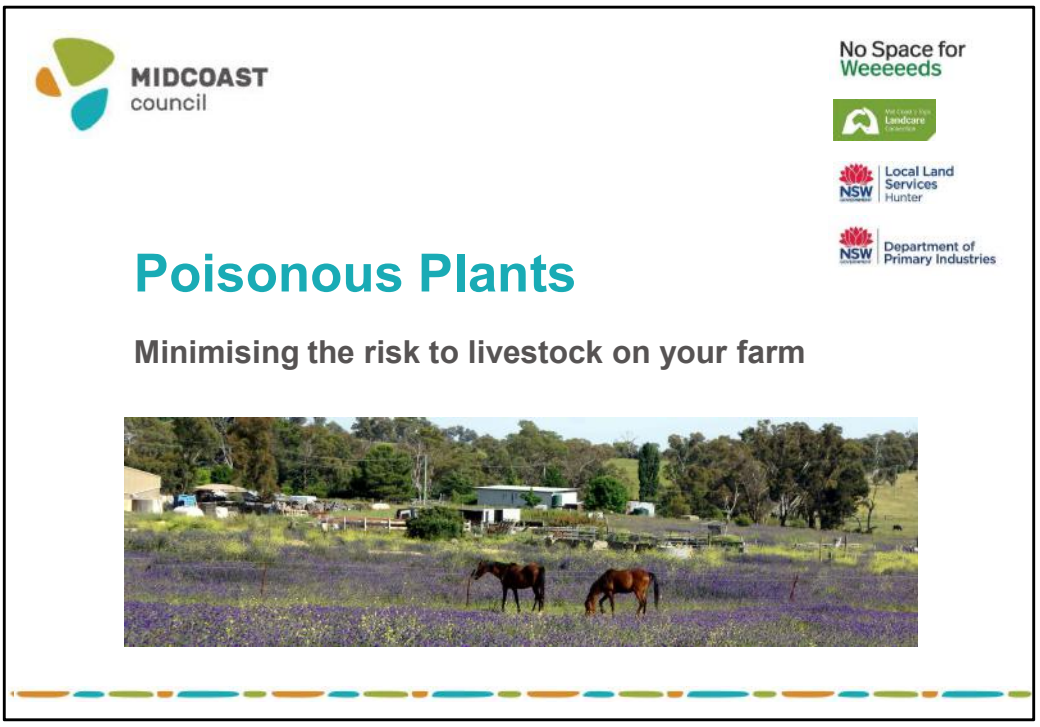
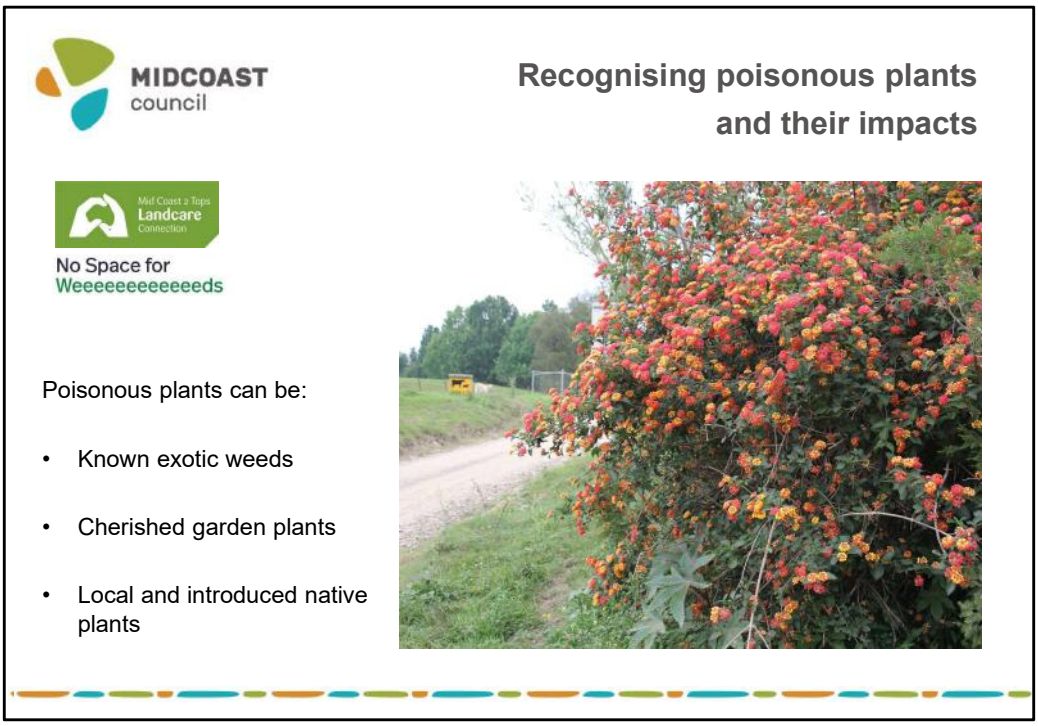


Introduction……..;

This presentation is designed to raise awareness of poisonous plants on the farm known to occur in the MidCoast Council area. It is a collaborative effort of Manning and Karuah, Great Lakes Landcare, MidCoast Council, NSW Department of Primary Industries and Hunter Local Land Services. This workshop was made possible though funding provided by NSW Department of Primary Industries though the Managing Established Pest Animals and Weeds project (MEPAAW).



Plant poisoning is nationally important to Australia. About a thousand species of plants in the country are known to be toxic to livestock and humans.

