EAST GIPPSLAND Pastures

A glovebox guide to identifying pasture plants of East Gippsland

This publication is to be reference as per the following: Weir, E. and Coleman, K. (2020) *East Gippsland Pastures: A glovebox guide to identifying pasture plants of East Gippsland*. East Gippsland Landcare Network, Victoria.

Every effort has been made to ensure that the information in this document is accurate at the time of publication. However, as appropriate, readers should obtain independent advice before making any decision based on this information.

This project is supported by the East Gippsland Catchment Management Authority through funding from the Australian Government's National Landcare Program and the East Gippsland Landcare Network Inc.

FOR MORE INFORMATION

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Contents

The Top Soils Project

This glove box guide is an information resource produced as part of Top Soils.

Top Soils is a multi partner East Gippsland region project focused on improving soil condition for farm profitability through farmer driven focus groups and research sites.

The aim of the project is to encourage and support change towards best practice in soil health.

Top Soils 1 was developed in 2013 as a 5 year project and was highly successful, enabling Top Soils 2 (1 July 2018 to June 30 2023) to continue the project's good work.

The need for the project was determined through the Australian Bureau of Statistics data that showed that sustainable land management practices were not widely adopted in the East Gippsland region.

The first few years saw partner agencies gather soil and plant data across well over 100,000 hectares in East Gippsland to benchmark (then) current soil condition, soil fertility and farming practices. Top Soils 2 will see some of these sites retested to determine change over the 10 years of the project.

Following the collation of soil and plant data, was the establishment of 5 farmer driven focus groups, each group based in a separate geographical area across the region; Plains, Foothills, High Country, Far East and Deddick/Bendoc. There was also the development of a number of research and demonstration sites investigating the effects of nutrients and strategic grazing on weed loads in native pasture systems, the effects of nutrients and rotational grazing on weed loads in improved pasture systems and soil requirements including micro and macro nutrients.

The Top Soils program is supported by the East Gippsland Catchment Management Authority through funding from the Australian Government's National Landcare Program. Project partners include, Southern Farming Systems, Agriculture Victoria, East Gippsland Landcare Network, Far East Victoria Landcare and Snowy River Interstate Landcare Committee.

TopSoils

Introduction

Across East Gippsland our food and fibre industries rely on good pastures, both native and introduced. Maintaining healthy pastures is important for stock, providing suitable groundcover, and they help manage issues such as salinity and erosion.

But do you know what plant you're looking at when out in the paddock?

Understanding your different pasture plants can help determine what plants provide good nourishment for stock, identifying what are invasive plants that may need to be controlled and to understand plant life cycles to ensure sustainable feed year-round.

About this book

The purpose of this book is to provide an easy reference guide to the most commonly seen grasses, clovers and other herbs that East Gippsland pastures grow.

Each group of plants can be quickly identified by their colour code and identifying symbol.

Grasses

Clovers

Other Pasture Plants

Identifying pastures

Each plant in this book includes easy to follow descriptions of plant physiology (growth, leaves, flowerheads, flowers, seeding), their active flowering times as well as diagrams and photos to help you identify the plant you're looking at when in the paddock.

To help understand the technical terminology used in the descriptions, a glossary has been prepared (see page 72).

Common name →

Scientific name →

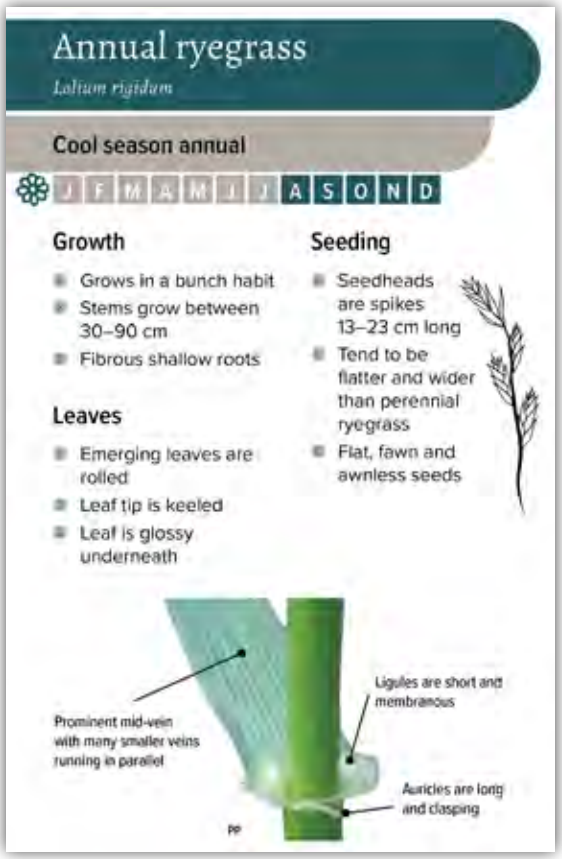
Lifespan →

Flowering time (green highlights) →

Descriptors (growth height includes flower stalk and leaf length) →

Diagram of a leaf showing the ligules and auricles (if present) →

Photo credits (see page 71 for names) →



Grasses

In the paddock, grasses can be hard to tell apart. It is easier to identify them when in their flower or seeding cycle. This book refers to the flowerhead structure to help with grass identification.

Open or closed panicles

A panicle is a multiple branching of spikelets off the main axis. Branching can be clustered or closed; it can also be loose or open.

Spike or Raceme

On a spike, the main axis does not branch and the spikelets are stalkless. A raceme's spikelets are also stalkless.

Primary axis of Racemes

Several branches carrying racemes emerge from the main axis or stem.

