



**LANDSCAPE**  
**SOUTH AUSTRALIA**

# Common Native Grasses

A South Australian  
regional guide



Port Augusta

Blanchetown

Marion Bay

Victor Harbor

## More information

For more information about this guide or managing native grasses, contact your local landscape board. Find their details at:

**[www.landscape.sa.gov.au](http://www.landscape.sa.gov.au)**.

The contact details for the landscape boards covered in this guide are:

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Estimated figures for grazing are an indication only. Variation may occur between grass species, seasonal differences and land conditions. Grazing information has been adapted from publications listed in the references.

Seek advice before grazing existing native pastures as state native vegetation regulations may apply.

### **June 2023**

Front cover: Kneed wallaby grass *Rytidosperma geniculatum*

# Contents

About this guide	1
Benefits of native grasses	2
Sowing, establishment and harvesting	3
Identifying native grasses	5
How to use this guide	6
Native wheat grass - <i>Anthosachne scabra</i>	9
Australian salt-grass - <i>Distichlis distichophylla</i>	11
Weeping rice-grass - <i>Microlaena stipoides</i>	13
Knottybutt grass - <i>Paspalidium constrictum</i>	15
Common love grass - <i>Eragrostis brownii</i>	17
Poa grasses - <i>Poa</i> species	19
Long grey-bread grass - <i>Amphipogen caricinus</i>	21
Bottlebrush grass - <i>Enneapogon nigricans</i>	23
Foxtail mulga grass - <i>Neurachne alopecuroidea</i>	25
Wallaby grasses - <i>Rytidosperma</i> species	27
Reg-leg grass - <i>Bothriochloa macra</i>	29
Windmill grass - <i>Chloris truncata</i>	31
Silky blue-grass - <i>Dichanthium sericeum</i>	33
Umbrella grass - <i>Enteropogon acicularis</i>	35
Brush wire-grass - <i>Aristida behriana</i>	37
Hairy panic - <i>Panicum effusum</i>	39
Rigid panic - <i>Walwhalleya proluta</i>	41
Lemon scented grass - <i>Cymbopogon ambiguus</i>	43
Kangaroo grass - <i>Themada triandra</i>	45
Spear grasses - <i>Austrostipa</i> species	47
Appendix A - Spear grasses	49
Appendix B - Wallaby grasses	53
Appendix C - Botanical structure of grasses	56
Glossary	57
References	58



**Bottlebrush Grass**  
*Enneapogon nigricans*

# About this guide

Whether you are a hobby farmer, commercial grazier, lifestyle landholder, bush block owner, volunteer or viticulturist/orchardist, this guide can help you identify 20 of the most common native grasses found in the area of South Australia covered by this guide (see adjacent map).

This guide also contains basic guidelines for establishing and harvesting native grasses, as well as information for graziers about the nutritional value of native grasses.

Kangaroo grass  
*Themeda triandra*

Map area includes the following four South Australian herbarium regions. See individual grass pages for more detailed information about their current and historic occurrence.

## SL: Southern Lofty

The Adelaide Plains, Fleurieu Peninsula and much of the Mount Lofty Ranges up to the Barossa.

## MU: Murray

The eastern flanks of the Mount Lofty Range across the flats to the River Murray.

## NL: Northern Lofty

From the Barossa to north of Jamestown and along the western flanks of the Mount Lofty Ranges.

## YP: Yorke Peninsula

The whole of the Yorke Peninsula.

For more information about the SA State Herbarium regions visit the Seeds of South Australia website. [spapps.environment.sa.gov.au/SeedsOfSA/](http://spapps.environment.sa.gov.au/SeedsOfSA/)



# Benefits of native grasses

## Why we need to protect and encourage native grass ecosystems

Native grassy ecosystems in South Australia were widespread but are now among our most threatened habitats due to historical broad scale clearing for agriculture. They were once managed by our First Nations people to be productive and biodiverse country for hunting and foraging. The protection and restoration of native grass communities in our agricultural and peri-urban landscapes is critical for their long-term sustainability.



Knottbutt grass *Paspalum constrictum*

## Benefits

- Being perennial and adapted to our climate and soils, most native grasses are frost and drought tolerant.
- If not overgrazed (by livestock or other herbivores), they provide cover for our fragile soils and maintain a healthy soil biology compared to introduced annual grasses that die out over summer and leave the soil unprotected.
- Compared to introduced pasture and weed grasses, a diverse native grassland provides more appropriate food and shelter for the huge range of native wildlife that evolved with them.
- Because they produce significantly less biomass and fuel load than introduced grasses and stay green most of the year, native grasses provide a reduced fire threat. They also recover quickly after fire making them an excellent choice for building resilience into fire-prone landscapes. These reasons make them a good option for viticulture/horticulture and for lifestyle and regenerative landholders.

## Tips for graziers to improve native grass management

- Get to know what native grasses are on your property and when they are actively growing.
- Most native grasses are either cool season growers (C3) or warm season growers (C4). Having both C3 and C4 grasses in a pasture provides growth and cover year round.
- Native pastures can be managed to maintain their productivity and conservation values. Use rotational grazing to avoid over-grazing native pastures.
- Regularly exclude livestock and rest native grass paddocks after grazing to ensure they recover.
- Rest some paddocks each year during flowering and seed set to encourage a greater recruitment of new plants to reinvigorate your pasture.



# Sowing, establishment and harvesting of native grasses

In South Australia there are 259 species of native grasses from 70 genera. Best practice site preparation, sowing and management of native grasses greatly depends on a range of variables including the historical land use, weed species, soil type, rainfall and species selection. Seek advice from a native grass specialist before commencing. Keeping existing native grasses is almost always a better option than reseeding. It's important to know that on both public and private land, you will need permission to harvest native grass seed from the owner or government agency.

## Site preparation

Appropriate site preparation before sowing native grasses is the key to success. Native grasses do not compete well during establishment. Site preparation techniques include top soil removal, solarisation, mouldboard ploughing, repeated mechanical removal and repeated herbicide applications. Reducing the seed bank of fast growing competitive weeds species is crucially important to allow time for the slower growing native grasses to establish without competition.



## Seeding

Seeding techniques range from the use of specialised sowing equipment to casting seed by hand. Good seed to soil contact on a well prepared seed bed is important. Factors to consider in deciding when to sow include seasonal rainfall patterns, long term climate forecasts (El Niño, La Niña), whether the grasses are warm season (C4) or cool season (C3) species and whether there has been appropriate site preparation.



## Establishment

Perennial native grasses are generally slow to establish compared to annual weeds or crops. Many factors influence germination rate, emergence and establishment of native grasses including but not limited to, rainfall, soil type and soil temperature. Patience is needed because it may take six months or more before sown native grasses emerge. Herbivores, such as kangaroos and rabbits, can quickly devour emerging grasses, so appropriate herbivore control or fencing must be considered.



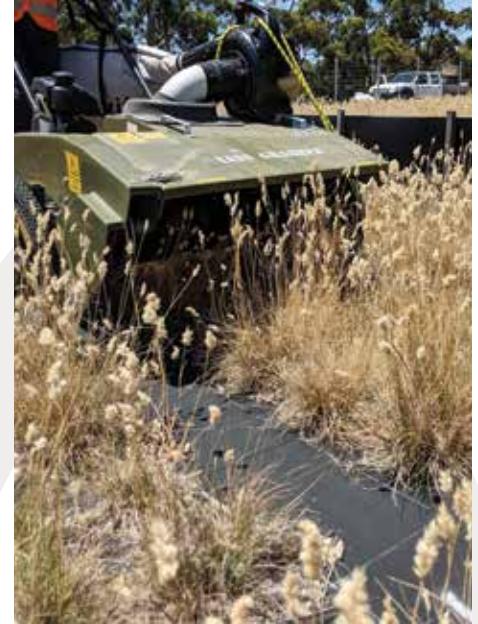
## Management

Native grasses do not respond well to frequent cutting or low grazing and must be rested for long periods between events. As a general rule, do not cut grasses below 100mm unless thatch reduction is needed, or if advised to by a professional. Thatch is the build up of too much dead leafy material close to the ground that inhibits native seedling establishment. Short periods of intense grazing should be used rather than continuous set stocking. Importantly, allow grasses to drop their seeds at least every second year. Controlled burning is also becoming a useful tool in managing native grasses which have naturally evolved with fire.



## Harvesting

Most native grasses have staged seed ripening, which means all of the seeds do not ripen at the same time. Harvesting can be undertaken over multiple events as ripening occurs using a range of techniques, from specialised equipment to hand collection.



# Identifying native grasses

## How do I tell a native from an introduced grass?

Grass ID can be tricky. Most natives are perennial. This means they live multiple years with some living for decades. Being perennial means that they can produce green leaves early in the growing season as they don't need to grow from seed every year. They generally stay greener for longer into the growing season as they have a bigger root system than an annual grass. They are also generally larger grasses and usually form clumps or tussocks.

Introduced grasses can be either annual (usually only live for less than one year) or perennial so we need some other way to identify natives from introduced grasses.

## Did you know that grasses have flowers?

We often use flowers to help us identify plants. Grasses do have flowers but they are very small and hard to see. Each individual grass flower is hidden within bracts that are hidden within more bracts, just like Russian 'Matryoshka' stacking or nesting dolls. Bracts are small modified leaves that stack up to hug and protect the flower.

To make grass identification even harder, every grass species has an almost identical flower, so even if you could find it, it would not be very useful.

## Why use seed heads to ID grasses?

Seeds and seed heads rather than flowers are used to identify grasses. The first step is to get to know the shape of the seed head. The mature seed head is used because many identification clues are only visible as the seeds develop. The two sets of bracts develop shapes and decorations unique to each grass species only as the seed grows and matures.

Grasses have many different looking seed heads. However, within each group (genus) of grasses, most of the species will have the same basic seed head in terms of shape. So, once you recognise the seed head, it may be all you need to know, or it will at least narrow your search for a species.

## Common botanic terms used in this guide

There are many thousands of grasses with almost exactly the same-looking hidden flowers. Each layer of bracts has its own name. These differ in appearance but are always in the same 'layer'. The outer layer of bracts are called glumes and the inner layer are called lemmas.

The below terms are used regularly throughout this Guide. For more botanic terminology, see the Glossary on page 57.

