

## 4.2 Feed availability

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# Measuring available feed

- Need to be able to measure pasture height and estimate/guestimate how fast it will grow
- Also need to understand pasture components and quality
- Methods of measurement
  - Eyeballing (experienced assessor), need to recalibrate regularly
  - Boot measure (physically walking a transect, calibrate on boot height)
  - Pasture ruler (transect, method)
  - Plate reader/electronic (optimal as gives actual rapidly)
  - Satellite (improving)
  - Gold standard = cutting and drying grass



## Measuring pasture height and converting to pasture mass:

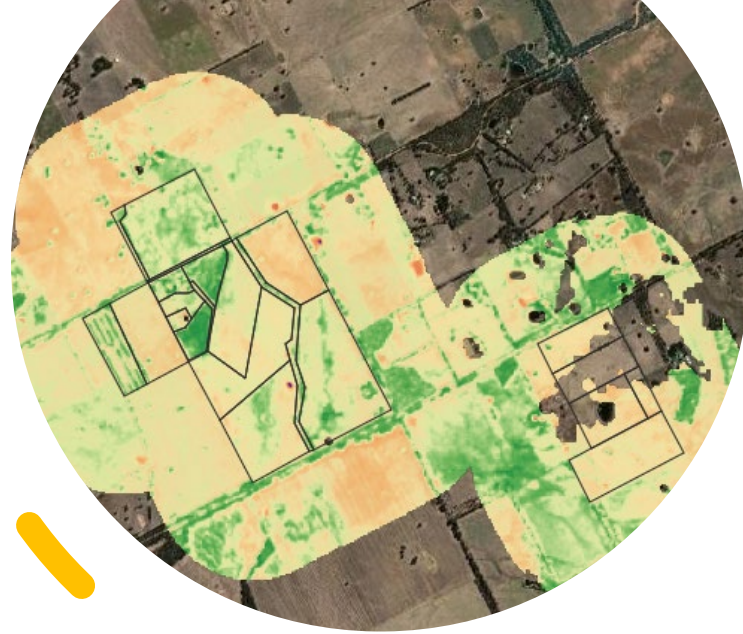
1. Place the MLA Pasture Ruler vertically onto the soil surface. Do not push it into the ground or sit it on top of dead pasture.
2. Slide your thumb down the ruler until it touches green leaves. This measured height will generally be less than that of the taller leaves in the pasture.
3. Do not measure dead stems or leaves or unpalatable weeds like onion grass, as stock do not readily eat these. If no green pasture is present, height is recorded as zero.
4. Measure the height of the green pasture at an appropriate number of sites to get a good representative sample of the pasture availability. Depending on the physical characteristics of the paddock (eg slopes and aspect), the best method might be to walk across the paddock in a zigzag pattern, tossing the ruler out in front of you as you go (to account for variations in pasture height and density), taking measurements where the ruler lands and recording the observations.
5. To convert from the average pasture height in the paddock to kilograms of green dry matter per hectare, simply read the kg green DM figure from the adjacent column on the MLA Pasture Ruler.
6. For information on how to adjust for pasture density and percentage of dry matter, refer to the text below.





# Satellite

- Different measures
- Simple and regularly updated
- Calibrate locally
- FOO, NDVI



# Methods of quality

- Optimal measure = laboratory based method
- Collect grass quadrats and assess for quality and quantity (can help to calibrate eyes to what you see and what is measured)
- Look at pasture photo gallery after video
- Pounds per acre versus kilograms per hectare (one acre = 0.405 ha, one pound = 0.454 kg), often express as kg/ha
- May need a knowledge of imperial to converse with some farmers and in some countries (not yet converted to metric)
- Generally higher quality pastures are vegetative, minimal weed and at least some legume



