

Primary Industries, Water, and Environment

Service Sheet

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African feather grass (*Pennisetum macrourum* Trin.)

Identification and Characteristics

African feather grass is a large tussock-forming, rhizomatous grass found in small patches throughout Tasmania. It can grow up to 2.0m high, and dense infestations can completely eliminate all other plants.

African feather grass is a native of South Africa. It was first discovered in Australia in 1904. Since that time it has spread to all states except Queensland. It is also a troublesome weed in New Zealand.

It is primarily a coloniser of road sides, banks of rivers and creeks and waste areas where adequate moisture is available. It requires full sun; rarely will a dense infestation occur within a shady bushland environment.

It forms an extensive fibrous root system to approximately 1.0m in depth. It also produces many stout rhizomes, or underground stems, which may grow up to 2.0m in length and 5mm thick. These rhizomes give rise to new shoots around the parent, enabling a single plant to quickly colonise the surrounding area.

Leaves may arise from the base of the plant, or from erect, cylindrical stems. The leaves can grow to 1.2m long, and are 10 to 13mm wide. They are light green on the upper surface, and grey-green below. Ribbing is quite pronounced on the upper

surface. They are slightly curved in cross-section, and the margin, or edge, has fine serrations which can be felt as the finger is drawn from the tip to the base.

African feather grass produces a long, thin flower head, or inflorescence, in late spring to summer. It ranges from 75 to 300mm long, and 10 to 20mm in diameter. It is generally a pale brown to straw colour, often with a purplish tinge. Prominent bristles approximately 10mm long protrude out from the stem of the inflorescence.

This distinctive long, thin form of the inflorescence readily distinguishes African feather grass from the similar tussock-forming pampas grass.

Seed is released from the parent in late summer and autumn. The seeds are yellow to brown in colour and 5 to 7mm long. They have a number of tiny barbed bristles attached to them, allowing them to easily lodge in animal fur and wool.

Eventually all the seeds fall away from the parent, leaving a characteristic bare flower stalk.

Distribution

The plant's impact in all states at present is minimal, with only isolated infestations remaining after several campaigns to reduce its incidence.

These campaigns were instigated after the plant was found to be rapidly spreading throughout parts of Victoria.

In Tasmania, African feather grass has been found in the Derwent and Huon Valleys, particularly near New Norfolk. Each known infestation has been subjected to management practices in the past and eliminated, however plants occasionally appear in other areas.

The plant is mainly found along roadsides, waste areas, banks of small creeks and rivers and other areas where moisture is available for most of the year. It occasionally invades poorly maintained pasture. Young plants exhibit a great need for a constant supply of moisture, however mature, well established plants are capable of withstanding long periods of drought.

Dispersal

African feather grass is capable of spreading by seed and vegetative material, however infestations in Australia are mostly spread by vegetative means, with only minor impact by seed.

Vegetative spread is carried out by the plant's stout rhizomes. These rhizomes may grow up to 1.0m from the parent, and give rise to many small plants along its length. Rate of spread is somewhat dependant upon soil types, with greatest reach in lighter, sandy soils, and slower spread in heavy clay soils.

Any activity that leads to disturbance of soil around African feather grass may allow small sections of rhizome to be picked up and moved around in soil and mud on machinery and implements. Strict hygiene practices such as thorough cleaning of equipment that comes into contact with the plant or soil should be followed whenever any work is carried out in the vicinity of African feather grass plants.

African feather grass produces large quantities of seed, although seed production varies from year to year. The seed is easily transported by animals due to the barbed bristles on the seed husk. It can also be moved on the wind for short distances, or carried along on water, such as periodic flooding of roadside channels.

The seeds exhibit a high level of viability, however dormant longevity is restricted to a few years. Seedling establishment levels are quite low, possibly due to the seed's requirement for a fine soil cover and adequate moisture for successful germination.

Economic significance

Mature plants are capable of spreading quickly due to their vigorous rhizome system. Once large infestations form, they become an ideal haven for rabbits and feral cats. They also present a significant fire hazard, and restrict movement around the plants, including blocking access to waterways.

Large plants are also capable of totally blocking waterways and channels by trapping silt and debris. Dense stands can completely exclude all other types of flora.

The leaves are quite tough and coarse, and low in nutritional content. They are rarely grazed by stock, even in times of low available feed.

Useful Properties

African feather grass has proved a useful plant for soil stabilisation, particularly around road verges.