**Bracts (outer)** = glume

**Bracts (inner)** = lemma

**Seed group** = spikelet

**Seed head** = inflorescence

**Awn** = needle or bristle-like extension to the seed

**Seed head stalk (from base of plant to top of seed head)** = culm

Foxtail mulga grass  
*Neurachne alopecuroidea*



# How to use this guide

Use this guide as a picture matching book to help you on your grass identification journey.

## STEP 1

Wait until your grass seed heads are fully mature to best match to the seed head category diagrams on page 7 of this guide.

## STEP 2

Ask yourself these questions about the shape of the seed head:

1. How many branches are there in the seed head?
2. How are the branches in the seed head arranged?
  - one set of side branches?
  - branches upon branches?
  - branches all starting from the same place on the stem?
3. Are there awns visible in the seed head, or not?
4. Are there very obvious hairs or extra big bracts in the seed head, or not?

## STEP 3

Compare the shape of your seed head with the six seed head category diagrams shown on page 7 and the list of grasses on page 8.

## STEP 4

Use the appropriate logo to go to the pages featuring that seed head.

## NOTE

This book shows some common native grasses from the central region of SA. It is not a comprehensive grass ID guide.



Lemon scented grass  
*Cymbopogon ambiguus*

# Seed head categories



**Linear:** Seeds attached along the stalk length



**Linear branched:** Seeds attached to branches along the stalk length



**Cylindrical:** Compact seed head at top of the stalk



**Fingers:** Seeds attached to branches at tip of the stalk










**Tumbleweed:** Seeds attached to wide spread branches along the stalk length



**Complicated:** Complex seed heads with inconsistent branch lengths



# Seed head categories

				Page
Native wheat grass	<i>Anthosachne scabra</i>	C3		9
Australian salt-grass	<i>Distichlis distichophylla</i>	C4		11
Weeping rice grass	<i>Microlaena stipoides</i>	C3		13
Knobbybutt grass	<i>Paspalidium constrictum</i>	C4		15
Common love grass	<i>Eragrostis brownii</i>	C4		17
Poa species	<i>Poa species</i>	C3		19
Long grey-bread grass	<i>Amphipogon caricinus</i>	C4		21
Bottlebrush grass	<i>Enneapogon nigricans</i>	C4		23
Foxtail mulga grass	<i>Neurachne alopecuroidea</i>	C3		25
Wallaby grass	<i>Rytidosperma species</i>	C3		27
Reg-leg grass	<i>Bothriochloa macra</i>	C4		29
Windmill grass	<i>Chloris truncata</i>	C4		31
Queensland blue-grass	<i>Dichanthium sericium</i>	C4		33
Umbrella grass	<i>Enteropogon acicularis</i>	C4		35
Three-awn grass	<i>Aristida behriana</i>	C4		37
Hairy panic	<i>Panicum effusum</i>	C4		39
Rigid panic	<i>Walwhalleya prolata</i>	C4		41
Lemon scented grass	<i>Cymbopogon ambiguous</i>	C4		43
Kangaroo grass	<i>Themada triandra</i>	C4		45
Spear grass	<i>Austrostipa species</i>	C3		47



Windmill grass *Chloris truncata*

# Native wheat grass

*Anthosachne scabra*



Habit: delicate tussock



Seeds



Seed head: spreading awns herring bone like

WEED  
Brome grass *Bromus species*



Flower head

Seed has 2 tips as well as a long awn





# Native wheat grass *Anthosachne scabra*

**Also called:** common wheat grass, rough wheat-grass. **Previously called:** *Elymus scaber*



<b>Key ID Features</b>	The young seed head has many long green awns close <b>together all pointing the same way</b> . It becomes straw-coloured when mature with spreading awns on either side of the stalk like a <b>herring bone pattern</b> . Each seed has a flattened tapering awn that won't roll in your fingers. The mature awn is edged and feels scratchy like a tiny saw in one direction and smooth in the other.
<b>Description</b>	A delicate tussock, which looks similar to weedy annual grasses. Leaves have flat blue-green blades like long narrow triangles about 6-8 cm long that stick out at right angles at intervals up along the main stem. Upright fine tall seed head stalks, which can droop at the ends. The narrow seed head is flattened into one plane.
<b>Height</b>	Basal leaves to 10 cm high. Seed head stalks from 30 to 100 cm high.
<b>Growing season and flowering time</b>	Perennial, short-lived grass (2-3 years) which readily reseeds. At least some leaves near the base remain green throughout the year. Most active leaf growth in winter and spring. Flowering in late spring and early summer.
<b>Distribution</b>	<b>SL:</b> Common and widespread but often overlooked in grassy woodlands and grasslands because of its small tussock and slender stems. <b>MU:</b> Widespread. <b>NL:</b> Widespread but often overlooked. <b>YP:</b> Widespread but often overlooked. Widely scattered in southern South Australia. Also in WA and Qld, NSW and Vic.
<b>Similar native species and weedy look-a-likes</b>	<b>Weed:</b> brome grass ( <i>Bromus</i> species): Seed with 2 small tips as well as awn. Annuals. Leaf sheath at least partly fused into a cylinder. Flowering in winter, spring. Many brome grasses also have a scabrid awn in one direction.
<b>Forage value</b>	Moderate tolerance to grazing. Selectively foraged if set stocked and may decline at higher stocking pressures. Rotational grazing encouraged. Remove stock and rest pasture during spring for flowering and seed set. Moderate to high forage value. Metabolisable energy 7.4 MJ/Kg DM. Crude protein 10%. Digestibility 52%.

# Australian salt grass

*Distichlis distichophylla*



Habit: stiff, with upright stems

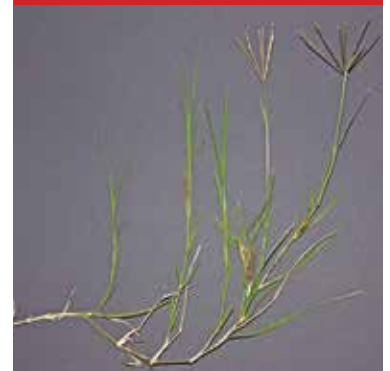
Habit: stiff, with leaves  
on a flattened plane



Seed head: like flattened almonds

WEED

Bermuda or couch grass  
*Cynodon dactylon* var *dactylon*



Habit; running stem

Flower head with 5  
radiating spokes



# Australian salt grass *Distichlis distichophylla*



**Also called:** emu grass, pineapple grass

<b>Key ID Features</b>	Leaves look a little like couch grass. However, the green leaves, about 5 cm long, are <b>stiff and extend out on opposite sides of the stem in a very regular pattern</b> . They are distinctly only in the one <b>flattened plane</b> . The seed head is NOT like a couch grass with umbrella spikes of seeds. The seed head is shaped almost like a slightly <b>flattened almond</b> .
<b>Description</b>	A long-lived running grass, stems grow under and creep across the ground with regular upright stems to about shin high along the length. Can form mats or patches in the right conditions. Leaves sharp pointed. Stems yellow or straw-coloured. This grass grows almost always in salty soils and while often coastal, is also found inland along slightly saline watercourses. This grass can help prevent erosion in salt scalded areas.
<b>Height</b>	Basal leaf is to about 20 cm high. Seed head stalks do not extend much above the same height.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth is when the soil is wet. It can flower spring through summer if conditions are suitable
<b>Distribution</b>	<b>SL:</b> Found near coasts, at the edges of salt marshes and on low dunes and inland in saline soils. <b>MU:</b> Inland in saline soaks and in damp saline soils. And around salt marshes. <b>NL:</b> Inland in saline soaks, creeklines and in damp saline soils. <b>YP:</b> Coastal and found inland in saline soaks and in damp saline soils. Most of the southern regions of South Australia in the right soils. Also in NSW and Vic.
<b>Similar native species and weedy look-a-likes</b>	<b>Weed:</b> There are other creeping weedy grasses such as lawn couch grass ( <i>Cynodon dactylon</i> var. <i>dactylon</i> ) but they do not have the regimented leaf form. <b>Native:</b> beautiful little couch ( <i>Cynodon dactylon</i> var. <i>pulchellus</i> ) occurs mainly along river banks and is almost identical to lawn couch grass. The native has 2 or 3 seed groups, whereas the weed has 4 to 6 seed groups. <b>Native:</b> salt couch ( <i>Sporobolus virginicus</i> ) is mainly found on the coast.
<b>Forage value</b>	Tolerant to grazing but has a low forage value due to prickliness and low digestibility. Metabolisable energy 6.5 MJ/Kg DM. Crude protein 10.2%. Digestibility 37-47%. Avoid grazing waterlogged or sensitive environments (i.e. wetlands, watercourses).

# Weeping rice-grass

*Microlaena stipoides*



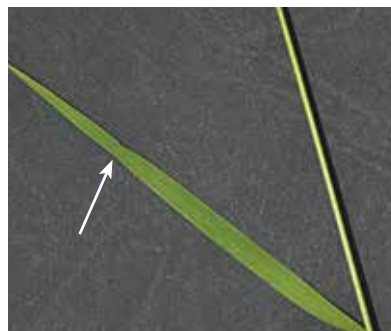
Habit: low tussock

Seeds



Seed head

Ligule: white collar  
where leaf meets stem



Leaf; 'Pinch point' near the tip



# Weeping rice-grass *Microlaena stipoides*

**Also called:** weeping grass, meadow rice Grass, rice Grass



<b>Key ID Features</b>	Seed head stalks are very slender with a delicate arching or weeping appearance. In the right light, the stalk often has tiny shiny white 'bracts' near the base of each seed group. Seed groups hang from short stalks. Many of the deep green leaves will have a small indentation, <b>pinch point</b> , or 'waist' (see photo) on the leaf edge about one centimetre from the blade tip. The <b>collar where the leaf meets the stem</b> is called the ligule and it is noticeably <b>white in colour</b> .
<b>Description</b>	A green perennial tussock with low growing habit. Basal leaves vary from ankle to shin high under good moisture conditions. Some leaves grow up the seed head stalk. Leaves usually close to the ground but, in wetter soils, leaves and seed head stalks can grow more erect. Most green and active in winter and spring. Like many grasses they will put leaves and seed heads out at almost parallel to ground level if grazed or mowed.
<b>Height</b>	Basal leaves vary from 10 to 30 cm high. Seed head stalks can be up to 70 cm long but usually spread sideways at an angle to about 30 cm high.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in winter. Flowering mainly in spring to summer. Growth will slow or stop with long exposure to sun or hot weather.
<b>Distribution</b>	<b>SL:</b> Found in damp shady sites in woodlands and some stringybark forests. <b>MU:</b> Rarely seen. May occur in damp shady spots. <b>NL:</b> In damp shaded sites. <b>YP:</b> Not common. Widespread in all mainland states.
<b>Similar native species and weedy look-a-likes</b>	<b>Weed:</b> annual veldt-grass ( <i>Ehrharta longiflora</i> ). Paler more yellowy-green leaves, no awns, seed head stalks erect. The leaves thicker and smooth. <b>Weed:</b> couch grass ( <i>Cynodon dactylon</i> ). The leaves can look a bit like weedy couch grass prior to flowering (see page 11).
<b>Forage value</b>	Moderate to high tolerance to grazing when actively growing. Keep short to maintain quality and production by rotationally grazing. Use strategic rests to allow plants to set seed in spring and/or autumn. Seeds can damage eyes and mouths of animals and contaminate fleeces so be cautious of grazing mature plants especially with sheep. Metabolisable energy 9.8-11.4 MJ/Kg DM. Crude protein 15-25%. Digestibility 66-75%

