this is not advisable. Goats can tolerate small amounts, although reported to selectively graze this plant with dire results. Honey from these plants is also toxic.

## ROMULEA ROSEA

### Alternative Name:
Onion weed, guildford grass

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to sheep

### Palatability: Medium

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Limb weakness, knuckling over in the fetlock joints, incoordination , walking on the knees, and eventually recumbency.

*Health and production problems;* In addition to outbreaks of staggers, breeding problems are also associated with eating this weed, either failure to conceive or failure to maintain pregnancies.

### Integrated Control Strategy:
GARDEN ESCAPEE
Spotspray with herbicide and a wetter.
Do not feed this weed to any livestock.

This is a declared “Noxious Weed” in WA.

### Comments:
Protracted grazing of dry onion grass during late summer and autumn seems to present the greatest risk. Animals affected for relatively short periods will recover when removed from this weed, others may die as a result of developing secondary problems.

A small erect forb, with long narrow leaves, and pinkish/purple flowers opening when the sun is shining, growing from corms. In wet winter to spring, this grass can dominate the pasture.
The tough wiry leaves bind together in the stomach to form fibre balls, which can block the bowel. Avoid “fibre hunger” during a wet winter/spring when animals seek fibre to balance a succulent diet.

No 15 *Romulea rosea*

# SENECIO JACOBAEA

## Alternative Name:
Ragwort, st james wort

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to horses, pigs, cattle and to a lesser extent sheep

## Palatability: Low

## Poisonous Principle:
Pyrrolilidine alkaloids

## Effects:
*Signs and symptoms;* Sometimes chronic weight loss, or sometimes acute jaundice with or without photosensitization, or sometimes sudden death with no other signs.

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced long term productivity. Chronically damaged livers in some ruminants are inclined to accumulate excessive amounts of copper, which can ultimately be released and kill the animal in the process.

## Integrated Control Strategy:
Spray graze program, with increased stocking rate. Will produce new growth from a cut crown, or small pieces of root left behind in the soil.
Biological control agents are being tested.

This is a declared "Noxious Weed" in Victoria, Tasmania, South Australia and Western Australia

## Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season. By this stage some animals may start to loose weight and become ill thrifty and others, which appear to be in very good condition, may suddenly become jaundiced or die.

Chronic liver damage in horses, and to a lesser extent in cattle, can result in secondary brain damage.

Toxic in the fresh and dried state, and may be present in hay. Young animals are affected more than the mature animal. Foetuses may be affected in utero, and milk may also be toxic.

A perennial forb spread by seed, which invades pastures. Several stems can arise from a single crown. The leaves are dark to mid-green on the upper surface, paler below, and sometimes bearing cobweb like hairs. The flowers are bright yellow and daisy like, and produce two types of seeds: ray seeds and disc seeds.

Very prevalent in the Gippsland area.

No 13 *Senecio jacobaea*

# SENECIO MADAGASCARIENSIS, (S. lautus)

## Alternative Name:
Fireweed, variable groundsel

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to horses, pigs, cattle and to a lesser extent sheep

## Palatability:
High at flowering

## Poisonous Principle:
Pyrrolizidine alkaloids

## Effects:
*Signs and symptoms;* Sometimes chronic weight loss, or sometimes acute jaundice, with or without photosensitization or sometimes sudden death with no other signs.

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced long term productivity. Chronically damaged livers in some ruminants are inclined to accumulate excessive amounts of copper, which can ultimately be released and kill the animal in the process.

## Integrated Control Strategy:
Goats preferentially eat fireweed.
Slash to prevent flowering, and use herbicides.
Group C.

## Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season. By this stage some animals may start to loose weight and become ill thrifty and others, which appear to be in very good condition, may suddenly become jaundiced and die. Chronic liver damage in horses, and to a lesser extent in cattle, can result in secondary brain damage.

An annual or short lived perennial growing up to 50 cms high. The leaves are a bright green with irregular margins. Many small, bright yellow daisy-like flowers, with 13 petals, appear from April to September.

This weed was first recorded in the lower Hunter in 1918, and since then it has spread to all coastal NSW, the western slopes, and to Queensland.

Goats do not seem to be affected, probably because of their specific rumen organisms. However, as with all weeds alternate pasture should be available, together with adequate salt licks.

No 12 *Senecio madagascariensis*

## SENECIO PTEROPHORUS

### Alternative Name:
African daisy

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to horses, pigs, cattle and to a lesser extent sheep

### Palatability: Low

### Poisonous Principle:
Pyrrolizidine alkaloids

### Effects:
*Signs and symptoms;* Sometimes chronic weight loss, or sometimes acute jaundice with or without photosensitization, or sometimes sudden death with no other signs.

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced long term productivity. Chronically damaged livers in some ruminants are inclined to accumulate excessive amounts of copper, which can ultimately be released and kill the animal.

### Integrated Control Strategy:
Weed out into disposable bags if in flower, or fruiting. Herbicide, Group C.
Spot spray, slash or mow.

This is a declared “Noxious Weed” in Victoria.

### Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season. By this stage some animals may start to loose weight and become ill thrifty and others, which appear to be in very good condition, may suddenly become jaundiced and die. Chronic liver damage in horses, and to a lesser extent in cattle, can result in secondary brain damage.

An erect, bushy, perennial growing to one metre high, with entire or toothed leaves, that are woolly underneath. The flowers are yellow. Reproduces by wind blown seed.

This weed grows well in burnt areas after fire. An aggressive weed of cleared areas on the Eyre Peninsular, and near Adelaide, also in western Victoria. It competes with developing pastures, and is relatively unpalatable.

No 213 *Senecio pterophorus*
UNIVERSITY OF PENNSYLVANIA

# SENECIO QUADRIDENTATUS

## Alternative Name:
Cotton fireweed

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to horses, pigs, cattle and to a lesser extent sheep

## Palatability:
High, all stages

## Poisonous Principle:
Pyrrolizidine alkaloids

## Effects:
*Signs and symptoms;* Sometimes chronic weight loss, or sometimes acute jaundice with or without photosensitization, or sometimes sudden death with no other signs.

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced long term productivity. Chronically damaged livers in some ruminants are inclined to accumulate copper, which can ultimately be released and kill the animal in the process.

## Integrated Control Strategy:
Goats really enjoy this plant. Graze at early flowering.
Tolerant to selective herbicides as spot sprays.
Variability of the climate often leads to a natural increase or decrease in plant numbers.

## Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season. By this stage some animals may start to loose weight and become ill thrifty and others, which appear to be in very good condition may become jaundiced or die. Chronic liver damage in horses, and to a lesser extent in cattle, can result in secondary brain damage.

A short lived perennial forb growing up to 70cms high, with a white woolly covering. The leaves are narrow, and flower heads are narrow, cylindrical and greenish-yellow, in loose clusters, appearing mainly in spring.

A widely distributed weed, found in all states, and habitats. A native of Australia. Drought resistant, and eaten when other feed is scarce.

No 03510 *Senecio quadtridentatus*
NSW AGRICULTURE

## SENECIO VULGARIS

### Alternative Name:
Common groundsel

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to horses, pigs, cattle, and to a lesser extent sheep

### Palatability:
High

### Poisonous Principle:
Pyrrolizidine alkaloids

### Effects:
*Signs and symptoms;* Sometimes chronic weight loss, or sometimes acute jaundice with or without photosensitization, or sometimes sudden death with no other signs.

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced long term productivity. Chronically damaged livers in some ruminants are inclined to accumulate excessive amounts of copper, which can ultimately be released and kill the animal in the process.

### Integrated Control Strategy:
Be aware of potential stock problems.
Spot spray or weed out into disposable bags.

### Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season. By this stage some animals may start to loose weight and become ill thrifty and others, which appear to be in very good condition, may suddenly become jaundiced and die. Chronic liver damage in horses, and to a lesser extent in cattle, can result in secondary brain damage.

A succulent annual, with weak branched stems, covered with a fine down. The leaves are divided into toothed lobes, and the flowers are yellow.

Toxic in the fresh and dried state, and often found in hay. Young animals are affected more than the mature animal. Foetuses may be affected in utero, and milk may also be affected.

It occurs in all parts of temperate Australia, in roadsides, pastures and disturbed areas.



No 55 *Senecio vulgaris*
JJ DELLOW

# SOLANUM CINEREUM

## Alternative Name:
Narrawa burr

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to sheep and possibly horses

## Palatability:
Not known to be eaten

## Poisonous Principle:
Unknown

## Effects:
*Signs and symptoms;* Weight loss, limb weakness, a wide based stance, incoordination, mild head tremors, and tendency to fall over.

*Health and production problems;* This is a chronic nervous disorder involving the cerebellum in the brain. Animals remain affected forever, consequently they become very unproductive and ill thrifty, and they are prone to develop secondary health problems.

## Integrated Control Strategy:
Weed out into disposable bags, or spot spray.
Be aware of potential stock problems.
Herbicide Group B.

## Comments:
Casual ingestion of this weed will not cause a problem, but protracted ingestion over many months will cause trouble.

A small, branched, prickly, perennial undershrub, growing up to a metre high.
Spreading yellow spines grow on branches, leaves and calyx. The leaves are long, pointed, green and hairless. Purple flowers appear in groups of 2-3 in the upper leaf axils, in late spring, summer and autumn. The fruit is a globular berry, mottled green/yellow.

A native of Australia.

No 11 *Solanum cinereum*

## SOLANUM NIGRUM

### Alternative Name:
Blackberry nightshade, potato bush, tomato bush

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to sheep and cattle

### Palatability: Seldom eaten

### Poisonous Principle:
Either steroidal glycocidal alkaloids or nitrates

### Effects:
*Signs and symptoms;* Inappetance, diarrhoea, depression, difficulty in breathing, frothing at the mouth, a rapid but weak pulse, muscle shivers, and leg weakness leading to incoordination and recumbency.

*Health and production problems;* Animals may die suddenly, or within 24 hours of an outbreak. Some will recover and these may experience some short term weight loss.

### Integrated Control Strategy:
Weed out into disposable bags, or spot spray.
Be aware of potential stock problems.
Herbicide Group C or I.

### Comments:
The leaves or unripe fruit would seem to be potentially poisonous, but the potential toxicity of this weed has tended to be overstated. It is most likely that it is the large amounts of nitrates in the weed that are potentially poisonous, rather than the relatively small amounts of steroidal glycocides. Problems are typically encountered when hungry animals are suddenly forced to eat significant amounts of this weed, rather than from casual ingestion by animals adapted to a pasture paddock.

A low branching, annual herb up to a metre high, with alternate leaves which are broad at the base and tapering to a round tip. The flowers are white and star-shaped with five spreading lobes, occurring in autumn to winter. The fruit is a small green berry, that turns purple/black at maturity.

There are several species and sub species of this weed. It is found in waste areas, cultivated land and in stock yards.

This weed may be a contaminant in hay, and looses some, but not all, of its toxicity in the drying process.

No 54 *Solanum nigrum*
JJ DELLOW

## SORGHUM SPP

### Alternative Name:
Johnson grass, columbus grass, sudan grass, silk forage sorghum, evergreen millet, aleppo grass

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to sheep, cattle and horses

### Palatability:
High at all stages

### Poisonous Principle:
Cyanogenetic glycocides. Nitrates, and an unknown neurotoxin

### Effects:
*Signs and symptoms;* Cyanide poisoning will cause animals to fall down, struggle to get up, shiver and shake, develop a rapid pulse and experience difficulty in breathing.

Nitrate poisoning will cause inappetance, diarrhoea, depression, difficulty in breathing, frothing at the mouth, a rapid but weak pulse, muscle shivers, and leg weakness leading to incoordination and recumbency.

Sorghum nervous ataxia will cause limb weakness, incoordination, knuckling of the fetlocks, head and body tremors, a tendency to fall over, and in some animals protracted recumbency. In some outbreaks affected animals may appear blind, or deaf, or unable to use their tongues and jaws in a normal manner.

*Health and production problems;* With cyanide and nitrate poisoning there may be sudden death in some cases but recovery within 24 hours in others. In outbreaks of sorghum ataxia many affected animals may die of misadventure.

Pregnant does, that are not necessarily affected, may later give birth to kids that are stillborn, born weak or malformed. The usual malformations seen are rigid limbs, twisted or contracted limbs and big heads.

### Integrated Control Strategy:
Excellent fodder for goats, with mixed pasture. Slash and burn in summer, and spray regrowth before flowering or heading to prevent seeding. Herbicide Group D.

Some of these species are declared “Noxious Weeds” in all NSW.

### Comments:
Vigorous, erect, summer growing perennials, spread by seed and rhizomes.

A troublesome weed of cultivation in irrigated and other areas. Causes crop losses by direct competition and allelopathic action on desired crops. They have the potential to harbour insect and disease pests, and they cross easily with other grain and forage sorghum species.

Overall, they are drought resistant, highly productive, and have a long growing period as fodder. These species may be a visual hazard along roadsides, and a fire hazard in summer.

No 61 *Sorghum halepense*
RB TROUNCE

# STACHYS ARVENSIS

## Alternative Name:
Stagger weed, hedge nettle, mint weed

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to sheep, cattle and horses

## Palatability: Moderate

## Poisonous Principle:
An unknown central nervous system poison

## Effects:
*Signs and symptoms;* A hind leg weakness that causes affected animals to stand wide based and to drop in the hind quarters, they move in an awkward manner and tend to stumble and fall down. They frequently knuckle over at the fetlocks.

*Health and production problems;* Affected animals will lose weight, many may die from secondary problems, but most recover over several weeks once they have been taken off areas of the weed.

## Integrated Control Strategy:
Be aware of potential stock problems.
Herbicides Group B or C.

## Comments:
This weed is frequently grazed without causing any problems, The seeds of the plant are the most poisonous part. Young animals are more susceptible than adults, and sucking kids can be poisoned by their mothers milk.

A weak ascending annual forb with square stems, covered with spreading hairs. The leaves are opposite, dull yellow-green, becoming more yellow with age. The flowers appear in spring, and are a pale purple to pink. The plant has a minty odour when crushed.

A widespread weed of cultivated ground, in higher rainfall areas.

No 7 *Stachys arvensis*

## STYPANDRA GLUACA (syn S. imbricata, S. grandiflora)

### Alternative Name:
Blind grass, nodding blue lily

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Toxic to sheep and cattle

### Palatability: Low

### Poisonous Principle:
Stypandrol

### Effects:
*Signs and symptoms;* Initially a rapidly developing hind limb weakness, which soon progresses to total hind limb paralysis. There is concurrent nervous depression, and eventually, permanent blindness.

*Health and production problems;* Death within days, or gradual recovery, but with permanent blindness.

### Integrated Control Strategy:

### Comments:
Stypandra plants vary in their stypandrol content, some are not toxic. Young green shoots seem to be the most toxic.

## SWAINSONA SPP

### Alternative Name:
Darling pea, swainsonia, broughton pea

### Toxicity to Goats:
Toxic, high risk

### Toxicity to Other Species:
Toxic to cattle, sheep and horses

### Palatability:
Seldom eaten

### Poisonous Principle:
Indolizidine alkaloids, notably swainsonine

### Effects:
*Signs and symptoms;* An intermittent hind leg weakness, incoordination, a tendency to fall over, a wide based stance, and a mild head tremor. Affected animals may loose weight, appear depressed and blind, wander aimlessly and press their head against trees or fence posts. Some will develop twitches of the hind legs and face.

*Health and production problems;* Affected animals become very unproductive and ill thrifty, this can continue for months, they may fail to get pregnant, abort or give birth to weak, non-viable offspring.

### Integrated Control Strategy:
Use herbicides.
Be aware of potential stock problems.

### Comments:
Affected animals generally get progressively worse and eventually die, but early cases can be saved if they are taken off *Swainsonia* infested country.

These plants are herbaceous and perennial, with compound leaves. The flowers are purple, blue, red, yellow or colours in between.

There are many varieties, and spread is mainly by seed. Most species grow in the low rainfall areas. The growth period is in autumn-winter, and flowering is in spring. Found in NSW and southern Queensland. Rotational grazing could be considered, giving the animals a break from the weed.

Most poisonings occur after rain in the spring, or after drought and feed shortages.

No 03478 *Swainsona spp*
NSW AGRICULTURE

# TAXUS BACCATA

## Alternative Name:
English yew tree

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to all farm livestock

## Palatability: Not known to be eaten

## Poisonous Principle:
Cardiac glycicides, notably thevetin

## Effects:
*Signs and symptoms;* Trembling, difficulty in breathing, collapse and death within minutes.

*Health and production problems;* Most cases are simply found dead.

No 210 *Taxus cuspidata*
CORNELL UNIVERSITY

## Integrated Control Strategy:
GARDEN OR PARK TREE
Collect leaves and clippings into a disposable bag.
Do not feed these clippings to any livestock.

## Comments:
Kills by causing the heart to fail. All parts of the plant are toxic. Garden clippings are the most common source of this plant for livestock.

A slow growing, woody, perennial conifer with a broadly conical dome. The leaves are flat, short, dark green and needle-like, but broader than pine needles. Female plants bear grape sized, cup-shaped, fleshy, bright red fruits.

The tree may be trimmed back to shape as required. It will grow to about 20 metres high, and makes a useful windbreak. Well drained soils are required for optimum growth.

Extra care needs to be taken where leaves can fall into pasture in the vicinity of a confined, bored or hungry animal. The leaves can be quite palatable, and are toxic, even when dry.

# THEVETIA PERUVIANA

## Alternative Name:
Yellow oleander, tree daffodil, be-still tree, cook tree

## Toxicity to Goats:
Toxic, high risk

## Toxicity to Other Species:
Toxic to all livestock species

## Palatability:
Not known to be eaten

## Poisonous Principle:
Cardiac glycocides, notably thevetin

## Effects:
*Signs and symptoms;* Depression, diarrhoea, slow irregular heart beat and eventually heart block.

*Health and production problems;* Rapid death in many cases.

## Integrated Control Strategy:
GARDEN PLANT
Use herbicide, or place clippings into a disposable bag.
Do not feed these clippings to any livestock.

## Comments:
All parts of this plant are toxic, dried plant material is as toxic as fresh. Ingestion of the fruits is the most common problem. Ruminants such as the goat display more tolerance for this type of poisonous plant than do horses and donkeys.
A shrub of neat rounded appearance, up to 3 metres high. It exudes a milky sap if damaged. A native of tropical America.

The alternate leaves are long, narrow, glossy and bright green, tapered at both ends. The flowers are bright yellow and broadly funnel shaped. The fruits are thick, oval and triangular, with a raised groove around the middle, usually green, becoming black. Inside is a hard seed with two starchy kernels.

Most grazing animals refuse to eat this plant.

## TREMA ASPERA, T. TOMENTOSA

### Alternative Name:
Poison peach, peach leaf poison bush

### Toxicity to Goats:
Toxic, high risk

### Toxicity to Other Species:
Toxic to sheep, cattle and horses

### Palatability:
Seldom eaten

### Poisonous Principle:
Trematoxin glycocide

### Effects:
*Signs and symptoms;* Inappetance, depression, protracted recumbency, muscle weakness, muscle twitches, drooping of the head and ears, sagging of the abdomen, inability to remain standing, and eventually respiratory and cardiac failure. In some animals liver damage may result in secondary brain damage and these animals can display bouts of aggressive behaviour.

*Health and production problems;* Affected animals experience severe liver damage and most will die slowly over several days. Animals that recover may remain unproductive for many months.

### Integrated Control Strategy:
Hand pull into disposable bags.
Use 2-4.D type herbicide, and bulldoze.

### Comments:
The toxicity of this plant is very unpredictable, but when it is toxic, it is very toxic. The leaves and fine stems contain the poison.

There is a wide variation in toxicity between different plants in the same patch. It is often eaten with no ill effect, sometimes with major losses. There appears to be no seasonal pattern, or association with soil type.

A shrub or small dainty tree, with many stems growing to 2-3 metres. The leaves have a short stalk, oval, and tapering to a sharp point, and with saw tooth edges. There is a coarse covering of white down on the underside of the leaves. Clusters of small greenish white flowers, and tiny black berries, appear in the leaf axils.

This is an Australian native, found in moist open forest, or sheltered gorges. After clearing, a lot of regrowth appears.

Animals new to the environment are most easily affected, whereas, animals accustomed to the plant seem to know when not to eat it.

# TRIBULUS TERRESTRIS

## Alternative Name:
Caltrops, cat head, puncture vine, tar vine bindi

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to sheep

## Palatability: Moderate

## Poisonous Principle:
Saponins, beta-carboline alkaloids, and nitrates

## Effects:
*Signs and symptoms;* The three different poisons in this weed can give rise to three different problems.

Firstly, photosensitization associated with liver damage.