Poisonous plants can be well known exotic weed species, cherished garden plants and even local native species. They can be naturally occurring as weeds or native vegetation, deliberately planted as garden plants and specimen trees in paddocks or accidentally introduced via feed brought onto the farm.

Many common plant species posses toxins that are capable of causing a range of illnesses from photosensitisation and dermatitis, bloat, scouring, vomiting, blindness, staggers, sudden death and even prolonged death due to associated complications and organ failure.

To state the obvious, pastures and paddocks in Australia were once areas of native vegetation and often contain natural vegetation cells allowing animals to seek shade. Be aware that without suitable maintenance pastures can revert to a natural condition and contain naturally occurring poisonous plants.

There are just too many plants known to man that can cause illness or injury to stock to mention them all. This presentation is designed to raise awareness of the most common and toxic poisonous plants known to occur in the MidCoast region.

The following plants are known known to occur in varying distribution and density in the MidCoast region and will be introduced individually.

Spread of these species depends on the reproductive characteristics of individual plant species. Some plants produce seeds that blow in the wind, float on flood waters or adhere to he skin of animals, some produce succulent berries that attract birds and are deposited in areas along fence lines, under trees where stock congregate and around infrastructure such as cattle yards and buildings.

Exposure of animals to plant toxins and introduction of poisonous plants to your farm can also occur accidentally via importation of fodder. Many of these species can be found as contaminants in hay so choose your feed carefully, where possible inspect a sample for contaminants and buy from a reputable supplier.

Mother of millions – *Bryophyllum species*

Persistent weed native to Madagascar and South Africa and occurs in most areas of the MidCoast region.

All parts of Mother-of millions can be **VERY POISONOUS**, particularly the flowers**.** It continues to claim the lives of cattle throughout the north west of NSW. In one of the worst reported cases in recent times, 125 head of cattle died after feeding on mother-of-millions on a travelling stock reserve, Moree area, 1997 *(- Michael Kane, Moree).*

Greatest risk is when the plant is in flower, especially during dry times when feed is scarce. When cattle are stressed or in unfamiliar territory (eg a new paddock) they are more likely to try plants they wouldn't normally touch.

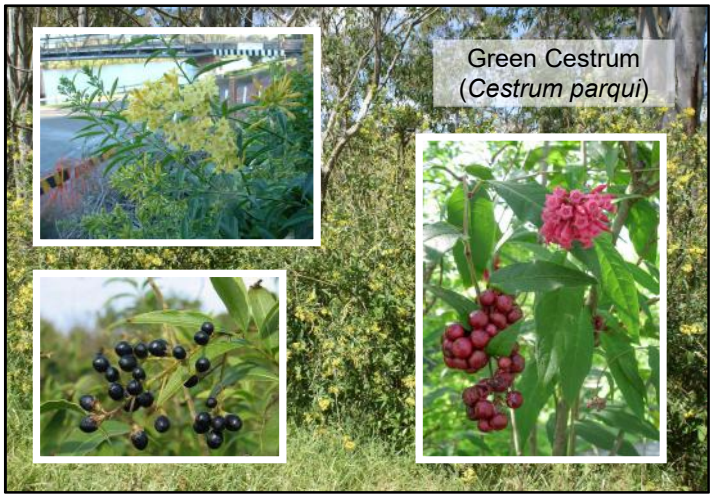
Photo 1: Infestation on roadside a result of garden waste dumping

Photo 2: Baby plantlets form on leaf edges

Photo 3: Pretty tubular flowers are produced in winter to spring and can be mistaken for the native Christmas bells.

Photo 4: Garden escape occurring in natural bushland

Refer to NSW WeedWise for site specific control options, however hand removal can be successful if the infestation isn't too extensive, and depending on the situation, foliar spraying with Starane, Metsulfuron(Brush-off), Grazon and glyphosate can provide good herbicide control.



Green Cestrum – *Cestrum parqui*

Persistent weed native to Central and South America. Cestrum was first introduced as an ornamental garden plant, is commonly found in disturbed areas, roadsides, landfill sites, creek banks and gullies.

All parts of the plant are toxic at all growth stages. Green cestrum frequently causes ‘sudden death’ in livestock and is highly toxic to humans, capable of causing serious illness or death.

Although cattle are the most commonly affected animals, deaths have also occurred in goats, sheep, horses, pigs and poultry. Bushes that have been cut down or killed with herbicide will retain poison in their leaves, branches and berries. In fact, recently sprayed wilting plants are more palatable then fresh healthy plants and potentially can cause more deaths.

Livestock should always be removed from any paddock where a cestrum control program is under way and not returned until the leaf material has disintegrated or been removed.

Photo 1: Naturalised infestation at Stroud

Photo 2: showy flowers are prized by gardeners for their night scented fragrance

Photo 3: Berries of green cestrum are green turning black when ripe. Like lollies for birds

Photo 4: There are many species of cestrum. All are thought to be toxic to animals however Green Cestrum is believed to be the most toxic.

Refer to NSW WeedWise for a range of control options. Physical controls can be effective providing the root system is fully removed to prevent suckering. Local information indicates the herbicide Grazon Extra provides the best herbicide control.

Lantana – *Lantana camara* (varieties)

Persistent weed native to South America

All forms of lantana are thought to be toxic, with the red-flowered forms being the most dangerous to stock. Lantana poisoning in cattle is quite common and can cause major economic loss. Most cases of poisoning occur in animals newly introduced into areas where toxic forms of lantana are already growing. Older cattle that are used to grazing lantana infested areas are not as susceptible. Stock are more likely to graze lantana during drought periods or when other feed is scarce.