# Knottybutt grass

*Paspalidium constrictum*



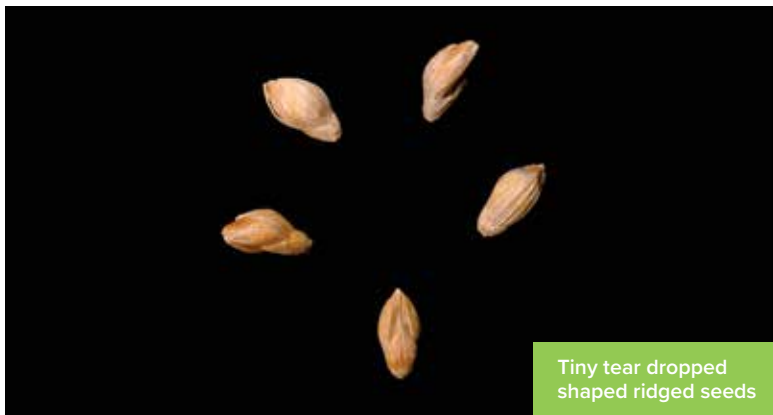
Habit: a dense plant with upright leaves



Immature seed head



Mature seed head



Tiny tear dropped shaped ridged seeds

# Knottybutt grass *Paspalidium constrictum*

**Also called:** box grass, slender panic. **Previously called:** *Setaria constricta*



<b>Key ID Features</b>	The upright seed head stalks start within the framework of the leaves and extend up above the leaves as they mature. Along the main seed head stalks are short side branches held close to the stem. Seeds are clustered on these short side branches. Seeds are shaped like <b>tiny teardrops</b> , the size of sesame seeds, but <b>seeds have ridges or stripes</b> . Each side branch ends with a <b>small stiff awn</b> (hand lens).
<b>Description</b>	A dense plant with many upright leaves to shin high and upright seed head stalks to knee high in good seasons. The leaves have an obvious mid-rib and thickened edges. They can fan out from the base in good seasons. Leaves, especially near the base, can have scattered hairs. The gnarly rootstock is more obvious than in most other grasses, hence the common name knotty butt.
<b>Height</b>	Basal leaves to 15 cm high. Seed head stalks from 10 to 60 cm.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in early summer. Flowering in early to mid-summer and in response to big rain events.
<b>Distribution</b>	<b>SL:</b> Found on the Adelaide Plains, grasslands and grassy woodlands in the foothills. <b>MU:</b> Along the eastern flanks and plains of the AP/SL hills and northwards, decreasing in lower rainfalls and poorer soils. <b>NL:</b> Scattered in grassland and grassy woodlands. <b>YP:</b> In native grasslands and grassy woodland on northern edge of region. Found in most parts of South Australia. Also in all mainland states.
<b>Forage value</b>	Very palatable to livestock; generally regarded as one of the most useful of the native grasses.

## Common love-grass

*Eragrostis brownii*



Habit: compact tussock with taller upright seed head stalks.



Immature seed head



Mature seed head

### Key ID Features

*Eragrostis* species have a distinct flower group when young, each looks like a bit like a **slater bug** – long, a bit flattened but with rounded edges and with fine cross lines. *Eragrostis brownii* has a **delicate flowering head** widely spaced and angled out from branches and a **purple-ish or slaty-grey green tinge** to the flower parts. No awns. *E brownii* has 6 to 20 seeds packed in closely overlapping and each ‘seed’ has an obvious green line down the middle.

### Description

Perennial compact tussock with leaves that grow from the base sideways or upright. Leaves hairless, flat when young but sometimes scrolling inward into a roll with bristly feeling tips with age. Leaves feel rough to the touch on the top side and can have a thickened edge. There may be a few long fine hairs at the joint where the leaf blade meets the stem. There are only a few upright seed head stalks to knee or thigh high. Grows in higher rainfall areas in most soil types.



# Common love-grass *Eragrostis brownii*

**Also called:** Brown's love-grass



<b>Height</b>	Basal leaves to about 50cm high. Seed head stalks to 75 cm high.
<b>Growing season and flowering time</b>	Perennial, most active in summer, flowering in early to mid-summer and in response to big rain events.
<b>Distribution</b>	<b>SL:</b> Not common. Found in the cool spots, in low-lying areas damp soils, and those adjoining streams and swamps. Yorke and <b>MN:</b> Rare in MN and top half of YP. <b>MU:</b> perhaps extinct.
<b>Similar native species and weedy look-a-likes</b>	Many species of <i>Eragrostis</i> have slate grey-green purple tinges to the flowers. There are many <i>Eragrostis</i> species, both native and weedy. If the plant has dish-like glands on the leaf edges (hand lens) or a yellow band around the stem under the nodes it is a weed, but not all weedy species have this. <b>Native:</b> Brown's love-grass ( <i>Eragrostis brownii</i> ). Inflorescence branches finally spread into pyramid shape, flower groups 1.5 cm long, spaced along branches. <b>Native:</b> swamp cane-grass ( <i>Eragrostis australasica</i> ). A very tall (head high) and stout caney grass with typical lozenge flower groups. Flood outs. <b>Native:</b> mallee love-grass ( <i>Eragrostis dielsii Mulka</i> ). Grass is short-lived (almost an annual), stems often spreading out along the ground, narrow sparse inflorescence looks one sided with all the flower groups curving up at the very ends of the stem , flower groups much longer at 5 cm and more cylindrical than other species, grows in sand, and limestone-based soils. Spikelets can have pink purple or brown tinges. <b>Native:</b> close-headed Love-grass ( <i>Eragrostis elongata</i> ). Inflorescence remains very narrow; strong grape-purplish tinge to flower groups 2 cm long, in close clusters or bunches but sparsely along stem; in seasonally wet soils. <b>Native:</b> infertile Love-grass ( <i>Eragrostis infecunda</i> ). Stems are wiry but very fine, and also growing out on short side roots, flower groups 1.2 cm long, inflorescence much shorter and compact and shiny green flower groups not very lozenge shaped; in rich damp soils. Mainly South Australian.
<b>Forage value</b>	Survives well under light grazing and occurs at significantly higher frequencies under planned rest than continuous grazing. Most palatable when young and leafy; it does not withstand close grazing but seeds profusely and regenerates rapidly if lightly grazed. Young growth is both nutritious and palatable, while mature forage is of low to reasonable quality. Consumption of large quantities of the plant (particularly the young growth) within 2-6 weeks after rain can lead to photo-sensitisation in sheep and cattle.

# Poa grasses

*Poa* species



*Poa crassicaudex* habit: upright narrow leaves



*Poa labillardieri* habit: numerous narrow leaves that flop outwards

**WEED**  
Rice millet  
*Piptatherum miliaceum*



Habit: large tussock



*Poa crassicaudex*  
mature seed head



*Poa crassicaudex*  
upright habit



*Poa labillardieri*  
immature seed head



*Poa labillardieri*  
mature seed head



Mature seed head



Many short glumes

# Poa grasses *Poa* species



<b>Key ID Features</b>	<p>Open multi-directional seed heads with main side branches in whorls. Seeds sparse along the main stems but rather crowded towards the end of short end branches. No awns. <i>Poa</i> species often have fine, <b>thready web-like hairs</b> showing around the base of the small seed.</p>
<b>Description</b>	<p><i>Poa</i> tussocks have many <b>upright narrow leaves</b> packed together which can <b>flop outwards</b> at the ends like a fountain. These 3 <i>Poa</i> species are perennial upright tussocks to thigh high with numerous closely-packed tall narrow flat or rolled leaves. Seed head stalks to thigh or waist high.</p>
<b>Height</b>	<p>Varies with species but most with seed head stalks up to 100 cm high.</p>
<b>Growing season and flowering time</b>	<p>Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in late spring to early summer. Flowering in early to mid-summer.</p>
<b>Distribution</b>	<p><b>SL:</b> All 3 common <i>Poa</i> species occur in higher rainfall areas of the Mount Lofty Ranges and heading north. <b>MU:</b> All close to the eastern flanks of the Mount Lofty Ranges while Thick-stem Poa and Tussock Poa extend out onto the plains. <b>NL:</b> Mainly scattered Thick-stem Poa and Tussock Poa. <b>YP:</b> Mainly scattered Thick-stem Poa and Tussock Poa.</p>
<b>Similar native species and weedy look-a-likes</b>	<p><b>Native:</b> There are 3 common native inland species in the area covered by this guide:  <b>Thick stem poa</b> (<i>Poa crassicaudex</i>). Most wide spread but mainly South Australian. Very narrow / rolled long finely hairy leaves and stems but the nodes are smooth. Stems striped. There can be honey coloured 'hard wax' looking tear-drop shapes at the bases of the stems (at ground or just underground).  <b>Clelands poa</b> (<i>Poa clelandii</i>) Sheaths (bottom part of leaves) and other parts often with purplish tinges. Stems slender but oval shaped, not round in cross section. Tips of the leaves abruptly narrow to make a shape like the front of a rowboat (keel shape).  <b>Tussock poa</b> (<i>Poa labillardieri</i> var. <i>labillardieri</i>) Leaves flat, or folded when fresh, margins inrolled when dry; leaves not hairy although they can feel a bit like fine sandpaper.  <b>Weed:</b> rice millett (<i>Piptatherum miliaceum</i>) is a large tussock with stout stems, long leaf blades, busy heads, many small glumes and awns &lt; 1cm.</p>
<b>Forage value</b>	<p><i>Poa</i> species can persist under constant grazing; survival is probably helped by the retention of dead foliage which reduces acceptability to livestock. Fresh young growth is palatable and readily grazed.</p>