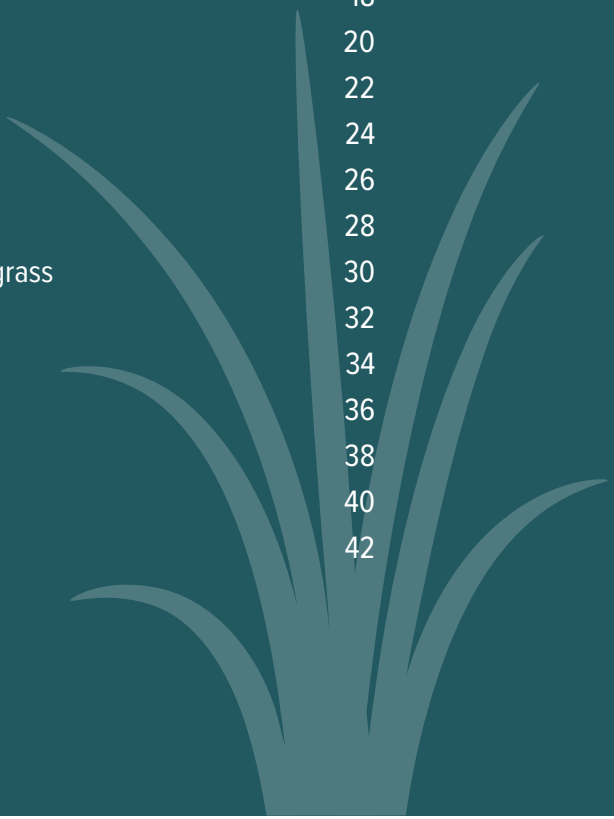
Digitate

Branches carrying spikelets radiate like fingers from one point.

Spatheate

Leaf-like bracts often surround the seedhead.

What grass are you looking for?



Great brome

Bromus diandrus

Annual

J F M A M J J A **S** **O** **N** D

Growth

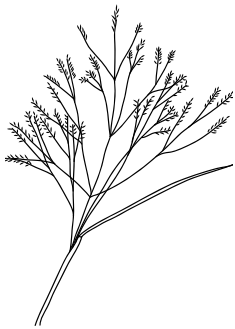
- Grows in bunches
- Grass can grow up to 80 cm tall
- Large fibrous root system

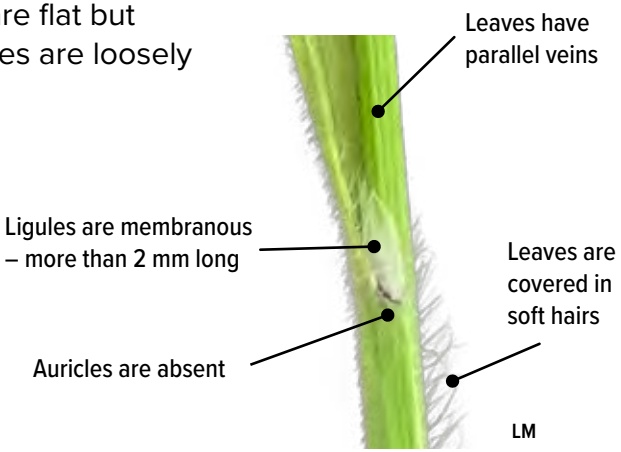
Leaves

- Emerging leaves are rolled
- Leaves grow up to 15 cm long, 1 cm wide
- Leaf tips are flat but often leaves are loosely folded

Fowerhead

- Seeds have long awns
- A loose drooping open panicle up to 15 cm long





INTRODUCED

MRM

MRM

LM

Rhodes grass

Chloris gayana

Perennial

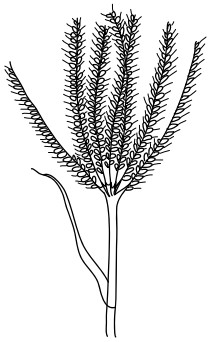
J F **M** **A** **M** **J** **J** A S O N D

Growth

- Tufted grass 1–2 m tall
- Spreads by stolon growth (runners) above ground

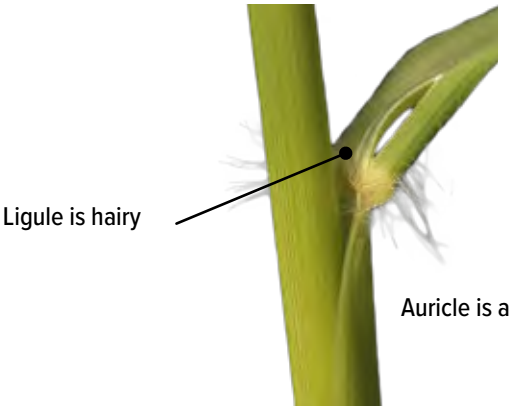
Fowerhead

- Digitate structure with 10–20 spikes
- Spikes 4–15 cm long
- Seeds light and fluffy, 3.5 mm long



Leaves

- Emerging leaves are folded and flat when mature
- Leaves are hairless and 40 cm long, 5–10 mm wide



IC

INTRODUCED

KC

LM

KC

Cocksfoot

Dactylis glomerata

Perennial

J F M A M J J A S O N D

Growth

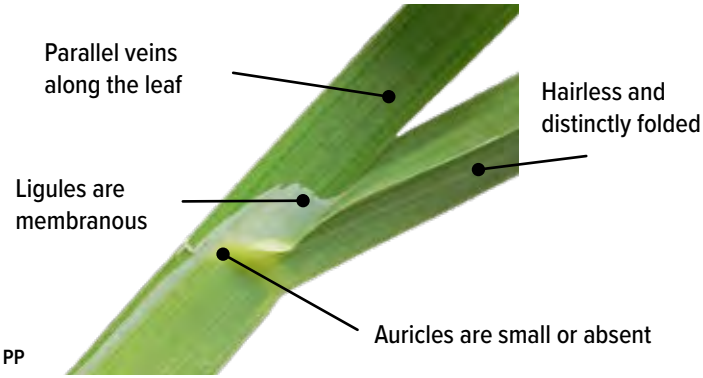
- Grows in bunches
- Seed heads can grow up to 130 cm tall, smaller in dryland conditions
- Deep root structure