Early symptoms of lantana poisoning include depression, loss of appetite, constipation and frequent urination, followed by 24–48 hours of jaundice. The eyes of poisoned animals can also become inflamed with a slight discharge. The muzzle may become inflamed, moist, and very sensitive, with a pink nose. Photosensitisation usually follows with death typically occurring 1 – 4 weeks after the appearance of symptoms. This slow and painful death is due mainly to liver insufficiency, kidney failure and, in some animals, myocardial damage and internal paralysis. (DPI NSW Primefact 673)

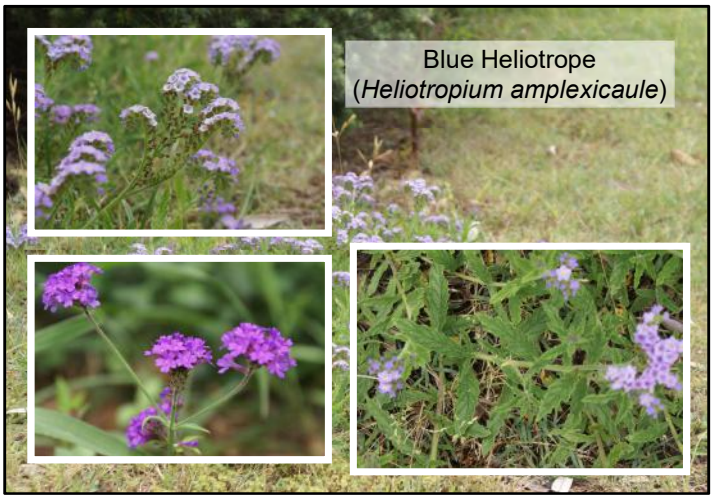
Photo 1: Significant red Lantana infestation in paddock at Kempsey NSW

Photo 2: Red flowering forms are more toxic to cattle.

Photo 3: A white flowering form identified at Tarbuck Bay south of Forster also highly

Photo 4: The common pink flowering form although not as toxic as the red, can still make cattle sick.

Refer to NSW WeedWise for control options, however physical and mechanical removal is a viable option for small infestations. Herbicide controls can include, cut stump, basal bark and various foliar spraying techniques.



Blue Heliotrope - *Heliotrpium amplexicaule*

Persistent weed native to South America.

If eaten by cattle liver damage and death may result.

Blue heliotrope is extremely drought-hardy, which increases its ability to persist and spread, and has made it a major agricultural weed in NSW. Blue heliotrope competes with desirable pasture plants and causes toxicity to stock. It is widespread and adaptable to a wide range of soil and climate types. It occupies more than 110 000 hectares in NSW.

Heliotrope is not very palatable to livestock, and consequently tends to be avoided; however, some individuals continue to eat it indiscriminately. Heliotrope will be eaten if no other feed is available.

Continual ingestion by livestock of large amounts of heliotrope plants (either fresh or dried), or of their seeds as contaminants in stock feed, can cause liver damage and reduced productivity. In order of susceptibility, horses, pigs, cattle, sheep and goats can all be affected, with horses being the most susceptible.

All affected livestock species may become jaundiced and experience varying degrees of photosensitisation.

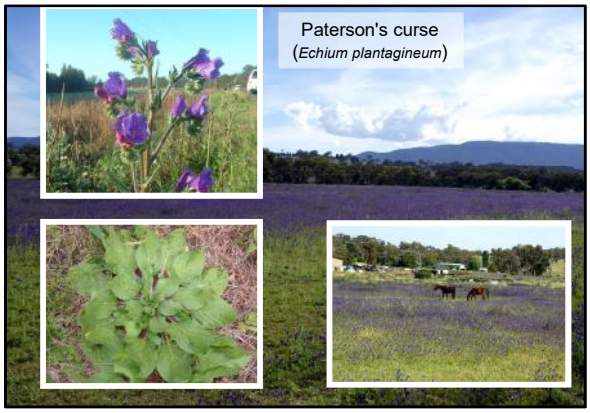
Photo 1: Perennial herb spreading or prostrate to 60cm

Photo 2: Mauve fiddle necked flowers often confused with verbena

Photo 3: Purple flowers of veined verbena can be mistaken for blue heliotrope

Photo 4: Sticky, hairy and fragrant stems and foliage are toxic

Eradication of blue heliotrope is difficult. Refer to NSW WeedWise for control options, however a combination of pasture, grazing and herbicide management can help control infestations.



Paterson's curse - *Echium plantagineum*

Native to western and southern Europe. It isn't persistent on the mid north coast and is in limited distribution.

Photo 1: Paterson's curse can dominate paddocks with the right environmental conditions .The most serious infestations occur in pastoral regions of New South Wales, Victoria, South Australia and in the south-west region of Western Australia where a winter rainfall climate dominates. It is in limited distribution in the MidCoast area and is most likely to be introduced in hay coming from other areas.