## Long grey-beard grass

*Amphipogon caricinus* var. *caricinus*



Habit: Many upright seed head stalks



Habit: Tightly packed leaves

Mature seed head



Spreading Greybeard Grass  
*Amphipogon strictus* seed head





# Long grey-beard grass *Amphipogon caricinus* var. *caricinus*



<b>Key ID Features</b>	A tightly packed group of leaves and many upright seed head stalks. Young seed heads often have purple tinges. Mature seed heads are <b>dirty yellow-straw-brown cylinders with a very prickly look</b> from many prickly awns poking out from the cylinder. Each seed can be pulled out of the head by its <b>5 prickly awns</b> , each of which is hairy along its margins.
<b>Description</b>	Tough tightly-packed tussock to about knee high with a grey-green or yellow-green look. Leaves rolled and a bit prickly to touch. This species has short closely packed underground modified stems so there can be many upright seed head stalks in the tussock. Sometimes with purple tinges. Often grows in areas with sandy soil or poor red earth soils, sometimes rocky soils.
<b>Height</b>	Basal leaves 20 to 60 cm high. Seed head stalks well above the leaves to 80 cm high.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in early summer. Flowering in early to mid-summer.
<b>Distribution</b>	Almost always in woodlands and grasslands of the eastern and western foothills but rare-ish. <b>MU</b> : Close to the flanks of the ranges and also across much of the drier areas, found in woodlands, mallee, and grasslands. <b>NL</b> : Scattered in remaining woodlands. <b>YP</b> : Scattered in remaining woodlands. Widely scattered in South Australia. Also found in all mainland States.
<b>Similar native species and weedy look-a-likes</b>	<b>Native</b> : spreading greybeard grass ( <i>Amphipogon strictus</i> var. <i>setifer</i> ) has a similar look, but more spread out, often running along the ground on longer underground modified stems, leaves softer; The seed head is more of a tear-drop pom-pom to 2cm long rather than a cylinder, grows on heavier soils in wetter sites.
<b>Forage value</b>	Sheep may nibble fresh green shoots when available but the plant is generally of very low palatability and is grazed only during a feed shortage.

# Bottlebrush grass

*Enneapogon nigricans*



Habit; small upright tussock



Immature seed head



Seed with multiple awns



Mature seed head

# Bottlebrush grass *Enneapogon nigricans*



**Also called:** shuttlecock grass, octopus grass, bottlewashers, nine-awn grass, dark nine-awn grass

<b>Key ID Features</b>	The seed heads start green, maturing with a black tinge, and drying dirty-straw colour with lots of ‘stubble’ showing through the seed head cylinder. Each seed can be pulled out from the head by the shortish awns. Each seed has <b>many (9 to 14) upswept awns</b> around the edge of the seed. [Enneapogon means “9 awns”]. The seed and its short awns look like an <b>octopus with tentacles</b> or a <b>badminton shuttlecock</b> .
<b>Description</b>	A small tussock with a <b>very upright look</b> , with both the tussock leaves and the seed head stems erect. There are usually a number of very upright seed head stalks. Leaves are often a yellow-green.
<b>Height</b>	Basal leaves to 10 cm high. Seed head stalks to 30 cm high.
<b>Growing season and flowering time</b>	Perennial. Is often a relatively short-lived (2–3 years) plant but will persist by regenerating from seed each year and after spring or early summer rainfall. Tussock is not very visible in winter but some leaves near the base will remain green throughout the year. It makes rapid active leaf growth in early summer. Flowering in late spring and early summer.
<b>Distribution</b>	<b>SL:</b> Common on both flanks of the SL in open grasslands and grassy woodlands but not in high rainfall forest or Stringybark heaths. <b>MU:</b> Widespread and now quite common along roadsides. Grows in dry woodlands; mostly on poor or sandy soils and soils over limestone in the mallee. <b>NL:</b> Found from Gawler north in to the mid-north and northwards. <b>YP:</b> Not known on YP. Widespread in South Australia. Also in Qld, NSW and Vic.
<b>Similar native species and weedy look-a-likes</b>	<b>Native:</b> There are other native <i>Enneapogon</i> species; all of which have the ring of awns around the top of the seed. Often confused with foxtail mulga grass, ( <i>Neurachne alopecuroidea</i> ) see page 25. <b>Weed:</b> Many weedy grasses have a similar flower head but none have the “octopus” or “shuttlecock” shaped seeds.
<b>Forage value</b>	Moderate tolerance to grazing but can decline if continuously grazed and will not persistent under heavy grazing in set stock system. Moderate forage value. Metabolisable energy 6.9 MJ/Kg DM. Crude protein 12.5%. Digestibility 50%.

# Foxtail mulga grass

*Neurachne alopecuroidea*



Habit; low tussock, tall erect seed head stalks

Immature seed head



Seeds: hairy with two short awns

Mature seed head





# Foxtail mulga grass *Neurachne alopecuroidea*

**Also called:** black-head grass



<b>Key ID Features</b>	The young seed head is green, but matures to a <b>hairy black and silvery cylinder with small stiff outward curved “teeth”</b> showing through the hairs. Most of the seed group parts are hairy. The seed is striped, hairy, and can be pulled out by its <b>two short awns</b> .
<b>Description</b>	Usually a small very tidy closely packed low growing tussock. Leaves are blue, short, and look ribbed, sometimes with a twist or curl. The seed head stalk is held high well above the tussock, usually emerging sideways and <b>making a sharp bend at a node</b> to grow straight up.
<b>Height</b>	Basal leaves to 10 cm high. Seed head stalks to 30 cm high.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in winter. Flowering in late winter and spring.
<b>Distribution</b>	<b>SL:</b> Common in areas of poor or sandy soils and moderate rainfall. <b>MU:</b> Scattered, mainly recorded in hilly areas along eastern flanks of the Mount Lofty Ranges. <b>NL:</b> Scattered, mainly in hilly areas. <b>YP:</b> Scattered in YP. Widespread in southern South Australia. Also in Vic. and WA.
<b>Similar native species and weedy look-a-likes</b>	<b>Native:</b> Can be confused with the native bottlebrush grass ( <i>Enneapogon nigricans</i> ) see page 23. <b>Weed:</b> Many weedy grasses have a similar flower head but few are the black and silver colour and none have the stiped hairy seed with short awns.
<b>Forage value</b>	Tolerance to grazing unknown. Metabolisable energy 7.9 MJ/Kg DM. Crude protein 16.1%. Digestibility 55%.

# Wallaby grasses

*Rytidosperma* species



Habit: typically erect smallish tussocks  
Example is *Rytidosperma caespitosum*



Seed head: typically cylindrical.  
Example *Rytidosperma setaceum*

Seeds: typically straw-coloured with fluffy white hairs. Example *Rytidosperma geniculatum*



# WEED

Pussy tail grass  
*Pentameris pallida*



Habit: soft hairy on many parts

Flower head:  
many tiny  
golden flowers



Seed hairs  
not in rings

# Wallaby grasses *Rytidosperma* species

Previously called: *Danthonia* species, *Austrodanthonia* species



See Appendix B for more examples

<b>Key ID Features</b>	<p>The most reliable way to recognise a wallaby grass is to use details of individual seeds and their white hairs. <b>The seed must be mature because all the rings and scatterings of white hairs are fully developed only when the seed is ripe.</b> Photos on this page illustrate these key features.</p> <p>Young seed heads are green and white, sometimes with purplish stripes or hue. Seeds are always <b>straw-coloured</b> with fluffy <b>white hairs</b> (often in 3 distinct rings). Seeds have one main “real” awn and two other shorter awns. The main awn matures to have a honey brown or dark brown corkscrew section immediately above the seed. Different species have variations on this basic pattern.</p> <p><b>See Appendix B for more on wallaby grass ID.</b></p>
<b>Description</b>	<p>Wallaby grasses are erect smallish tussocks mostly to about shin high but can be thigh high. Leaves can be hairless or hairy and vary from fine to broad. Some leaves near the base remain green throughout the year. Seeds have visible white hairs when mature. When ripe, each seed can be pulled out from the bracts by pulling gently on the awns.</p>
<b>Height</b>	<p>Basal leaves vary from 10 to 50 cm high depending on species. Seed head stalks vary from 30 to 80 cm high depending on the species.</p>
<b>Growing season and flowering time</b>	<p>Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in winter to early spring. Flowering in spring to early summer. Can produce a second lot of seed heads after good summer rains.</p>
<b>Distribution</b>	<p><b>SL:</b> 13 species, widespread. <b>MU:</b> 11 species, along the west side and plains of the Murray River. <b>NL:</b> 11 species, widespread. <b>YP:</b> 5 species, widespread. Widespread in southern South Australia. Also in all mainland States.</p>
<b>Similar native species and weedy look-a-likes</b>	<p><b>Weed:</b> Pussy tail grass (<i>Pentameris pallida</i>, <i>Pentaschistis pallida</i>) is similar to a number of wallaby grasses especially <i>Rytidosperma setaceum</i>. It is a small hairy tussock that has intricate seed heads with many tiny glumes. It is shiny golden when young and rusty brown when maturing.</p>
<b>Forage value</b>	<p>Responds to rotational grazing, rest pasture after rains in spring/autumn for seedling establishment. Persists and seeds prolifically unless very heavily and continuously grazed. Moderate to high forage value. Metabolisable energy 7.1-9.6 MJ/Kg DM. Crude protein 7.5-10.8%. Digestibility 50-65%.</p>