Secondly, a chronic asymmetric weakness of the hind legs associated with damage to the nervous system.

Thirdly, sudden death within 48 hours of eating large amounts of the weed.

Photosensitization causes swelling of the head and ears, and weeping of the swollen skin.

Chronic limb weakness causes affected animals to develop an unusual staggering locomotor habit which gets progressively worse.

Sudden death implies that affected animals are usually found dead and no prior signs are observed.

*Health and production problems;* Animals with photosensitization will often die over a period of days or take several weeks to recover.

Those with the staggers will remain affected forever and become fairly unproductive.

Outbreaks of sudden death occur over a narrow time frame and involve either rapid death or rapid recovery.

## Integrated Control Strategy:
Frequent cultivation, prickle rollers, herbicides.

Spot spray, and prevent seeding. Ensure adequate shelter and water is provided for grazing animals.

Herbicide, Group I.

This is a declared “Noxious Weed” in Victoria, Tasmania and South Australia.

## Comments:
The toxicity of this weed is very unpredictable and very variable.

Liver poisoning is generally only seen in southern Australia and is associated with short periods of rain in otherwise dry times.

Motor nervous system poisoning is only seen in northern NSW and requires the ingestion of very large amounts of the weed over 6 or more months.

Sudden death is only associated with the sudden ingestion of large amounts of the weed by hungry, recently introduced stock.

A summer growing, creeping, annual forb. A weed of pastures, and especially troublesome, since burrs can injure animals feet, and cause a vegetable fault in fleece. Found along roads, degraded pastures, and in stock yards. It has an allelopathic effect on grasses.

A fungus on the plant may contribute to photosensitivity and liver damage.



No 53 *Tribulus terrestris*
JJ DELLOW

## VERBESINA ENCELIOIDES

### Alternative Name:
Crown beard, gold weed, wild sunflower south african daisy

### Toxicity to Goats:
Toxic, moderate risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle, and pigs

### Palatability:
Seldom eaten

### Poisonous Principle:
Galegine

### Effects:
*Signs and symptoms;* Acute respiratory distress, frothing at the mouth, bluish gums.

*Health and production problems;* Death within hours of first signs.

### Integrated Control Strategy:
Chip out, hand pull, grub out and burn.
Herbicides before flowering, BUT this may make it more palatable to stock.
Herbicide Group C.
Cultivate and sow to a good pasture.

### Comments:
The ability to poison is very variable, generally only causes problems during drought periods, but can cause problems at other times if eaten in any quantity.

A hairy, branched, annual forb growing to about one metre high. The leaves are long triangles, with sharply toothed edges, attached to the stem with lobes. The golden daisy flowers have toothed petals growing in spring and autumn. Spread is by seed.

Found on the central and north coast of NSW, through to the western plains, and north to Queensland. A weed of crops, but also found along roadsides and stock routes, in small clumps.
A drought resistant plant. Introduce stock gradually, as in most seasons the plant does not seem to be very dangerous, unless the animals are very hungry, or after light rain in drought conditions. The older plants seem to be more toxic.

# XANTHIUM SPINOSUM

## Alternative Name:
Bathurst burr, spiny cockle burr

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to all grazing livestock

## Palatability: Low

## Poisonous Principle:
Carboxyatractyloside

## Effects:
*Signs and symptoms;* Acute liver poisoning. Initially there is inappetance, depression, protracted recumbency, muscle weakness, muscle twitches, drooping of the head and ears, sagging of the abdomen, inability to remain standing, and eventually respiratory and cardiac failure. In some animals liver damage may result in secondary brain damage and these animals can display bouts of aggressive behaviour.

*Health and production problems;* Death within 48 hours or following several days of clinical signs. Less acutely affected animals will recover but may take some weeks to return to full production.

## Integrated Control Strategy:
Prevent seeding for 4-6 years and eliminate sources of infestation. Pasture improvement, combined with herbicides seem to do best.
Herbicide, Group I.
Biological control agents are being tested.

This is a declared "Noxious Weed" in all states of Australia.

## Comments:
The freshly germinating seedlings are frequently eaten and are potentially very poisonous. The more mature stems and leaves are much less poisonous and rarely eaten.

An erect, much branched, summer growing, annual forb, reproducing by seed, which may remain dormant for several years. Inconspicuous flowers appear in summer to autumn, followed by small burrs.

It acts as a host for a number of fungal pathogens important in horticulture, and causes contact dermatitis in humans.

An important contaminant of fleece, also causing irritation to shearers, and damage to the combs.
Spines will damage the feet of animals.
Burrs may host moth and beetle larvae in stored fleece.

The idea for 'velcro" fasteners originated with these burrs.

No 03519 *Xanthium spinosum*
NSW AGRICULTURE

# XANTHIUM OCCIDENTALE

## Alternative Name:
Noogoora burr

## Toxicity to Goats:
Toxic, moderate risk

## Toxicity to Other Species:
Toxic to all grazing livestock

## Palatability: Low

## Poisonous Principle:
Carboxyatractyloside

## Effects:
*Signs and symptoms;* Acute liver poisoning, initially there is inappetance, depression, protracted recumbency, muscle weakness, muscle twitches, drooping of the head and ears, sagging of the abdomen, inability to remain standing, and eventually respiratory and cardiac failure. In some animals liver damage may result in secondary brain damage and these animals can display bouts of aggressive behaviour.

*Health and production problems;* Death within 48 hours or following several days of clinical signs. Less acutely affected animals will recover but may take some weeks to return to full production.

## Integrated Control Strategy:
Prevent seeds from entering the property.
Cultivate before flowering, control burn.
After seed set, cut back and burn to kill seeds.
Use a broad leaf herbicide, Group I.
Treatment will be necessary for at least two successive summers.
Biological control agents are being tested.

This is a declared "Noxious Weed" in Victoria, parts of NSW, Western Australia and South Australia.

## Comments:
The freshly germinating seedlings are frequently eaten and are potentially very poisonous. The more mature stems and leaves are much less poisonous and are rarely eaten.

A coarse, erect, annual forb, growing up to 2 metres high, with large, broad alternate leaves, with irregular toothed edges. Insignificant flowers and a large spiny burr grow in the leaf axils. Usually flowers and fruits appear in the summer to autumn. This plant does not like the shade.

The lower seed germinates in the following spring, while the upper seed remains dormant for several years. These seeds cause a serious vegetable fault in fleece.

No 58 *Xanthium occidentale*
JJ DELLOW

## AESCULUS SPP

### Alternative Name:
Horse chestnut

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all grazing animals

### Palatability: Moderate

### Poisonous Principle:
The hydroxycoumarin glycocide, aesculin

### Effects:
*Signs and symptoms;* Lameness associated with limb haemorrhages, and diarrhoea.

*Health and production problems;* Occasionally sudden death without any prior signs.

### Integrated Control Strategy:
GROWN IN PARKS AND GARDENS.
Do not feed these clippings to any livestock.

### Comments:
Young leafy shoots and nuts are the most poisonous parts.

A very tall tree, suitable only for large open spaces. Produces huge heads of white flowers, and shiny brown nuts. The honey from these trees can also be toxic.

## AGERATINA ADENOPHORA

### Alternative Name:
Crofton weed

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Toxic to cattle, sheep and horses

### Palatability: Moderate

### Poisonous Principle:
Pyrrolizidine alkaloids

### Effects:
*Signs and symptoms;* Chronic weight loss, or sometimes acute jaundice with or without photosensitization, or sometimes sudden death with no other signs.

*Health and production problems;* Chronic ingestion of this plant may lead to significant liver damage and subsequent reduced longterm productivity. Chronically damaged livers in some ruminants are inclined to accumulate excessive amounts of copper, which can ultimately be released and kill the animal in the process.

### Integrated Control Strategy:
Crowns must be removed. Slash to prevent flowering and seed set. Use glyphosate.
Goats will graze this weed, and prevent flowering, but other fodder must be available.

This is a declared “Noxious Weed” in parts of NSW.

### Comments:
Goats and sheep may tolerate many months of ingestion, but eventually risk being poisoned if the plant has been eaten in significant amounts for more than one season.
A perennial plant common in eastern NSW and Queensland. Leaves are opposite and triangular, flowers, white, in clusters, numerous stems and branches growing from a large well rooted crown.

## AGROSTIS AVENACEA

### Alternative Name:
Blown grass, fairy grass, oat grass

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep cattle and horses

### Palatability: Moderate

### Poisonous Principle:
Corynetoxins

### Effects:
*Signs and symptoms;* Corynetoxins can cause episodic convulsions, together with general signs of a motor nervous disorder.

*Health and production problems;* Affected animals may die within hours, or days.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
This plant is only affected by this problem in particular geographic areas, and then only in some years.

It is the seed head of the plant that can become poisonous. In most situations this plant is grazed without causing problems.

A weak, tufted, annual grass with straight rough leaves, flowering in spring to early summer.
Occurs in dense stands, near water, and in patches through the pasture.

Growth commences in autumn, and continues during winter. Palatable when young, but not when hayed off.

The seed heads break off, hence ‘blown grass”, and pile up, causing a fire hazard, or block watercourses.

## ALLIUM SPP

### Alternative Name:
Wild garlic, crow garlic, three corner garlic, garlic onion chives

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all grazing animals

### Palatability: Low

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* General weakness, blood pigmented urine.

*Health and production problems;* Death in severe cases.

### Integrated Control Strategy:
GARDEN ESCAPEE
Dig out and remove bulbs and bulbils. The best results are achieved by removing plants when bulbs from the previous year have fully developed, usually just before flowering, when they are still attached to the stalks.
Clean machinery, including slashers.
Spot spray with herbicides just before flowering (Group B).

These are declared “Noxious Weeds” in Victoria, South Australia and Tasmania.

### Comments:
Only large amounts of garlic, onion or chives plant material poses a risk.

An erect perennial reproducing by seed, bulbs and bulbils. Usually have showy, white flowers on a single stalk.

A winter growing weed in orchards, dairy pastures and gardens of coastal Australia.

Parts of this weed can contaminate agricultural produce, wheat, milk, meat, eggs etc.

## ALOCASIA MACRORRHIZA

### Alternative Name:
Cunjevoi, alocasia

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Toxic to all animals

**Palatability:** Not known to be eaten

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Intense irritation to, and swelling of, the lips, tongue, mouth and throat.

*Health and production problems;* Recovery in most cases.

### Integrated Control Strategy:
GARDEN PLANT, OR ESCAPEE.
Use herbicides, or weed out into disposable bags.
Do not feed this plant to any livestock.

### Comments:
All parts of this plant are potentially irritant.

A large forb, with a thick black rootstock and thick stems. Usually prostrate, or semi-prostrate at ground level.

The flower heads are a spike of pale yellow flowers along the upper part of a stout stalk (spadex) , and surrounded by a cream coloured hood, shaped like a spathe. The berries are usually red when ripe.
Found growing wild in Queensland and northern NSW, in moist gullies. The root stock is edible after washing, and cooking.

Fortunately stock are not attracted to this plant, in the fresh state. The juice of the leaf or rhizome can be stinging when handled, and can cause intense conjunctivitis or temporary blindness.

## AMBROSIA ARTEMISIIFOLIA

### Alternative Name:
Annual ragweeds, horseweed

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to cattle and sheep

**Palatability:** Moderate

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Nitrate poisoning causes respiratory distress and darkening of the gums.

*Health and production problems;* Affected animals may be just found dead, or die very quickly. Some may recover.

### Integrated Control Strategy:
Use herbicides. (Group I)
Biological control agents are being tested.
This is a declared “Noxious Weed” in South Australia and Queensland.

### Comments:
Nitrate accumulating plants are frequently grazed without any adverse effects, providing stock are allowed to adapt to them slowly.

An annual shallow-rooted erect herb, with finely divided, dainty leaves. The male flowers are yellow, with a greenish hood, and are well-known for the hay fever they cause.

A nuisance weed of coastal NSW , southern Queensland, and South Australia. It is a serious weed of crops, spreading by seed.

In pastures it has a nutrient composition similar to high grade lucerne, and is eaten at flowering and seeding, but not when dried off.

Cattle eat it in the early stages, but may get sore mouths. It is unpalatable to horses.

## AMARANTHUS SPP

### Alternative Name:
Boggabri, amaranth, red root, red shank

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Toxic to sheep, cattle, horses, donkeys and pigs

### Palatability: Moderate

### Poisonous Principle:
Nitrates, oxalates, and unknown

### Effects:
*Signs and symptoms;* Nitrate poisoning causes respiratory distress, darkening of the gums and rapid death.

Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and rapid death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of these plants are eaten over long periods.

Alternatively kidney failure can sometimes develop for a different reason, and in as short a time as 7-14 days, when large amounts of these plants are ingested.

### Integrated Control Strategy:
Be aware of potential stock problems.
Use herbicides, however they may increase palatability to the detriment of the stock.

### Comments:
Weeds from this genus are often grazed without causing any adverse effects.
Oxalate accumulating plants can sometimes cause a calcium deficiency state in horses and donkeys called “big head” (nutritional secondary hyperparathryoidism).
Stout, erect, annual forbs, up to 30 cms high.
The stem is stiff and branched, often hairy.
The leaves are alternate, and the flowers are inconspicuous, in the leaf axils, giving rise to black seeds.

## AMMI MAJUS

### Alternative Name:
Bishop’s weed, queen anne’s lace

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: Moderate

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Nitrate poisoning causes respiratory distress, and darkening of the gums.

*Health and production problems;* Affected animals may be just found dead, or die very quickly. Some may recover.

### Integrated Control Strategy:
GARDEN ESCAPEE.
Use goats, and selective herbicides.
Be aware of potential stock problems.

### Comments:
Nitrate accumulating plants are frequently grazed without any adverse effects, provided stock are allowed to adapt to them slowly.

An annual multi-stemmed plant up to 1.5 metres high, with very finely divided light green leaves. Bunches of small white flowers in spring to summer, may be mistaken for parthenium weed, hemlock or ragweed.

Found in Victoria. NSW, and south east Queensland. A weed of disturbed wasteland, pastures and roadsides.

Livestock grazing this weed may become photosensitive, leading to cellular damage and inflamation. Ensure there is adequate shelter.

## ANTHEMIS COTULA

### Alternative Name:
Corn chamomile, stinking mayweed

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all animals

### Palatability: Low

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Intense irritation to, and swelling of, the lips, tongue, mouth and throat.

*Health and production problems;* Recovery in most cases.

### Integrated Control Strategy:
Be aware of potential stock problems.
Herbicides (Group C and F), or Bromoxyl..
Cultivate and sow to a competitive pasture species.

### Comments:
All parts of the plant are potentially irritating.

A smelly, erect annual forb growing to about 40 cms, with fern-like leaves, and spread by seed.
The white flowers are daisy-like, but with an elongated protruding centre.

This weed is widespread throughout most of the eastern states. A weed of cultivation, roadsides, and wasteland.

This plant can taint animal products, milk, meat and grain, and may cause human dermatitis.

## ARAUJIA HORTORUM

### Alternative Name:
White moth plant, moth vine, cruel plant

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Toxic to poultry, and possibly other species

### Palatability: Moderate

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Nervous signs, particularly of a disturbed sense of balance.

*Health and production problems;* Death within 24 hours in some cases.

### Integrated Control Strategy:
Use goats.
Pull out young plants, and place fruits in disposable bags. Use glyphosate, or selective herbicide.

### Comments:
This plant is rarely eaten, the fruits appear to be the most poisonous parts.

A perennial, vigorous, woody, twining vine, growing up to 5 metres tall. Large, elongated, triangular leaves, occurring in pairs. The flowers are white to pale pink occurring in spring, summer and autumn. The fruits are large spongy capsules, pear or choco shaped, maturing in late winter.

The woody stems contain latex, a milky sap. The vine clambers over everything in its way.

Confined to the coastal areas and adjoining parts of eastern Australia, north and central coast of NSW and Queensland.
Primarily a weed of wasteland, orchards, forest edges, and old fence lines.

## ARCTOTHECA CALENDULA

### Alternative Name:
Capeweed, daisy chains

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
High

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Nitrate poisoning causes respiratory distress and darkening of the gums.

*Health and production problems;* Affected animals may be just found dead, or die very quickly. Some may recover.

### Integrated Control Strategy:
Use goats.
Selective broadleaf herbicides, (Group C or I).

### Comments:
Nitrate accumulating plants are frequently grazed without any adverse effects, providing stock are allowed to adapt to them slowly.

An annual, sprawling plant, with a large tap root. The leaves form a rosette at ground level. The flowers are yellow, with brown marks at the base of the petal, flowering in the spring.

The plant establishes itself in the autumn, with the main growth during winter and spring. It can withstand frost, and drought.

Goats may eat this plant at all stages, from before flowering, through to the dried off stage.

The woolly seeds and flower buds may cause hairballs in sheep. The plant may cause a taint in milk.

## ARGEMONE MEXICANA (A. ochroleuca)

### Alternative Name:
Mexican poppy

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all animal species, but generally only affects poultry

### Palatability:
Not known to be eaten

### Poisonous Principle:
Isoquinoline alkaloids, notably sanguinarine

### Effects:
*Signs and symptoms;* Weakness and subcutaneous oedema.

*Health and production problems;* Oedema of the lungs and heart may lead to cardio-respiratory complications and death.

### Integrated Control Strategy:
Prevent seeding. Cultivate.
Use selective herbicides, try Group C or I.
Plants become more resistant with age.
This a declared “Noxious Weed" in Western Australia.

### Comments:
Ingestion of seeds poses the greatest risk, but increased ingestion of herbicide treated plants may also lead to problems.

An erect, annual plant with prickly stems up to a metre high, spread by seed. Yellow sap, pale bluish-green prickly leaves, sometimes mottled with white. Solitary pale yellow flowers, mainly in spring to autumn. The fruit is a capsule, and seeds are small, in a fleshy covering.
Grows in areas low in nitrogen and phosphorus. Contains high levels of nitrate. Not very palatable to grazing animals. Widespread through NSW, and occurs in all eastern states.

## ATALAYA HEMIGLAUCA

### Alternative Name:
Whitewood, cattle bush

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to cattle, sheep, and particularly horses

**Palatability:** High at all stages

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Vague signs of distress followed by fairly rapid death.

*Health and production problems;* Either no effects, or death.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
The fruits appear to be poisonous, but the rest of the plant is frequently eaten without ill effects. Fruit poisoning may be cumulative.

A small tree with pale, grey, bark, and grey-green leaves. Creamy white flowers in large panicles grow at the ends of the branches, in spring and summer. The fruits are yellow-green, with a wing at one end.

Very hardy and drought resistant, providing good shade and fodder in drought. Some clumps sucker freely. The crown is fairly dense, and will tolerate pruning.

Widespread in the inland areas, in a range of habitats, and soil types. Found in tropical Western Australia, Northern Territory, Queensland, and western NSW.

## ATRIPLEX SPP

### Alternative Name:
Saltbush

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** Moderate at all stages

### Poisonous Principle:
Nitrates and oxalates

### Effects:
*Signs and symptoms;* Nitrate poisoning causes respiratory distress, darkening of the gums, and rapid death. Oxalate poisoning causes muscle tremors, staggering gait, collapse, death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of oxalate producing plants are eaten over long periods.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
These plants may occasionally cause problems in hungry stock that are unaccustomed to it, but is generally eaten without ill effects.

Densely branched, sprawling shrubs, with long branches, which may take root. They may be annual or perennial, and reproduce by wind blown seed.
There are about 50 species endemic to Australia. Generally growing in low rainfall areas, in the southern half of the continent. They are able to grow in saline or alkaline soils. Some species are fire resistant, or fire retardant, and excellent for fire breaks. Good fodder for grazing stock, but should be maintained at the level where the plant survives. The deep taproot makes use of all underground moisture.

## BACCHARIS HALIMIFOLIA

### Alternative Name:
Groundsel bush

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to cattle and sheep

### Palatability:
High, at all stages

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* A locomotor disturbance, and associated recumbency.

*Health and production problems;* Death is possible.

### Integrated Control Strategy:
Goats will eat out this weed completely.
Bulldose and burn.
Slash, and use herbicides.
Biological control agents are being tested.

This is a declared "Noxious Weed" in parts of NSW, and Queensland.

### Comments:
Rarely eaten in sufficient quantity to cause any problems.

A perennial, densely branched shrub, up to 7 metres high. Alternate wedge shaped leaves, with large teeth on the tips. Seeds give the tree a fluffy appearance in autumn.