Leaves

- Leaves are grey/blue greenish colours
- 50 cm long, 12 mm wide
- Leaf tip is flat and pointed

Fowerhead

- Densely clustered closed panicle when it first emerges and becomes more open and branched with maturity
- Seeds are very small, narrow, smooth and pale yellow



INTRODUCED

PP

IC

PP

Tall fescue

Festuca arundinacea

Perennial

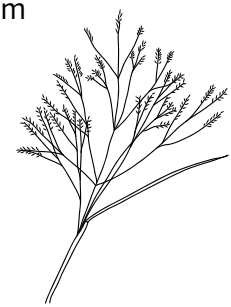
J F M A M J J A S O N D

Growth

- Grows in bunches
- Depending on cultivar it can grow between 10 cm and 2 m
- Deep rooted

Fowerhead

- Seed spikelets have 4–8 florets with or without awns
- Open panicles are 10–30 cm long



Leaves

- Emerging leaves are rolled
- Leaves are often shiny underneath
- 60 cm long, 12 mm wide
- Leaf tip is pointed

PP

Leaves have many deep veins running in parallel

INTRODUCED


PP


PP


PP

Perennial ryegrass

Lolium perenne

Perennial

J F M A M J J A S O N D

Growth

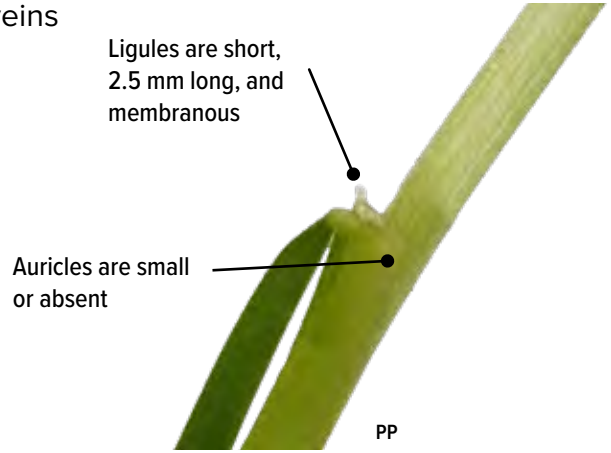
- Grows in a bunch habit
- Stems grow between 30–90 cm
- Fibrous shallow roots

Fowerhead

- Seedhead spikes to 30 cm long
- Seeds are flat and awnless

Leaves

- Emerging leaves are folded
- 20 cm long, 5 mm wide
- Leaves have a prominent mid vein with many smaller veins running in parallel
- Leaf tip is keeled
- Leaf is glossy underneath



INTRODUCED

Annual ryegrass

Lolium rigidum

Annual

J F M A M J J A S O N D

Growth

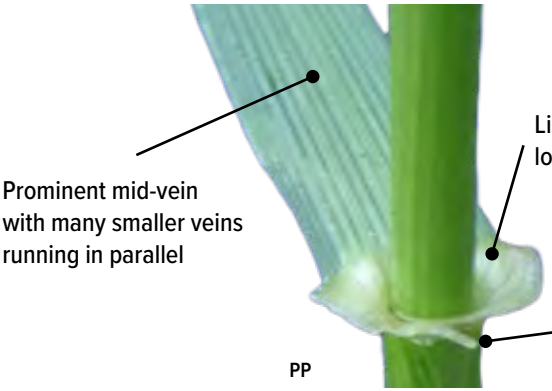
- Grows in a bunch habit
- Stems grow between 30–90 cm
- Fibrous shallow roots

Leaves

- Emerging leaves are rolled
- 20 cm long, 8 mm wide
- Leaf tip is keeled
- Leaf is glossy underneath

Fowerhead

- Seedheads are spikes 13–23 cm long
- Tend to be flatter and wider than perennial ryegrass
- Flat, fawn and awnless seeds



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Paspalum

Paspalum dilatatum

Perennial

J F M A M J J A S O N D

Growth

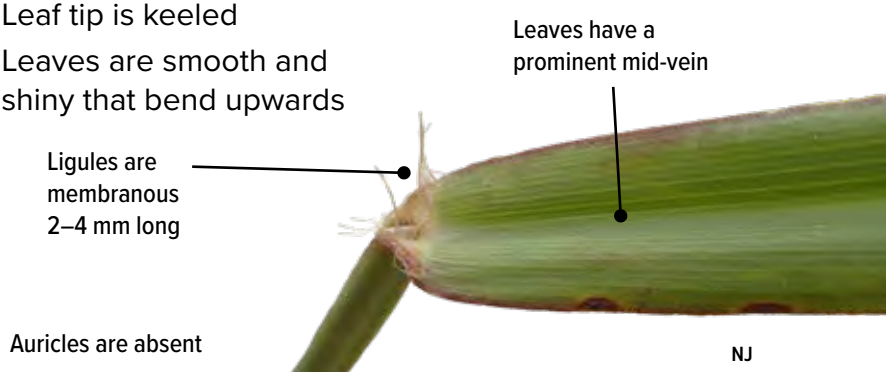
- Grows in bunches
- Tall grass that grows to 1.5 m in height
- Fibrous roots with short rhizomes around the plant

Fowerhead

- Erect or drooping primary axis of up to 11 racemes
- Seeds are contained within small, hard, shiny, brown seed pods

Leaves

- Emerging leaves are rolled, flat when mature
- Leaves are dull to dark green, 20 cm long and 15 mm wide
- Leaf tip is keeled
- Leaves are smooth and shiny that bend upwards