# Red-leg grass

*Bothriochloa macra*



Habit: low spreading tussock

# WEED *Paspalum dilatatum*



Habit: broad leaved with spreading growth



Flower head: young flowers



Immature seed head



Seed: with small round pit



Seed head: showing twisting seed awns



Seed head



Flattened striped seed



# Red-leg grass *Bothriochloa macra*



**Also called:** red Grass

<b>Key ID Features</b>	Leaves, leaf nodes, seed head stalks and the narrow seed heads usually have a <b>burgundy</b> or claret tinge. Each seed is <b>hairy</b> , has a <b>twisty honey to rusty coloured awn</b> and can be decorated with stripes. Each seed always has a <b>small round pit</b> on one side of the seed (hand lens).
<b>Description</b>	Red-leg grass is a tough tufted and spreading perennial tussock with coarse broad leaves forming low spreading clumps to ankle high. Leaves can have a blue-green tinge, and be slightly hairy. Upright seed head stalks may have a few leaves. Seed head stalks erect and held high above leaves, sometimes with a distinct bend at a lower node. The seed heads have several finger-like branches with narrow hairy seed groups at the tips.
<b>Height</b>	Basal leaves 20 to 40 cm high. Seed head stalks, upright, rigid and clear of the leaves up to 60 to 80 cm high.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in early summer. Flowering in early to mid-summer, but can flower at all times during the year.
<b>Distribution</b>	<b>SL:</b> Not common but probably overlooked in grassy woodlands and grasslands. <b>MU:</b> On the western flanks of the Mount Lofty Ranges and out onto the plains. <b>NL:</b> Scattered throughout. <b>YP:</b> Rare or rarely collected. Grassy ecosystems of South Australia. Also in Qld, NSW, Vic and Tas.
<b>Similar native species and weedy look-a-likes</b>	<b>Weed:</b> There are other weedy grasses with hairy branches and rusty coloured awns, but these are often pampas-sized grasses with lots of tall stems. Paspalum ( <i>Paspalum dilatatum</i> ): Broad-leaved low growing perennial, seeds not hairy. Coolatai Grass ( <i>Hyparrhenia hirta</i> ): Upright tussock to over 1 m, long blue-green leaves, no pit on hairy seed (see page 45). See kangaroo grass ( <i>Themeda triandra</i> ) page 45.
<b>Forage value</b>	Tolerant to grazing and can even colonise bare areas. Rotational grazing encouraged to maintain pasture. Best grazed early summer for leafy growth. To increase density remove stock and rest pasture in late summer. Low to moderate forage value. Forage quality decreases once stems and seed heads form. Metabolisable energy 9 MJ/Kg DM. Crude protein 9%. Digestibility 62%.

## Windmill grass

*Chloris truncata*



Habit: small low growing tussock



Seed: triangular with 2 long awns



Seed head: windmill-like

## WEED

Feathertop rhodes grass

*Chloris virgata*



Habit: tussock or creeping foliage with tall flowering stems



Seed with 2 long awns plus many hairs

# Windmill grass *Chloris truncata*



<b>Key ID Features</b>	Branches on the <b>seed head resemble a windmill</b> of radiating spikes (umbrella spokes) starting from the same place at the end of the seed head stalk. <b>Small seeds look like black triangles</b> with small, very thin awns on two corners. Leaves often bluish-green, broad, flat or most often folded.
<b>Description</b>	The plants are small low growing tussocks to shin high with the windmill seed head held above the leaves to about knee high. The distinctly broad, often blue-green leaves, are broad at the top but the bottom half of leaf usually folds like a book. Leaves mainly basal but a few grow up the stalk. The seed head has up to 10 reddish-purple seed groups each about 15 cm long, radiating out from a common point at the end of the seed head stalk.
<b>Height</b>	Basal leaves are usually to about 15 cm high. Seed head stalks to 40 cm high.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in spring and early summer. Flowering in late spring into summer. It can be a relatively short-lived (2–3 years) but will persist by regenerating from seed after spring or early summer rainfall. Grows mainly in summer but may extend into autumn.
<b>Distribution</b>	<b>SL:</b> Not usual in forests. Common in grassy systems on the E and W slopes of Lofty Ranges. <b>MU:</b> Western slopes of the Adelaide hills and onto the flats. <b>NL:</b> Probably more common in the past; widespread. <b>YP:</b> Northern half of the YP. Widespread in all mainland States.
<b>Similar native species and weedy look-a-likes</b>	There are other native and weedy grasses with the umbrella spokes seed head but most are larger or taller. <b>Weed:</b> Introduced <i>Chloris</i> species and couch grasses have similar windmill seed heads. Feathertop rhodes Grass ( <i>Chloris virgate</i> ) is a much taller grass with shorter awns. Lawn couch grass ( <i>Cynodon dactylon</i> var. <i>dactylon</i> ) spreads by running stems (see page 11). See Australian salt-grass, page 11.
<b>Forage value</b>	Tolerant to grazing even set stocking and can colonise bare ground. Favoured by sheep as it grows close to the ground. Best grazed over spring/summer. Keep green and leafy to maintain quality. Moderate forage value. Metabolisable energy 7.5 MJ/Kg DM. Crude protein 11%. Digestibility 53%.

## Silky blue-grass

*Dichanthium sericeum* ssp. *sericeum*



Habit: small upright tussock with blue-ish leaves



Densely silky hairy seed head with seeds



Stem nodes have a collar of spreading long white hairs



# Silky blue-grass *Dichanthium sericeum* ssp. *sericeum*

**Also called:** Queensland blue-grass



<b>Key ID Features</b>	The erect seed head stalks and the <b>blueness of the leaves</b> is quite striking. The nodes have a <b>collar of spreading long white hairs</b> . The seedhead is <b>densely silky-hairy</b> with white hairs and <b>rusty brown awns</b> poking through. <b>2-3 erect seed groups (fingers) are held closely together</b> , initially appearing as one. Often a purple hue in seed head when young. A distinctive tuft of hairs often remains on the seed head stalk after most seeds have fallen.
<b>Description</b>	A small upright tussock to about shin high with blue-ish leaves and many slender erect leafy stalks. Most leaves are broad and grow up along the leafy stalks; not crowded at the base as occurs in many other native grasses. Seed head stalks to knee high or higher in good seasons, can look like one big mess if you do not carefully separate it to find the 2 (or more) individual spokes of seed groups at the top of each upright stem. Each seed has some hairs at both ends, particularly where the one awn joins. Seeds can be separated by pulling on the rusty brown awn.
<b>Height</b>	Basal leaves to 15 cm high. Seed head stalks from 10 to 120 cm.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain 'green' throughout the year. Most active leaf growth in early summer. Flowering in early to mid-summer and in response to big rain events.
<b>Distribution</b>	<b>SL:</b> Found in the grasslands of the Adelaide plains and grassy woodlands of the western slopes but rare here, especially south of Adelaide. A grass of drier grasslands and open woodlands. <b>MU:</b> No records in this region. <b>NL:</b> Found in the grasslands and grassy woodlands of the mid-north. More commonly seen in good seasons. <b>YP:</b> Found in the grasslands and grassy woodlands at the northern edges of region. Found in most South Australian regions, especially in drier areas. More widespread further north. Also in found in most states.
<b>Forage value</b>	Rarely seen in most grazed pastures as it is readily eaten. It is damaged by heavy, uncontrolled grazing and set stocking. It is tolerant of light to moderate grazing; best suited to rotational grazing. Highly palatable and of good feed quality when green; but quality falls rapidly after maturity and is very low in winter. Crude protein 2-11% (part of plant tested unknown).

# Umbrella grass

*Enteropogon acicularis*

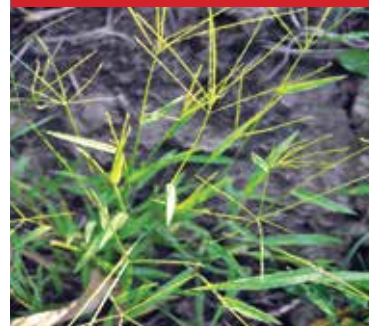


Habit: tufted grass often untidy and sprawling



Seed head with 7 or more spokes

# WEED Crab grass *Digitaria sanguinalis*



Habit: sparse tufted spreading low grass

# Rhodes grass *Chloris gayana*



Seed heads

# Umbrella grass *Enteropogon acicularis*

**Also called:** large windmill grass, curly windmill grass, star grass, spider-grass



<b>Key ID Features</b>	Seed head with <b>7 or more ‘umbrella’ spokes of seed groups which go out at all angles</b> . Seed head often turning a deep <b>maroon</b> or purple colour with age, then brown. Seed head feels spiky with long <b>stiff, but very brittle, awns</b> . The seeds are a bit <b>‘canoe-shaped’ with thin long awns</b> both in the same direction.
<b>Description</b>	Tufted grass to knee high with deep blue-green leaves when fresh. Purple brown seed groups on seed head stalks to knee or thigh high. Often an untidy sprawling plant with some leafy side branches as well as leaves along the seed head stalks. Leaves may curl when drying with age.
<b>Height</b>	Basal leaves from 5 to 20 cm. Seed head stalks held slightly higher but in good soils can be as high as 110cm.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in early summer. Flowering in early to mid-summer and in response to big rain events. More commonly seen in good seasons.
<b>Distribution</b>	<b>SL:</b> Found in Adelaide plains grasslands and grassy woodlands of the western slopes but rare. <b>MU:</b> Rarely recorded. Scattered and on heavier soils. <b>NL:</b> Reasonably common in the grasslands and grassy woodland. <b>YP:</b> Not recorded except at the very north edge of region. Found in most regions in South Australia, especially drier areas. Also in all mainland states.
<b>Similar native species and weedy look-a-likes</b>	<b>Native:</b> Compare the seed head shape with the native grass <i>Chloris truncata</i> . <b>Weed:</b> The common weedy crab-grass ( <i>Digitaria sanguinalis</i> ) does not have awns. There are other weedy grasses with umbrella spoke seed heads. Most of the weedy species are more upright, including Rhodes grass ( <i>Chloris gayana</i> ), which is taller and has short awns.
<b>Forage value</b>	Young growth is moderately palatable but plants left ungrazed can become harsh and maybe ignored by stock. Green shoots appearing in winter are usually not utilised in the presence of other preferred species. If ungrazed, the younger grasses may become very robust large coarse tussocks, which are avoided by cattle.