Widespread in central and north coast of NSW, and south east Queensland, forming dense thickets. The pollen may cause hay fever. Very invasive, but will not grow under heavy tree cover. Plants over two years old, flower in April or May, and can be easily identified from the air. Male and female flowers grow on separate bushes. Goats do not appear to be affected by this plant.

## BIDENS SPP

### Alternative Name:
Cobbler's peg, beggar's ticks, farmer's friend

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
High at all stages

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Nitrate poisoning causes respiratory distress and darkening of the gums.

*Health and production problems;* Affected animals may just be found dead, or die very quickly. Some may recover.

### Integrated Control Strategy:
Use goats, preferably before seeding.
Herbicides, "Group C", and slashing.
Hand pull before seeding.

### Comments:
Nitrate accumulating plants are frequently grazed without any adverse effects, provided stock are allowed to adapt to them slowly.

An erect, annual forb, growing to about one metre high, with opposite compound leaves, and serrated edges. The daisy like flowers, appear on numerous terminal flower heads.

There are 4 species in NSW, each with different coloured flowers, white, cream and yellow. Flowering is from spring to autumn.

Weeds of disturbed areas, wastelands, roadsides and gardens. The seeds are "sticky", with a barbed end, causing an annoying vegetable fault.

## BRACHYCHITON POPULNEUS

### Alternative Name:
Kurrajong

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** High at all stages

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* A vague locomotor disturbance.

*Health and production problems;* Inappetance, ill thrift and sometimes death.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
Rarely poisonous, but if large amounts of seeds are present on fruiting trees, poisoning can occur.

A small spreading tree, with a large diameter butt, tapered stem, and grey bark on older trees.
Leaves are a shiny green, flowers are bell-shaped and cream or pink, flecked with red. The tree usually sheds its leaves before flowering. The fruit is a woody boat-shaped pod, with hairs on the seeds. These can be very irritating to the skin.

Found in rocky areas, plains and on river banks, in a variety of soils. An excellent shade and shelter tree, as well as good fodder for stock. Slow growing when young, but drought and frost tolerant. Careful lopping of branches will allow regeneration. This tree has an extensive root system.
The roots and seeds are edible, and the fibres from the trunk can be used for making twine.

## BRASSICA SPP

### Alternative Name:
Rape, canola, radish, turnip, mustard

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** High at all stages

### Poisonous Principle:
Contain six potential toxins: Indoles, Nitriles, Nitrates, Thiocyanates, Isothiocyanates and Non-protein amino acids.

### Effects:
*Signs and symptoms;* Indoles may cause a pneumonia syndrome.
Nitriles may cause primary liver damage with secondary photosensitization, and/or brain damage characterised by blindness and dullness.
Nitrates may cause respiratory distress and sudden death.
Thiocyanates may cause goitre in kids born to does grazing the plant.
Isothiocyanates may cause digestive disturbances involving rumen stasis and constipation.
Non-protein amino acids may cause anaemia with blood coloured urine.

*Health and production problems;* As above.

### Integrated Control Strategy:
Use goats to eat the weeds.
Herbicides before flowering to control seed production. (Group B or I).

### Comments:
*Brassicas* are commonly eaten without causing any ill effects, however the most likely ill effect to be encountered is the digestive syndrome.

Most *Brassicas* will taint milk and milk products.

## BRUGMANSIA CANDIDA (Datura candida)

### Alternative Name:
Angels trumpet

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all animal species

**Palatability:** Not known to be eaten

### Poisonous Principle:
Tropane alkaloids, notably scopolamine

### Effects:
*Signs and symptoms;* Staggering gait, recumbency, dilated pupils and rapid respiration rate.

*Health and production problems;* Affected animals may die.

### Integrated Control Strategy:
GARDEN PLANT.
Place clippings into disposable bags.
Do not feed these clippings to any livestock.

### Comments:
All parts of this plant are potentially poisonous, but episodes tend to be restricted to the accidental ingestion of large amounts of seeds, when present as contaminants in other fodder.

A large, soft wooded shrub, sparingly branched, grown for their showy white, pink or yellow flowers.

All cultivated varieties are from Colombia or Chile, where they were historically used for their hallucinatory effects.

## BUXUS SPP

### Alternative Name:
Box hedge

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to horses, cattle, sheep, camels, and pigs

**Palatability:** Not known to be eaten

### Poisonous Principle:
Unknown alkaloids

### Effects:
*Signs and symptoms;* Severe gastro-enteritis.

*Health and production problems;* Affected animals may die.

### Integrated Control Strategy:
GARDEN PLANT.
Place clippings into disposable bags.
Do not feed these garden clippings to any livestock.

### Comments:
Can occur as part of a mixture of garden clippings.

A genus of evergreen shrubs and trees, grown for their foliage and habit. The flowers are insignificant, frost hardy, and require sun or semi shade.

Used as a dwarf edging plant for gardens, or as pot specimens. Vigorous roots similar to privet.
These plants are often clipped into unusual shapes.

No. 219 *Aesculus spp*
CORNELL UNIVERSITY

No. 49 *Atriplex spp*


No. 04622 *Amaranthus spp*
NSW AGRICULTURE

No. 03525 *Arctotheca calendula*
NSW AGRICULTURE

## CALANDRINA SPP

### Alternative Name:
Parakeelya

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to other grazing animals

### Palatability: High

### Poisonous Principle:
Oxalates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and rapid death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of oxalate producing plants are eaten over long periods.

### Integrated Control Strategy:
Be aware of potential stock problems.
Herbicide, Group C.

### Comments:
This plant may occasionally cause problems, but it is generally eaten without ill effects.

A genus of annual or short lived perennial forbs, with deep taproots, and very showy flowers, often purple.

Variable species, in growth, leaves, flowers and habitat. A useful fodder plant, found in most states, and some gardens.

## CANNABIS SATIVA

### Alternative Name:
Marijuana, indian hemp

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all grazing animals

### Palatability: High

### Poisonous Principle:
Tetrahydrocannabinols

### Effects:
*Signs and symptoms;* Nervous excitement, and difficulty in breathing.

*Health and production problems;* Rapid death.

### Integrated Control Strategy:
Goats will eat this weed.

This is a declared “Noxious Weed”, in all parts of Australia. It must be destroyed under police supervision.

### Comments:
Very unpalatable and rarely eaten, consequently rarely poisonous.

A summer growing, erect, annual forb, growing to about 1.5 metres high. The leaves have 5-9 leaflets, sharply toothed margins and prominent veins, are dark green and somewhat hairy on the surface. Male and female flowers form on separate plants.

There are many varieties grown overseas, for food, fibre and medicine. Some plantations are grown under licence. Reproduction is only by seed.

## CARDARIA DRABA

### Alternative Name:
Hoary cress, white weed

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
Seldom eaten

### Poisonous Principle:
Contain six potential toxins: Indoles. Nitriles, Nitrates, Thiocyantes, Isothiocyanates, and non-protein amino acids

### Effects:
*Signs and symptoms;* Indoles may cause a pneumonia syndrome.

Nitriles may cause primary liver damage, with secondary photosensitization and or brain damage characterised by blindness and dullness.

Nitrates may cause respiratory distress and sudden death.

Thiocyanates can cause goitre in kids born to does grazing the plant.

Isothiocyanates may cause digestive disturbances involving rumen stasis and constipation.

Non-protein amino acids may cause anaemia with blood coloured urine.

*Health and production problems;* As above.

### Integrated Control Strategy:
Herbicides (Group I), in July to September, but not in drought or in water-logged conditions.
Avoid cultivation, as this spreads the plant.
This is a declared “Noxious Weed” in all southern states of Australia.

### Comments:
A member of the *brassica* family, frequently eaten without ill effects. Occasionally poisonous.

## CARDUUS NUTANS

### Alternative Name:
Nodding thistle, slender thistle, musk thistle

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
Moderate

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Nitrate poisoning causes respiratory distress and darkening of the gums.

*Health and production problems;* Affected animals may just be found dead, or die very quickly. Some may recover.

### Integrated Control Strategy:
Goats eat the flower buds, and prevent seeding. Use “Group I” herbicides at the rosette stage, then again later. Do not slash, as the weed will flower at low levels. Grub out.

Biological control agents are being tested.

This is a declared “Noxious Weed" in Victoria, parts of NSW and Western Australia.

### Comments:
Nitrate accumulating plants are frequently grazed without any adverse effects providing stock are allowed to adapt to them slowly.

An erect annual or biennial forb, growing to about a metre tall. It is many branched, especially the upper half. If the crown is damaged, multiple stems are produced.

Establishes well on bare ground, and competes with pasture. A vegetable fault in fleece. May have allelopathic properties, which inhibit pasture species.

## CARDUUS PYCNOCEPHALUS

### Alternative Name:
Slender thistle, shore thistle

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: Moderate

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Nitrate poisoning causes respiratory distress, and darkening of the gums.

*Health and production problems;* Affected animals may be just found dead, or die very quickly. Some may recover.

### Integrated Control Strategy:
Goats eat the flower buds and prevent seeding.
Soft new growth is also palatable. Hoe out.
Wick wipe or spot spray with "Group I" herbicide.
Biological control agents are being tested.

This is a declared "Noxious Weed" in Victoria, South Australia and Tasmania.

### Comments:
Nitrate accumulating plants are frequently grazed without any adverse effects provided stock are allowed to adapt to them slowly.

An erect annual, with spiny leaves, bracts and stems. Flower heads are pink to purple, surrounded by spiny bracts. Rosette leaves have conspicuous white patches along the veins. The stems are green, and the flower heads have short stems usually in groups of 2 or 3.

A weed of roadsides and pastures. Spread by seed.

## CENCHRUS SPP

### Alternative Name:
Buffel grass, spiny burr grass, mossman river grass

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Toxic to sheep, cattle, horses and donkeys

### Palatability: Moderate

### Poisonous Principle:
Oxalates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of these plants are eaten over long periods.

### Integrated Control Strategy:
Avoid spread of seed on tyres, animal coats etc.
Prevent seeding by heavy grazing or cultivating. Wick wipe, spot spray with herbicide "Group A" .

Some species are declared "Noxious Weeds" in most states of Australia.

### Comments:
Weeds from this genus are often grazed without causing any adverse effects. Oxalate accumulating plants can sometimes cause a calcium deficiency state in horses and donkeys, called "Big head" , (nutritional hyperparathyroidism).
A species of erect annual grasses, forming loose tufts, with either a sprawling or tussocky habit. Germination of seed is staggered over months or years.
Important weeds of pastures, crops and fleece. Causes problems to humans, stock and dogs, with painful injuries caused by the burrs.

## CHENOPODIUM SPP

### Alternative Name:
Fat hen, goosefoot, crumb weed, nitre bush

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** High at all stages

### Poisonous Principle:
Nitrates and oxalates

### Effects:
*Signs and symptoms;* Nitrate poisoning causes respiratory distress, darkening of the gums and rapid death. Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and rapid death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of oxalate producing plants are eaten over long periods.

### Integrated Control Strategy:
Goats will eat the plants down to the ground.
Hand pull, wick wipe or spot spray with "Group C or I" herbicide, before flowering.

### Comments:
These plants may occasionally cause problems in hungry stock that are unaccustomed to them, but are generally eaten without any ill effects.

Erect annual forbs growing to about a metre high. The stems are angular, the leaves generally have a mealy, greyish appearance, some varieties have spines. The flowers are variable, usually in dense spikes.

They are valuable as fodder plants, and have high protein levels. These plants may cause a taint in milk if eaten by dairy cows.

## CHLORIS SPP

### Alternative Name:
Windmill grass, winter rhodes grass

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** Moderate, when young

### Poisonous Principle:
Cyanogenetic glycocides (cyanide/prussic acid)

### Effects:
*Signs and symptoms;* Fall down, struggle to get up, shiver and shake, develop a rapid pulse and experience difficulty in breathing.

*Health and production problems;* Death within hours, or rapid recovery.

### Integrated Control Strategy:
Use goats.
Hand pull. Wick wipe, spot spray with herbicides.

### Comments:
Ruminants, such as the goat, can generally tolerate ingested cyanogenetic glycocides, provided they do not eat large amounts in a short period.

Grazing of *Chloris truncata* has occasionally been associated with outbreaks of secondary photosensitization, a problem which is unrelated to the ingestion of cyanogenetic glycocides.

Small to medium size perennial grasses, forming compact tufts. The leaves are dull green and rough. Spread by seed.

Native and imported species, providing reasonable fodder. Occurs on wasteland or in pastures. Imported species are useful in regenerating pastures.

## CIRSIUM ARVENSE

### Alternative Name:
Californian thistle, perennial thistle

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** Moderate at flowering

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Respiratory distress, with associated darkening of the gums.

*Health and production problems;* Rapid death or sometimes recovery.

### Integrated Control Strategy:
Use goats to prevent seeding, plants are eaten when young. Use herbicides (Group I).
Cultivation will spread root fragments.

This is a declared "Noxious Weed" in Victoria, Tasmania, South Australia, and Western Australia.

### Comments:
These weeds may occasionally cause problems in hungry stock that are unaccustomed to eating them, but are generally eaten without ill effects.
An erect perennial forb, growing well over a metre high, green leaves are woolly white underneath. The flowers are reddish or greyish purple. Male and female flowers grow on different plants.

A weed of pastures, crops and cereals. Spines may cause damage to stock and dogs. Reproduces by wind dispersed seed, and a root system which spreads over several metres.
Produces allelopathic compounds affecting pastures and crops. Also harbours insects which attack crops, and is an alternate host for some plant pathogens.

## CIRSIUM VULGARE

### Alternative Name:
Black thistle, scotch thistle, spear thistle

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** Moderate, at flowering

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Respiratory distress with associated darkening of the gums.

*Health and production problems;* Rapid death or sometimes recovery.

### Integrated Control Strategy:
Goats eat the flower heads, preventing seeding.
Spray graze at the rosette stage, then intensively graze while plants are growing. (Group I).
Two insects are being tested as biological control agents.

This is a declared "Noxious Weed" in Victoria and South Australia and parts of NSW.

### Comments:
This weed may occasionally cause problems in hungry stock that are unaccustomed to eating them, but are generally eaten without any ill effects.

An erect deep rooted annual or perennial forb, reproducing by seed. The flowers are purple or reddish, with protruding petals, single or in groups, at the end of branches, appearing in late spring to autumn. The leaves are fleshy and dark green, with indentations, each lobe ending in a sharp spine.
Plants may germinate in late summer, or late winter. It requires a cold period before it can produce a flower head. They die after flowering, but remain standing for years.

## CITRULLUS COLOCYNTHIS (C. vulgaris)

### Alternative Name:
Colocynth, bitter melon, bitter apple

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all grazing animals

### Palatability: Moderate

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Severe diarrhoea.

*Health and production problems;* Dehydration and weight loss are possible sequalae.

### Integrated Control Strategy:
Grub out, collect and burn the ripe fruit.
Use herbicides.
This is a declared "Noxious Weed" in Victoria, South Australia and the Northern Territory.

### Comments:
Rarely eaten by livestock.

A prostrate perennial vine. Grey-green alternate leaves, lobed, hairy and rough. The flowers are yellow, male and female on the same plant. The fruit is dark green, dappled with yellow bands, spherical and about 10 cms in diameter. The seeds are imbedded in a whitish spongy flesh.

Can be propagated by seeds, or root segments. Germinates in spring after rain, developing a large woody taproot and long trailing stems, in spring and summer. Flowers in summer, and dies off in autumn.

Found in arid or semi arid regions on disturbed sandy loam.

## CITRULLUS LANATUS

### Alternative Name:
Wild melon, bitter melon, afghan melon

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all grazing animals

### Palatability: Low

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Severe diarrhoea.

*Health and production problems;* Dehydration and weight loss.

### Integrated Control Strategy:
Use goats.
Repeated cultivation and herbicides.
Hand pull and burn before fruits form.

This is a declared "Noxious Weed" in Victoria and parts of Western Australia.

### Comments:
Rarely eaten by livestock.

An annual prostrate or climbing vine, up to 3 metres long. Reproduces by bird, animal or windblown seed. The leaves are deeply lobed, with short hairs on the lower surface. Single yellow flowers appear in the leaf axils. The fruit is fairly small and bitter to taste, green, and mottled with white.

Germinates in spring, rapidly developing a deep taproot. Produces vines in summer, flowers, then dies off. Drought tolerant. The plant has a foetid odour when crushed, and an unpleasant smell. It is rarely eaten by most livestock except when ripe.

## CUCUMIS MYRIOCARPUS

### Alternative Name:
Prickly paddy melon, paddy melon

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle, horses and pigs

### Palatability: Moderate

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Severe diarrhoea.

*Health and production problems;* Sometimes rapid death, without diarrhoea.

### Integrated Control Strategy:
Use goats.
Herbicides, heavy grazing, and cultivation.

This is a declared "Noxious Weed" in parts of Western Australia.

### Comments:
Rarely eaten by livestock, therefore rarely poisonous.

A summer growing annual vine. The plant has male and female flowers, and globular, bitter fruit, which acts as an emetic. The fruit is about 25 cms in diameter, with long bristles. And the surface is green and mottled, turning yellow with maturity.

A weed of cultivation, and also found along roadsides, disturbed areas, around water tanks etc. Often abundant after summer rain, affecting pastures and cultivated areas.

The bitter component appears to be addictive to some animals.

## CYNODON SPP

### Alternative Name:
Couch grass, african star grass, blue couch

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: Moderate

### Poisonous Principle:
Cyanogenetic glycocides (cyanide/ prussic acid)

### Effects:
*Signs and symptoms;* Fall down, struggle to get up, shiver and shake, develop a rapid pulse and experience difficulty in breathing.

*Health and production problems;* Death within hours, or recovery.

### Integrated Control Strategy:
Grazing, herbicides.

### Comments:
Ruminants, such as the goat, can generally tolerate ingested cyanogenetic glycocides, provided they do not eat large amounts in a short period.

A perennial grass with fibrous roots, prostrate and creeping, with stems that cover the ground surface. The green leaves are borne in short tufts, the seed heads are short spikes.

Adapted to a wide range of soils, from sand to clay, either acidic or alkaline, under flood conditions or drought.

A useful forage plant and soil binder along stream banks. It is, however, frost sensitive.

## EMEX AUSTRALIS

### Alternative Name:
Spiny emex, 3 corner jack, double gee, cats head

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Toxic to sheep, cattle horses and donkeys

**Palatability:** Moderate at all stages

### Poisonous Principle:
Oxalates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and rapid death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of these plants are eaten over long periods.

### Integrated Control Strategy:
Use "prickle rollers". Grub out and burn.
Herbicides. Seed is not viable if ploughed in to a depth of 10 cms or more.

This is a declared "Noxious Weed" in Victoria, parts of NSW, and the rest of Australia.

### Comments:
Weeds from this genus are often grazed without causing any adverse effects. Oxalate accumulating plants can sometimes cause a calcium deficiency state in horses and donkeys called "big head", (nutritional secondary hyperparathyroidism).

An annual broad leafed forb, spread by seed. It develops as a rosette, above a deep taproot. The seeds are triangular, so that one spine is always upright. A weed of cereal crops and pasture, sheds and yards. Causes vegetable fault in fleece, and painful injury to animals.

## EREMOCARPUS SETIGER

### Alternative Name:
Doveweed, turkey mullein

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle, pigs and poultry

**Palatability:** Not known to be eaten

### Poisonous Principle:
None

### Effects:
*Signs and symptoms;* Digestive disturbance, abdominal pain, possibly diarrhoea.

*Health and production problems;* Digestive problems tend to be chronic and consequently affected animals fail to thrive.

### Integrated Control Strategy:
Grub out.
Spray with selective herbicide and wetting agent to get through the hairy leaves.
Be aware of potential stock problems.

### Comments:
This weed causes fibrous "hair balls" to form in the digestive tract.

A grey, strongly scented, spreading annual forb, forming low compact clumps.

Does not compete directly with cereal crops, but may interfere with harvesting machinery.

Unpalatable to stock, perhaps because of the unpleasant odour. Sheep tend to avoid the areas where this weed grows.

## ERYTHRINA SPP

### Alternative Name:
Coral tree, corkwood

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle and horses

### Palatability:
High, all stages

### Poisonous Principle:
Isoquinoline alkaloids

### Effects:
*Signs and symptoms;* Affected animals become comatose.

*Health and production problems;* Affected animals generally die.

### Integrated Control Strategy:
GARDEN ESCAPEE.
Use goats to eat the leaves and ringbark the trees.
Cut stump, and use herbicides.

