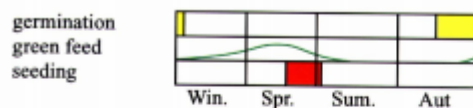


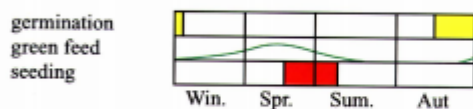
## Cool season grasses

- Active in the cooler months
- optimal growth is at 20 – 25 C
- Frost tolerant
- Common in temperate and high altitude tropical areas
- C3 photosynthesis pathway

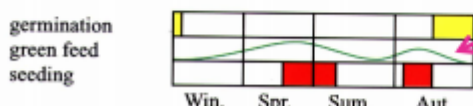
### Cool season annual



### Cool season perennial



### Year-long green perennial



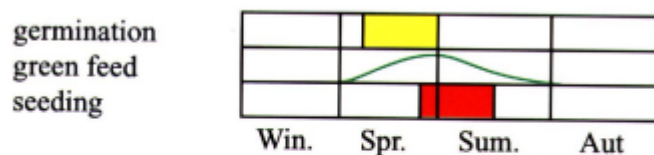
If rainfall permits

The ability to provide green feed in spring, late summer and autumn make them valuable as pasture sp.

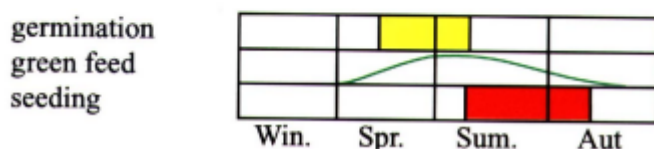
## Warm season grasses

- Active in the warmer months (optimal growth at 25 – 35 C)
- Frost susceptible (damaged by temps <10 C)
- Common in wet tropics, subtropics and semi arid tropics of northern Australia
- Most are C4 (capture CO<sub>2</sub> and use H<sub>2</sub>O more efficiently than C3 grasses. Several perennial members store starch in their rhizomes)
- High growth rates

### Warm season annual



### Warm season perennial



## Natives

- Tufted perennials
- Adapted to infertile soils and aridity

- Tall sp, not tolerant of grazing
- Cool season sp produce higher feed quality than warm season sp, but are less productive
- Cool season examples:
  - *Austrodanthonia* sp - wallaby grass (ylgp)\*
  - *Austrostipa* sp - spear grass (ylgp)
  - *Microlaena* - weeping grass (ylgp)\*
  - *Poa* sp - tussock or snow grass (csp) (provides shelter for sheep and lamb in adverse conditions)
- Warm Season examples
  - *Bothriochloa macra* - Red grass
  - *Chloris* sp - Windmill grass
  - *Dicanthium sericeum* - QLD bluegrass
  - *Themeda australis* – Kangaroo grass

A native grassland comprises of

Matrix species

- Dominant species
- Long lived perennial tufted grasses
- Not overly palatable but provide drought reserve

Interstitial species

- Annual and short lived perennial grasses, other monocots, eudicots
- Come and go depending on rainfall
- Palatable and nutritious

High levels of diversity. This is beneficial as no matter when rain occurs some species can take advantage, maintain ground cover which reduces erosion and invasion by weedy species.

**Sown pasture grasses**

- Domesticated exotics
- Perennials
- High productivity
- Respond well to nutrients
- High nutritive value and palatability (leafy, high protein, low in lignin)
- Tolerant of grazing and trampling
- Good seed set and ease of harvest
- Low seed dormancy
- Good seedling establishment in cultivated ground
- But do not persist in drier climates
- Cool season examples:
  - *Dactylus glomerata* - cocksfoot (csp)
  - *Festuca arundinacea* - tall fescue (csp)
  - *Lolium perenne* - perennial ryegrass (csp)