Photo 2: Purple to mauve flowers are produced progressively over the flowering season

Photo 3: Rosettes are formed in winter which is the best time for control

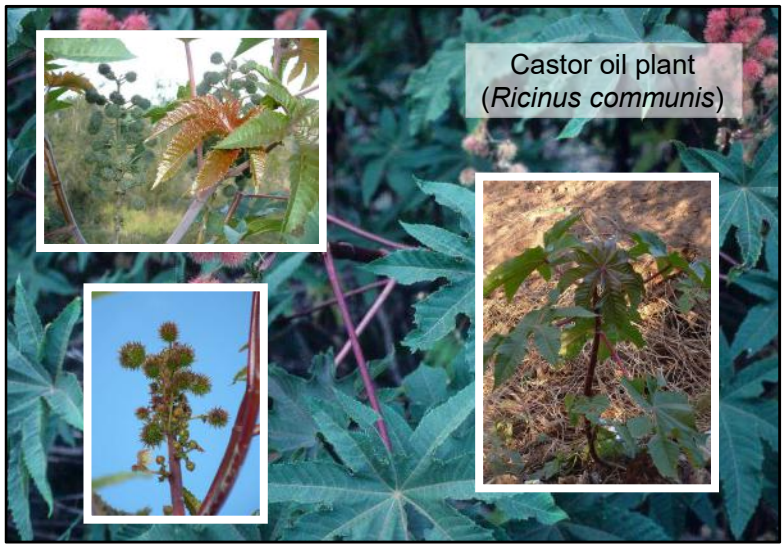
Photo 4: Do not keep animals in areas infested with Paterson's curse

Paterson's curse contains pyrrolizidine alkaloids. These alkaloids cause liver damage if livestock graze the weed for extended periods. Liver damage reduces livestock productivity, reduces their productive lifespan (increasing stock replacement rates) and may result in death. The damage is irreversible and cannot be treated.

It has been observed that the production of pyrrolizidine alkaloids in Paterson's curse increases at the full flowering stage. This suggests that the weed is the most toxic to livestock if grazed while it is flowering.

Susceptibility to poisoning by Paterson's curse varies with different livestock species. Pigs and horses are highly susceptible, cattle moderately susceptible and sheep and goats the least susceptible.Pigs and horses are non-ruminants and do not have the necessary micro-organisms in the stomach to break down the pyrrolizidine alkaloids.

Refer to NSW WeedWise for control options, however a combination of pasture, grazing and herbicide management can help control infestations.



Castor oil plant – *Ricinus communis*

Persistant shrub native to Africa and Eurasia. Castor oil plant was first introduced as an ornamental garden plant, is commonly found in disturbed areas, roadsides, landfill sites, creek banks and gullies.

The castor oil plant contains ricin a poison that is extremely toxic to livestock and humans and is capable of causing serious illness and death. The seeds of the plant contain a greater amount of toxin than the leaves.

Symptoms of poisoning in animals usually do not appear for a few hours or several days. Seeds cause gastrointestinal disorders and leaves tend to cause neuromuscular disorders.

Poisoning in livestock is rarely reported though, as castor oil plant is seldom grazed by stock when other pasture plants are available.

Photo 1: Large green palmate leaves with 7-9 deep cut, toothed lobes and red-brown stalks.

Photo 2: Woody segmented stem are dull while new leaf growth is generally of a glossy bronze colouring

Photo 3: The fruit is a prickly capsule borne in clusters with each capsule containing many brownish mottled seeds and eating only 2-8 seeds can be fatal.

Photo 4: Seeds have a high viability and seedling are easy to distinguish.

Refer to NSW WeedWise for a range of control options. Physical controls can be effective providing the root system is fully removed to prevent suckering. Local information indicates the herbicide Grazon Extra provides the best herbicide control.

Thornapples – *Datura species*

Numerous species of short-lived shrubs native to Central and South America.

Common and widespread in Australia the weed is found in disturbed agriculutral land, creek banks and semi-arid pasture. Also found as a contaminant of hay.

Thornapple is highly toxic to humans, capable of causing serious illness or death. All parts of the plant, particularly the flowers, seeds and nectar are poisonous, causing thirst, increased temperatures, rapid pulse, incoherence and convulsions.

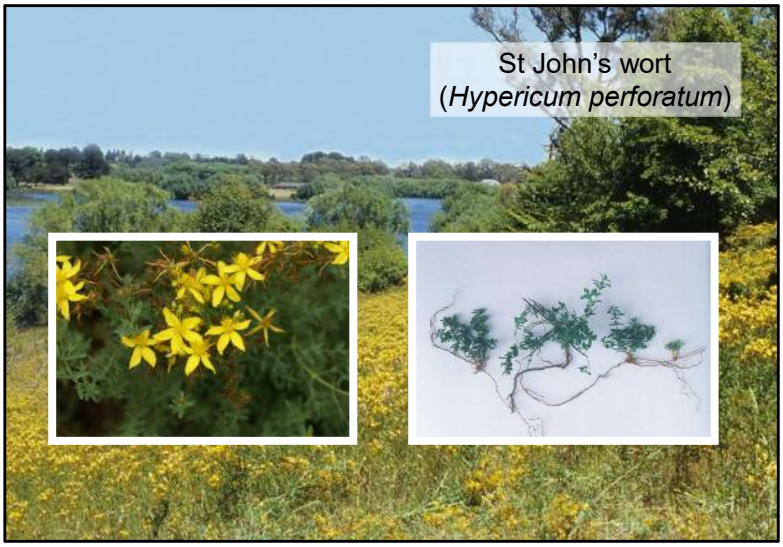
The entire plant is also poisonous to livestock and pets.

Photo 1: Flowers are tubular, white-lilac and 6-8cm long.

Photo 2: Leaves are green, multi lobed often with reddish stems.

Photo 3: The fruit is a large prickly oval shaped capsule with numerous spines of varying lengths. Pods desiccate to reveal many brown/black seeds.

Refer to NSW WeedWise for control options. Physical controls can be effective and various herbicides are registered for control.



St John's wort - *Hypericum perforatum*

Native to Europe and Asia. Some local native Hypericum species can be mistaken for St John's wort.