### Comments:
The poisonous principle has great difficulty in being absorbed into the bloodstream from the gut, consequently large amounts of this plant need to be eaten before there will be any risk of poisoning.

Semi evergreen trees, with stout thorny trunks growing to over 18 metres high. The compound leaves are trifoliate, deciduous with oval pointed leaflets. The flowers are orange to red and pea-shaped on long racemes, occurring at the end of winter.

Propagated by seed, suckers and cuttings. This tree has very soft wood. An ornamental tree that has got out of control. There are 4 species native to Australia, and many introduced species.
Goats have a preference for all species of *erythrina*, and if allowed will eradicate them.

## EUPHORBIA SPP

### Alternative Name:
Spurge, caustic bush, poinsettia, milkweed, geraldton carnation

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all animal species

### Palatability:
Not known to be eaten

### Poisonous Principle:
Diterpenes, Cyanogenetic glycocides, Unknown

### Effects:
*Signs and symptoms;* Gastro-enteritis, with weight loss.

*Health and production problems;* Sometimes causes sudden death with no other signs.

### Integrated Control Strategy:
Herbicides. Group C.
Do not feed to livestock.
Be aware of potential stock problems.

### Comments:
The poisonous nature of these plants is poorly understood, and cases of poisoning attributable to them are infrequent.

Spindly, annual or perennial forbs, or trees, may be succulent, exuding milky acrid sap when damaged. Leaves are varied. Flowers are small with no petals, usually red to yellow to orange, sometimes creamy-white, clustered in small cup-like shapes. Often surrounded by attractive bracts. Fruits are borne on stalks protruding from the “flower”.

Highly unpalatable, and can be very irritating to the skin. All parts are dangerous. Generally not eaten, but poisoning may occur if hay containing spurge is eaten.

## GNAPHALIUM SPP

### Alternative Name:
Cudweed

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
Seldom eaten

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Respiratory distress, with associated darkening of the gums.

*Health and production problems;* Rapid death, or sometimes rapid recovery.

### Integrated Control Strategy:
Fertilise and cultivate.
Herbicides Group C.

### Comments:
These weeds may occasionally cause problems in hungry stock that are unaccustomed to eating them, but are generally eaten without any ill effects.

Annual or short lived perennial forbs, with woolly stems and narrow, silvery, or grey-green stalkless leaves. Flowers are pale whitish-yellow, with papery heads, clustered into terminal heads or spikes.

Found all over Australia, usually on waste ground or on poor soil. A winter spring annual, grazed at times, but of no particular value.

## GOMPHRENA GLOBOSA

### Alternative Name:
Globe amarynth, batchelor's buttons

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Toxic to sheep, cattle, horses and donkeys

### Palatability:
Moderate

### Poisonous Principle:
Oxalates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and rapid death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of thee plants are eaten over long periods.

### Integrated Control Strategy:

### Comments:
Weeds from this genus are often grazed without causing any adverse effects. Oxalate accumulating plants can sometimes cause a calcium deficiency state in horses and donkeys called "big head", (nutritional secondary hyperparathyroidism).

## HYDRANGEA MACROPHYLLA

**Alternative Name:**
Hydrangea

**Toxicity to Goats:**
Toxic, low risk

**Toxicity to Other Species:**
Potentially toxic to all animals

**Palatability:** Not known to be eaten

**Poisonous Principle:**
Unknown

**Effects:**
*Signs and symptoms;* Acute gastro-enteritis.

*Health and production problems;* Affected animals soon recover.

**Integrated Control Strategy:**
GARDEN PLANT.
Prune into disposable bags.
Do not feed any of these clippings to any livestock.

**Comments:**
Garden clippings are the usual source of this plant.

A deciduous shrub grown for domed or flattened flower heads, and pink or blue flowers.

Propagated by softwood cuttings, grown in the sun to semi-shade.

## JATROPHA CURCAS

**Alternative Name:**
Physic nut, purge nut, coral plant

**Toxicity to Goats:**
Toxic, low risk

**Toxicity to Other Species:**
Potentially toxic to all animal species

**Palatability:** Not known to be eaten

**Poisonous Principle:**
Unknown

**Effects:**
*Signs and symptoms;* Acute gastro-enteritis.

*Health and production problems;* Recovery is generally rapid.

**Integrated Control Strategy:**
GARDEN PLANT
Dig out and burn.
Cultivate and use herbicides.
Do not feed these clippings to any livestock.

**Comments:**
The seeds of this plant are poisonous.

A small tree or large shrub, bark often greenish, exuding a watery sap. The leaves are thin and heart shaped, on long stalks, and very decorative.

Native of South America.

No. 218 *Baccharis halimifolia*
UNIVERSITY OF PENNSYLVANIA

No. 220 *Brachychiton populneus*
DF STANLEY

No. 04661 *Carduus nutans*
NSW AGRICULTURE

No. 48 *Brassica tournefortii*

## LACTUCA SERRIOLA

### Alternative Name:
Prickly lettuce, compass plant

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle and horses

### Palatability:
High

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Acute respiratory distress

*Health and production problems;* Affected animals may die

### Integrated Control Strategy:
Chip out, use herbicides and cultivate.

### Comments:
Poisoning has only been associated with the consumption of large amounts of young plants.

A stiff, erect biennial forb, with a well developed taproot, stiff flowering stem, and producing milky sap when damaged. Grows to about 1.5 metres high. The lower leaves are stem-clasping, blue-green, broadly oblong, and spiny. The upper leaves are twisted at the base and held vertically in the north/south plane.

The inflorescence is a branched pyramid of pale yellow flowers.

A widespread weed of waste spaces, found in all States. Plants are grazed until prickles deter feeding. These weeds germinate in spring, and flower in summer to autumn.

## LIGUSTRUM LUCIDUM

### Alternative Name:
Broad leaved privet

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle and horses

### Palatability:
High at all stages

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Gastro-enteritis.

*Health and production problems;* Death within hours or days is possible.

### Integrated Control Strategy:
GARDEN PLANT AND ESCAPEE
Goats will eradicate these species.
Weeding, slashing and mechanical removal to prevent flowering and seeding. Ring barking and burning are not effective.
No herbicides are registered for this species.

### Comments:
Poisoning can involve either leaves or fruits, but is very infrequent.

Leaves are oval, opposite, soft and dark green, with wavy margins. Flowers are small and white, in upright sprays, black berries in clusters, in winter. Will become a substantial tree, given the opportunity.

A garden escapee, very invasive of bushland. Seedlings are shallow rooted at first, and easily removed. It can establish in dense shade, which enables it to be so invasive of native trees and bush.

Other trees which may be confused with privet are pittosporum, coachwood, and lilly-pilly.

## LIGUSTRUM SINENSE

### Alternative Name:
Small leaved privet, chinese privet

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle and horses

**Palatability:** High at all stages

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Gastro-enteritis.

*Health and production problems;* Death within hours or days is possible.

### Integrated Control Strategy:
GARDEN PLANT AND ESCAPEE
Goats will eradicate these species.
Ring barking and burning are ineffective.
Plants will regenerate by sprouting and suckering.
No herbicides are registered for this species.

### Comments:
Poisoning can involve either leaves or fruits, but is very infrequent.

Leaves are yellow-green to green, usually with wavy margins. The flowers are small and white, with drooping sprays. Berries are black, and these tend to stay on longer than those of large leaf privet. These berries are spread by birds.

During spring and summer, large amounts of pollen are produced which can cause allergic reactions to humans. The fruit will cause gastric upsets.

Tends to grow on drier sites than broad leaf privet, flowers earlier, and has a more tenacious root system. It can re-establish after being uprooted.

## LOLIUM PERENNE

### Alternative Name:
Perennial rye grass

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** High at all stages

### Poisonous Principle:
Lolitrems, sporidesmin

### Effects:
*Signs and symptoms;* Lolitrems can cause severe incoordination, together with severe body tremors.
Sporidesmin can cause liver damage that results in photosensitization of unpigmented or unprotected skin areas, particularly the face and head.

*Health and production problems;* Cessation of ingestion of lolitrems is followed by recovery within days, but some affected animals may die of misadventure.
Sporidesmin causes a more insidious problem, with chronic ill thrift and deaths from complications, full recovery may take months.

### Integrated Control Strategy:
Use goats to control this plant.
Perennial varieties are becoming resistant to the usual herbicides.

### Comments:
This plant is only affected by either of these problems in particular geographic areas, and then only in some years. In most situations this plant is grazed without causing problems.
A valuable pasture grass, with a tufted inflorescence, winter and spring growing. Can be a weed of cereal crops.
The poisoning is due to a parasitic fungus, rather than the grass itself. If the animals are moved to a safe paddock they generally recover.

## MAIREANA SPP

### Alternative Name:
Bluebush

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: Moderate

### Poisonous Principle:
Oxalates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and rapid death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of oxalate producing plants are eaten over long periods.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
This plant may occasionally cause problems in hungry stock that are unaccustomed to it, but is generally eaten without ill effects.

Small shrubs, with fleshy, often grey foliage, single, pale yellow flowers, in the leaf axils, mainly in the spring and summer. Some have showy, reddish fruits.

Widely grown in the arid, semi-desert areas in Australia, mainly on sandy soils, subject to wind and water erosion. They are long lived, branched perennials. Several species are valuable pasture plants.

*M. pyramidata* (black blue bush), is palatable, but has been toxic to hungry stock.

In 1975, all Australian *Kochia* species were placed in the genus *Maireana.*

## MALVA PARVIFLORA

### Alternative Name:
Marshmallow, small flowered mallow

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle, horses and poultry

### Palatability: Low

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Muscle weakness, hence a staggering gait and trembling muscles when forced to exercise. Heart rate and respiratory rate become rapid. Affected animals eventually collapse then recover, then relapse once again.

*Health and production problems;* Deaths do occur but most recover within days when removed from the plant.

### Integrated Control Strategy:
Use paraquat type herbicide, cultivate and fertilise.
Easily weeded out when ground is moist.

### Comments:
Only causes problems when large amounts are eaten continuously for several days.

Low growing, spreading, perennial forb, growing only to 50 cms high, with a single taproot. Alternate, wrinkled, dark green leaves, that are rounded, with a notched base. The leaf margins are notched to form lobes. The flowers are small, pale pink to white, in the leaf axils, winter/spring flowering.

A rapidly growing and common weed of stock yards and gardens, and around sheds, and roadsides. Wilted plants are less toxic, and dry plants are not toxic.

## MELIA AZEDARACH

### Alternative Name:
White cedar, cape lilac

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle and pigs

### Palatability:
Moderate

### Poisonous Principle:
Tetranortriterpenes (meliatoxins), and unknown toxins

### Effects:
*Signs and symptoms;* Either nervous excitement or depression, depressed heart and lung function, muscle weakness hence an unsteady gait and trembling muscles, and eventually diarrhoea.

*Health and production problems;* Death within 48 hours, or recovery over several days.

### Integrated Control Strategy:
GARDEN PLANT
Basal bark or cut stump, with herbicide.
Do not feed these clippings to any livestock.

### Comments:
The fruits of this tree are the most poisonous part but their toxicity varies from district to district.

A deciduous tree growing to 20 metres or more. Fragrant, lilac flowers grow in loose pannicles in late spring to early summer. The yellow berries may persist all winter.

Only 6-8 fruits are enough to cause death in a young child. Fresh leaves do not appear to be harmful to stock, however, a milk taint is produced from cows, eating the leaves.
Found in gardens, as shade trees, in stock yards, specimen trees in streets and as escapees along water courses and roads.

## MELIANTHUS COMOSUS

### Alternative Name:
Cape honey flower, tufted honey flower

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all animal species

### Palatability:
Not known to be eaten

### Poisonous Principle:
Cardiac glucocides (bufadienolide type)

### Effects:
*Signs and symptoms;* Depression, diarrhoea, slow irregular heart beat and eventually heart block.

*Health and production problems;* Rapid death in many cases.

### Integrated Control Strategy:
Grub out and burn, plough, rake and cultivate. Use herbicides.

### Comments:
Ruminants, such as the goat, display more tolerance for this type of poisonous plant than do horses and donkeys. This plant rarely causes poisoning because it is rarely eaten.

An erect, evergreen, branched shrub, growing to about 2.5 metres high, reproducing by seed, and from the crown. There may be several branched woody stems arising from the crown. The leaves are downy below, alternate and pinnate, and many pairs of leaflets per leaf. The flowers are red, and have 4 unequal clawed petals, occurring in loose clusters. The fruit is a bladder-like capsule. The root is woody, shallow, but extensive.

The plant, although attractive, has an unpleasant smell, which seems to deter animals from grazing it at any stage.

## NICOTIANA GLAUCA

### Alternative Name:
Tree tobacco, wild tobacco tree

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** Moderate at all stages

### Poisonous Principle:
Pyridine alkaloids, notably nicotine

### Effects:
*Signs and symptoms;* Limb weakness, muscle trembling, collapse and dilated pupils, sometimes diarrhoea.

*Health and production problems;* Rapid death or recovery within 24 to 48 hours.

### Integrated Control Strategy:
Grub out or use herbicides.
Use goats to control small growth.

### Comments:
Only poses a risk to very hungry, newly introduced animals, or stock under drought conditions.

A tall, short lived shrub or small tree, with sparse branches, growing to about 4 metres high.. Leaves are oval, about 10 cms long, bluish green to grey, and long tubular pale yellow flowers most of the year.

Grows on light sandy soils, on flood plain and drainage channels. Relatively drought resistant.
Native of Argentina.

Normally unpalatable. The woody material has a low concentration of the toxins, compared to the leaves and bark.

## OXALIS SPP

### Alternative Name:
Oxalis, soursob, shamrock, wood-sorrel

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** Low

### Poisonous Principle:
Oxalates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and sudden death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of oxalate producing plants are eaten over long periods.

### Integrated Control Strategy:
Dig out bulbils while the plant is still flowering.
Spot spray with glyphosate and a wetting agent when the plant is actively growing and not under stress. Herbicides Group B or C.
Frequent mowing to deplete plant reserves.

These are declared “Noxious Weeds” in Victoria, Tasmania, South Australia and parts of Western Australia.

### Comments:
These plants may occasionally cause problems to hungry stock that are unaccustomed to them, but are frequently eaten without any ill effects.

Perennial forb, with compound underground stems and bulbils. Leaves are shamrock style, and flowers are yellow and buttercup shaped.
A serious weed of cereal crops, lawns and gardens. May take years of treatment to eradicate.

## PAPAVER SOMNIFERUM

### Alternative Name:
Opium poppy

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all livestock species

### Palatability: Low

### Poisonous Principle:
Isoquinoline alkaloids, notably morphine, and resins

### Effects:
*Signs and symptoms;* Gastro-enteritis, inappetance, ill thrift.

*Health and production problems;* General loss of productivity, including loss of milk production.

### Integrated Control Strategy:
This is a declared "Noxious Weed" in all parts of Australia. It must be destroyed under police supervision.

### Comments:
Ingestion of the resins associated with this plant may be more of a problem than the ingestion of the alkaloids themselves.

An annual plant with erect stems up to a metre high, leaves are bluish-green, flowers are pale violet, with dark blotches around the stamens. Flowering is in summer, and spread is by seed. May be found in disturbed areas, and croplands.

May only be grown in Australia, under licence, as a summer field crop. The grower must have a contract to sell all the crop to an approved pharmaceutical company.

## PARKINSONIA ACULEATA

### Alternative Name:
Jerusalem thorn, parkinsonia, ratama

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: Moderate

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Respiratory distress with associated darkening of the gums.

*Health and production problems;* Rapid death, or sometimes rapid recovery.

### Integrated Control Strategy:
Mechanical removal, bulldose or grub out.
Basal bark, or cut stump treatment with herbicide, for mature trees.

This is a declared "Noxious Weed" in South Australia and parts of Western Australia.

### Comments:
May occasionally cause problems in hungry stock that are unaccustomed to eating it, but generally eaten without any ill effects.

A slender drooping plant with zig-zag branches. The leaves have a short spine-tipped stalk. Yellow flowers have 5 petals, in loose racemes, and the pods are long and pencil shaped.

A troublesome, thorny weed in tropical areas. It will form dense thickets around watercourses, and is very hardy, thriving in a wide range of climates. Spread is by seed.
Sheep will eat the leaves, but cattle are not interested in this plant.

## PENNISETUM CLANDESTINUM

### Alternative Name:
Kikuyu grass

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
High at all stages

### Poisonous Principle:
Trichothecene mycotoxins

### Effects:
*Signs and symptoms;* Depression, inappetance, copious drooling, dehydration, constipation or mild diarrhoea, sham drinking, weakness and incoordination.

*Health and production problems;* Death within 48 hours, or recovery in about 7 days.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
This grass is only poisonous in this way when associated with the pasture activity of a *Myrothecium* fungus, which usually occurs in association with army worm pasture invasions.

A creeping, perennial grass, forming a dense mat. The leaves are bright green, growing from long rhizomes and stolons. The grass can be very invasive of gardens and orchards.

A widespread and important pasture species in subtropical and coastal Australia.

## PENNISETUM MACROURUM

### Alternative Name:
African feather grass, white foxtail

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
Moderate, young shoots

### Poisonous Principle:
Oxalates and Nitrates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and rapid death. Nitrate poisoning causes respiratory distress, with darkening of the gums.

*Health and production problems;* Rapid death or sometimes recovery. Chronic kidney disease with associated ill thrift is possible when large amounts of oxalate producing plants are eaten over long periods.

### Integrated Control Strategy:
Frequent cultivation, and sow to competitive pasture. Goats find this grass quite palatable, and heavy grazing will kill the seedlings, but not the established plants.
Burn the tussocks in spring and autumn, then spot spray with herbicide.
Declared a “Noxious Weed” in Victoria, parts of NSW, Tasmania, South and Western Australia.

### Comments:
May occasionally cause problems in hungry stock that are unaccustomed to eating the plant.
A drought resistant, erect, tussocky, perennial grass spread by seeds and rhizomes. Leaves maybe purplish on the edges and tips.

Occurs in all southern states, seldom grazed by stock, it becomes a harbour for rabbits, and becomes a fire hazard.

## PHALARIS SPP

### Alternative Name:
Phalaris grasses

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
High at all times

### Poisonous Principle:
Indole alkaloids, and unknown substances

### Effects:
*Signs and symptoms;* A locomotor nervous disturbance involving limb weakness and head and body tremors, together with incoordination.

*Health and production problems;* Recovery occurs in some cases but not others, animals may be affected for many days, or up to many months and productivity declines accordingly.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
This locomotor disorder only occurs in some parts of some districts, where dietary cobalt ingestion is low. These grasses can sometimes cause outbreaks of sudden death in sheep and horses, but this has not yet been observed in goats.

A dense, clumped, perennial grass growing over a metre high. Leaves are blue green, with a prominent mid rib. It is a widespread and important pasture grass in all the southern and eastern states of Australia.

## PINUS HALEPENSIS

### Alternative Name:
Aleppo pine

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
Moderate

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* The sudden onset of depression together with oedematous swelling of the udder and vulva.

*Health and production problems;* Abortion during the last third of a pregnancy.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
The needles of the tree are poisonous, lopping trees or dropping branch trimmings in paddocks containing livestock can result in abortion outbreaks.

A conical, open-crowned conifer with an open growth of bright green leaves, and ovoid, glossy brown cones. Young trees retain their glaucous juvenile needles for several years.

Trees were grown experimentally for timber, however, did not do well until their fungal partners were also introduced.

Plants naturalised away from plantations became invasive. Useful as ornamental trees, or shelter belts in semi arid areas. Shed lower branches with age.

## PINUS RADIATA

### Alternative Name:
Radiata pine, monterey pine

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
High at all times

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* The sudden onset of depression, together with oedematous swelling of the udder and vulva.

*Health and production problems;* Abortion during the last third of a pregnancy period.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
The needles of the tree are poisonous, lopping trees or dropping branch trimmings in paddocks containing livestock can result in abortion outbreaks.

A very fast growing conifer, conical when young and domed when mature, leaves a bright green.

A tree imported from California for its timber, it has a poor ability to tolerate fire, even in moderate intensity, and will drop all its needles.
Grown from cuttings and seed.

A useful tree for windbreaks and shelter belts, wind firm and frost resistant.

## POLYPOGON MONSPILIENSIS

### Alternative Name:
Annual beard grass

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle and horses

### Palatability:
Moderate

### Poisonous Principle:
Corynetoxins

### Effects:
*Signs and symptoms;* Corynetoxins can cause episodic convulsions together with general signs of a motor nervous disorder.

*Health and production problems;* Affected animals may die within hours or days.

