



Decision days in a beef year

Considerations for managing your beef grazing food year

In recent years, we have experienced great volatility in agricultural commodity and input costs, interest rates, and natural gas prices. This has been driven by the COVID-19 pandemic, the Russo-Ukrainian War, international trade agreements and significant climatic events, globally and regionally. Within a farming system, these challenges raise questions such as: What is normal rainfall? When are pasture conditions optimal for production? Can I forecast my feed year for pasture and livestock management?

Climate influencing pasture growth in the North Coast

Aside from soil properties and nutrient availability, pasture growth is strongly influenced by water, temperature, light energy, and day length.

Most of the North Coast is considered a high-rainfall, subtropical zone with native and improved pasture species. These species are predominately tropical such as Setaria, Paspalum and Rhodes, with temperate species such as ryegrasses, clovers and Cocksfoot.

Pasture growth in the North Coast is most often constrained seasonally by moisture and temperature. Figure 1 shows the North Coast's mean monthly rainfall and temperatures.

Figure 2 shows general North Coast pasture growth trends during a "standard year".

Temperature

Warmer temperatures promote pasture growth and can accelerate pasture maturity. You can expect pasture growth to be limited by cooler temperatures from late April until early September. Warmer temperatures between November and March promote higher pasture growth rates.

Rainfall and soil moisture

Water is an essential resource for plants, taken up by roots from the soil. Water demand by plants and water supply held by the soil are affected by factors such as soil texture, rainfall, humidity, transpiration rate (water lost by plant leaves) and plant root characteristics. Rainfall is summer-dominant in the North Coast. Stored water held in the soil is vital to limit the effects of low rainfall between April and September when pasture growth is expected to slow. From Figure 3, you can conclude that "normal rainfall" is variable year to year, with high variances from the average and median annual rainfall.

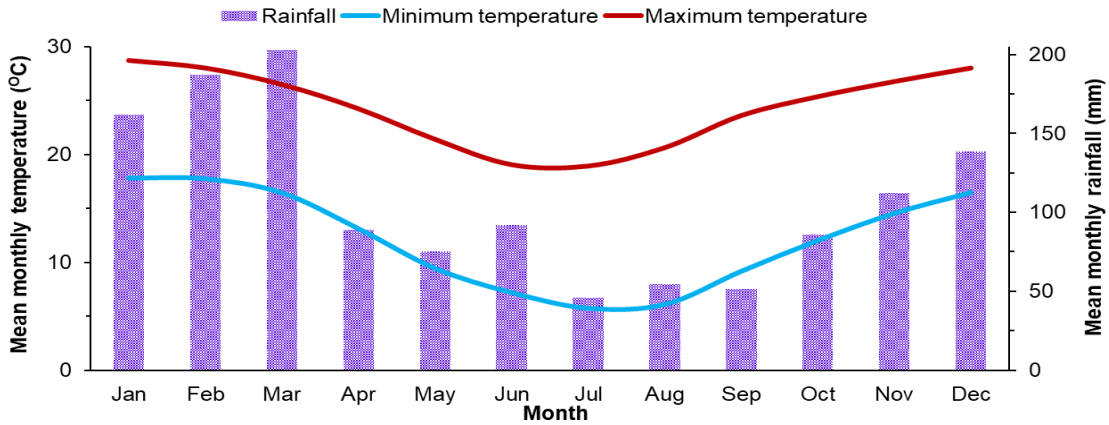


Figure 1 *North Coast NSW Climate*. North Coast averages are represented by recorded climate data from 1997 until 2022 of the NSW towns, Dorrigo, Kempsey, Grafton and Casino, sourced from the Bureau of Meteorology’s “Climate statistics for Australian locations” (2023).