St John's wort is small shrub with bright yellow flowers. It contains a chemical called hypericin that can poison livestock.

Livestock that eat it become very sensitive to sunlight. Stock will only eat St John's wort when other feed is scarce. Minor exposure to St John's wort affects animal health as weight loss, fewer pregnancies, stillbirths, weak young, cows producing less milk, fewer lambs and calves surviving weaning.

Intense sunlight worsens the effects of hypericin. Access to shade helps protect animals. On sunny days, stock without access to shade can develop signs of acute poisoning in five hours.

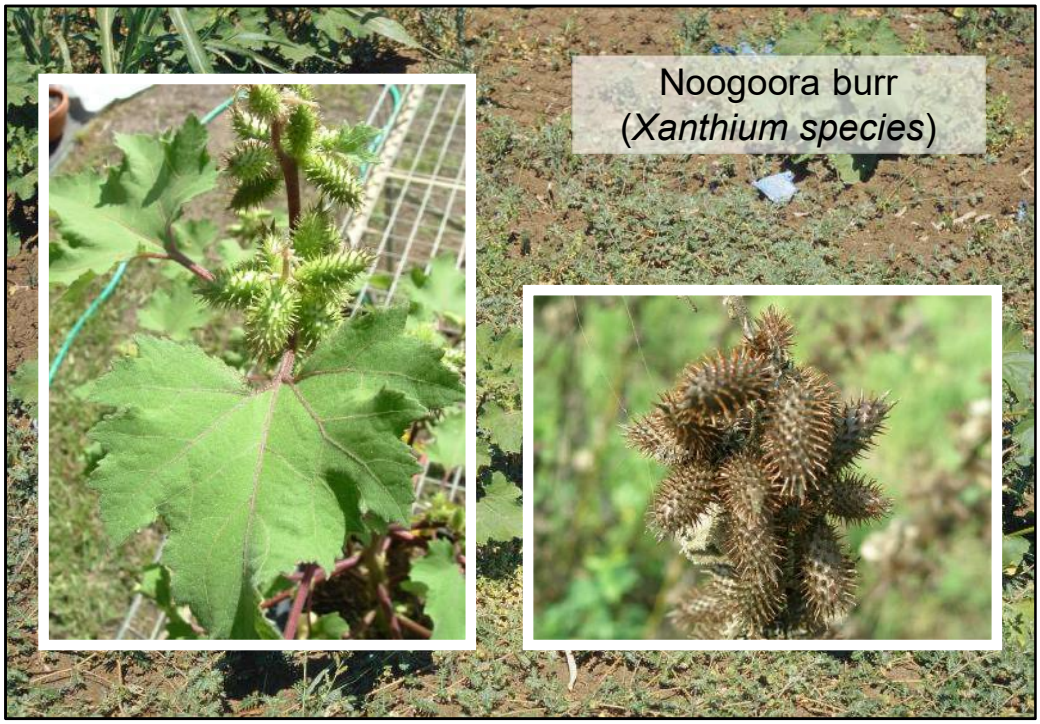
Early symptoms of acute hypericin poisoning include, agitation, rubbing the head against posts or trees, weak hind legs, panting, confusion, depression.

Photo 1: A large naturalised infestation in western NSW

Photo 2: Pretty yellow flowers and small green leaves.

Photo 3: St John's wort can produce new plants from lateral roots as well as seed.

Refer to NSW WeedWise for control options. Controls include prevention, pasture and grazing management, physical and chemical controls.



Noogoora burr - Xanthium species

Native to southern United States of America, Mexico and West Indies.. Noogoora burr is an annual plant that produces a woody burr. It is widespread through most of NSW. It is very similar to other Xanthium burr species.

Adult plants are not easily eaten by livestock, due to the roughness of the leaves and stems. Care needs to be taken when grazing to ensure there are no seedling plants, which are toxic to animals and could result in death.

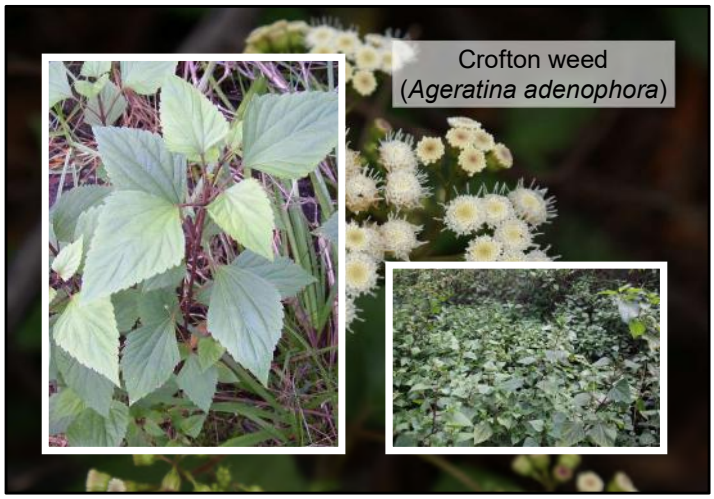
Plants are commonly found in riparian areas, along roadsides, in wasteland and in pastures or cultivated areas that are low lying or subject to periodic flooding. They are capable of forming extensive dominant stands in wet summers.

Photo 1: Plants grow best in deep fertile soils but are found on a variety of soil types.

Photo 2: Noogoora burr has grapevine-like leaves that grow alternately on the stems.