### Integrated Control Strategy:
Be aware of potential problems.

### Comments:
This plant is only affected by this problem in particular geographic areas, and then only in some years. It is the seed head of the plant that can become poisonous. In most situations this plant is grazed without causing problems.

This is a slender, tufted, annual grass, growing in the winter, spring period. Flowering is in the spring.

Found in wet, shady, waste areas. Occurs all over Australia, although not very profuse.

## PORTULACA OLERACEA

### Alternative Name:
Pigweed, purslane

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: Low

### Poisonous Principle:
Oxalates and nitrates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and rapid death.
Nitrate poisoning causes respiratory distress with associated darkening of the gums.

*Health and production problems;* Rapid death, or sometimes recovery. Chronic kidney disease with associated ill thrift is possible when large amounts of oxalate producing plants are eaten over long periods.

### Integrated Control Strategy:
May be controlled by cultivation.
Variable control by herbicides, Group I.
Be aware of potential stock problems.

### Comments:
May occasionally cause problems in hungry stock that are unaccustomed to the plant, but generally eaten without any ill effects.

A succulant, prostrate, annual forb, flowering in summer. Seeds are spread by wind, water and birds. Stems will root on contact with the soil, forming dense mats preventing growth of other species.

Common weed of high rainfall areas on the east coast, but grows on a wide range of soils. The inland form is known as “mungaroo”.

## PROSOPIS SPP

### Alternative Name:
Mesquite

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: High at all stages

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Severe chronic indigestion with progressive weight loss.

*Health and production problems;* If unresolved this leads to death after many months of sickness.

### Integrated Control Strategy:
Grub out, chain at right angles. Try herbicides.
Biological control agents are being tested.

This is a declared “Noxious Weed” in all mainland states.

### Comments:
This shrub is only poisonous when very large amounts are eaten for long periods of time.
There are six species found in Australia, imported from America, as shade, shelter and fodder plants, but it has become very invasive.

A straggly, spiny plant, with variable hairy, feathery leaves, normally deciduous. A pair of spines are usually found above each leaf stalk. Bushes vary in height between 1 to 15 metres. Bright yellow flowers appear in late spring to early autumn, in spiky racemes. Reproduces by seed passed in dung, and suckers.
Fire aids in stimulating seed germination, and damage to top growth or surface roots may stimulate vegetative shoots. Branches touching the ground may take root. Found in gardens, stabilised mine dumps, and drainage lines.

## RANUNCULUS SPP

### Alternative Name:
Buttercup

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all grazing animals

### Palatability: Low

### Poisonous Principle:
Ranunculin, a glycocide of protoanamonin

### Effects:
*Signs and symptoms;* Salivation, inflamation (with blistering) of the mouth, limb weakness and diarrhoea.

*Health and production problems;* Occasionally death within 12 hours of clinical signs.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
The fresh plant can be toxic, but when it is dried in hay it does not appear to be toxic.

There are many varieties of this forb. Flowers are usually solitary, bright yellow on a long spike. May be annual or perennial, with variable leaves. Some are pasture weeds, yet others are garden plants.

Plants grow from a thickened rootstock or bulb, to form a rosette, and sometimes a long stem with leaves and single flowers.

Most problems seem to be in the spring, however, animals seem to avoid the plant.

## RAPHANUS RAPHANISTRUM

### Alternative Name:
Wild radish, jointed charlock

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: High at all stages

### Poisonous Principle:
Contains six potential toxins; Indoles, Nitriles, Nitrates, Thiocynates, Isothiocynates, and non-protein amino acids

### Effects:
*Signs and symptoms;* Indoles may cause a pneumonia syndrome.
Nitriles may cause primary liver damage with secondary photosensitization and/or brain damage characterised by blindness and dullness.
Nitrates may cause respiratory distress and sudden death.
Thiocyanates may cause goitre in kids born to does grazing the plant.
Isothiocyanates may cause digestive disturbances involving rumen stasis and constipation.
Non-protein amino acids may cause anaemia with blood coloured urine.

*Health and production problems;* As above.

### Integrated Control Strategy:
Slash to prevent flowering and seeding.
Wick wipe or spot spray with Group C or I herbicide. Spray graze using goats to eat weeds.

This is a declared “Noxious Weed” in parts of NSW, South Australia and West Australia.

### Comments:
This weed, like the closely related *Brassica* group, is commonly eaten without causing any ill effects. Taints milk.

## RESEDA SPP

### Alternative Name:
Wild mignonette, dyer's weed

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: Low

### Poisonous Principle:
Thio-oxazolidines

### Effects:
*Signs and symptoms;* Kids born with enlarged thyroids.

*Health and production problems;* Goitre in kids born to does grazing the plant.

### Integrated Control Strategy:
Hand pull seedlings, do not cultivate.
Repeatedly mow before flowering.
Use herbicides. Can be controlled by actively growing pasture.

This is a declared "Noxious Weed" in Victoria, Tasmania and parts of NSW.

### Comments:
Seeds are the main source of the antithyroid compounds.

The plant germinates in autumn and forms a rosette. An erect annual or biennial forb, growing to about 1.5 metres high. Stems are erect, ribbed and unbranched. Leaves from the rosette are long, shiny and alternate. Flowers are yellow and white in a spike like cluster at the end of the stem.

A weed of neglected areas and cereal stubble, lucerne and new pastures. Competes with pasture and crops for nutrient and moisture.

"Dyers Weed", produces a distinctive yellow dye, used in the wool industry in the Middle Ages, and even now in the cottage industry.

## RICINUS COMMUNIS

### Alternative Name:
Caster oil plant

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle, horses, pigs and poultry

### Palatability: Moderate at all times

### Poisonous Principle:
Uncertain, possibly the toxic protein ricin

### Effects:
*Signs and symptoms;* Inappetance, abdominal discomfort, dullness, weakness, diarrhoea, sometimes a rapid loud heart beat with trembling and incoordination.

*Health and production problems;* Death can occur, but recovery over several days is more likely.

### Integrated Control Strategy:
Dig out and burn, slash and cultivate.
Glyphosate on cut stumps, 2,4-D on young plants.

This is a declared "Noxious Weed" in Queensland.

### Comments:
The seeds of the plant are poisonous, but relatively large amounts must be eaten before any problems occur.
A perennial shrub up to 3 metres high, with large maple-like leaves, green turning to red as they mature. Fruit is an attractive, spiny, 3-lobed capsule. Flowers and fruits in summer to autumn.
Found in waste areas, creek beds, and occasionally as specimen plants in gardens.
Oil is extracted from the seeds by "cold pressing". When fresh it is quite bland to taste, later it becomes acrid and nauseating. Originally used as medication, now as a liniment, and lubricating agent.

## ROBINIA PSEUDOACACIA

### Alternative Name:
Black locust, robinia tree, false acacia

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle, horses, pigs and poultry

**Palatability:** Moderate at all stages

### Poisonous Principle:
Uncertain, probably a toxic protein

### Effects:
*Signs and symptoms;* Inappetance, dullness, leg weakness, diarrhoea, cold extremities, dilated pupils, weak pulse but loud heart beat, and difficulty with breathing.

*Health and production problems;* Death within days in some cases, but recovery is more likely.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
All parts of this tree are potentially poisonous, but cases of poisoning are relatively few.

Wilted leaves, young shoots, seeds and inner bark are toxic. Horses in particular are at risk.

An erect, tall, spreading, thorny tree, with dark furrowed bark, up to 15 metres high. Large light green leaves, composed of up to 15 leaflets, with spines at the base of the leaf stalks. Flowers are white and pea-shaped, on long panicles, during spring to early summer. Fruit is a broad, flat reddish pod.

A useful tree for windbreaks, shade and gully erosion control. Drought resistant, but tends to sucker and form thorny thickets. An excellent fodder tree.

## RUMEX SPP

### Alternative Name:
Sorrel, dock weeds

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** Moderate

### Poisonous Principle:
Oxalates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and rapid death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of oxalate producing plants are eaten over long periods.

### Integrated Control Strategy:
Herbicides which kill sorrel will also kill legumes and grass. Herbicide, Group I, for actively growing plants when most have reached the early bud stage.

### Comments:
These plants may occasionally cause problems in hungry stock that are unaccustomed to them, but are frequently eaten without any ill effects.

Erect perennials, with extensive root systems, forming rosettes. Forms a lot of seed, which remains viable for many years.

Very persistent weeds, spread vegetatively and by seed. Most are natives of Europe and Asia.

Competitive weeds of crops and pastures. Causes yield reduction in crops, and will smother and kill other seedlings.

## SALSOLA KALI

### Alternative Name:
Soft roly poly, prickly salt wort, buckbush, tumbleweed

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: Moderate

### Poisonous Principle:
Oxalates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse, and rapid death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of oxalate producing plants are eaten over long periods.

### Integrated Control Strategy:
Do not overgraze pastures.
Be aware of potential stock problems.

### Comments:
These plants may occasionally cause problems in hungry stock that are unaccustomed to it, but is generally eaten without any ill effects occurring.

An erect annual shrub, up to a metre high and wide, with rigid stems, and rigid fleshy alternate leaves, which are cylindrical and linear. Small white to pale mauve flowers during spring.

The plant is quite edible when young, but less so as it matures. Old plants are avoided by stock, and they break off and roll away.
Often the first to recolonise after drought on sandy and salty ground. A weed of disturbed ground and roadsides, in all mainland states.

## SALVIA REFLEXA

### Alternative Name:
Mintweed

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: Moderate

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Respiratory distress, with associated darkening of the gums.

*Health and production problems;* Rapid death, or sometimes recovery.

### Integrated Control Strategy:
Cultivation, spray graze and summer cropping.
Use herbicide “Group I”.

### Comments:
May occasionally cause problems in hungry stock that are unaccustomed to eating it, but generally it is eaten without any ill effects.

An erect, branching, green-grey annual forb, with square stems, growing up to 60 cms high. Leaves are opposite and rather soft. Flowers are small and bluish, in the upper leaf axils, from spring to autumn. Has a minty odour when crushed.

Takes over heavily grazed or weakened pasture, also a weed of crops. The main danger is from hayed-off plants in winter, when the plants have lost their characteristic odour.

Found in NSW, Victoria and Queensland. Not readily eaten by stock because of the smell.

## SCLEROLAENA BIRCHII

### Alternative Name:
Galvanised burr

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: Moderate

### Poisonous Principle:
Oxalates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and rapid death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of oxalate producing plants are eaten over long periods.

### Integrated Control Strategy:
Collect and burn all plants and seeds. Deep cultivate and fertilise to redevelop pasture.
Control by herbicides, crop rotation and pasture improvement may not be economical in low rainfall grazing areas. Herbicide, Group I.
Be aware of potential stock problems.

This is a declared “Noxious Weed” in parts of NSW, Queensland and South Australia.

### Comments:
This plant may occasionally cause problems in hungry stock that are unaccustomed to it , but is generally eaten without any ill effects.

A native shrub, about a metre high and wide, which can get out of control after drought. A short-lived perennial, lasting 2-4 years, with grey-green inconspicuous leaves. Spread is due to overgrazing, or drought, in the drier areas.

## SCLEROLAENA MURICATA

### Alternative Name:
Fivespined saltbush, black rolypoly

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability: Eaten when young

### Poisonous Principle:
Oxalates

### Effects:
*Signs and symptoms;* Acute oxalate poisoning causes muscle tremors, staggering gait, collapse and rapid death.

*Health and production problems;* Chronic kidney disease with associated ill thrift is possible when large amounts of oxalate producing plants are eaten over long periods.

### Integrated Control Strategy:
Apply herbicide, Group I, only to actively growing plants after good soaking rain. Wet thoroughly. Prevent seeding, hoe in before flowering.
Spot spray seedlings, use goats to graze the weed.

This is a declared “Noxious Weed” in Victoria, Queensland and parts of NSW.

### Comments:
This plant may occasionally cause problems in hungry stock that are unaccustomed to it, but is generally eaten without any ill effects occurring.
A native shrub. Short-lived, densely branched perennial, up to a metre high, and wide. Leaves a bluish green, and the burrs have five spines.
This plant may reduce wind damage and erosion. The old bushes break off near the ground, and roll with the wind. Occurs over large tracts of semi-arid eastern Australia.

## SILYBUM MARIANUM

### Alternative Name:
Variegated thistle

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
High at all stages

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Respiratory distress, with associated darkening of the gums.

*Health and production problems;* Rapid death, or sometimes recovery.

### Integrated Control Strategy:
Slash, plough and cultivate, sow to competitive pasture. Use herbicide Group B or I.
Wilted plants may cause nitrate poisoning, do not spray graze.
Biological control agents are being tested.

This is a declared "Noxious Weed" in parts of NSW, and all other states.

### Comments:
These weeds may occasionally cause problems in hungry stock that are unaccustomed to eating them, but are generally eaten without any ill effects.

An annual or biennial forb, leaves are large with white streaks along the veins, and spiny margins, flowers are single, purple, and large, on branched stems, in spring and summer.

Selective summer grazing prevents seed head development. Seedlings can grow into rosettes one metre in diameter before the flowering stems develop.
Occurs in damp, disturbed areas and on waste ground, stock yards and old camps.

## SOLANUM CAROLINENSE

### Alternative Name:
Carolina horse nettle

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
Low

### Poisonous Principle:
Steroidal alkaloid glycocides, notably solanine

### Effects:
*Signs and symptoms;* Profuse diarrhoea and profound nervous depression.

*Health and production problems;* There can be significant weight loss and eventually death, possibly due to heart failure, after 7-14 days of sickness.

### Integrated Control Strategy:
Herbicides and cropping management of sugar cane crops.
Be aware of potential stock problems.

### Comments:
Ripe fruits are the most poisonous part of the plant. Goats are somewhat more tolerant of *Solanum* species than other ruminants.

A perennial weed in tropical pastures.

Nuisance weed in sugar cane crops.

## SOLANUM ELAEAGNIFOLIUM

### Alternative Name:
Silverleaf nightshade, white nightshade

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** Moderate at all stages

### Poisonous Principle:
Steroidal alkaloid glycocides, notably solasodine

### Effects:
*Signs and symptoms;* Profuse diarrhoea and profound nervous depression.

*Health and production problems;* There can be significant weight loss and eventually death, possibly due to heart failure, after 7 to 14 days of sickness.

### Integrated Control Strategy:
Difficult to control by mechanical or chemical methods, cultivation stimulates root growth.
Biological control agents are being tested.
Herbicide Group I, at late flowering stage, respray may be necessary.
This is a declared "Noxious Weed" in most parts of Australia.

### Comments:
Ripe fruits are the most poisonous part of the plant. Goats are somewhat more tolerant of *Solanum* species than other ruminants.

An erect, summer growing perennial with a vigorous root and rhizome system. Leaves are light green covered with fine hairs, giving the plant a silvery appearance. Flowers are a violet-blue in spring to summer, and the fruit is an orange, globular berry. Sharp needle-like spines occur, mainly on the stems.
A major weed of crops and pastures. Give goats "time-out" if there is heavy infestation of this weed. Mineral salt licks are generally needed.

## SOLANUM HERMANNII

### Alternative Name:
Apple of sodom

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** Not known to be eaten

### Poisonous Principle:
Hydroxycholecalciferols

### Effects:
*Signs and symptoms;* Weight loss, bony changes, eventually respiratory difficulties.

*Health and production problems;* Chronic ill thrift hence reduced productivity.

### Integrated Control Strategy:
Prevent seeding. Grub out and burn.
Use herbicides and spot spray. Group I.
This is a declared "Noxious Weed" in Victoria, South Australia and Western Australia.

### Comments:
The consumption of large amounts of this plant over a long period can cause a chronic form of vitamin D toxicity, hence signs and symptoms of excessive calcium deposition and insufficient phosphorus and magnesium intake.

A spreading, thorny shrub, growing up to 1.5 metres high, reproducing by bird and animal dispersed seed. Germination is enhanced by the removal of older plants.

Leaves are deeply lobed and prickly, as are the stems. Flowers are pale purple, in clusters, fruits are yellow berries, turning brown/black on maturity.

Occurs in coastal areas and southern plains of NSW, and in all other states. Found by roadsides, wastelands and pastures, where it is a harbour for rabbits.

## SOLANUM LACINIATUM

### Alternative Name:
Kangaroo apple

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
Not known to be eaten

### Poisonous Principle:
Steroidal alkaloid glucocides, notably solasodine

### Effects:
*Signs and symptoms;* Profuse diarrhoea and profound nervous depression.

*Health and production problems;* There can be significant weight loss and eventually death, possibly due to heart failure, after 7 to 14 days of sickness.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
Ripe fruits are the most poisonous part of the plant. Goats are somewhat more tolerant of *Solanum* species than other ruminants.

An annual or perennial forb, with sparse, drooping, deep green leaves and no prickles. Flowers are violet with yellow centres, and the berries are green, changing to orange, like a small tamarillo.

A source of corticosteroid drugs, and the base of oral contraceptives. One of the major medicinal herbs, its benefits are important world-wide.

## SOLANUM MAURITIANUM

### Alternative Name:
Wild tobacco tree, tobacco bush

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
Moderate at all stages

### Poisonous Principle:
Steroidal alkaloid glycocides of the solanine group

### Effects:
*Signs and symptoms;* Profuse diarrhoea and profound nervous depression.

*Health and production problems;* There can be significant weight loss and eventually death, possibly due to heart failure, after 7 to 14 days of sickness.

### Integrated Control Strategy:
Grub out, use herbicides.
Foliar spray for small plants, cut stump treatment for larger trees.

### Comments:
Ripe fruits are the most poisonous part of the plant. Goats are somewhat more tolerant of *Solanum* species than other ruminants.

An erect shrub up to 5 metres high. Leaves are yellowish-green, velvety and covered with fine hairs. Flowers are lavender blue, in stalked bunches during summer.

Found on the north and central coast of NSW, along river banks, and as dense forests on neglected pasture.

## SOLANUM ROSTRATUM

### Alternative Name:
Buffalo burr, pincushion nightshade
colorado burr

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep, cattle and pigs

**Palatability:** Not known to be eaten

### Poisonous Principle:
Probably steroidal alkaloid glucosides

### Effects:
*Signs and symptoms;* Acute gastro-enteritis.

*Health and production problems;* Affected animals may die.

### Integrated Control Strategy:
Prevent seeding, grub out or cultivate.
Spot spray seedlings, herbicide Group I.

This is a declared "Noxious Weed" in Victoria, parts of NSW, and West Australia.

### Comments:
All parts of the plant are poisonous, but particularly the ripe fruits.

A prickly annual herb growing to a metre high, grey-green, hairy, becoming woody with maturity. Leaves are deeply lobed, flowers are yellow in clusters of 10, fruit is a blackish berry.

Occurs in southern and eastern Australia, a minor weed of pastures. The plant is too prickly to eat, and it contributes to a vegetable fault in fleece.
The plant is also a contaminant of cereal grain.

The original host to the Colorado Beetle, so destructive to potatoes.

## SOLANUM STURTIANUM

### Alternative Name:
Thargomindah nightshade

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

**Palatability:** Not known to be eaten

### Poisonous Principle:
Uncertain, possibly solasonine

### Effects:
*Signs and symptoms;* Profuse diarrhoea, and profound nervous depression.

*Health and production problems;* There can be significant weight loss and eventually death, possibly due to heart failure, after 7 to 14 days of sickness.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
Ripe fruits are the most poisonous parts of the plant. Goats are somewhat more tolerant of *Solanum* species than other ruminants.

A slender, erect shrub growing to about a metre high and grey-green in colour. The stems may have prickles, leaves are long, narrow and greenish, covered with down. Flowers are showy, in clusters, bluish purple with yellow stamens, flowering most of the year. The pods are blackish and fleshy.

Occurs in most parts of Australia in arid areas, in small clumps, on stony soils.

## SOLANUM TORVUM

**Alternative Name:**
Devil's fig

**Toxicity to Goats:**
Toxic, low risk

**Toxicity to Other Species:**
Potentially toxic to sheep and cattle

**Palatability:** Not known to be eaten

**Poisonous Principle:**
Hydroxycholecalciferols

**Effects:**
*Signs and symptoms;* Weight loss, bony changes, eventually respiratory difficulties.

*Health and production problems;* Chronic ill thrift hence reduced productivity.

**Integrated Control Strategy:**
Be aware of potential stock problems.

This is a declared "Noxious Weed" in Queensland.

**Comments:**
The consumption of large amounts of this plant over a long period can cause a chronic form of vitamin D toxicity, hence the signs and symptoms of excessive calcium deposition and insufficient phosphorus and magnesium uptake.

