

Cape tulip (*Moraea* species)

November 2015



Cape tulip is declared under the *Natural Resources Management Act 2004*. It is prohibited to move or sell plants or goods carrying plants or plant parts. The landholder must control plants.

Overview

Cape tulip is the common name applied to two highly toxic and declared plants. One-leaf Cape Tulip (*Moraea flaccida*) and Two-leaf Cape Tulip (*Moraea miniata*) are herbaceous perennial weeds that were introduced from South Africa as garden plants.

Cape tulip is a garden escapee which now poses a significant risk to landholders throughout southern Australia.

Both Cape tulips are difficult to control with herbicides due to the dormancy of corms below the ground. It is therefore important to keep your property free of Cape tulips and to recognise and destroy new infestations before they become established.

Description

One-leaf Cape Tulip (*Moraea flaccida*) is a perennial herb which grows from a corm that sprouts annual leaves and flowers to 60 cm high.

Each plant has only one leaf which is flat, 1–2 cm wide and up to 1 m long. Flowers are 3–5 cm in diameter with six petals that can vary from salmonpink through orange to yellow in colour.

The fruit is a three-valved capsule up to 5 cm long which starts green and turns brown when mature.

Seeds are brown in colour, irregular in shape and discharged from the summit of the capsule. Each capsule may contain up to 150 seeds. Corms are 1–2 cm in diameter, white in colour but covered in a brown fibrous tunic. Roots are fine, shallow and fibrous.

Two-leaf Cape Tulip (*Moraea miniata*) is a perennial herb that grows from a corm surrounded by a black tunic and sprouts to 60 cm high with annual leaves and flowers. Each plant has 2–3 leaves, which are flat, 1–2 cm wide and up to 1 m long. The flowers are smaller and more numerous than those of One-leaf Cape Tulip, 2 to 4 cm diameter with six pink petals whose yellow bases are dotted with green. The root system is fine, shallow and fibrous with a central corm.





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Two-leaf Cape Tulip does not produce seeds, even though small capsules are sometimes formed after flowering. Instead, large numbers of cormils (tiny corms 1–2 mm long) are formed in the angle of each leaf and also around the corm at the base of the plant.

Distribution

Both Cape tulips can be found on agricultural land (especially permanent pastures), roadsides, wasteland and remnant bushland.

Scattered patches of Cape tulip occur in the wetter rural and peri-urban districts of the Adelaide and Mount Lofty Ranges in soils that range from sands to heavy waterlogged clays in higher rainfall areas.

Life cycle

Corms germinate after the autumn rains and new corms already begin to form before the flowers appear in September.

Cape tulips grow quickly through winter and soon after they produce distinctive salmon pink to orange flowers providing a small window of opportunity for effective control. The aerial growth dies by November.

Corms can stay dormant in the soil for 5–10 years until a favourable season and up to 60% of corms may not germinate each season. It is estimated that Two-leaf Cape Tulip can accumulate up to 20,000 cormils per square metre.



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Impacts

All parts of both One-leaf and Two-leaf Cape Tulip are toxic to all types of grazing animals. The poison is a glycoside that causes loss of appetite, weakness and depression, blindness, dysentery, scouring and paralysis of the hind legs and, in extreme cases, death. In some stock, about a kilogram of fresh leaf material is enough to cause death overnight. Sheep can be affected by the toxins and at present there is no treatment readily available.

The plant remains toxic even when dry, so contaminated hay can also be a problem. Every landholder needs to be aware of the legal implications of selling or moving contaminated hay as well as the consequences for the unsuspecting buyer.

Stock can become accustomed to grazing on infested pasture and may only show mild effects, as they know not to eat the plants. Over time, this results in desirable pasture species being replaced by Cape tulip due to selective grazing which further decreases stock carrying capacity.

Hygiene

Cape tulips are spread through infested fodder, soil or machinery. Hay or silage cut from infested paddocks is probably the most common method of dispersal.

Seeds and corms will adhere to wool and the feet of animals and seeds are still viable after passing through stock.

Dried plants, with seed capsules intact, are also spread by wind and running water.