INTRODUCED

Kikuyu

Cenchrus clandestinum

Perennial

J F M A M J J A S O N D

Growth

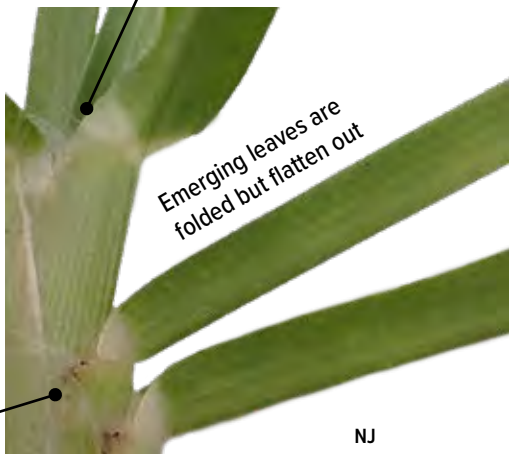
- Grows underground rhizomes and above ground stolons (runners)
- Grows up to 30 cm long
- Deep connecting roots form a dense mat

Fowerhead

- Seeds form inside leaf sheath
- Seeds are dark brown and oval shaped

Leaves

- Obvious mid-vein with smaller parallel veins
- Leaf tip slightly keeled but can appear flat
- Bright green
- Commonly around 5 cm long, 6 mm wide with scattered hairs



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NJ

NJ

NJ

Phalaris

Phalaris aquatica

Perennial

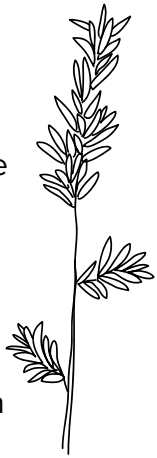
J F M A M J J A S O N D

Growth

- Grows in bunches
- Can grow to 1–2 m at maturity
- Deep rooted

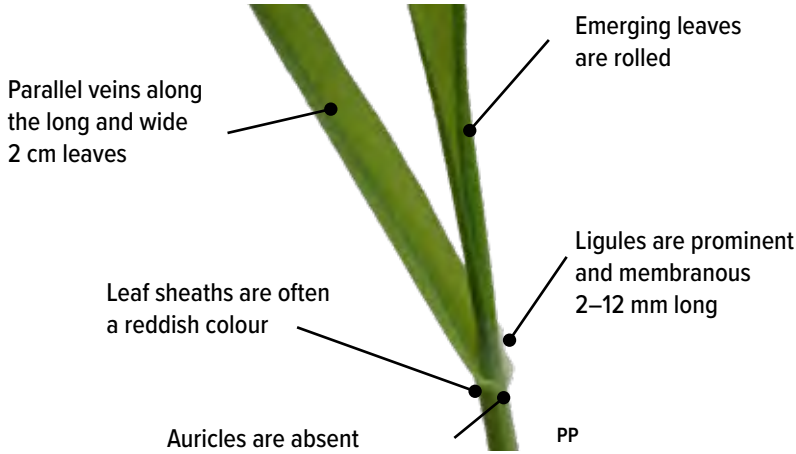
Fowerhead

- Dense spike-like closed panicle above the leaves
- Flat, smooth and shiny seeds that are a cream to pale brown in colour



Leaves

- 30 cm long, 20 mm wide
- Leaf tip is keeled
- Leaves are hairless and primarily arise from the base of the plant



INTRODUCED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Wallaby grass

Rytidosperma spp.

Perennial

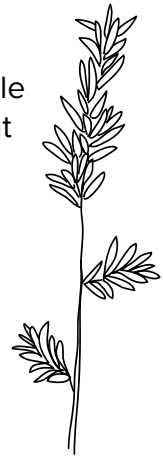
J F M A M J J A S O N D

Growth

- Grows in bunches
- Grows from 20–100 cm tall
- Large fibrous root system

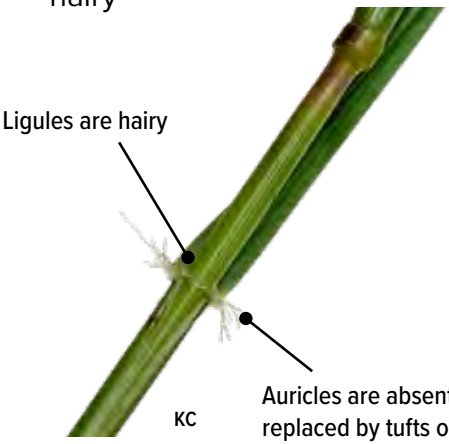
Fowerhead

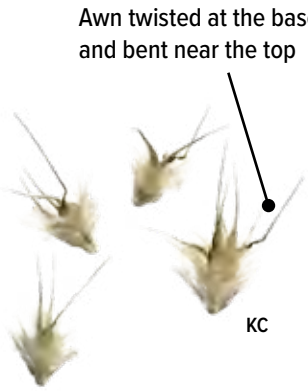
- Closed panicle that is fluffy at maturity
- Oval seeds have fluffy white hairs



Leaves

- Emerging leaves are folded
- Leaves are grey-green to dark green and often hairy





NATIVE


MLM


MLM


KC


MLM

Rough spear grass

Austrostipa scabra

Perennial

J F M A M J J **A S O N D**

Growth

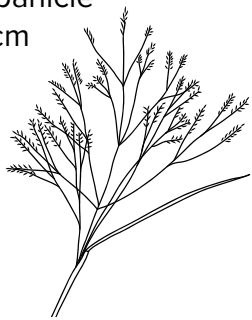
- Tufted grass with coarse stems
- Grows to 60 cm tall