## SONCHUS SPP

**Alternative Name:**
Sowthistle, milk thistle

**Toxicity to Goats:**
Toxic, low risk

**Toxicity to Other Species:**
Potentially toxic to sheep and cattle

**Palatability:** High at all stages

**Poisonous Principle:**
Nitrates

**Effects:**
*Signs and symptoms;* Respiratory distress, with associated darkening of the gums.

*Health and production problems;* Rapid death or sometimes recovery.

**Integrated Control Strategy:**
Use glyphosate, and goats to eat the weeds.

**Comments:**
These weeds may occasionally cause problems in hungry stock that are unaccustomed to eating them, but are generally eaten without any ill effects.

An upright annual forb, growing up to 40 cms high. Leaves and stems are bluish green, and stems are hollow, with a milky sap. Most leaves are found around the base of the stem, forming a basal rosette. They are broad, and irregularly lobed. Flowers have yellow florets and produce white thistle down, mostly in spring.

A weed of pastures, cultivation and wetlands, growing during the cooler months, and die after flowering. Grows on most soil types, and in most communities, including gardens.

Readily eaten by all livestock, used as stock feed, and as salad greens.

## TERMINALIA OBLONGATA

### Alternative Name:
Yellow-wood

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
Not known to be eaten

### Poisonous Principle:
Hydrolysable tannins

### Effects:
*Signs and symptoms;* Dark brown urine, depression, limb stiffness, and eventually sudden bouts of prostration with trembling.

*Health and production problems;* Can result in sudden deaths, or in those animals that develop chronic kidney damage, long term ill thrift.

### Integrated Control Strategy:
Trees can be destroyed by fire, but are difficult to control with herbicides.
Be aware of potential stock problems.

### Comments:
Only causes problems when it becomes the major feed source for many weeks at a time.

Semi deciduous tree, up to 12 metres tall. Leaves are narrow, thin, finely veined, pale green and alternate, towards the ends of branches. Flowers are small and inconspicuous. Fruits are flat and winged.

Grows in central to coastal Queensland. Animals are usually affected during heavy leaf fall, or when suckers are browsed during drought.

## TRACHYANDRA DIVARICATA

### Alternative Name:
Branched onion weed

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Toxic to sheep, cattle, horses and pigs

### Palatability:
Low

### Poisonous Principle:
Unknown

### Effects:
*Signs and symptoms;* Hind limb weakness with knuckling of the fetlocks.

*Health and production problems;* A chronically debilitating and progressive locomotor disorder that results in weight loss and eventually recumbency and death.

### Integrated Control Strategy:

### Comments:
This plant only seems to be poisonous when it is eaten in large amounts for many months at a time.

No. 2467 *Cenchrus spp*
NSW AGRICULTURE

No. 4590 *Chenopodium album*
NSW AGRICULTURE

No. 2512 *Chloris spp*
NSW AGRICULTURE

No. 5712 *Cirsium vulgare*
NSW AGRICULTURE

## UROCHLOA PANICOIDES

### Alternative Name:
Liverseed grass

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
High at all stages

### Poisonous Principle:
Nitrates

### Effects:
*Signs and symptoms;* Respiratory distress, with associated darkening of the gums.

*Health and production problems;* Rapid death or sometimes recovery.

### Integrated Control Strategy:
Be aware of potential stock problems.
Herbicide, Group D.

### Comments:
These weeds may occasionally cause problems in hungry stock that are unaccustomed to them, but are generally eaten without any ill effects.

A loose, tufted to semi-prostrate, annual grass, often forming a dense sward, growing up to 60 cms high, with light green, hairy leaves. A summer active grass, usually germinating after spring-summer rains.

Often found on neglected land, roadsides, foot paths and stock yards. Under normal conditions the plant is not dangerous, but when it is wilted, or in overcast weather, poisoning can occur. Tends to disintegrate when dry.

Commonly found in Queensland.

## VENTILAGO VIMINALIS

### Alternative Name:
Supplejack

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to sheep and cattle

### Palatability:
High at all stages

### Poisonous Principle:
Hydrolysable tannins

### Effects:
*Signs and symptoms;* Dark brown urine, depression, limb stiffness and eventually sudden bouts of prostration with trembling.

*Health and production problems;* Can result in sudden deaths, or in those animals that develop chronic kidney damage, long term ill thrift.

### Integrated Control Strategy:
Be aware of potential stock problems.

### Comments:
Only causes problems when it becomes the major feed source for many weeks at a time.

Starts life as a woody climber, often several stems intertwined. Eventually grows to a shapely tree about 6 metres high, and 9 metres across. It has a dense crown, and many spreading branches. Leaves are dark green and narrow, with a lighter mid vein. Flowers are small, in panicles, in the leaf axils, spring to summer.

Drought resistant, readily eaten, and of moderate nutritional value , it suckers freely and is therefore a useful fodder tree.

## ZANTEDESCHIA AETHIOPICA

### Alternative Name:
Arum lily, cattle lily

### Toxicity to Goats:
Toxic, low risk

### Toxicity to Other Species:
Potentially toxic to all animal species

### Palatability:
Not known to be eaten

### Poisonous Principle:
Insoluble calcium oxalate crystals

### Effects:
*Signs and symptoms;* Sudden swelling of the tongue and throat, acute gastro-enteritis.

*Health and production problems;* Death within hours, or sometimes days.

### Integrated Control Strategy:
GARDEN PLANT OR ESCAPEE
Mechanical removal of rhizomes, spray with herbicide in spring before flowering begins.

This is a declared “Noxious Weed” in parts of Western Australia.

### Comments:
A garden plant or garden escapee found around areas of habitation.

A genus of tuberous perennials, grown for their erect spathes, each enclosing a finger shaped spadex. Flowering in winter to spring.

Competes with pastures for light, space and nutrients. A native of South Africa.

No. 29 *Lactuca serriola*


No. 16 *Raphanus raphanistrum*


No. 5332 *Ricinus communis*


No. 3323 *Robinia pseudoacacia*

**The palatability* of weeds (not necessarily endemic to Australia) to goats when the weeds are grown in Australia.**
H = high; M = moderate; L = low; N = not known to be eaten.

*palatability where T = toxic; N = nil (not eaten); L = low palatability; M = moderate palatability; H = high palatability and F = eaten at flowering; R = recent growth, regrowth; Pd = physical damage caused by goats

| Botanical name | | Botanical name | |
|---|---|---|---|
| Acacia aneura | H | Argemone mexicana | N |
| Acacia escelsa | M | Aristida spp | M |
| Acacia farnesiana | M | Asclepias spp | N |
| Acacia georginae | L | Asclepias curassavica | N |
| Acacia glaucescens | M | Asphodelus fistulosus | N |
| Acacia karoo | L | Atalaya hemiglauca | H |
| Acacia mearnsii | H F | Atriplex spp | M |
| Acacia nilotica | M | Atropa belladonna | N |
| Acacia homalophylla | M | Avena spp | H |
| Acacia paradoxa | M | Baccharis halimifolia | H |
| Acaena ovina | M | Bambusa spp | H R |
| Acetosa sagittata | H | Bidens spp | H |
| Aconitum napellus | N | Brachychiton populneus | H |
| Acroptilon repens | M | Brassica spp | H |
| Adonis microcarpa | N | Brugmansia candida | N |
| Aesculus spp | M | Bryophyllum spp | L |
| Agapanthus spp | L | Bursaria spinosa | H |
| Agave spp | L | Buxus spp | N |
| Ageratina adenophora | M | Caesalpinia spp | N |
| Ageratum houstonianum | M | Calandrina spp | H |
| Ageratum riparia | M | Calicotome spinosa | M |
| Agrostis avenacea | M | Callitris columellaris | H |
| Ailanthus altissima | L | Callitris endlicheri | H |
| Alhagi pseudalhagi | M | Calotropis procera | L |
| Allium spp | L | Cannabis sativa | H |
| Alocasia macrorrhiza | N | Capparis mitchellii | H |
| Alternanthera pungens | L | Capsella bursa-pastoris | M |
| Amaranthus spp | M | Cardaria draba | L |
| Amaryllis belladonna | L | Cardiospermum spp | N |
| Ambrosia artemisiifolia | M | Carduus nutans | M F |
| Ambrosia confertiflora | M | Carduus pycnocephalus | M F |
| Ambrosia psilostachya | M | Carex spp | M F |
| Ambrosia tenuifolia | M | Carthamus lanatus | M F |
| Ammi majus | M | Carthamus leucocaulos | M F |
| Amsinckia spp | L | Cassia artemisioides | L |
| Andropogon virginicus | M R | Cassia eremophila | N |
| Angophora spp | M | Cassia barclayana | M |
| Anredera cordifolia | L | Cassia floribunda | M |
| Anthemis cotula | L | Cassia obtusifolia | H |
| Apophyllum anomalum | H | Cassia occidentalis | H |
| Araujia hortorum | M | Cassinia arcuata | L |
| Arctotheca calendula | H | Cassinia quinquefaria | H |

| Botanical name | | Botanical name | |
|---|---|---|---|
| Castanospermum australe | N | Dittrichia graveolens | M R |
| Casuarina cristata | H | Dodonaea attenuata | H |
| Cenchrus echinatus | M R | Dodonaea viscosa | M F |
| Cenchrus spp | M R | Duboisia spp | N |
| Centaurea melitensis | L | Ecballium elaterium | N |
| Centaurea nigra | M | Echium plantagineum | M F |
| Centaurea solstitialis | M F | Echium vulgare | H F |
| Cestrum spp | L | Emex australis | M |
| Chamaecytisus proliferus | H | Eragrostis australasica | M |
| Cheilanthes spp | L | Eragrostis curvula | H R |
| Chenopodium spp | H | Eremophila longifolia | H |
| Chloris spp | M R | Eremophila mitchellii | L |
| Chondrilla juncea | M R | Eremocarpus setiger | N |
| Chrysanthemoides monilifera | H | Eremophila sturtii | N |
| | | Erodium spp | M F |
| Cichorium intybus | M | Erythrina spp | H |
| Cineraria lyrata | M | Erythrophleum spp | N |
| Cinnamomum camphora | H | Erythroxylum coca | M |
| Cirsium arvense | M F | Eucalyptus albens | M F |
| Cirsium vulgare | M F | Eucalyptus cladocalyx | L |
| Citrullus colocynthis | M | Eucalyptus melliodora | M R |
| Citrullus lanatus | L | Eucalyptus polyanthemos | M F |
| Codonocarpus spp | L | Eucalyptus populnea | L |
| Conium maculatum | M | Euphorbia spp | N |
| Consolida ambigua | N | Foeniculum vulgare | M |
| Convallaria majalis | N | Froelichia floridana | M |
| Convolvulus arvensis | H | Galenia pubescens | M |
| Conyza albida | H | Gastrolobium spp | L |
| Coreopsis lanceolata | M | Gaura parviflora | M |
| Cortaderia spp | H R | Geijera parviflora | L |
| Cotoneaster spp | M | Gelsemium sempervirens | N |
| Cotula australis | M | Genista linifolia | H |
| Craspedia spp | M F | Genista monspessulana | H |
| Crataegus spp | M | Gleditisia triacanthos | H |
| Crotolaria spp | L | Gloriosa superba | N |
| Cryptostegia grandiflora | L | Gnaphalium spp | L |
| Cucumis myriocarpus | M | Gomphocarpus spp | N |
| Cuscuta spp | H | Gomphrena globosa | M |
| Cycas spp | L | Gorteria personata | H |
| Cynara cardunculus | H F | Haloragis aspera | H |
| Cynodon spp | M | Heliotropium amplexicaule | L |
| Cyperus aromaticus | M F | Heliotropium europaeum | N |
| Cyperus rotundus | L F | Helleborus niger | N |
| Cytisus scoparius | H | Heterodendrum oleifolium | H |
| Danthonia spp | H | Hibiscus trionum | M |
| Daphne spp | N | Hirschfeldia incana | M R |
| Datura stramonium | N | Homeria spp | L |
| Delphinium spp | N | Hordeum leporinum | M |
| Dieffenbachia spp | N | Hydrangea spp | N |
| Digitalis purpurea | N | Hyparrhenia hirta | H |
| Diplotaxis tenuifolia | M F | Hypericum androsaemum | L |

| Botanical name | | Botanical name | |
|---|---|---|---|
| Hypericum perforatum | M | Olea europaea | M |
| Hypericum tetrapterum | M | Olearia elliptica | M |
| Hypericum triquetrifolium | M | Onopordum acanthium | M F |
| Hypochaeris radicata | F | Onopordum acaulon | M F |
| Ibicella lutea | N | Onopordum illyricum | M F |
| Ilex spp | L | Opuntia inermis | L |
| Imperata cylindrica | H R | Opuntia stricta | L |
| Ipomoea lonchophylla | M | Owenia acidula | H |
| Ipomoea plebeia | M | Oxalis latifolia | L |
| Ipomoea purpurea | H | Oxalis pes-caprae | M |
| Ipomoea spp | M | Papaver somniferum | L |
| Iva axillaris | M | Parkinsonia aculeata | M |
| Ixiolaena brevicompta | N | Parthenium hysterophorus | M |
| Jatropha curcas | N | Peganum harmala | N |
| Juncus acutus | F | Pennisetum clandestinium | H |
| Juncus spp | M F | Pennisetum macrourum | M R |
| Laburnum spp | N | Pennisetum villosum | M R |
| Lactuca serriola | H | Pentzia suffruticosa | L |
| Lantana camara | H | Persea americana | N |
| Lathyrus odoratus | N | Pinus halepensis | M |
| Laurel spp | M | Persicaria spp | M |
| Lavandula stoechas | M | Phalaris minor | H |
| Lepidium spp | M F | Phragmites australis | M F |
| Leucaena spp | M | Phyla canescens | L |
| Leucanthemum vulgare | M | Physalis virginiana | L |
| Ligustrum lucidum | H | Physalis viscosa | M F |
| Ligustrum sinense | H | Phytolacca octandra | M |
| Lolium spp | H | Pimelea curviflora | N |
| Lomandra longifolia | L | Pinus halepensis | M |
| Lonicera japonica | H | Pinus radiata | H |
| Lycium ferocissimum | M | Poa labillardieri | M |
| Macfadyena unguis-cati | N | Polygonum aviculare | M |
| Macrozamia spp | N | Polypogon monspeliensis | M |
| Maireana spp | M | Portulaca oleracea | L |
| Malva parviflora | L | Proboscidea louisianica | L |
| Malvella leprosa | M | Prosopis spp | H |
| Marrubium vulgare | H F | Prunus spp | H |
| Marsilea drummondii | N | Pteridium esculentum | L Pd |
| Medicago falcata | H | Pyracantha spp | H |
| Medicago sativa | H | Ranunculus spp | L |
| Melia azedarach | M | Raphanus raphanistrum | H |
| Melianthus comosus | N | Rapistrum rugosum | H |
| Melilotus albus | M | Reseda spp | L |
| Muehlenbeckia spp | H | Rhododendron spp | L |
| Myagrum perfoliatum | H | Ricinus communis | M |
| Myoporum spp | M | Robinia pseudoacacia | M |
| Nassella neesiana | M | Romulea rosea | M |
| Nassella trichotoma | M R | Rosa canina | H |
| Nerium oleander | N | Rosa rubiginosa | H |
| Nicandra physalodes | M F | Rubus fruiticosus | H |
| Nicotiana glauca | M | Rumex acetosella | M |

| Botanical name | | Botanical name | |
|---|---|---|---|
| Rumex brownii | L | Taxus baccata | N |
| Rumex conglomeratus | L | Terminalia oblongata | N |
| Rumex crispus | M | Thevetia peruviana | N |
| Rumex obtusifolius | L | Thunbergia grandiflora | M |
| Rumex pulcher | M R | Toxicodendron radicans | L |
| Salsola kali | M | Toxicodendron succedaneum | M |
| Salvia reflexa | M | Trachyandra divaricata | L |
| Schinus spp | H | Trema aspera | L |
| Sclerolaena birchii | M | Tribulus terrestris | M |
| Sclerolaena muricata | M R | Trifolium spp | M F |
| Scolymus hispanicus | M F | Typha spp | M |
| Senecio jacobaea | L | Ulex europaeus | H |
| Senecio madagascariensis | H F | Urochloa panicoides | H |
| Senecio pterophorus | L | Urtica incisa | L |
| Senecio quadridentatus | H | Urtica spp | L |
| Senecio vulgaris | H | Ventilago viminalis | H |
| Senna artemisioides | L | Verbascum thapsus | H F |
| Senna barclayana | M | Verbena spp | H F |
| Sida acuta | M R | Verbena tenuisecta | H |
| Sida cordifolia | M | Verbesina encelioides | L |
| Sida rhombifolia | H | Watsonia bulbillifera | M R |
| Silene vulgaris | N | Xanthium occidentale | L |
| Silybum marianum | H | Xanthium orientale | L |
| Sisymbrium officinale | H F | Xanthium spinosum | L |
| Solanum carolinense | L | Zantedeschia aethiopica | N |
| Solanum cinereum | N | | |
| Solanum elaeagnifolium | M | | |
| Solanum hermannii | N | | |
| Solanum laciniatum | N | | |
| Solanum marginatum | N | | |
| Solanum mauritianum | M | | |
| Solanum nigrum | L | | |
| Solanum rostratum | N | | |
| Solanum sturtianum | N | | |
| Solanum torvum | N | | |
| Soliva pterosperma | L | | |
| Sonchus spp | H | | |
| Sorghum halepense | H | | |
| Sorghum spp | H | | |
| Sorghum x almum | H R | | |
| Sporobolus caroli | M F | | |
| Sporobolus indicus | M R | | |
| Sporobolus pyramidalis | M R | | |
| Stachys arvensis | M | | |
| Stypandra glauca | L | | |
| Stevia eupatoria | L | | |
| Stipa caudata | M R | | |
| Stipa spp | M R | | |
| Swainsona spp | L | | |
| Syncarpia glomulifera | L | | |
| Tagetes minuta | M | | |