Photo 3: The fruit or burr of the Noogoora burr is hard, woody and more or less egg-shaped. It is densely covered with hooked spines. The burr turns brown when mature. The fruit of Noogoora burr was the inspiration behind Velcro.

Refer to NSW WeedWise for control options. Controls include prevention, pasture and grazing management, physical and chemical controls.



Crofton weed- *Ageratina adenophora*

Native to Mexico. Since its escape from ornamental cultivation in Australia around 1900, it has become widespread in Queensland coastal areas, on the New South Wales North Coast, and as far south as Wollongong.

Horses may preferentially graze the plant even when ample feed is available. Access to Crofton weed for as little as eight weeks can cause sickness.

The first sign of Crofton weed poisoning is coughing, made more pronounced by exercise. If horses are not removed from infested areas, further lung and possible heart damage occurs, leading to shortness of breath even when at rest. Death from respiratory failure is the eventual result, with affected horses often suddenly collapsing and dying during work.

Treatment of Crofton weed poisoning is unlikely to reverse the damage, so early detection of poisoning and removal from the weed infestation is essential. If you suspect poisoning, seek veterinary advice. Poisoned horses may never again be capable of work.

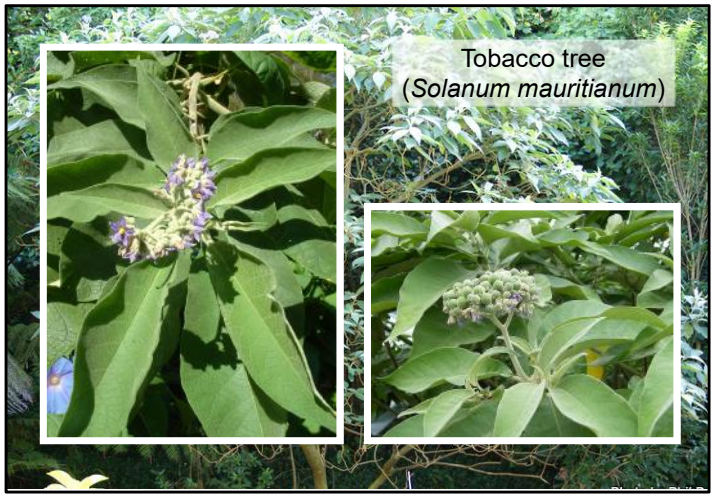
It is possible that Crofton weed is at its most poisonous during or soon after flowering. Pollen inhalation could be a factor in poisoning.

Photo 1: Crofton weed was first introduced to Australia as a garden ornamental for its showy white flowers

Photo 2: Diamond shaped green leaves and chocolate brown stems are a key identification feature

Photo 3: Crofton weed prefers damp shaped position but will happily grow in a wide range of situations.

Refer to NSW WeedWise for control options. Controls include prevention, pasture and grazing management, physical and chemical controls.



Tobacco tree- *Solanum mauritianum*

Native to South America, Tobacco tree is a densely woolly shrub or small tree and usually grows near the coast. It is tolerant of many soil types and quickly becomes established around plantations, forest margins, scrub and open land. While all *Solanum* species are often regarded as potentially toxic, in reality only a small number of them have been demonstrated to be poisonous under field conditions.

It is alleged that all parts of the tobacco tree are poisonous to humans, especially the unripe berries,[3] and furthermore that human fatalities have resulted from the consumption of the berries, and cases of fatal poisoning in pigs and illness in cattle have been reported in Queensland. (https://en.wikipedia.org/wiki/Solanum_mauritianum)

Photo 1: The plant has a life of up to thirty years, and can grow up to 10 m (33 ft) tall.

Photo 2: The flower is purple with a yellow center. Its large oval leaves are grey-green in color and covered with felt-like hairs.

Photo 3: The plant can flower year round but fruiting occurs in late spring to early summer.

Refer to NSW WeedWise for control options. Controls include physical, mechanical and chemical treatments.

Fireweed – *Senecio madagascariensis*

Native to South Africa, Serious weed particularly of coastal pastures in eastern Australia where it covers thousands of hectares. First recorded in the lower Hunter Valley in 1918.

Fireweed contains pyrrolizidine alkaloids and is poisonous. Horses, cattle, and other livestock are at risk. The greatest risk is from dried fireweed present in hay, chaff or slashed of mulched ground feed.

Symptoms of poisoning from fireweed include gradual weight loss, jaundice, fluid in the lungs, blindness, sudden death without any other indications, aimless wandering, muscular coordination, twitching of the head muscles, abdominal straining, rectal prolapse, and irritability.[4]

Photo 1: Losses result from decreased pasture production and reductions in growth rates of stock.

Photo 2: So widespread on the north coast it is only banned from sale.

Photo 3: Flowers all year, but mostly autumn to late spring

Photo 4: Main spread is by wind blown seed. Long distance spread occurs by seed in stock feed, on animals, or in mud on vehicles.

Refer to NSW WeedWise for control options. Controls include pasture and grazing management, physical, mechanical and chemical treatments.

Sixty percent of the toxic plants in Australia are native to this country and have their major economic effect on agricultural enterprises which produce livestock by grazing native pastures.

The toxic native species belong to about 70 of the over 200 native plant families in Australia. Families with more than 10 toxic species include the legumes (Fabaceae, Mimosaceae), the nightshades and tobaccos (Solanaceae), the spurges (Euphorbiaceae), the grasses (Poaceae), the cycads (Cycadaceae, Zamiaceae), the saltbushes (Chenopodiaceae), the riceflowers (Thymelaeaceae) and the buttercups (Ranunculaceae). http://anpsa.org.au/APOL7/sep97-4.html

Some plants that are known to be toxic and occur locally are:

Poison peach – Toxic to cattle, sheep and goats. Records of poisoning to animals have come from Tenterfield, Tweed, Lismore and Grafton districts, North Richmond and Grose Vale in Sydney.