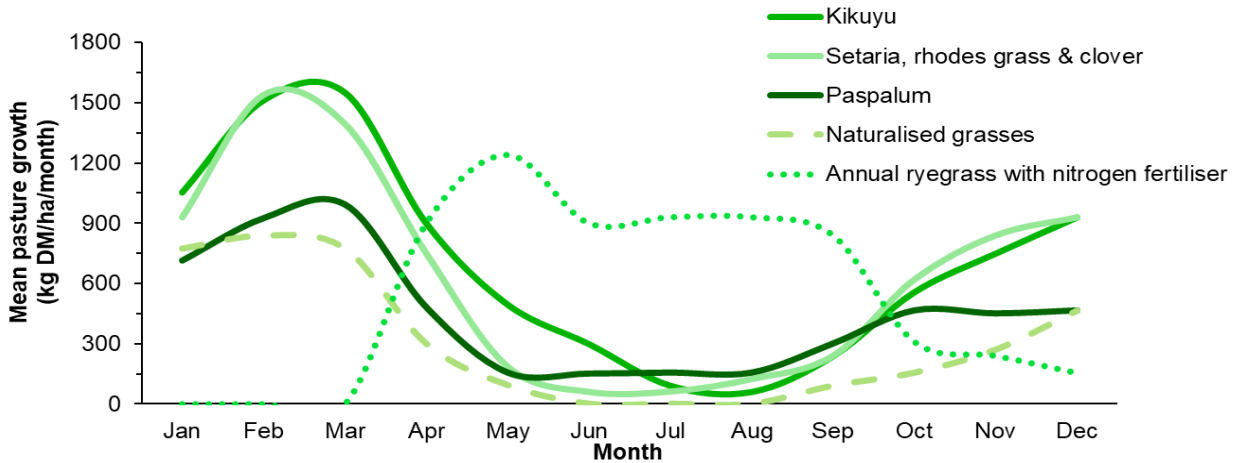


Figure 2 *Pasture Growth Curves for the North Coast’s Standard Climate Year*. Graph uses data sourced from EverGraze (“Regional pasture growth rates”, 2013).

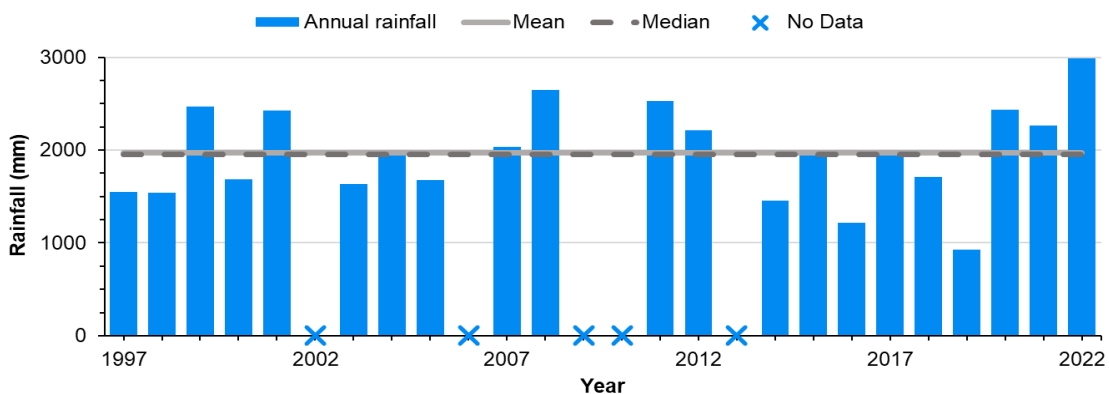


Figure 3 *Annual Rainfall Variability – Dorrigo NSW*. Data retrieved from “Annual rainfall Dorrigo (Old Coramba Rd)” (Bureau of Meteorology, 2023). Station number 059140.

Considering the feed year

The feed year is a general term to describe the dynamic relationship between feed supply and livestock feed demand. Feed supply is influenced by environmental factors and pasture growth. Feed demand reflects animal feed requirements, and changes seasonally with animal maturity, size, growth, and reproduction.

It is essential to manage your system so that feed demand does not exceed feed supply, especially during feed gap periods which are experienced over winter months.

Reducing feed gap risk involves decision periods where you must consider management decisions about:

- stocking rates and densities
- livestock breeding cycle
- introducing new pasture species
- grazing management strategies
- animal fat reserves/body condition
- system diversification (e.g., fodder crops, livestock enterprises or off-farm income)
- conserve feed (e.g., locking up paddocks or making silage or hay)
- buy in feed (e.g., complementing or substituting with hay, grain or silage, or supplementing with licks)
- irrigation
- soil nutrient and moisture management (e.g., fertiliser and ground cover), and
- weed and pest management.