# The botanical name for weeds listed by their common name.

| Common Name | Botanical Name |
|---|---|
| aarons rod | Verbascum thapsus |
| aconite | Aconitum napellus |
| afghan melon | Citrullus lanatus |
| afghan thistle | Solanum hoplopetalum |
| african boxthorn | Lycium ferocissimum |
| african daisy | Senecio pterophorus |
| african feather grass | Pennisetum macrourum |
| african love grass | Eragrostis curvula |
| african rue | Peganum harmala |
| african star grass | Cynodon spp |
| african thistle | Berkheya rigida |
| agapanthus | Agapanthus spp |
| aleppo pine | Pinus halepensis |
| alkali sida | Malvella leprosa |
| alocasia | Alocasia macrorrhiza |
| alkali sida | Malvella leprosa |
| amaranth | Amaranthus spp |
| amsinckia | Amsinckia spp |
| angels trumpet | Brugmansia candida |
| angophora | Angophora spp |
| annual beard grass | Polypogon monspiliensis |
| annual ragweed | Ambrosia artemisiifolia |
| annual ryegrass | Lolium rigidum |
| ant bush | Cassia occidentalis |
| apple of peru | Nicandra physalodes |
| apple of sodom | Solanum hermannii |
| | Solanum linnaeamum |
| arsenic bush | Cassia floribunda |
| artichoke thistle | Cynara cardunculus |
| arum lily | Zantedeschia aethiopica |
| australian blackthorn | Bursaria spinosa |
| australian blackthorn | Bursaria spinosa |
| australian daisy | Olearia elliptica |
| avocado | Persea americana |
| badhara bush | Gmelina asiatica |
| balloon cotton bush | Gomphocarpus physcocarpus |
| balloon vine | Cardiospermum spp |
| bamboo | Bambusa spp |
| barley grass | Hordeum leporinum |
| batchelors buttons | Gomphrena globosa |
| bathurst burr | Xanthium spinosum |
| bay tree | Laurel spp |
| beggars ticks | Bidens spp |
| belah | Casuarina cristata |
| bell vine | Ipomoea plebeia |
| belladonna lily | Amaryllis belladonna |
| bifora | Bifora testiculata |
| billybuttons | Craspedia spp |
| bimble box | Eucalyptus populnea |
| bindweed | Convolvulus arvensis |
| bird of paradise | Caesalpinia spp |
| bishops weed | Ammi majus |
| bitou bush | Chrysanthemoides monilifera |
| bitter apple | Citrullus colocynthis |
| bitter melon | Citrullus lanatus, C. colocynthis |
| black bean | Castanospermum australe |
| black bindweed | Fallopia convolvulus |
| black cyprus pine | Callitris endlicheri |
| black hellebore | Helleborus niger |
| black knapweed | Centaurea nigra |
| black locust | Robinia pseudoacacia |
| black roly poly | Sclerolaena muricata |
| black thistle | Cirsium vulgare |
| black wattle | Acacia mearnsii |
| blackberry | Rubus fruiticosus |
| blackberry nightshade | Solanum nigrum |
| bladder campion | Silene vulgaris |
| bladder ketmia | Hibiscus trionum |
| blady grass | Imperata cylindrica |
| blind grass | Stypandra glauca |
| blown grass | Agrostis avenacea |
| blue billygoat weed | Ageratum houstonianum |
| blue bush | Maireana spp |
| blue heliotrope | Heliotropium amplexicaule |
| blue trumpet vine | Thunbergia grandiflora |
| boggabri weed | Amaranthus mitchellii |
| bokhara clover | Melilotus albus |
| boneseed | Chrysanthemoides monilifera |
| boonery | Heterodendrum oleifolium |
| box hedge | Buxus spp |
| bracken | Pteridium esculentum |
| branched onion weed | Trachyandra divaricata |
| bridal creeper | Myrsiphyllum asparagoides |
| broadleaf privet | Ligustrum lucidum |
| broadleaf hop bush | Dodonaea viscosa |
| broadleaf dock | Rumex obtusifolius |
| broom | Cytisus scoparius |
| broomrape | Orobanche spp |
| broughton pea | Swainsona spp |
| buchan weed | Hirschfeldia incana |
| budda | Eremophila mitchellii |
| buffalo burr | Solanum rostratum |
| buffel grass | Cenchrus spp |
| bullock bush | Heterodendrum oleifolium |
| burr ragweed | Ambrosia confertiflora |
| burrawang | Macrozamia spp |
| buttercup | Ranunculus spp |
| californian burr | Xanthium orientale |
| californian thistle | Cirsium arvense |
| calomba daisy | Pentzia suffruticosa |
| calotrope | Calotropis procera |
| caltrop | Tribulus terrestris |
| camel thorn | Alhagi pseudalhagi |
| camel poison | Erythrophleum spp |
| camphor laurel | Cinnamomum camphora |
| canary broom | Genista monspessulana |
| canegrass | Phragmites australis |
| | Eragrostis australasica |
| cape lilac | Melia azedarach |
| cape tulips | Homeria spp |
| caper spurge | Euphorbia lathyrus |
| capeweed | Arctotheca calendula |
| carolina horse nettle | Solanum carolinense |
| carolina jessamine | Gelsemium sempervirens |
| carpet weed | Phyla canescens |
| carrot fern | Conium maculatum |
| carrot weed | Cotula australis |
| castor oil plant | Ricinus communis |

| Common Name | Botanical Name |
|---|---|
| cat head | Tribulus terrestris |
| caterpillar weed | Heliotropium europaeum |
| cats claw creeper | Macfadyena unguis-cati |
| cat's ear | Hypochoeris radicata |
| cattle bush | Atalaya hemiglauca |
| cattle lily | Zantedeschia aethiopica |
| century plant | Agave spp |
| chicory | Cichorium intybus |
| chilean needle grass | Nassella neesiana |
| chinese apple | Ziziphus maruiitania |
| chinese privet | Ligustrum sinense |
| chinese shrub | Cassinia arcuata |
| christmas bells | Bryophyllum spp |
| christmas rose | Helleborus niger |
| cineraria | Cineraria lyrata |
| climbing buckwheat | Fallopia convolvulus |
| climbing lily | Gloriosa superba |
| clockweed | Gaura parviflora |
| clovers | Trifolium spp |
| clustered dock | Rumex conglomeratus |
| coastal myall | Acacia glaucescens |
| cobblers peg | Bidens pilosa |
| cockle burr | Zanthium spp |
| cockspur | Centaurea melitensis |
| coca leaf | Erythroxylaceae coca |
| coffee senna | Cassia occidentalis |
| colocynth | Citrullus colcynthis |
| colorado burr | Solanum rostratum |
| columbus grass | Sorghum X almum |
| common fern | Pteridum esculentum |
| common groundsel | Senecio vulgaris |
| common prickly pear | Opuntia stricta |
| common reed | Phragmites australis |
| common sensitive plant | Mimosa pudica |
| compass plant | Lactuca serriola |
| cooktown ironwood | Erythrophleum spp |
| coolatai grass | Hyparrhenia hirta |
| coral plant | Jatropha curcas |
| coral tree | Erythrina spp |
| coreopsis | Coreopsis lanceolata |
| corkwood | Erythrina spp |
| corn chamomile | Anthemis cotula |
| cotoneaster | Cotoneaster spp |
| cotton fireweed | Senecio quadridentatus |
| cotton tails | Froelichia floridana |
| couch | Cynodon dactylon |
| cowvine | Ipomoea lonchophylla |
| creeping knapweed | Acroptilon repens |
| crofton weed | Ageratina adenophora |
| crowfoot | Erodium spp |
| crow garlic | Allium vineale |
| crown beard | Verbesina encelioides |
| cruel plant | Araujia hortorum |
| cudweed | Gnaphalium spp |
| cumbungi | Typha spp |
| cunjevoi | Alocasia macrorrhiza |
| curled dock | Rumex crispis |
| cut-leaf mignonette | Reseda lutea |
| cyprus pine | Callitris columellaris |
| daisy chain | Arctotheca calendula |
| dalmation toadflex | Linaria dalmatica |
| daphne | Daphne spp |
| darling pea | Swainsona spp |
| deadly nightshade | Atropa belladonna |
| delphinium | Delphinium spp |
| dense cassia | Cassia artemisioides |
| desert cassia | Cassia eremophila |
| desert poison bush | Gastrolobium grandiflorum |
| devils claw purple | Proboscidea louisianica |
| devils claw yellow | Ibicella lutea |
| devils fig | Solanum torvum |
| dock | Rumex spp |
| dodder | Cuscuta spp |
| dog rose | Rosa canina |
| dogwood | Cassinia quinquefaria |
| double gee | Emex australis |
| doveweed | Eremocarpus setiger |
| duck bush | Gomphcarpus spp |
| dumbcane | Dieffenbachia spp |
| duranta | Duranta repens |
| elephants' foot | Elephantopus mollis |
| emu bush | Eremophila longifolia |
| | Myopordum desertii |
| english yew | Taxus baccata |
| espartillo | Stipa caudata |
| fairy grass | Sporobolus caroli |
| | Agrostis avenacea |
| false acacia | Robinia pseudoacacia |
| false caper | Euphorbia terracina |
| false castor oil | Datura stramonium |
| farmers friend | Bidens spp |
| fat hen | Chenopodium album |
| feather top | Pennisetum villosum |
| fennel | Foeniculum vulgare |
| fiddle dock | Rumex pulcher |
| fiddleneck | Amsinckia spp |
| fireweed | Senecio madagascariensis |
| fivespined saltbush | Sclerolaena muricata |
| flannel weed | Sida cordifolia |
| flat billy buttons | Ixiolaena brevicompta |
| flatweed | Hypochaeris radicata |
| flax-leaved broom | Genista linifolia |
| flax weed | Pimelea curviflora |
| foxglove | Digitalis purpurea |
| galenia | Galenia pubescens |
| galvanised burr | Sclerolaena birchii |
| georgina gidgee | Acacia georginae |
| geraldton carnation | Euphorbia terracina |
| giant bramble | Rubus alceaefolius |
| giant parramatta grass | Sporobolus indicus |
| giant rats tail | Sporobolus pyramidalis |
| giant sensitive plant | Mimosa invisa |
| giant sensitive tree | Mimosa pigra |
| gidgee | Acacia cambagei |
| glaucous star thistle | Carthamus leucocaulos |
| globe amaryth | Gomphrena globosa |
| glory lily | Gloriosa superba |
| goats rue | Gelega officinalis |
| goat weed | Hypericum perforatum |
| golden chain | Laburnum spp |
| golden dewdrop | Duranta repens |
| golden thistle | Scolymus hispanicus |
| gold weed | Verbesina encelioides |
| gomphrena weed | Gomphrena celosioides |
| gorse | Ulex europaeus |
| gorteria | Gorteria personata |

| Common Name | Botanical Name |
|---|---|
| great brome | Bromus diandrus |
| great mullein | Verbascum thapsus |
| green cestrum | Cestrum parqui |
| groundsel bush | Baccharis halimifolia |
| gruie | Owenia acidula |
| guildford grass | Romulea rosea |
| hard head thistle | Acroptilon repens |
| hawthorn | Crataegus spp |
| heart-leaf poison | Gastrolobium spp |
| hedge mustard | Sisymbrium officinale |
| heeps burr | Acaena ovina |
| heliotrope | Heliotropium europaeum |
| hemlock | Conium maculatum |
| hexham scent | Melilotus indicus |
| hoary cress | Cardaria draba |
| holly | Ilex aquifolium |
| honey locust tree | Gleditisia triacanthos |
| honeysuckle | Lonicera japonica |
| horehound | Marrubium vulgare |
| horse chestnut | Aesculus spp |
| horse nettle | Solanum spp |
| horse radish tree | Codonocarpus spp |
| horsetail | Equisetum arvense |
| horse weed | Ambrosia artemisiifolia |
| hydrangea | Hydrangea macrophylla |
| illyrian thistle | Onopordum illyricum |
| indian hawthorn | Pyracantha spp |
| indian hemp | Cannabis sativa |
| indian jujube | Ziziphus mauritiania |
| inkweed | Phytolacca octandra |
| ironweed | Acacia escelsa |
| | Amsinckia spp |
| ironwood | Acacia escelsa |
| ivy-leaf sida | Malvella leprosa |
| jerusalem thorn | Parkinsonia aculeata |
| jimmy burn | Bursaria spinosa |
| jimson weed | Datura stramonium |
| jo-jo | Soliva pterosperma |
| johnson grass | Sorghum halepense |
| jointed charlock | Raphanus raphanistrum |
| kangaroo apple | Solanum laciniatum |
| kangaroo thorn | Acacia paradoxa |
| karoo thorn | Acacia karoo |
| khaki weed | Alternanthera pungens |
| kikuyu grass | Pennisetum clandestinum |
| kings crown | Calotropis procera |
| knotweed | Polygonum aviculare |
| kurrajong | Brachychiton populneus |
| laburnam | Laburnam spp |
| lacy ragweed | Ambrosia tenuifolia |
| lantana | Lantana camara |
| larkspur | Consolida ambigua |
| | Delphinium spp |
| lavender | Lavandula stoechas |
| lesser canary grass | Phalaris minor |
| leucaena | Leucaena spp |
| lignum | Muehlenbeckia spp |
| lily of the valley | Convallaria majalis |
| lippia | Phyla canescens |
| liverseed grass | Urochloa panicoides |
| longstyle feather grass | Pennisetum villosum |
| lucerne | Medicago sativa |
| lucerne tree | Chamaecytisus proliferus |
| ludwigia | Ludwigia peruviana |
| madeira vine | Anredera cordifolia |
| marijuana | Cannabis sativa |
| marshmallow | Malva parviflora |
| mat rush | Lomandra longifolia |
| maynes pest | Verbena tenuisecta |
| mesquite | Prosopis spp |
| mexican poppy | Argemone mexicana |
| milk thistle | Sonchus spp |
| milkweed | Euphorbia heterophylla |
| mimosa bush | Acacia farnesiana |
| mintweed | Salvia reflexa |
| | Stachys arvensis |
| mission bells | Bryophyllum spp |
| mistflower | Ageratum riparia |
| mitre cress | Myagrum perfoliatum |
| monkshood | Aconitum napellus |
| monterey pine | Pinus radiata |
| montpellier broom | Genista monspessulana |
| morning glory | Ipomoea purpurea |
| moreton bay chestnut | Castanospermum australe |
| mossman river grass | Cenchrus echinatus |
| mother of millions | Kalanchoe tubiflora |
| | Bryophyllum spp |
| mothplant | Araujia hortorum |
| mulga | Acacia aneura |
| mulga fern | Cheilanthes spp |
| musk thistle | Carduus nutans |
| musk weed | Myagrum perfoliatum |
| mustard | Brassica spp |
| mysoe thorn | Caesalpinia spp |
| nardoo | Marsilea drummondii |
| narrawa burr | Solanum cinereum |
| narrowleaf cotton | Gomphocarpus fruticosus |
| narrowleaf hop bush | Dodonaea attenuata |
| navua sedge | Cyperus aromaticus |
| nitre bush | Chenopodium spp |
| nitre goosefoot | Chenopodium nitrariacem |
| nodding thistle | Carduus nutans |
| noogoora burr | Xanthium occidentale |
| nut grass | Cyperus rotundus |
| oat grass | Agrostis avenacea |
| oleander | Nerium oleander |
| olive | Olea europaea |
| onion grass | Romulea rosea |
| onion weed | Asphodelus fistulosus |
| opium poppy | Papaver somniferum |
| oxalis | Oxalis latifolia |
| ox-eye daisy | Leucanthemum vulgare |
| paddy melon | Cucumis myriocarpus |
| paddys lucerne | Sida rhombifolia |
| pampas grass | Cortaderia spp |
| pampas lily of valley | Salpichroa origanifolia |
| parakeelya | Calandrinia spp |
| parkinsonia | Parkinsonia aculeata |
| parthenium weed | Parthenium hysterophorus |
| patersons curse | Echium plantagineum |
| peach leaf poison bush | Trema aspera |
| pellitory | Parietaria judaica |
| pennyroyal | Mentha pulegium |
| pepper leaved senna | Senna barclayana |
| pepper tree | Schinus spp |
| peppercress | Lepidium spp |

| Common Name | Botanical Name |
|---|---|
| perennial groundcherry | Physalis virginiana |
| perennial ragweed | Ambrosia psilostachya |
| perennial ryegrass | Lolium perenne |
| perennial thistle | Cirsium arvense |
| philodendron | Dieffenbachia spp |
| physic nut | Jatropha curcas |
| pigweed | Portulaca oleracea |
| pimelea | Pimelea curviflora |
| pitjuri | Duboisia hopwoodii |
| plum | Prunus spp |
| poa tussock | Poa labillardieri |
| poinsettia | Euphorbia pulcherrima |
| poison ivy | Toxicodendron radicans |
| poison sedge | Schoenus asperocarpus |
| potato bush | Solanum nigrum |
| potato weed | Heliotropium europaeum |
| poverty weed | Iva axillaris |
| prairie ground cherry | Physalis viscosa |
| prickly acacia | Acacia nilotica |
| prickly lettuce | Lactuca serriola |
| prickly pear | Opuntia inermis |
| prickly saltwort | Salsola kali |
| punty bush | Senna artemisioides |
| | Cassia eremophila |
| purge nut | Jatropha curcas |
| purple top | Verbena spp |
| | Heliotropium amplexicaule |
| purslane | Portulaca oleracea |
| queen annes lace | Ammi majus |
| radiata pine | Pinus radiata |
| radish | Brassica spp |
| ragwort | Senecio jacobaea |
| rampion mignonette | Reseda phyteuma |
| rape | Brassica spp |
| raspwort | Haloragis aspera |
| rattlepods | Crotolaria spp |
| red box | Eucalyptus polyanthemos |
| red chamomile | Adonis microcarpa |
| red root | Amaranthus spp |
| redhead cotton bush | Asclepias curassavica |
| rhododendron | Rhododendron spp |
| rhus tree | Toxicodendron succedaneum |
| riceflower | Pimelea curviflora |
| rock fern | Cheilanthes spp |
| rosewood | Heterodendrum oleifolium |
| rubber bush | Calotropis procera |
| rubber vine | Cryptostegia grandiflora |
| rushes | Juncus spp |
| rusty fig tree | Ficus rubignosa |
| ryegrass | Lolium spp |
| saffron thistle | Carthamus lanatus |
| saltbush | Atriplex spp |
| sally wattle | Acacia glaucescens |
| salvation jane | Echium plantagineum |
| sand rocket | Diplotaxis tenuifolia |
| scented cassia | Cassia eremophila |
| scotch thistle | Onopordum acanthium |
| | Cirsium vulgare |
| scrub nettle | Urtica incisa |
| sedge | Carex spp |
| senna barclayana | Cassia barclayana |
| serrated tussock | Nassella trichotoma |
| sheeps burr | Acaena ovina |
| shepherds purse | Capsella bursa-pastoris |
| shore thistle | Carduus pycnocephalus |
| sickle pod | Cassia obtusifolia |
| sifton bush | Cassinia arcuata |
| silk forage sorghum | Sorghum spp |
| silver cassia | Cassia artemisioides |
| silverleaf nightshade | Solanum elaeagnifolium |
| skeleton weed | Chondrilla juncea |
| slender thistle | Carduus pycnocephalus |
| | C. nutans |
| small fruited pheasants' eye | Adonis microcarpa |
| small flowered mallow | Malva parviflora |
| small-leaf privet | Ligustrum sinense |
| smart weed | Persicaria spp |
| smooth cassia | Cassia floribunda |
| soft khaki weed | Gomphrena celosioides |
| soft roly poly | Salsola kali |
| soldier thistle | Picnomon acarna |
| sorrel | Rumex acetosella |
| soursob | Oxalis pes-caprae |
| sowthistle | Sonchus spp |
| spear grass | Stipa spp |
| spear thistle | Cirsium vulgare |
| spiny-head sida | Sida acuta |
| spiny broom | Calicotome spinosa |
| spiny burrgrass | Cenchrus spp |
| spiny cockle burr | Xanthium spinosum |
| spiny emex | Emex australis |
| spiny rush | Juncus acutus |
| spotted golden thistle | Scolymus maculatus |
| spurge | Euphorbia helioscopia |
| square stemmed hypericum | Hypericum tetrapterum |
| squirting cucumber | Ecballium elaterium |
| st barnaby thistle | Centaurea solstitialis |
| st james wort | Senecio jacobaea |
| st johns wort | Hypericum perforatum |
| st peters wort | Hypericum tetrapterum |
| stagger weed | Stachys arvensis |
| star thistle | Centaurea calcitrapa |
| stemless thistle | Onopordum acaulon |
| stevia | Stevia eupatoria |
| sticky cape gooseberry | Physalis viscosa |
| stinging nettle | Urtica spp |
| stinking mayweed | Anthemis cotula |
| stinking roger | Tagetes minuta |
| stinkwort | Dittrichia graveolens |
| storksbill | Erodium spp |
| strychnine bush | Myopordum acuminatum |
| sugar gum | Eucalyptus cladocalyx |
| supplejack | Ventilago viminalis |
| swamp dock | Rumex brownii |
| sweet amber | Hypericum androsaemum |
| sweet briar | Rosa rubiginosa |
| sweet pea | Lathyrus odoratus |
| tall fleabane | Conyza albida |
| tangled hypericum | Hypericum triquetrifolium |
| thargomindah nightshade | Solanum sturtianum |
| thornapples | Datura stramonium |
| three corner garlic | Allium triquetrum |

| Common Name | Botanical Name |
|---|---|
| tobacco bush | Solanum mauritianum |
| tree daffodil | Thevetia peruviana |
| tree of heaven | Ailanthus altissima |
| tree tobacco | Nicotiana glauca |
| tufted honeyflower | Melianthus comosus |
| turkey bush | Myopordum desertii |
| turkey mullain | Eremocarpus setiger |
| turkey rhubarb | Acetosa sagittata |
| turnip weed | Rapistrum rugosum |
| turpentine | Syncarpia glomulifera |
| turpentine bush | Eremophila sturtii |
| tutsan | Hypericum androsaemum |
| variegated thistle | Silybum marianum |
| vetch | Lathyrus odoratus |
| vipers bugloss | Echium vulgare |
| wait-a-while | Caesalpinia spp |
| wallaby grass | Danthonia spp |
| warrior bush | Apophyllum anomalum |
| water bush | Myoporum acuminatum |
| watsonia | Watsonia bulbillifera |
| wavy leaf st johns wort | Hypericum triquetrifolium |
| whisky grass | Andropogon virginicus |
| white box | Eucalyptus albens |
| white cedar | Melia azedarach |
| white edge nightshade | Solanum marginatum |
| white eye | Gomphrena celosioides |
| white foxtail | Pennisetum macrourum |
| white orange | Capparis mitchellii |
| white weed | Cardaria draba |
| whitewood | Atalaya hemiglauca |
| wier vine | Ipomoea spp |
| wild garlic | Allium vineale |
| wild melon | Citrullus lanatus |
| wild mignonette | Reseda luteola |
| wild oats | Avena spp |
| wild peach | Prunus persica |
| wild radish | Raphanus raphanistrum |
| wild teazel | Dipsacus fullonum |
| wild tobacco tree | Solanum mauritianum<br>Nicotiana glauca |
| wild turnip | Brassica tournefortii |
| wilga | Geijera parviflora |
| windmill grass | Chloris spp |
| winter rhodes grass | Chloris spp |
| wire grass | Aristida spp |
| wire weed | Polygonum aviculare |
| wolfsbane | Aconitum napellus |
| yarran | Acacia homalphylla |
| yellow box | Eucalyptus melliodora |
| yellow flower lucerne | Medicago falcata |
| yellow jasmine | Gelsemium sempervirens |
| yellow oleander | Thevetia peruviana |
| yellow wood | Terminalia oblongata |
| zamia | Cycas spp |
| zamia palm | Macrozamia spp |