# Sustainability of pasture

- Over summer annual pasture will die and not grow again until Autumn rain
  - Perennial grass stays over summer and may respond to summer rain
  - Important not to overgraze pasture to avoid damage to pasture and soil (water and wind erosion)
  - At what % cover should we stop grazing? Varies with soil and plant types.
  - If less than shown need to decrease stocking rate
- *"70% for pastures on flat and slightly sloping (<3%) land and on non-erosion prone soils (moderate-good soils generally). Herbage mass should be a minimum of 800–1,200kg dry matter (DM)/ha.*
  - *80–90% groundcover for lighter, more erosion prone soils and minimum herbage mass should also be 1,000–1,500kg DM/ha where land is undulating.*
  - *90–100% groundcover for steep hill country on light and erosion prone soils (eg slopes of greater than 10%, granite or light sedimentary soils with low fertility and often high acidity). Herbage mass should be a minimum of 1,500kg DM/ha.*
  - *In areas such as the Mallee and Western Australia, 50% is often used as the minimum groundcover percentage.*





# Measuring and forecasting pasture growth

- Pasture growth rate (PGR)
- Along with measuring pasture height today we need to be able to forecast (to be able to plan for our livestock grazing enterprise)
- A little bit of “crystal ball grazing”, ideally backed up with some science
- Generally make guestimates based on a combination of historical figures combined with current season and projected environmental variables using models (noting a model is only as useful as information that goes into it)
- Keep reiterating the guestimate as season progresses ie. Not static



# Historical PGR

- Some properties have rainfall and PGR data for many years, helpful for planning e.g. when are maximal PGR periods on average and how long for?
- Satellite PGR imagery can achieve similar graphs without the on-farm work
- MLA and CiboLabs provide region based data

Australian Feedbase Monitor 3672

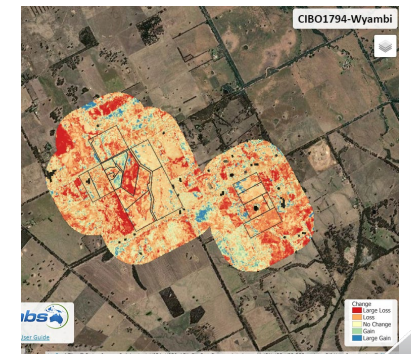
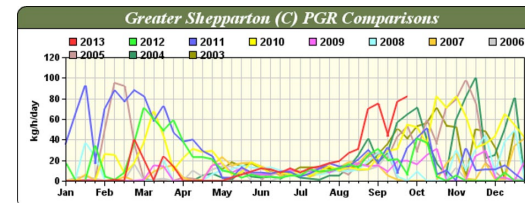
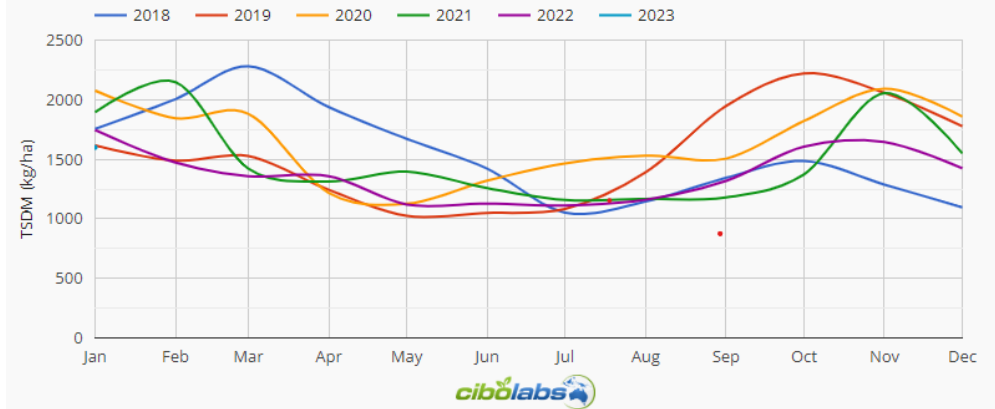
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**1599** kg/ha

Last reported: 2023-01-01

This time last year: 1746 kg/ha

All time average: 1456 kg/ha



# Models to aid forecasting

- Range of decision support tools
- Rely on soil type, pasture levels, rainfall likelihood
- On right = likely predicted rainfall and can then plot PGR
- Key decision point = overstock/understock/just right?
- Enterprise plan for dry season/wet season/drought