Pimelea spp (Rice flower) – Pimelea poisoning is caused by ingestion of toxic varieties of the plant pimelea . Pimelea poisoning can be either acute or chronic.
Some species are more toxic than others. There have been recent recordings of local deaths to Pimelea in the Gloucester area.

Bracken Fern - The toxicity of the plant varies. The most toxic parts are the underground stems (rhizomes), next come the younger green fronds and the least toxic parts are the mature fronds. There are two situations where bracken fern poisoning commonly occurs, firstly when high quality pasture feed is in short supply, and secondly when the pasture is very lush and stock are looking for roughage. Frequently it is young stock, around 8 – 18 months of age, which are affected partly because they haven't learnt to avoid the bracken.

Rock fern – animals affected include cattle and sheep. Avoid grazing areas with rock fern. Deaths have occurred in sheep within three days of grazing rock fern.

Burrawang – Reports of poisoning have included wobbles or rickets mainly in cattle, but sheep and other animal are also susceptible.

White Cedar - Do not or plant white cedar trees near stock yards or place water troughs under them, as the toxin contained in the yellow seed can leach into the water.

Nardoo - Toxic to cattle, horses and sheep. In sheep symptoms vary from sudden death without any signs of illness to staggers combined with stargazing. Cattle show excitability, stumbling and falling over with muscle trembling with many reverting to normal after a variable period. Horses show excitability, depression, uneven gait and stepping high with the forelegs,head nodding, yawning and whinnying. Sometimes recumbency and death occur after three to seven days of sickness.

Black Bean - The seeds should be regarded as poisonous and not eaten as there are numerous well documented cases of poisoning. Aborigines have been reported as eating the seeds but only after careful preparation involving leaching in water and roasting. Everist (1974).

Batswing Coral Tree
Occurs naturally in both the inland and coastal areas of northern Australia. The greyish or yellowish corky bark is poisonous. Clusters of orange red flowers in the dry season and followed by brown pods which contain orange or red seeds which are also poisonous.

Tie Bush (Wikstromia spp) - The leaves of this species are poisonous to cattle. The fruits are more poisonous than the leaves. Cases have been reported of children dying after eating the fruits of this plant. Everist (1974).

Cunjevoi (Alocasia spp) – All parts of the plant are known to be poisonous and can induce severe gastric irritation, vomiting and diarrohea.

Corkwood (Duboisia spp) – Animals affected are cattle, horses and pigs. Sheep seem to be relatively resistant.
Records indicate sporadic deaths, mainly in cattle, with only a few affected in a herd, indicating selective browsing of certain animals.

Many plants that grow in Australia are potentially poisonous to animals. Plants listed in this slide are only but a few of the hundreds of introduced poisonous plants found in home gardens around the country.

Identify all the plants on your property and research to find out if they pose a risk to your livestock, children or pets.

Some poisonous species are:

Foxglove (Digitalis purpurea) – Very poisonous. Toxic to livestock and pets. Has been recorded as causing death in children.

Wisteria – Can cause mild to sever gastric conditions, vomiting and diarrohea followed by collapse.

Cherry laurel (Prunus laurocerasus) – Fruit, seed and leaves are very poisonous. Symptoms include rapid abdominal pain and convulsions followed by breathing difficulties, loss of balance and in extreme cases death.

Daphne – Poisoning of pigs and horses has been reported. Symptoms include vomiting, blood stained diarrohea, weak rapid pulse, collapse and death.

Arum lily – Symptoms include gastritis, diarrohea, and in severe cases exhaustion, shock and death.

Oleander – Animals affected include humans, cattle, horses, sheep and goats. Most cases of poisoning refer to cattle. Symptoms include reduced blood circulation, wide open pupils. Death is due to heart and or breathing failure.

Yellow Oleander – all parts of the plant, particularly the kernels are very poisonous and can cause death.

Bushmans poison – all parts of the plant, particularly the milky sap are very poisonous and can cause death due to heart failure.

Angels Trumpet - all parts of the plant, particularly the flowers, seeds and nectar are very poisonous and can cause death.

Sago palm – Fruit, seeds and young leaves are very toxic and can cause death. Toxins

produced are a strong carcinogen.

Avocado tree - All parts of avocado trees are poisonous to animals but the leaves contain the highest levels of toxins. Although rare deaths in animals have occurred in Australia.

Azalea - All parts of azalea plants are very poisonous to pets and livestock and can cause death.

To avoid poisoning, we need to learn what the known poisonous plants look like, based on knowledge generated by past experience and scientific studies of the subject.

Severity of poisoning can depend on exposure levels

The Do's

- Identify all the plants on your farm. Control and remove all known poisonous plants
- Maintain vigilance for poisonous plants at all times, particularly after drought has broken.
- Examine samples of hay to look for weed contaminants prior to purchase This is when you find out what was really in any imported fodder
- Source good quality fodder from reputable producers and suppliers as a rule.
- Maintain a 'sacrificial' paddock / location for feeding. This reduces spread, and increases likelihood of early detection and control of weedy /poisonous species.
- Plan for appropriate stock and pasture management with local environmental conditions in mind.
- Maintain your fences in good repair, don't allow animals off your property to unwittingly graze poisonous species

The Don'ts

- Avoid putting water troughs under trees – particularly white cedars as the seeds will leach toxins and affect the drinking water
- Avoid allowing access to house gardens as they may contain toxic plants
- Avoid grazing animals on species that have had herbicide applied. This may affect the palatability of plants an animal wouldn't ordinarily eat
- Avoid keeping animals in paddocks with known poisonous plants that can kill them and limit your stocks exposure to species that can cause bloat or stomach upsets

A range of controls exist for management of poisonous plants that include Pasture and grazing management, physical, mechanical and herbicide controls.