# The common name for some Australian weeds.

| Botanical Name | Common Name |
|---|---|
| Acacia aneura | mulga |
| Acacia cambagei | gidgee |
| Acacia escelsa | ironwood |
| Acacia farnesiana | mimosa bush |
| Acacia georginae | georgina gidgee |
| Acacia glaucescens | coastal myall, sally wattle |
| Acacia karoo | karoo thorn |
| Acacia mearnsii | black wattle |
| Acacia nilotica | prickly acacia |
| Acacia homalophylla | yarran |
| Acacia paradoxa | kangaroo thorn |
| Acaena ovina | sheeps burr |
| Acetosa sagittata | turkey rhubarb |
| Aconitum napellus | monkshood, wolfsbane, aconite |
| Acroptilon repens | hard head thistle, creeping knapweed |
| Adonis microcarpa | red chamomile, small fruited pheasant's eye |
| Aesculus spp | horse chestnut |
| Agapanthus spp | agapanthus |
| Agave spp | century plant |
| Ageratina adenophora | crofton weed |
| Ageratum houstonianum | blue billygoat weed |
| Ageratum riparia | mistflower |
| Agrostis avenacea | blown grass, fairy grass, oat grass |
| Ailanthus altissima | tree of heaven |
| Alhagi pseudalhagi | camel thorn |
| Allium triquetrum | three corner garlic |
| Allium vineale | wild garlic, crow garlic |
| Alocasia macrorrhiza | cunjevoi, alocasia |
| Alternanthera pungens | khaki weed |
| Amaranthus mitchellii | boggabri weed |
| Amaranthus spp | amaranth, boggabri, red root, red shank |
| Amaryllis belladonna | belladonna lily |
| Ambrosia artemisiifolia | annual ragweed, horse weed |
| Ambrosia confertiflora | burr ragweed |
| Ambrosia psilostachya | perennial ragweed |
| Ambrosia tenuifolia | lacy ragweed |
| Ammi majus | bishops weed, queen anne's lace |
| Amsinckia spp | amsinckia, iron weed, fiddleneck |
| Andropogon virginicus | whisky grass |
| Angophora spp | angophora |
| Anredera cordifolia | madeira vine |
| Anthemis cotula | stinking mayweed, corn chamomile |
| Apophyllum anomalum | warrior bush |
| Araujia hortorum | mothplant, cruel plant |
| Arctotheca calendula | capeweed, daisy chains |
| Argemone mexicana | mexican poppy |
| Aristida spp | wire grass |
| Asclepias curassavica | redhead cotton bush |
| Asphodelus fistulosus | onion weed |
| Atalaya hemiglauca | whitewood, cattle bush |
| Atriplex spp | saltbush |

| Botanical Name | Common Name |
|---|---|
| Atropa belladonna | deadly nightshade |
| Avena spp | wild oats |
| Baccharis halimifolia | groundsel bush |
| Bambusa spp | bamboo |
| Berkheya rigida | african thistle |
| Bidens spp | cobblers peg, beggar's ticks, farmer's friend |
| Bifora testiculata | bifora |
| Bowenia spp | zamia palm |
| Brachychiton populneus | kurrajong |
| Brassica spp | wild turnip, rape, radish, mustard |
| Bromus diandrus | great brome |
| Brugmansia candida | angels trumpet |
| Bryophyllum spp | mother of millions, mission bells, christmas bell |
| Bursaria spinosa | jimmy burn, australian blackthorn |
| Buxus spp | box hedge |
| Caesalpinia spp | bird of paradise, wait-a-while, mysol thorn |
| Calandrina spp | parakeelya |
| Calicotome spinosa | spiny broom |
| Callitris columellaris | cyprus pine |
| Callitris endlicheri | black cyprus pine |
| Calotropis procera | rubber bush, calotrope, kings crown |
| Cassinia quinquefaria | dogwood |
| Cannabis sativa | indian hemp, marijuana |
| Capparis mitchellii | white orange |
| Capsella bursa-pastoris | shepherds purse |
| Cardaria draba | hoary cress, white weed |
| Cardiospermum spp | balloon vine |
| Carduus nutans | nodding thistle, slender thistle, musk thistle |
| Carduus pycnocephalus | slender thistle, shore thistle |
| Carex spp | sedge |
| Carthamus lanatus | saffron thistle |
| Carthamus leucocaulos | glaucous star thistle |
| Cassia artemisioides | silver cassia, dense cassia |
| Cassia barclayana | pepper leaved senna, senna barclayana |
| Cassia eremophila | punty bush, desert cassia, scented cassia |
| Cassia floribunda | smooth cassia, arsenic bush |
| Cassia occidentalis | sickle pod, coffee senna, ant bush |
| Cassinia arcuata | sifton bush, chinese shrub |
| Castanospermum australe | black bean, moreton bay chestnut |
| Casuarina cristata | belah |
| Cenchrus echinatus | mossman river grass |
| Cenchrus spp | spiny burrgrass, buffel grass, mossman river grass |
| Centaurea calcitrapa | star thistle |
| Centaurea melitensis | cockspur |

| Botanical Name | Common Name |
|---|---|
| Centaurea nigra | black knapweed |
| Centaurea solstitialis | st barnaby thistle |
| Cestrum spp | green cestrum |
| Chamaecytisus proliferus | lucerne tree |
| Cheilanthes spp | rock fern, mulga fern |
| Chenopodium spp | fat hen, nitre bush, goosefoot |
| Chloris spp | windmill grass, winter rhodes grass |
| Chondrilla juncea | skeleton weed |
| Chrysanthemoides monilifera | bitou bush, boneseed |
| Cichorium intybus | chicory |
| Cineraria lyrata | cineraria |
| Cinnamomum camphora | camphor laurel |
| Cirsium arvense | californian thistle, perennial thistle |
| Cirsium vulgare | black thistle, spear thistle, scotch thistle |
| Citrullus colocynthis | bitter apple, colocynth, bitter melon |
| Citrullus lanatus | bitter melon, wild melon, afghan melon |
| Citrullus vulgaris | bitter apple |
| Codonocarpus spp | horse radish tree |
| Conium maculatum | hemlock, carrot fern |
| Consolida ambigua | larkspur |
| Convallaria majalis | lily of the valley |
| Convolvulus arvensis | bindweed |
| Conyza albida | tall fleabane |
| Coreopsis lanceolata | coreopsis |
| Cortaderia spp | pampas grass |
| Cotoneaster spp | cotoneaster |
| Cotula australis | carrot weed |
| Craspedia spp | billybuttons |
| Crataegus spp | hawthorn |
| Crotolaria spp | rattlepods |
| Cryptostegia grandiflora | rubber vine |
| Cucumis myriocarpus | paddy melon |
| Cuscuta spp | dodder |
| Cycas spp | zamia palm |
| Cynara cardunculus | artichoke thistle |
| Cynodon spp | couch, african star grass |
| Cyperus aromaticus | navua sedge |
| Cyperus rotundus | nut grass |
| Cytisus scoparius | broom |
| Danthonia spp | wallaby grass |
| Daphne spp | daphne |
| Datura candida | angels trumpet |
| Datura stramonium | thornapples, false castor oil, jimson weed |
| Delphinium spp | delphinium, larkspur |
| Dieffenbachia spp | dumbcane, philodendron |
| Digitalis purpurea | foxglove |
| Diplotaxis tenuifolia | sand rocket |
| Dipsacus fullonum | wild teazel |
| Dittrichia graveolens | stinkwort |
| Dodonaea attenuata | narrowleaf hop bush |
| Dodonaea viscosa | broad leaf hop bush |
| Duboisia hopwoodii | pitjuri |
| Duranta repens | golden dewdrop, duranta |
| Ecballium elaterium | squirting Cucumber |
| Echium plantagineum | patersons curse, salvation jane |
| Echium vulgare | vipers bugloss |
| Emex australis | spiny emex, double gee |
| Equisetum arvense | horsetail |
| Eragrostis australasica | canegrass |
| Eragrostis curvula | african love grass |
| Eremocarpus setiger | turkey mullain, doveweed |
| Eremophila longifolia | emu bush |
| Eremophila mitchellii | budda |
| Eremophila sturtii | turpentine bush |
| Erodium spp | crowfoot, storksbill |
| Erythrina spp | coral tree, corkwood |
| Erythrophleum spp | camel poison, cooktown ironwood |
| Erythroxylaceae coca | coca leaf |
| Eucalyptus albens | white box |
| Eucalyptus cladocalyx | sugar gum |
| Eucalyptus melliodora | yellow box |
| Eucalyptus polyanthemos | red box |
| Eucalyptus populnea | bimble box |
| Euphorbia spp | spurge, milkweed, caper spurge, poinsettia, geraldton carnation, false caper |
| Fallopia convolvulus | climbing buckwheat, black bindweed |
| Ficus rubignosa | rusty fig tree |
| Foeniculum vulgare | fennel |
| Froelichia floridana | cotton tails |
| Galega officinalis | goats rue |
| Galenia pubescens | galenia |
| Gastrolobium spp | desert poison bush, heart-leaf poison |
| Gaura parviflora | clockweed |
| Geijera parviflora | wilga |
| Gelsemium sempervirens | yellow jasmine, carolina jessamine |
| Genista linifolia | flax-leaved broom |
| Genista monspessulana | canary broom, montpellier broom |
| Gleditisia triacanthos | honey locust tree |
| Gloriosa superba | glory lily, climbing lily |
| Gnaphalium spp | cudweed |
| Gomphocarpus spp | narrow leaf cotton bush, balloon cotton bush, duck bush |
| Gomphrena celosioides | white eye, soft khaki weed, gomphrena weed |
| Gomphrena globosa | globe amaryth, batchelors buttons |
| Gorteria personata | gorteria |
| Haloragis aspera | raspwort |
| Heliotropium amplexicaule | blue heliotrope, purple top |
| Heliotropium europaeum | heliotrope, potato weed, caterpillar weed |
| Helleborus niger | christmas rose, black hellebore |
| Heterodendrum oleifolium | rosewood, boonery, |
| Hibiscus trionum | bladder ketmia |
| Hirschfeldia incana | buchan weed |
| Homeria spp | cape tulips |

| Botanical Name | Common Name |
|---|---|
| Hordeum leporinum | barley grass |
| Hydrangea macrophylla | hydrangea |
| Hyparrhenia hirta | coolatai grass |
| Hypericum androsaemum | tutsan, sweet amber |
| Hypericum perforatum | st johns wort, goat weed |
| Hypericum tetrapterum | st peters wort, square stemmed hypericum |
| Hypericum triquetrifolium | tangled hypericum, wavy leaf st john's wort |
| Hypochoeris radicata | cat's ear, flatweed |
| Ibicella lutea | devils claw yellow |
| Ilex aquifolium | holly |
| Imperata cylindrica | blady grass |
| Ipomoea spp | wier vine, cow vine, morning glory |
| Iva axillaris | poverty weed |
| Ixiolaena brevicompta | flat billy buttons |
| Jatropha curcas | physic nut, purge nut, coral plant |
| Juncus acutus | spiny rush |
| Juncus spp | rushes |
| Laburnam spp | laburnam, golden chain |
| Lactuca serriola | prickly lettuce, compass plant |
| Lantana camara | lantana |
| Lathyrus odoratus | sweet pea, vetch |
| Laurel spp | bay tree |
| Lavandula stoechas | lavender |
| Lepidium spp | peppercress |
| Leucaena spp | leucaena |
| Leucanthemum vulgare | ox-eyed daisy |
| Ligustrum lucidum | broad-leaf privet |
| Ligustrum sinense | small-leaf privet, chinese privet |
| Linaria dalmatica | dalmation toadflax |
| Lolium perenne | perennial ryegrass |
| Lolium rigidum | annual ryegrass |
| Lomandra longifolia | mat rush |
| Lonicera japonica | honeysuckle |
| Ludwigia peruviana | ludwigia |
| Lycium ferocissimum | african boxthorn |
| Macfadyena unguis-cati | cats claw creeper |
| Macrozamia spp | burrawang, zamia palm |
| Maireana spp | blue bush |
| Malva parviflora | marshmallow, small flowered mallow |
| Malvella leprosa | ivy-leaf sida, alkali sida |
| Marrubium vulgare | horehound |
| Marsilea drummondii | nardoo |
| Melia azedarach | white cedar, cape lilac |
| Melianthus comosus | tufted honeyflower |
| Melilotus albus | bokhara clover |
| Melilotus indicus | hexham scent |
| Mentha pulegium | pennyroyal |
| Muehlenbeckia spp | lignum |
| Myagrum perfoliatum | mitre cress, musk weed |
| Myoporum acuminatum | water bush, strychnine bush |
| Myoporum desertii | emu bush, turkey bush |
| Myrsiphyllum asparagoides | bridal creeper |
| Nassella neesiana | chilean needle grass |
| Nassella trichotoma | serrated tussock |
| Nerium oleander | oleander |
| Nicandra physalodes | apple of peru |
| Nicotiana glauca | tree tobacco, wild tobacco tree |
| Olea europaea | olive |
| Olearia elliptica | australian daisy |
| Onopordum acanthium | scotch thistle |
| Onopordum acaulon | stemless thistle |
| Onopordum illyricum | illyrian thistle |
| Opuntia inermis | prickly pear |
| Opuntia stricta | common prickly pear |
| Orobanche spp | broomrape |
| Owenia acidula | gruie |
| Oxalis spp | oxalis, soursob |
| Papaver somniferum | opium poppy |
| Parietaria judaica | pellitory |
| Parkinsonia aculeata | parkinsonia, ratama, jerusalem thorn |
| Parthenium hysterophorus | parthenium weed |
| Peganum harmala | african rue |
| Pennisetum clandestinum | kikuyu grass |
| Pennisetum macrourum | african feather grass, white foxtail |
| Pentzia suffruticosa | calomba daisy |
| Persea americana | avocado |
| Persicaria spp | smart weed, knotgrass |
| Phalaris spp | phalaris grass |
| Phragmites australis | canegrass, common reed |
| Phyla canescens | lippia, carpet weed |
| Physalis virginiana | perennial groundcherry |
| Physalis viscosa | prairie ground cherry, sticky cape gooseberry |
| Phytolacca octandra | inkweed |
| Picnomon acarna | soldier thistle |
| Pimelea curviflora | pimelea, riceflower, flaxweed |
| Pinus halepensis | aleppo pine |
| Pinus radiata | radiata pine, monterey pine |
| Poa labillardieri | poa tussock |
| Polygonum aviculare | wire weed, knotweed |
| Polypogon monspiliensis | annual beard grass |
| Portulaca oleracea | purslane, pigweed |
| Proboscidea louisianica | devils claw purple |
| Prosopis spp | mesquite |
| Prunus spp | wild peach, apricot, plum almond |
| Pteridium esculentum | bracken, common fern |
| Pyracantha spp | indian hawthorn |
| Ranunculus spp | buttercup |
| Raphanus raphanistrum | wild radish, jointed charlock |
| Rapistrum rugosum | turnip weed |
| Reseda spp | cut-leaf mignonette, wild mignonette, rampion mignonette |
| Rhododendron spp | rhododendron |
| Ricinus communis | castor oil plant |
| Robinia pseudoacacia | black locust, robinia tree, false acacia |

| Botanical Name | Common Name |
|---|---|
| Romulea rosea | guildford grass, onion grass |
| Rosa canina | dog rose |
| Rosa rubiginosa | sweet briar |
| Rubus alceaefolius | giant bramble |
| Rubus fruiticosus | blackberry |
| Rumex spp | sorrel, dock |
| Salpichroa origanifolia | pampas lily of valley |
| Salsola kali | soft roly poly, prickly saltwort |
| Salvia reflexa | mintweed |
| Schinus spp | pepper tree |
| Schoenus asperocarpus | poison sedge |
| Sclerolaena birchii | galvanised burr |
| Sclerolaena muricata | fivespined saltbush, black roly-poly |
| Scolymus hispanicus | golden thistle |
| Scolymus maculatus | spotted golden thistle |
| Senecio jacobaea | ragwort, st james wort |
| Senecio lautus | fireweed |
| Senecio madagascariensis | fireweed |
| Senecio pterophorus | african daisy |
| Senecio quadridentatus | cotton fireweed |
| Senecio vulgaris | common groundsel |
| Senna artemisioides | punty bush, silver cassia |
| Senna barclayana | pepper leaved senna |
| Sida acuta | spiny-head sida |
| Sida cordifolia | flannel weed |
| Sida rhombifolia | paddy's lucerne |
| Silene vulgaris | bladder campion |
| Silybum marianum | variegated thistle |
| Sisymbrium officinale | hedge mustard |
| Solanum carolinense | carolina horse nettle |
| Solanum cinereum | narrawa burr |
| Solanum elaeagnifolium | silverleaf nightshade |
| Solanum hermannii | apple of sodom |
| Solanum laciniatum | kangaroo apple |
| Solanum marginatum | white edge nightshade |
| Solanum mauritianum | wild tobacco tree, tobacco bush |
| Solanum nigrum | blackberry nightshade, potato bush |
| Solanum rostratum | buffalo burr, colorado burr |
| Solanum sturtianum | thargomindah nightshade |
| Solanum torvum | devils fig |
| Soliva pterosperma | jo-jo |
| Sonchus spp | sowthistle, milk thistle |
| Sorghum spp | silk forage sorghum, johnson grass, columbus grass |
| Sporobolus caroli | fairy grass |
| Sporobolus indicus | giant parramatta grass |
| Sporobolus pyramidalis | giant rats tail |
| Stachys arvensis | stagger weed, mint weed |
| Stevia eupatoria | stevia |
| Stipa caudata | espartillo |
| Stipa spp | spear grass |
| Stypandra glauca | blind grass, nodding blue lily |
| Stypandra imbricata | blind grass |
| Stypandra grandiflora | blind grass |
| Swainsona spp | darling pea, broughton pea |
| Syncarpia glomulifera | turpentine |
| Tagetes minuta | stinking roger |
| Taxus baccata | english yew |
| Terminalia oblongala | yellow wood |
| Thevetia peruviana | yellow oleander, tree daffodil |
| Thunbergia grandiflora | blue trumpet vine |
| Toxicodendron radicans | poison ivy |
| Toxicodendron succedaneum | rhus tree |
| Trachyandra divaricata | branched onion weed |
| Trema aspera | peach leaf poison bush |
| Trema tomentosa | peach leaf poison bush |
| Tribulus terrestris | caltrop, cat head |
| Trifolium spp | clovers |
| Typha spp | cumbungi |
| Ulex europaeus | gorse |
| Urochloa panicoides | liverseed grass |
| Urtica incisa | scrub nettle |
| Urtica spp | stinging nettle |
| Ventilago viminalis | supplejack |
| Verbascum thapsus | aarons rod, great mullein |
| Verbena spp | purple top |
| Verbena tenuisecta | maynes pest |
| Verbesina encelioides | crown beard, gold weed |
| Watsonia bulbillifera | watsonia |
| Xanthium occidentale | noogoora burr |
| Xanthium orientale | californian burr |
| Xanthium spinosum | bathurst burr, spiny cockle burr |
| Zantedeschia aethiopica | arum lily, cattle lily |
| Zanthium spp | cockle burr |
| Ziziphus mauritiania | chinese apple, indian jujube |

**Table of herbicide groups.**

| Group | Situation | Example of effective chemical |
|---|---|---|
| A | grasses only | fluozifop - P |
| | | fenoxaprop - p - ethyl |
| B | grasses and broad-leaf weeds | metsulfuron methyl |
| C | broad-leaf weeds in cereals pre-emergent | atrazine |
| D | annual grasses and selection broad-leaf weeds | trifluralin |
| I | broad-leaf weeds | 2, 4-D amine/ester<br>MCPA |
| M | little selectivity if growing | glyphosate |

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