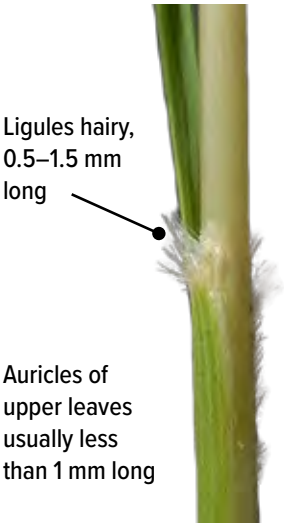
Leaves

- Emerging leaves are folded or rolled and rough to touch
- 30 cm long

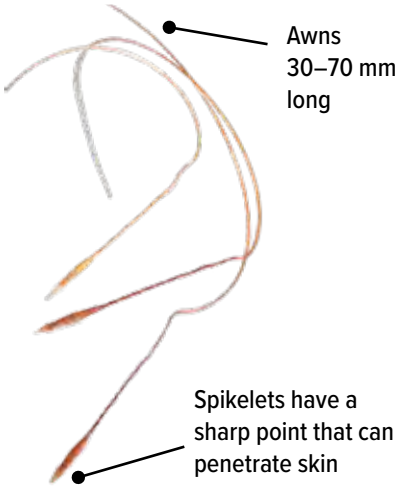
Fowerhead

- Spikelets are 8–15 mm long
- Open panicle to 30 cm long





NB MRM



NATIVE


JR


MRM


JR


JR

Common windmill grass

Chloris truncata

Perennial, short-lived

J F M A M J J A S O N D

Growth

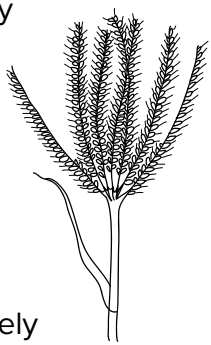
- Tufted grass that grows in bunches/tussocks
- Can be stoloniferous (creates runners)
- Grows to 40 cm tall
- Also called Umbrella grass

Leaves

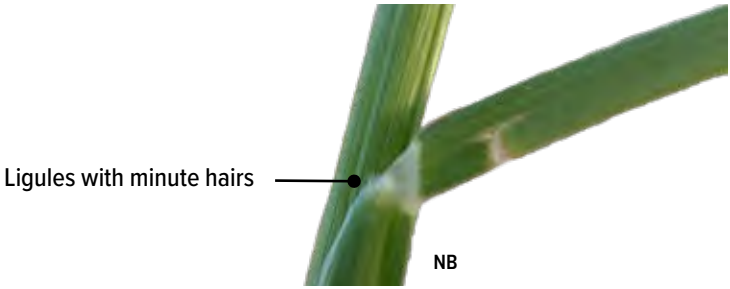
- Emerging leaves are folded
- Coarse 15 cm long and 5 mm wide leaves
- Pale green-blue and hairless

Fowerhead

- Umbrella-like digitate seedhead
- 5–10 hairy spikes, 5–17 cm long



- Seed spikelets are arranged alternatively in rows - the lower bisexual, the upper sterile
- Spikelets are blackish when mature



NATIVE

MLM

JB

JB

Couch grass

Cynodon dactylon

Perennial

J F M A M J J A S O N D

Growth

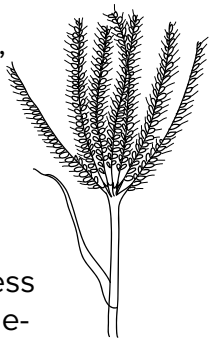
- Mat-forming with both rhizome growth underground and stoloniferous (runners) growth above ground
- Grows to 30 cm tall

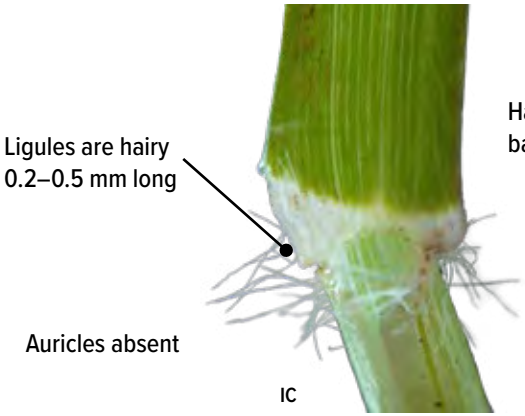
Leaves

- Short 2–15 cm long leaves

Fowerhead

- Umbrella-like digitate seedhead
- 3–7 small branches, each 2–6 cm in length
- Seed spikelets are awnless and purple-black in colour





NATIVE


MRM


JR


JR


JR

Weeping grass

Microlaena stipoides

Perennial

J F M A M J J A S O N D

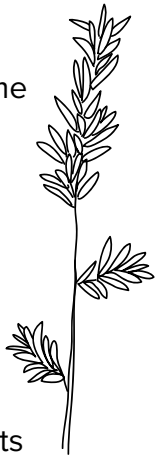
Growth

- Tufted grass
- Can have short rhizome growth, forming mats
- Grows to 60 cm tall, often shorter

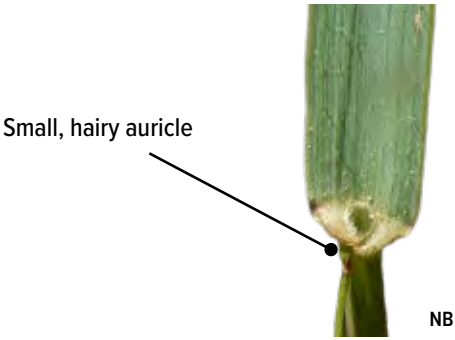
Leaves

- Emerging leaves are flat with a notched tip
- Semi-spreading leaves that are 2–20 cm long and 1–12 mm wide
- Lime-green or blue-green

Fowerhead



- Narrow raceme or panicle, 5–18 cm long that has a weeping appearance when expanded
- Including awns, spikelets are 13–40 mm long
- Spikelets are green to dark purplish-brown



NB

NATIVE


MLM


MLM


MLM

Kangaroo grass

Themeda triandra

Perennial

J F M A M J J A S O N D

Growth

- Tufted grass with deep root system
- Can have short rhizome growth, forming mats
- Grows 60–150 cm tall and up to 50 cm across

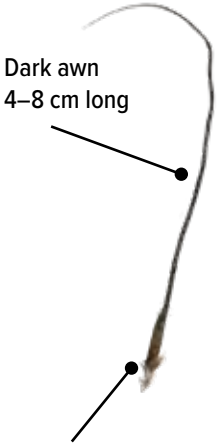
Fowerhead

- Spatheate panicle 10–25 cm long with drooping appearance
- Spikelets are reddish-brown