# Brush wire-grass

*Aristida behriana*



Habit: Low dense tussock

Mature seed head



Immature seed head: brush-like, green with a purple tinge



Seed with 3 long fine awns, windmill-like



**WEED**  
Feather grass  
*Cenchrus longisetus*



Habit: low dense clump or tussock



Flower group: flower with many hairy bristles



Flower head: mature flower head is white



# Brush wire-grass *Aristida behriana*



**Also called:** bottlewasher grass, three-awn Grass

<b>Key ID Features</b>	Juvenile seed heads from a <b>narrow green brush</b> (like a drum brush) with purple tips. They expand while ripening to form a distinct open multidirectional bristly 3D cylinder or toilet brush; firstly, cream to golden straw to finally, a dark straw colour. Each of the many seeds has a spreading windmill of <b>three long fine awns</b> .
<b>Description</b>	Brush wire grass is a hardy short-tufted dense perennial with low spreading leaves that are coarse and narrow, to ankle high. Seed head stalk and seed head are erect and rigid, with brush-like seed head, often purplish in colour when young. Often found on poor shallow soils.
<b>Height</b>	Basal leaves are rarely more than 20 cm high. Seed head stalks to about 15 to 40 cm high.
<b>Growing season and flowering time</b>	Perennial. Most active in spring and early summer. At least some leaves near the base remain green throughout the year. Most active leaf growth. Flowering is in late spring to early summer but can flower at all times during the year with sufficient soil moisture.
<b>Distribution</b>	<b>SL:</b> Not in forests. Common in grassy systems on the eastern and western slopes of the Mount Lofty Ranges. <b>MU:</b> Western slopes of the Mount Lofty Ranges and onto the flats. <b>NL:</b> Probably more common in the past; throughout the mid-north. <b>YP:</b> Known in the northern section. Most regions of South Australia, especially drier woodlands and grasslands. Also in NSW and Vic.
<b>Similar native species and weedy look-a-likes</b>	<b>Native:</b> There are other native <i>Aristida</i> species with three awns, but they are often tall lanky plants. <b>Weed:</b> Feather grass ( <i>Cenchrus longisetus</i> syn <i>Pennisetum villosum</i> ): A very similar low growing tussock. Bottle brush-like flower heads with many long white bristles.
<b>Forage value</b>	Moderate tolerance to grazing. Sharp awns may contaminate fleece. Remove stock and rest pasture from grazing for flowering and seed set. Moderate forage value. Metabolisable energy 7.4 MJ/Kg DM. Crude protein 10%. Digestibility 52%.

# Hairy panic

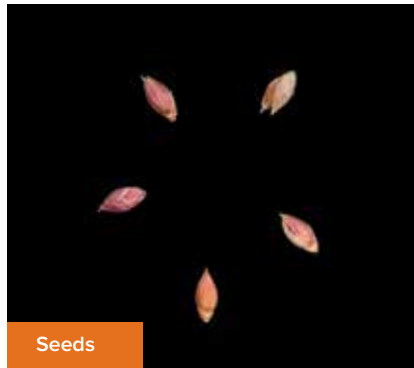
*Panicum effusum* var. *effusum*



Habit: spreading untidy grass with a cluster of grey-green leaves



Seed head with numerous fine branches



Seeds

# WEED

Witchgrass

*Panicum capillare*



Seed heads

# Hairy panic *Panicum effusum* var. *effusum*



<b>Key ID Features</b>	Seed head of <b>long thin branches opening out widely in all directions</b> to basketball size. Seed groups and small seeds widely spaced along the branches. Tiny teardrop shaped seeds about the size of plump sesame seeds. No awns. <b>The fine spiderweb of branches remain</b> on the plant after the seeds fall. Seed groups are purplish when young.
<b>Description</b>	Spreading untidy plant with a cluster of grey-green leaves at the base to about knee high but also leaves along the upright leafy stems. <b>Leaves are hairy with fine long hairs</b> , usually standing out from surface (visible against the light). Leaf edges are usually sand-papery to the touch. Long branched thin seed head stalks to near thigh height in good seasons. Seed heads expand and open up with maturity.
<b>Height</b>	Basal leaves from 10-20 cm high. Seed head stalks up to 100 cm.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth is in early summer. Flowering in early to mid-summer and in response to big rain events.
<b>Distribution</b>	<b>SL:</b> Was common on the Adelaide Plains and other grasslands and grassy woodlands in the past, now rare. <b>YP:</b> In existing patches of grassland and grassy woodlands, especially towards the mid-north. <b>NL:</b> In existing patches of grassland and grassy woodlands, especially towards the mid-north. <b>MU:</b> Found along the flanks and plains of eastern side of the AP/SL hills. Found in most parts of South Australis. Also in all mainland states.
<b>Similar native species and weedy look-a-likes</b>	<b>Weed:</b> Witchgrass ( <i>Panicum capillare</i> ) is an annual grass with stouter stems, much wider and softer light green leaf blades, often with a wavy edge.
<b>Forage value</b>	Unknown

## Rigid panic

*Walwhalleya proluta*



Habit: upright plant with rigid leaf stems



Seed head branches fan out in multidirectional arrangement



Seeds shaped like elongated teardrops with parallel ridges



## Rigid panic *Walwhalleya proluta*

**Also called:** coolah grass, pallid panic. **Previously called:** *Panicum prolutum*, *Homophilus proluta*



<b>Key ID Features</b>	Seed head starts as a group of branches close together but fans out into <b>a spreading multidirectional arrangement</b> of stoutish branches with single seeds scattered widely <b>at the tips of thin side branches</b> . Side seed head branches may droop. Seed groups often have a purple tinge when young. Seeds shaped like a tiny <b>elongated teardrop</b> about the size of a sesame seed, but <b>with parallel ridges</b> . No awns. All the main branches of the seed head are like <b>rough sand paper</b> to the touch or look rough held against the light.
<b>Description</b>	Plant upright and many branched with leaves at the base as well as flat broad leaves growing up along the leafy stems to about knee high. Plant spreading with age and size. Leaf stems quite rigid, hence the common name. Seed head stalks to thigh or waist in high rainfall seasons.
<b>Height</b>	Basal leaves to about 10 to 20 cm high. Seed head stalks from 20 to 100 cm high.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in early summer. Flowering in early to mid-summer and in response to big rain events.
<b>Distribution</b>	<b>SL:</b> On the Adelaide plains, native grasslands and grassy woodland, especially north of Adelaide. <b>MU:</b> Rarely recorded, on heavier soils and damp sites towards the eastern slopes of Mount Lofty Ranges. <b>NL:</b> Found in native grasslands and grassy woodland. <b>YP:</b> Very scattered, found in native grasslands and grassy woodland northern edge of region. Most southern regions of South Australia. Also in Qld, NSW and Vic.
<b>Forage value</b>	Only fair palatability and nutritive value.

## Lemon scented grass

*Cymbopogon ambiguus*



Habit: tall large tussock grass



Seed head with numerous white silky hairs



Seed heads look bulky and busy

# Lemon scented grass *Cymbopogon ambiguus*



**Also called:** lemon grass, scented grass, scented oil-grass

<b>Key ID Features</b>	<b>Older leaves</b> dry to a rusty colour and <b>have a twist</b> . The seed heads have 2, rarely 3 short <b>umbrella spokes</b> of 2-3 cm long <b>which usually point upward</b> . They are almost obscured with the <b>numerous white silky hairs</b> on the stalks and seeds. The spokes have a sheathing bract about as long as the spokes. The <b>dark honey-coloured awns</b> are obvious.
<b>Description</b>	Usually, a tall large tussock grass to about knee high with seed head stalks up to waist high. The fresh leaves often a blue-green colour and have a lemony scent when rubbed or scrunched. Leaves narrow and fine pointed. Most leaves are at the base but a few grow further up on the stem. The seed heads look bulky and busy with extra small leaves amongst them.
<b>Height</b>	Basal leaves from 15 to 50 cm high. Seed head stalks from 30 to 100 cm.
<b>Growing season and flowering time</b>	Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in early summer. Flowering in early to mid-summer.
<b>Distribution</b>	<b>SL:</b> Found mainly in rocky creek lines and gorges that run towards the coast and the western flanks of the hills. <b>MU:</b> Found on the rocky hillsides of the eastern flanks of the MLR hills and scattered throughout the region in woodlands or grasslands; often in gullies and rocky areas. <b>NL:</b> Not often collected. <b>YP:</b> Not recorded for YP. Most regions in South Australia, especially drier areas. Also in all mainland States except Vic.
<b>Similar native species and weedy look-a-likes</b>	<b>Native:</b> silky heads ( <i>Cymbopogon obtectus</i> ) is very similar, but the short umbrella spokes of seed head hang from the seed head and the awns are not so easily seen. <b>Native:</b> Can look a bit like the native kangaroo grass ( <i>Themeda triandra</i> ) at first glance (see page 45).
<b>Forage value</b>	Virtually ungrazed by livestock, although it may be eaten if it is the only plant available.

# Kangaroo grass

*Themeda triandra*



Habit: large upright tussock

Immature seed heads



## WEED

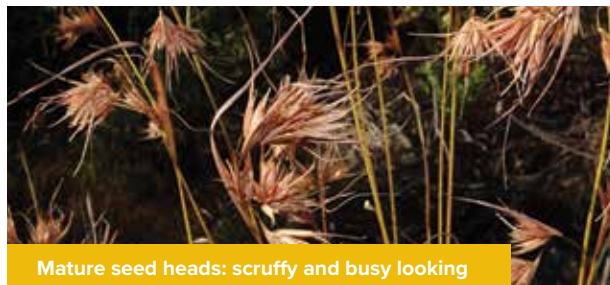
Coolatai grass *Hyparrhenia hirta*



Habit: big bluish tussocks



Seed group: long dark awns visible



Mature seed heads: scruffy and busy looking



Flower: short awns



# Kangaroo grass *Themeda triandra*



<b>Key ID Features</b>	<p>The quite distinctive seed heads are <b>scruffy and busy-looking</b>. Seed heads are large and unkempt, starting blue-green but drying to faded apricot tan. Young seed groups are hidden by extra leaf-like green bracts. Individual seeds can be pulled out when mature by their <b>long black crooked awn</b>. A patch of <b>kangaroo grass can be identified in summer from a distance by the overall faded apricot tan colour</b>.</p>
<b>Description</b>	<p>Large upright tussock, ankle to knee high. Long seed head stalks with drooping heads from waist high to head high in good seasons. Some leaves along seed head stalks. Leaf blades may have sparse hairs. Old leaves are a faded apricot tan colour. Can be regularly high slashed to form a thick sward of ground cover.</p>
<b>Height</b>	<p>Basal leaves 40 to 90 cm high. Seed head stalks to over 100 cm high in a good season.</p>
<b>Growing season and flowering time</b>	<p>Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in early summer. Flowering in early to mid-summer. Kangaroo Grass will respond to significant summer rain events.</p>
<b>Distribution</b>	<p><b>SL:</b> On the Adelaide Plains and foothills in areas of grassy woodland and grassland. <b>MU:</b> Along the eastern flanks of the Mount Lofty Ranges. <b>NL:</b> In areas with native grasses. <b>YP:</b> In areas with native grasses. Grows in every state and territory. One of the most widespread native grasses in Australia.</p>
<b>Similar native species and weedy look-a-likes</b>	<p><b>Native:</b> There are other tall native grasses with large tussocks and busy looking heads. May be confused with native lemon grass (<i>Cymbopogon ambiguus</i>) see page 43. <b>Weed:</b> Coolatai grass (<i>Hyparrhenia hirta</i>) is a big tussock, flowers with short red-brown awns.</p>
<b>Forage value</b>	<p>Low tolerance to grazing, decreased growth under heavy grazing. The growing points and main carbohydrate storage areas of Themeda are located above the ground and can be removed with heavy grazing. If this occurs frequently, as may happen under continuous grazing, the energy reserves of the plant are depleted and plants may die. Only lightly stock periodically over summer when actively growing. Regularly remove stock and rest pasture, particularly over winter. Moderate to high forage value. Metabolisable energy 8.9 MJ/Kg DM. Crude protein 13.5%. Digestibility 61%.</p>