Consult NSW WeedWise for expert advice and chose the best control technique that is suited to your weed, situation and environment.

Mid Coast 2 Tops Landcare Connection

No Space for Weeeeeeeeeeeeds

NSW WeedWise
Website and App

- Profiles and control methods
- Registered herbicides
- Biosecurity duties
- for over 300 weeds in NSW

- NSW WeedWise Website and App

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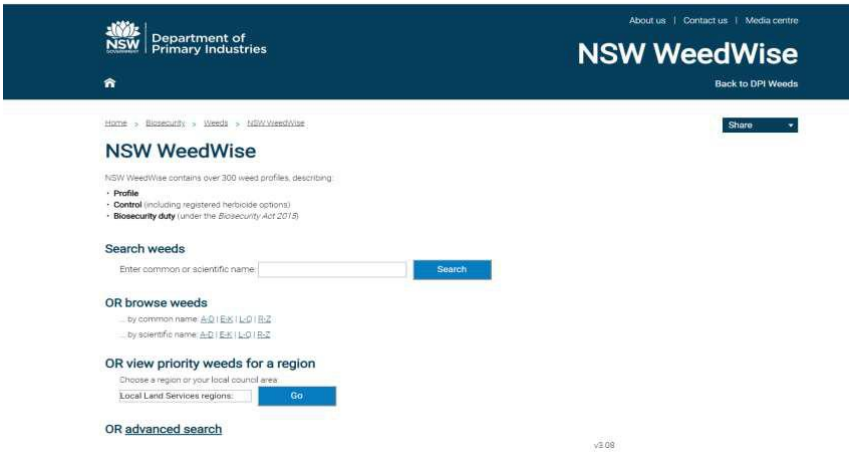
Mid Coast a Tops Landcare Connection

No Space for Weeeeeeeeeeeeds

NSW WeedWise website

weeds.dpi.nsw.gov.au

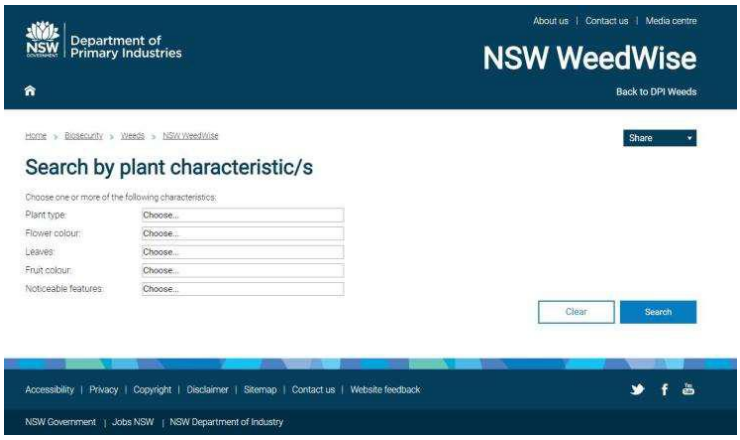


Mid Coast & Tops Landcare Connection

No Space for Weeeeeeeeeeeeds

NSW WeedWise website

NEW: Search for a weed using it's plant characteristics



NSW WeedWise website
NEW: Search for a weed using it's plant characteristics

Printing factsheets: you can choose to print

- Weed profile
- Registered herbicides
- Biosecurity duties
- Weed images

The images are a resource on their own - you can save and reuse the images for any landcare projects.

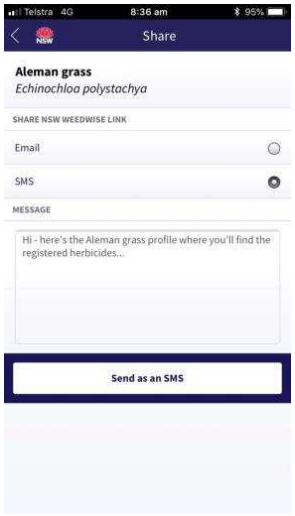
Mid Coast & Tops Landcare Connection

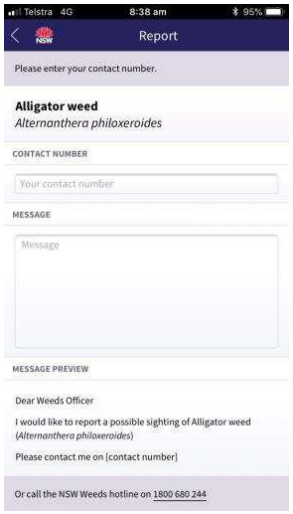
No Space for Weeeeeeeeeeeeds

NSW WeedWise App

In the phone app you can

- view profiles, controls and biosecurity duties
- share weed profiles
- report weeds to your weeds officer





In the phone app you can

- view profiles, controls and biosecurity duties
- share weed profiles
- report weeds to your weeds officer

Mid Coast & Tops Landcare Connection

No Space for Weeeeeeeeeeeeds

NSW Weed Control Handbook 7th Edn

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Each LLS region has 5000 copies

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Weed control handbook