Leaves

- Emerging leaves are folded at the base becoming flat
- 15–50 cm long and 2–5 mm wide
- Blue-green when growing maturing to reddish-brown

Short, membranous ligules tufted at each end with long hairs



Dark awn 4–8 cm long

Fertile spikelet has silky brown hairs

KC

NATIVE

MLM

MLM

KC

Bent grass

Agrostis capillaris

Perennial

J F M A M J J A S O N D

Growth

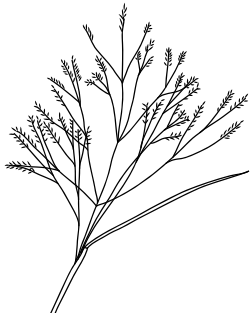
- Mat-forming, tufted grass with rhizome growth underground
- Occasionally has stoloniferous (runners) growth above ground
- Grows to 70 cm tall

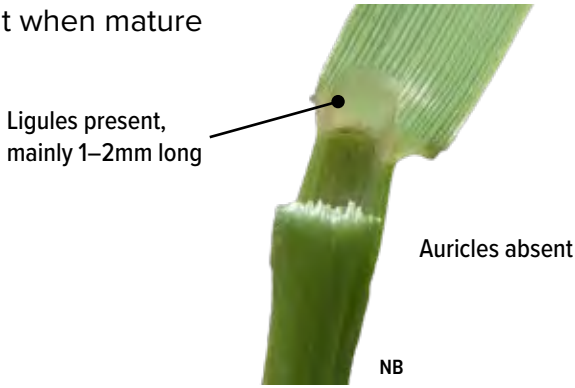
Leaves

- Grey-green, fine leaves 1–5 mm in width and 40 cm in length
- Leaves are folded when young, flat when mature

Fowerhead

- Open panicle 2–20 cm long
- Purplish-brown spikelets are small, 2–3.5 mm long





INVASIVE

PP

PP

PP

Barley grass

Hordeum leporinum

Annual

J F M A M J J A S O N D

Growth

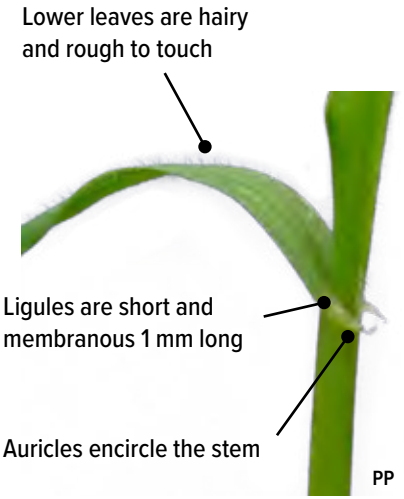
- Tufted annual grass to 50 cm high
- Stems are often branched at the base
- Large fibrous root system

Leaves

- Emerging leaves are rolled
- 4–15 cm long, 2–8 mm wide
- Parallel veins run along leaf and taper off at the flat tip
- Upper leaves have a few fine soft hairs

Fowerhead

- Dense cylindrical spikes 3–10 cm long
- Seeds have rough awns (bristles) of varying lengths




INVASIVE
NJ


PP


PP

Winter grass

Poa annua

Annual – perennial and biennial biotypes

J F M A M J J A S O N D

Growth

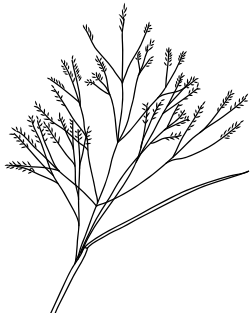
- Grows in bunches
- Small plant which grows to 30 cm
- Tap root

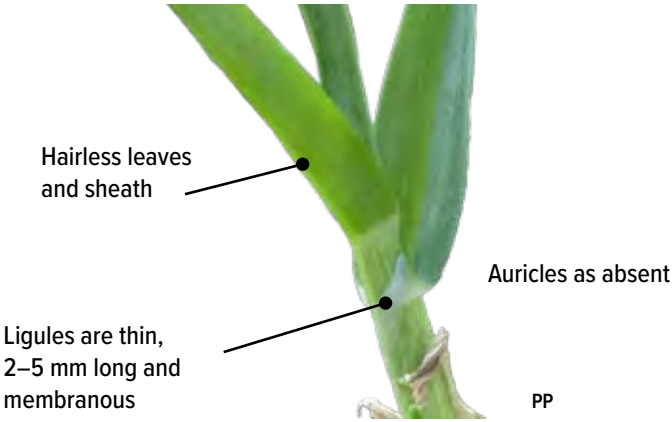
Leaves

- Emerging leaves are folded
- 12 cm long, 5 mm wide
- Leaf tip is keeled

Fowerhead

- Pyramid-shaped open panicle 1–12 cm long
- Seeds are about 3 mm long with fine hairs covering the outer casing