Movement of gravel for road-making from infested areas can also spread corms and seeds.

Control methods

The successful control of Cape tulips depends on several factors. Firstly, it is important to determine which species is present, as the timing for Two-leaf Cape Tulip is usually earlier than One-leaf Cape Tulip.



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Secondly, as with most weed control, it is important to eradicate the small patches first and prevent spread by seed or corms.

Another important factor in the control of Cape tulips is corm dormancy. Both species produce corms that have a high dormancy. During the summer this dormancy gradually declines so that by the beginning of April most will sprout if moisture is present.

Because of the presence of these dormant corms or cormils, herbicide treatments will need to be applied over several seasons before any significant reduction is noticed.

Seasonal conditions can alter the timing by 2–3 weeks from year to year so it is essential to regularly monitor the growth stages of the corms.

To check for treatment suitability, landholders are encouraged to dig up corms to see that the old corm is shrivelled and the new corm forming. Since not all corms germinate every year, known locations of infestations must be monitored regularly.

It is important to understand that a high percentage of corms will germinate into active growth after fire. Control following a fire event can therefore be quite effective.

Foliar spray

Cape tulips can be controlled using a foliar spray method, with either a knapsack sprayer or boom spray equipment for larger infestations. For more widespread infestations, it is recommended that landholders spray using a selective herbicide that will translocate throughout the root system of the plant.

One of the most effective treatments is the broadleaf herbicide, metsulfuron methyl, mixed with a good quality penetrant and water at the appropriate label rates. The use of this herbicide is ideal in a pasture situation as it will only affect plants that are broadleaf if applied at the correct rates. Note that metsulfuron methyl is suitable ONLY in grass pastures, as it will affect clovers and medics. Some trees and shrubs are also sensitive to this herbicide through root uptake.



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Treatments should be applied from early emergence to September, regardless of species, as this is the stage of corm exhaustion (when bayonet shoots first appear and well before flower buds) and control will be most effective.

As a guide, control should be programmed around the following times:

One-leaf Cape Tulip: August – September

Two-leaf Cape Tulip: July – August

Note: The correct rate for herbicide application can change according to different circumstances.

This information is intended as a general guide only. When using herbicides, ALWAYS follow the instructions on the label.

Wiping

Herbicide can be applied using a sponge, weed tongs or a wick applicator. This method is commonly used in bushland situations where the risk of off-target damage from spraying is almost certain.

Herbicide can also be applied in broad-acre farming situations using a blanket or wick applicators.

Blanket wipers or rope wick applicators consist of a series of ropes, blanket or carpet that are suspended above the ground on a boom and saturated with a herbicide, usually glyphosate based. As the boom travels along the paddock, taller weeds such as Cape tulip come into contact with the blanket, herbicide is wiped onto the plant and the pasture below remains unaffected.

Hand removal

Control by manual removal is difficult due to many cormils formed around the basal corm and in the leaf axils and flowers. The top also tends to break off leaving the corm in the soil.

For the odd plant, small patches or where Cape tulip is growing in a bushland setting, it is possible to carefully grub the plant making sure the entire root system and all corms are extracted and then burnt.

Plants can be effectively removed using a knife or a trowel.

Slashing and mowing are ineffective and may increase spread by dispersing cormils.

Declarations

The following sections of the NRM Act apply to Cape Tulip in the Adelaide and Mount Lofty Ranges region:

- 175 (2) Cannot transport the plant on or anything with the plant in it**
- 177 (1) Cannot sell the plant**
- 177 (2) Cannot sell any produce / goods carrying the plant**
- 182 (2) Landowner must control the plant on their land**
- 185 NRM authority may recover costs for control of weeds on roadsides from adjoining landowners**

More information

Please contact your local Natural Resources Centre for further information, advice and assistance in controlling Cape tulip.

Black Hill

115 Maryvale Road, Athelstone 5076
T: 08 8336 0901

Gawler

8 Adelaide Road, Gawler South 5118
T: 08 8523 7700

Willunga

5 Aldinga Road, Willunga 5172
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