# Spear grasses

*Austrostipa* species



*Austrostipa semibarbata*  
tussock with seed heads



*Austrostipa elegantissima* seed head



*Austrostipa curticoma*  
tussock with seed heads

Typical seeds with curved/falcate awns.  
Example *Austrostipa scabra*



WEED  
Needle grass  
*Nasella* species



Seed with turban / crown

# Spear grasses *Austrostipa* species



See Appendix A for more examples

Previously called: *Stipa* species

<b>Key ID Features</b>	<p>The most reliable way to recognise a spear grass is from the details of individual ripe seeds and their attached twisted awn. <b>The seed must be mature because all awns on all seeds start as a straight needle.</b> As the seeds mature, the awn changes shape. Immediately above the seed, the awn develops a short section twisted like a corkscrew (often about 1 cm long). Then the rest of the awn will change to either:</p> <ul style="list-style-type: none"><li>• straight sections between two almost right-angle bends, or</li><li>• curves such as an arched shape or smoothly bent (falcate).</li></ul> <p>Photos on the previous page illustrate these key features.</p> <p>There are many seeds in a seed head, but only one seed per set of glumes and each seed has only 1 awn. When ripe, a seed can be removed by pulling gently on its obvious strong awn.</p>
<b>Description</b>	<p>This large group of grasses has variable growth habits and seed heads. Most spear grasses are very hardy. Leaves vary in length, width, and hairiness depending on species. Most leaves are at the base, although there may be 4 to 6 leaves up the stem. Most species are widespread, but a few have very specific habitat needs. With so many species, identification to species will rely on a combination of 4 or 5 characteristics.</p> <p><b>See Appendix A for more on spear grass ID.</b></p>
<b>Height</b>	<p>Basal leaves vary from 10 to 80 cm high depending on the species. Seed head stalks vary from 30 to 150 cm high depending on the species.</p>
<b>Growing season and flowering time</b>	<p>Perennial. At least some leaves near the base remain green throughout the year. Most active leaf growth in winter and early spring. Flowering in late spring to early summer. Can produce a second lot of seed heads after good summer rains.</p>
<b>Distribution</b>	<p><b>SL:</b> About 40 different species, widespread. <b>MU:</b> About 35 different species, widespread. <b>NL:</b> About 25 different species, widespread. <b>YP:</b> About 25 different species, widespread. Widespread in the South Australia. Also Australia wide.</p>
<b>Similar native species and weedy look-a-likes</b>	<p><b>Weed:</b> Needle grass (<i>Nassella</i> species) is very like spear grass but has a tuban/crown at the top of an almost hairless decorated seed.</p>
<b>Forage value</b>	<p>Low tolerance to grazing. Palatability and quality reduced as plant matures. Sharp awns can contaminate fleece. Crash graze or slash at early flowering reduces contamination, but also population over time. Remove stock and rest pasture at flowering to aid persistence. Low to moderate forage value. Metabolisable energy 4.5-7.5 MJ/Kg DM. Crude protein 3-17%. Digestibility 35-60%.</p>

## Appendix A

### Spear grass 1 *Austrostipa* species

#### Speargrasses with a curved (falcate) awn; narrow seed head



<b>Key ID Features</b>	Seed narrow like a cigarette, awn with a column twisted like tiny corkscrew at the base topped with a long smoothly curved tail.
<b>Description</b>	Hardy coarse- or fine-leaved perennial tussocks with variable growth habits and seed heads. Each floret has 1 seed with awn. Awns have a 'straight' section (column) topped with a curved or bent section.
<b>Common examples</b>	<p><b>Cottony spear grass</b> (<i>Austrostipa drummondii</i>): all parts of plant very hairy, giving a bluish look.</p> <p><b>Rough spear grass</b> (<i>Austrostipa scabra</i>): leaves thin, rolled, rough to touch.</p> <p><b>Balcarra grass</b> (<i>Austrostipa nitida</i>): basal leaves only, gold-green shiny tinge to narrow seed head.</p> <p><b>Noded spear grass</b> (<i>Austrostipa nodosa</i>): leaves up stems, purple tinge, open seed head.</p>



## Appendix A

### Spear grass 2 *Austrostipa* species

**Spear grasses with narrow congested seed head with hairs on awn column OR wide branching seed head with hairs along seed head stalks**



<b>Key ID Features</b>	Seed awn with a very hairy column twisted like tiny corkscrew at the base (visible to the naked eye if held against the light) topped with a less hairy awn OR seed head branches hairy ( <i>Rytidosperma laeve</i> ): fine-leaved tussock, seed with almost no middle ring of hairs.
<b>Description</b>	Hardy coarse- or fine-leaved perennial tussocks with variable growth habits and flower heads. Each floret has 1 seed with awn. Awns have a 'straight' section (column) topped with a curved or bent section.
<b>Common examples</b>	<p><b>Narrow flower head like a rat's tail, not spreading:</b></p> <p><b>Fibrous spear grass</b> (<i>Austrostipa semibarbata</i>): Short hairs spread around column, long column to 2nd bend, long awn.</p> <p><b>Soft spear grass</b> (<i>Austrostipa mollis</i>): Long visible hairs spiral along column twist, long column to 2nd bend, long awn.</p> <p><b>Foxtail spear grass</b> (<i>Austrostipa densiflora</i>): Young leaves and flower glumes hairy. Short hairs spread around short column (1 to 2 cm) to 2nd bend, short awn to 4.5 cm.</p> <p><b>Expanded branched flower head:</b></p> <p><b>Elegant spear grass</b> (<i>Austrostipa elegantissima</i>): Caney grass with branched stems; hairs on flower stalk, not on awn.</p>

## Appendix A

### Spear grass 3 *Austrostipa* species

Spear grasses with large tussocks, wide leaf blades, awn with 2 bends, usually an expanded seed head

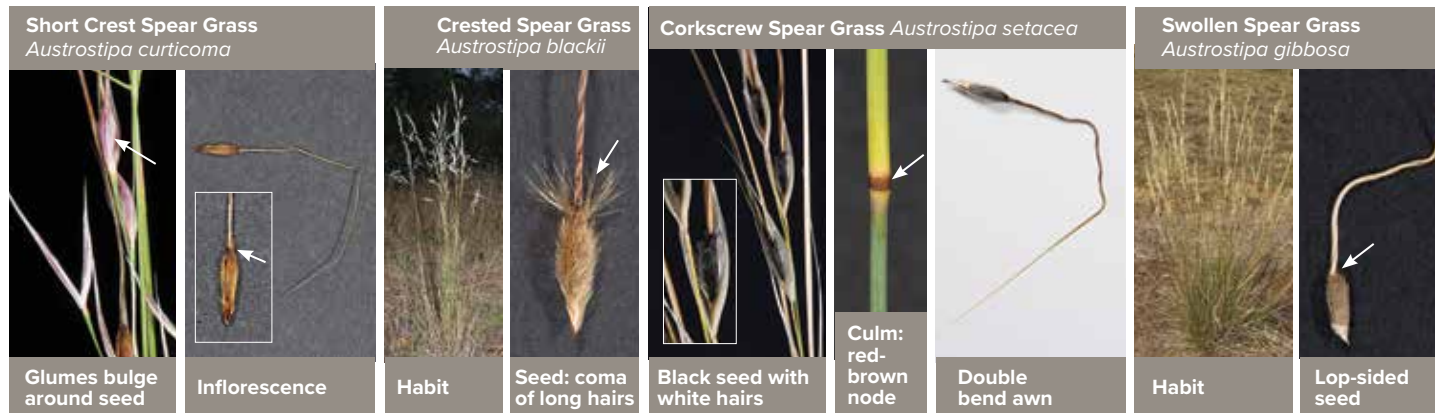


<b>Key ID Features</b>	Seeds usually have an awn with a double bend up to 10 cm long. Some species have seeds with sharp tips. Large tussocks with flat leaf blades up to 50 to 70 cm long.
<b>Description</b>	Hardy coarse- or fine-leaved perennial tussocks with variable growth habits and seed heads. Each floret has 1 seed with awn. Awns have a 'straight' section (column) topped with a curved or bent section.
<b>Common examples</b>	<p><b>Rusty or desert spear grass</b> (<i>Austrostipa eremophila</i>): Seed with rusty-orange hairs and "badly shaved" patch near top.</p> <p><b>Coast spear grass</b> (<i>Austrostipa flavescens</i>): stout stem, long thin seed in long slender glumes, seed with long straight callus.</p> <p><b>Small-seed spear grass</b> (<i>Austrostipa multispiculis</i>): A loose many-flowered panicle, smaller glumes, seed, and callus to above species. A grassland specialist.</p>

## Appendix A

### Spear grass 4 *Austrostipa* species

Spear grasses with obvious leaf blades, fat seeds and 2 glumes bulging to accommodate them, double bend awn; grassland specialists