Status under the *Weed Management Act 1999*

African feather grass is a declared weed in Tasmania, largely due to its actual and potential impacts on agricultural productivity. As such, its importation, sale and distribution are prohibited. In addition, because its occurrence across Tasmania is not yet large, all land holders are required to eradicate this plant from their properties. The legal responsibilities of landholders and other stakeholders for this declared weed are specified in a statutory weed management plan available from the DPIWE.

Control

There are a number of techniques available that offer a high degree of success in controlling African feather grass. Regardless of which method is employed to initially kill the plant, follow-up management of the site is imperative to prevent seedlings or any remaining rhizomes from re-establishing the infestation.

A key component of this is to establish a plant cover to provide competition to emerging African feather grass plants. Arable land may be sown to permanent pasture, which will provide direct competition for nutrients, water and light, plus allow grazing pressure.

Replanting with suitable shrubs or trees will assist ongoing management in waste areas and roadsides, if space permits. Where replanting is undesirable, continual monitoring for several years and swift action where necessary is the best alternative.

Mechanical control:

Excavation

Small African feather grass plants can be removed by use of a spade or mattock. Care must be taken to ensure all soil is removed down to the level of the deepest rhizomes, as rhizome material missed can allow the plant to quickly regenerate. The removed soil should be thoroughly cleaned of all root and rhizome fragments, or alternately piled in an area that can be easily monitored for regrowth.

Larger plants may need heavy machinery such as an excavator to allow physical removal to be effective. Once again, all soil down to the deepest rhizomes must be removed and placed where constant monitoring will enable early detection of any regrowths.

Excavation may also be employed to reduce the size of infestations. This is particularly useful where a dense stand makes complete chemical coverage difficult. Preliminary excavation may reduce the bulk of the plants, allowing easier follow up with cultivation or a herbicide treatment.

Cultivation

In the case of small infestations on arable land, control by mechanical means is feasible if it is possible to undertake a succession of repeated cultivations. Each cultivation breaks up the rhizome system and encourages the buds to sprout. If cultivations are repeated often, the rhizomes will eventually exhaust all their energy reserves and die.

Cultivation may be carried out at any time of the year, however best results are achieved over summer.

All machinery used around African feather grass must be carefully cleaned afterwards to ensure no fragments of rhizomes are transported from the site to other areas.

Grazing

Heavy grazing pressure in areas where African feather grass is present will reduce the number of seedlings and shoots arising from rhizomes.

Grazing is not an effective technique in reducing the impact of larger plants.

Chemical control:

Chemical control is an effective option for management of African feather grass. Any herbicides used must be applied to give a complete coverage of all foliage. On particularly large plants, herbicide application is easier if the bulk of the plant material is removed by burning or slashing, then herbicide applied to the regrowth when it is approximately 400mm high.

Herbicides should be applied when the grass is growing actively in late spring to early autumn. Large infestations may need follow up applications. Treated plants should always be checked the following season and any regrowth treated.

The herbicides glyphosate (sold as a range of products including Roundup[®], Glyphosate 360[®], Weedmaster[®]) and flupropanate (Frenock[®]) are effective for use as foliar sprays. Care must be taken using both these products, as glyphosate will harm most plants contacted, whilst flupropanate kills other grasses such as annuals and native grasses, whilst not affecting broadleaved plants. Flupropanate is a slow acting herbicide, and a complete kill may not be evident for many months after application.



Bee Careful !

Some herbicides are toxic to bees. As a general rule, avoid applying herbicides when and where bees are foraging. Always read the label.

Disclaimer:

These herbicide recommendations are made subject to the product being registered for that purpose under relevant legislation. It is the user's responsibility to check that registration or an off-label permit cover the proposed use. Always read the herbicide label. If in doubt, check with the Registrar of Chemical Products, Department of Primary Industries, Water and Environment. Statewide Freecall 1300 368 550.

Herbicide recommendations for African feather grass.

Type of Application	Herbicide (Active ingredient)	Commercial products (Content of active ingredient)	Rate of commercial product per L	Comments
Foliar Spray	glyphosate	Roundup Biactive [®] (360g/L) Roundup [®] (360g/L) Glyphosate 360 [®] (360g/L) Roundup Dry [®] (680g/Kg)	13 mL/L “ “ 7 g/L	Apply to give a complete cover of all foliage between late spring and early autumn. Avoid run-off or spray drift entering waterways. As above. Flupropanate is very slow acting - results may not be evident for several months after application.
	flupropanate	Frenock [®] (745g/Kg)	9 mL/L	

Note: Addition of adjuvants to most herbicides alters their effectiveness. Carefully consult each product's label for specific directions before adding any adjuvant.