INVASIVE

PP

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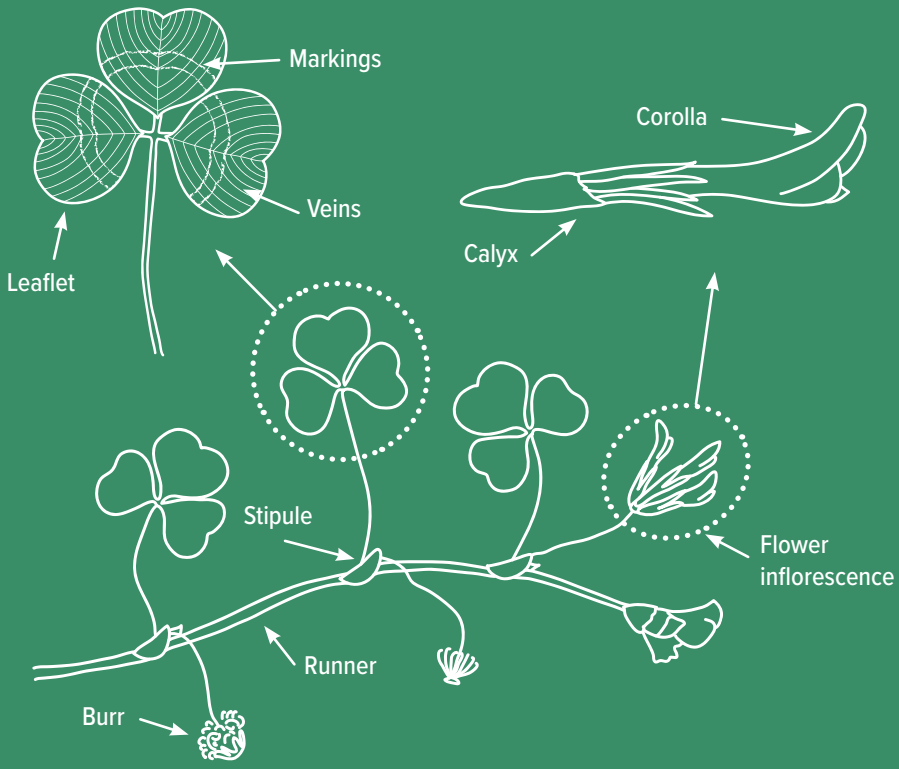
Clovers

All clovers belong to the family Fabaceae—or pea family. This means that they have the ability to fix (make available) nitrogen in the soil through nodules located on their roots. Clovers are known for their tri-lobed leaves and can be distinguished by their shape and patterning. Most clovers have a globe-like flower inflorescence (many small flowers grouped together).



What type of clover are you looking for?

Medic

Medicago spp.

Annual

J F M A M J J A S O N D

Growth

- Sprawling, low-growing herb
- Strong taproot
- Also known as Burr medic
- Lucerne falls within the genus *Medicago*

Leaves

- 3 leaflets located on the end of each leaf stalk, with the middle leaflet having a longer stalk
- Leaflets 4–25 mm long

Flowers

- Single, yellow, pea-like flowers 3–6 mm long

Seeding

- Seed pods are coiled into a cylindrical burr
- Each pod is 2–12 mm long and 3–8 mm wide, hairless but do contain spines 2–4 mm long
- Pods contain 1–2 brown, kidney-shaped seeds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Strawberry clover

Trifolium fragiferum

Perennial

J F M A M J J A S O N D

Growth

- Low growing, spreading by stolons (runners) and sometimes forming mats
- Stems to 40 cm long
- Strong taproot

Leaves

- 3 oval-shaped leaflets 5–30 mm long and 3–15 mm wide
- Leaflets have a minor toothed edge

Flowers

- Inflorescence of pinkish flowers 8–20 mm diameter
- After flowering the calyx (outer part of flowers) swells, giving a strawberry-like appearance

Seeding

- Seed pods are 2 mm long containing 1 or 2 seeds


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White clover

Trifolium repens

Perennial

J F M A M J J A S O N D

Growth

- Low growing, creeping, hairless stems
- Stems to 10–30 cm long
- Spreads by sending out underground rhizomes and above ground stolons (runners)

Leaves

- 3 largely circular-shaped leaflets 6–40 mm long and 10–30 mm wide
- Leaflets are hairless and have a minor toothed edge
- Leaflets have a pale crescent-shaped markings

Flowers

- Round globluar flower-heads have a white to pinkish colour
- 15–35 mm diameter

Seeding

- Seed pods are oblong, 4 mm long containing 1–7 seeds
- Seeds are yellow-brown and 1 mm wide


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Persian clover

Trifolium resupinatum

Annual

J F M A M J J A S O N D

Growth

- Low growing habit
- Hairless stems to 80 cm long
- Nitrogen-fixing nodules located on both the taproot and the lateral roots

Leaves

- 3 drop-shaped leaflets 5–50 mm long and 3–20 mm wide
- Leaflets are hairless and sharply toothed

Flowers

- Pink to purple flower-heads
- 5–15 mm diameter

Seeding

- Seed pods are oblong, 2 mm long and enclosed within a woolly burr
- Seeds are dark brown and 1.5 mm wide


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Sub-clover

Trifolium subterraneum ssp.

Annual

J F M A M J J A S O N D

Growth

- Low-lying with branched stems 10–35 cm long
- Stems are slightly hairy
- Taproot with nitrogen-fixing nodules located on the lateral roots

Leaves

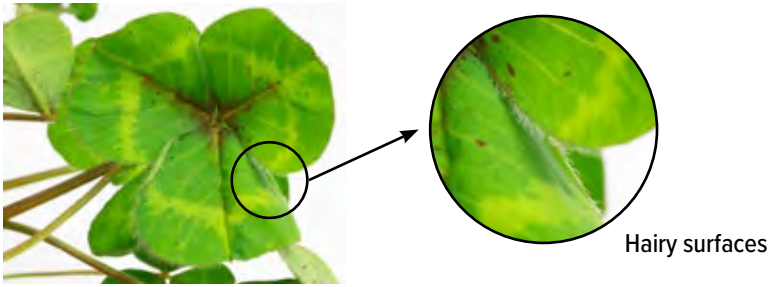
- 3 heart-shaped leaflets 8–25 mm long and wide
- Central vein is dominant
- Hairy on both surfaces
- Leaflets have pale patterned markings

Flowers

- White with pink to red stripes flowers 6–11 mm long
- Few flowers are fertile

Seeding

- 3–8 seed pods are coiled into a burr that is usually buried in the soil
- Each 3 mm long pod contains a single seed
- Seeds are dark brown to black and 1–3 mm long



Hairy surfaces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Arrowleaf clover

Trifolium vesiculosum

Annual

J F M A M J J A S O N D

Growth

- Stems are erect or spreading, up to 60 cm tall
- Taproot with nitrogen-fixing nodules located on the lateral roots

Leaves

- 3 diamond-shaped leaflets 15–40 mm long by 5–15 mm wide
- Finely toothed edges
- Leaflets have pale green to white patterned markings

Flowers

- White to pink flowers 3–6 mm long and 2–3.5 mm wide

Seeding

- Seed pods are 4 mm long containing 2 or 3 seeds


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Other pasture plants

Other herbaceous pasture plants includes any species that does not fit the grass or clover categories. The key species chosen for this category include legumes and sedges. Some of these species can be invasive if not managed correctly.