<b>Key ID Features</b>	Seeds fat, loose in 2 bulging bracts (glumes) of the spikelet that holds the seed. Called inflated glumes.
<b>Description</b>	Hardy coarse- or fine-leaved perennial tussocks with variable growth habits and seed heads. Each floret has 1 seed with awn. Awns have a 'straight' section (column) topped with a curved or bent section.
<b>Common examples</b>	<p><b>Short crest spear grass</b> (<i>Austrostipa curticola</i>): fat black seed, brown hairs, short coma, one inflated glume only, short curved callus, glumes often purple tinge with 3 green veins. See page 47 for image of habit (erect tussock).</p> <p><b>Crested spear grass</b> (<i>Austrostipa blackii</i>): fat black seed, brown hairs, very long coma, hairy leaves.</p> <p><b>Corkscrew spear grass</b> (<i>Austrostipa setacea</i>): fat black seed, white hairs, long ligule, brown nodes, double bend awn.</p> <p><b>Swollen spear grass</b> (<i>Austrostipa gibbosa</i>): fat black seed lop-sided; position of awn not central.</p>

## Appendix B

### Wallaby grass 1 *Rytidosperma* species Seed with 3 distinct rings of hairs

Common wallaby grass *Rytidosperma caespitosum*



Habit: variable dense tussock



Seed: 3 rings of hairs, 3 long awns, middle awn longer

Small-flower wallaby grass *Rytidosperma setaceum*



Seed head; small seeds and glumes



Very small seeds

Lobed wallaby grass *Rytidosperma auriculatum*



Seed head



Lobe on edges of seed



Brown-back wallaby grass *Rytidosperma duttonianum*



Seed head



Back of seed roasted-brown, middle row hairs not obvious

#### Key ID Features

**Common wallaby grass, white top** (*Rytidosperma caespitosum*): broad green leaves, seed can be imagined to resemble a ballerina, 3 rings of hairs mimicking hair, bodice and tutu, and long side awns like legs. Seed head stalk to 60 cm.

**Small-flowered wallaby grass** (*Rytidosperma setaceum*): short blue leaves, very small seed, small glumes, small version of *R. caespitosum*, busy flower head to 25 cm.

**Lobed wallaby grass** (*Rytidosperma auriculatum*): small tussock, fine hairy leaves, fat seed with tiny side lobes on the smaller awns, spreading head to 30 cm. A grassland specialist.

**Brown-back wallaby grass** (*Rytidosperma duttonianum*): large tussock, seed roasted-brown colour rather than straw coloured, awn with few dark brown twists, grows in seasonally wet ground.



## Appendix B

### Wallaby grass 2 *Rytidosperma* species

#### Seed with rings of hairs with sections missing



#### Key ID Features

**Narrow-head wallaby grass** (*Rytidosperma racemosum*): fine-leaved tussock. Seed with long 'neck', bottom row of hairs interrupted in middle, long narrow flowerhead with spikelets held tight against stalk, sometimes arching, to 40 cm.

**Hairy wallaby grass** (*Rytidosperma pilosum*): fine narrow, hairy-leaved tussock. Seed with bottom row of hairs missing at the outer edges.

**Smooth-flower wallaby grass** (*Rytidosperma laeve*): fine-leaved tussock, seed with almost no middle ring of hairs.

## Appendix B

### Wallaby grass 3 *Rytidosperma* species

#### Seed with hairs between rings as well as in rings



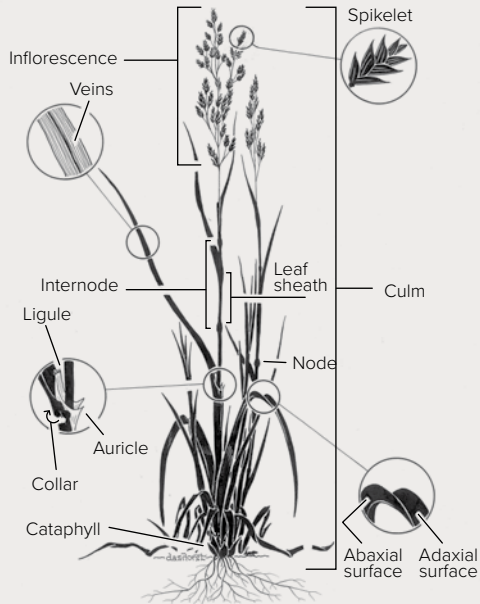
#### Key ID Features

**Short wallaby grass** (*Rytidosperma carphoides*): low growing tussock, short fat busy seed head, very short awns not very visible. Not common in this region.

**Tawny wallaby grass** (*Rytidosperma fulvum*): large tussock, broad blue-green leaves, seeds with very fluffy white hairs, tall erect seed head stalks to 80cm with regularly spaced spikelets held close to the stalk. A grassland specialist. **Knead wallaby grass** (*Rytidosperma geniculatum*): low growing tussock, fine leaved, seed central awn and 2 side awns all short and the same length, short compact seed head stalk to 30cm, stalk often emerging sideways and then turning straight up at a distinct bend / joint in the stalk.

# Appendix C - Botanical structure of grasses

Use this diagram to help identify the main structural components of a grass.

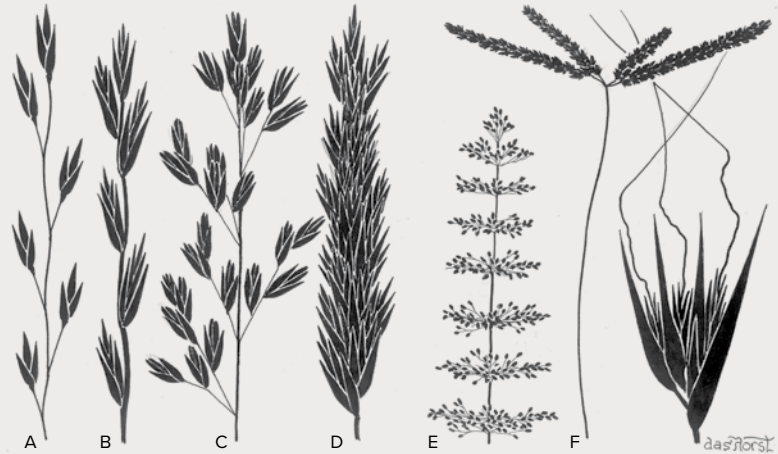


## Structure of the grass plant

From Jessop, Dashorst and James (2006)

Use this diagram to help identify the main types of grass flower heads.

The look of the flower head can help guide you in your identification of grasses. Here are six main flower head shapes.



Inflorescence types: **A.** Raceme, **B.** Spike, **C.** Open panicle, **D.** Spike-like panicle,

**E.** Whorled branches, **F.** Digitate inflorescence, **G.** Cluster of spikelets in a spathe

## Main types of grass flower heads

From Jessop, Dashorst and James (2006)

# Glossary

<b>annual</b>	plant completes life cycle in one year	<b>glume</b>	1 of 2 bracts protecting the floret (small flower)
<b>awn</b>	long or short needle like extension to the seed	<b>inflorescence</b>	see flower head
<b>awn column</b>	the straight section of the awn above the seed	<b>leaf blade</b>	the flat part of the leaf
<b>C3 grass</b>	cool season grass, tend to have their most active growth period in autumn and spring	<b>leaf sheath</b>	the bottom section of the leaf which surrounds or curls around the stem
<b>C4 grass</b>	warm season grass, tend to have their most active growth period in summer	<b>lemma</b>	usually the most obvious of the 2 bracts protecting the floret
<b>callus</b>	hard tip to the seed, often sharp	<b>ligule</b>	where the blade meets the sheath of a leaf
<b>cane grass</b>	stem branches in several directions from stem nodes so grass is large and 3D	<b>metabolisable energy</b>	the amount of energy in a feed that is available for an animal's maintenance, production and reproduction
<b>coma</b>	ring of hairs at top of the seed	<b>node</b>	joint or strengthening junction on grass stems
<b>crude protein</b>	the estimated protein content of stock feed, as a percentage of the dry matter	<b>palea</b>	usually the smaller of the 2 bracts protecting the floret
<b>culm</b>	alternative name for the stem	<b>perennial</b>	green / growing all year and can live for many years
<b>digestibility</b>	the proportion of the dry matter in a feed which can be digested by an animal	<b>rhizome</b>	an underground stem, usually growing horizontal, produces roots at the joint
<b>falcate</b>	bent or curved like a sickle or scythe	<b>running grass</b>	grass with stems which grow along the ground anchoring roots at nodes
<b>floret</b>	individual small flower, protected by 2 bracts called lemma (visible) and palea (often not visible)	<b>scabrid</b>	grass part feels rough to touch, a bit like sandpaper
<b>flower</b>	group of florets protected by glumes (bracts) in the flower head	<b>seed</b>	the mature seed and its hard decorative casing
<b>flower head</b>	all the flowering part of the grass – often called inflorescence	<b>sheath</b>	see leaf sheath
<b>forage value</b>	the overall quality of a pasture as a source of nutrition for livestock	<b>spikelet</b>	the botanical name for 'flower' in these cards
		<b>tussock</b>	grass that forms a clump, tuft, or bunch rather than spreading along the ground



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## Index of scientific names

<i>Amphipogon caricinus</i>	21
<i>Anthosachne scabra</i>	9
<i>Aristida behriana</i>	37
<i>Austrostipa</i> species	47
<i>Bothriochloa macra</i>	29
<i>Chloris truncata</i>	31
<i>Cymbopogon ambiguus</i>	43
<i>Dichanthium sericeum</i>	33
<i>Distichlis distichophylla</i>	11
<i>Enneapogon nigricans</i>	23
<i>Enteropogon acicularis</i>	35
<i>Eragrostis brownii</i>	17
<i>Microlaena stipoides</i>	13
<i>Neurachne alopecuroidea</i>	25
<i>Panicum effusum</i>	39
<i>Paspalidium constrictum</i>	15
<i>Poa</i> species	19
<i>Rytidosperma</i> species	27
<i>Themada triandra</i>	45
<i>Walwhalleya proluta</i>	41

## Index of common names

Australian salt-grass	11
Bottlebrush grass	23
Brush wire-grass	37
Common love grass	17
Foxtail mulga grass	25
Hairy panic	39
Kangaroo grass	45
Knobbybutt grass	15
Lemon scented grass	43
Long grey-bread grass	21
Native wheat grass	9
Poa grasses	19
Reg-leg grass	29
Rigid panic	41
Silky blue-grass	33
Spear grasses	47
Umbrella grass	35
Wallaby grasses	27
Weeping rice-grass	13
Windmill grass	31



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