What other plant are you looking for?

Serradella

Ornithopus spp.

Annual Legume

J F M A M J J A S O N D

Growth

- Low spreading growth to 40 cm
- Many-branched and finely hairy
- Deep root system

Leaves

- Oblong leaves situated in pairs (pinnate) of up to 20 along the stem
- Leaves are covered in short, white, fine hairs

Flowers

- Yellow, pea-like flowers about 5 mm long
- Flowers found singular or in groups up to 5

Seeding

- Seed pods 20–35 mm long and 1.5 mm wide
- Pods usually curved into a hooked beak


INTRODUCED
JR


JR

Common vetch

Vicia sativa

Annual legume

J F M A M J J A S O N D

Growth

- Scrambling and climbing growth habit
- Highly branched tap root that can go down to 1–1.5 m deep

Flowers

- Pink to red-purple pea-like flowers
- Mostly paired and located at the base of the leaf

Leaves

- Leaves are 2–10 cm long and consist of multiple pinnate leaflets (4–16) arranged
- Leaves end with long tendrils that help climbing

Fowerhead

- Seed pods 3.5–8 cm long
- Each seed pod contains 8–12 black to brownish flattened, circular seeds

INTRODUCED

JR


JR


MRM

Bird's-foot trefoil

Lotus corniculatus

Perennial legume

J F M A M J J A S O N D

Growth

- Weakly erect stems trail across the ground up to 90 cm long
- Deep tap root
- Invasive on infertile soils

Leaves

- Pinnate leaves with 5 leaflets; 2 leaflets are small while 3 are more dominant

Flowers

- Yellow with five petals
- Sometimes red veins in petals
- Groups of 2–8

Seeding

- Seed pod is 1.5–3 cm long and 2–3 mm wide
- Seeds are small, 1 mm long, greyish-brown to black in colour

INVASIVE

NB


NB


NB


NB

Nutgrass

Cyperus rotundus

Perennial sedge

J F M A M J J A S O N D

Growth

- Grows by spreading underground through rhizomes
- Grows between 20–50 cm tall
- Roots are long wiry rhizomes with elliptical tubers or nuts
- Not a true grass

Leaves

- Bright green, long slender grass like leaves
- Prominent vein on the underside
- Shiny, smooth, slightly serrated narrow leaves

Flowers

- Flower head is sub-digitate
- Reddish-brown or purplish-brown
- ‘Fingers’ radiate in an umbrella shape

Seeding

- Seeds are black, brown-grey or olive-green,
- Small, triangular pyramidal nut about 1–1.5 mm long

INVASIVE


JR


KC


JR

Onion grass

Romulea rosea

Perennial herb

J F M A M J J A S O N D

Growth

- Grows in bunches
- Typically grows between 5–40 cm long
- Fibrous roots extend from bottom of corm (similar to a bulb)
- Not a true grass

Leaves

- Grass-like leaves are tightly rolled and appear cylindrical with parallel veins
- 85–65 cm long and 15–2.5 mm wide
- Leaves have two lengthwise grooves on each side
- Dark green and shiny

Flowers

- Pink flowers of 6 petals with a yellow centre
- Flowers are lower than the length of the leaves

Seeding

- Seeds are slightly flattened spheres of a reddish-brown colour

INVASIVE


PP


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Glossary

Annual: plant life-cycle is completed within one season.

Awn: needle- or bristle-like structures that extend from seeds to aid seed dispersal by animals.

Corm: swollen part of the stem that stores nutrients and grows underground.

Digitate: branches carrying spikelets radiate like fingers from one point.

Floret: a small flower that is part of a larger flower.

Glume: a bract (leaf-like structure) located below a spikelet in the flower clusters of grasses or sedges.

Keeled: leaves or bracts are folded and ridged along the midrib.

Panicle: multiple branching of spikelets off the main axis. Branching can be clustered or closed; it can also be loose or open.

Perennial: plant life-cycle is completed over more than one season.

Pinnate: leaflets are arranged on either side of the stem.

Raceme: spikelets are attached by short stalks directly to a main axis.

Rhizome: an underground root that grows laterally and sends up new shoots from nodes.

Spatheate: leaf-like bracts often surround the seedhead.

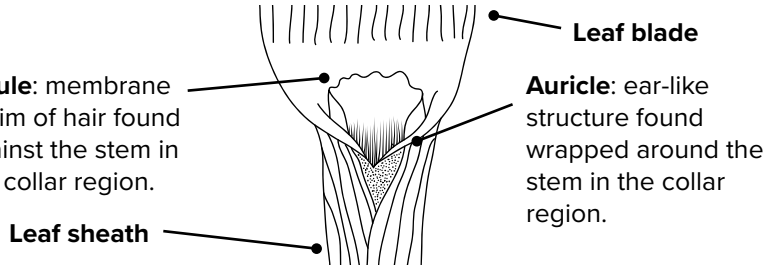
Spike: main axis does not branch and the spikelets are stalkless.

Spikelet: a small or secondary spike in grasses. Describes the typical arrangement of grass flowers.

Stolon: an aboveground stem that grows laterally and sends down new roots from nodes. Also called runners.

Sub-digitate: almost digitate but branches radiate from various points along a short stem.

Taproot: large, central root from which other roots sprout laterally.



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Pasture Paramedic
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