Remember, your aim is to match your livestock's feed demand to your feed supply and make the beneficial forecasting decisions for your enterprise.

Significant decision days in a North Coast beef year

Day 1 - October

October is the “green point” as rainfall and temperature begin to favour pasture growth, resulting in visible greening. For more cold-tolerant species, like *Setaria*, the green point may be reached slightly earlier.

As pastures turn green, quality begins to improve yet feed quantity is still limited by minimum temperatures.

In dry years with low soil moisture reserves, even if rain does fall, the combination of low soil moisture and low minimum temperatures may limit pasture growth beyond turning green. The chance of a false break (pasture turns green but fails to grow and can even die without adequate follow up rainfall) is high during this time.

If pastures are not showing signs of turning green and regaining biomass, their yield over the growing season will be reduced and they are also at their most vulnerable. Cattle “chasing the green” is often experienced during this time, and cow condition can fall rapidly as they spend hours walking paddocks trying to meet their intake requirements.

It is important to consider weed management at this point to prevent unwanted plants outcompeting re-establishing pastures.

Day 2 – Nov-Jan

Depending on adequate rain since the “green point”, you should begin considering your stocking numbers and grazing intensity to meet pasture feed supply from November until January.

Based on the limiting effects of the October green point, the more favourable conditions should enable high pasture growth rates. Feed quality is likely to be high as the pasture is vegetative and not yet matured.

Day 3 – Mid Feb

During February, rainfall and temperature are usually non-limiting. Pastures may begin to elongate and

become stalky as they enter the reproductive stage, reducing quality. At this stage, feed quantity should be at maximum.

You may benefit by considering the opportunity of selling livestock while prices are not limited by other farmers trying to destock closer to winter in delayed preparation for potential feed gap risk.

Day 4 – April

As summer pasture growth slows or becomes dormant, the quantity available is likely to be the highest until October. Quality declines as pastures set seed in response to reducing temperatures and day length.

The most important consideration now is how to prevent the forecasted winter feed gap. This may be achieved by:

- reduce feed demand by selling livestock
- increase feed supply by storing carryover feed such as silage or hay, or by buying in feed such as supplement licks, grain or hay
- promote pasture growth by sowing cool-season plants such as forage oats, ryegrasses, forage brassicas, white clover, arrowleaf clover and plantain

These options may be limited by on-farm equipment, labour, economics, soil properties and fertility and individual attitudes to risk.

Where are we now in this feed year?

The BOM long-range seasonal outlook for the next three months from February 2023 states a weakening La Niña. This suggests that soil moisture and temperature will limit pasture growth leading into Autumn and Winter.

Rainfall is forecasted to likely be below median rainfall, with maximum temperatures to be very likely above their median. We may experience a difficult feed gap from slow to dormant tropical pasture growth over April until October if weather is not favourable.

Pasture quality is declining and what feed you have on hand today is most likely the maximum feed you will have over winter. Responses may include lower stocking numbers and/or investigate how to maximise feed supply over the winter feed gap period.

Summary

Every beef producer's situation is different; from the land and soils they manage, available feed, recorded rainfall to date, cattle condition, financial position, attitude to risk, and what drives the decision-making process on-farm, e.g., fact (evidence something may or may not occur) or faith (belief that something may or may not happen).

Regardless, the riskiest approach to managing a feed year is to not take the time to set decision days, not only around pasture growth and feed availability but also water, stock condition and most importantly, finances.

The decision days mentioned here relating to pasture growth can also be a suitable time to recheck the other critical areas of the business and to reflect on previous decisions made at given times. The ability of the farmer to balance feed demand and feed supply throughout the feed year and forecast for future challenges impact all the key aspects of a beef grazing business.

For more information

Contact Nikia Nolan, North Coast Land Services Officer - Livestock (agricultural advice):

Mobile: 0497 862 221

Email: nikia.nolan@lls.nsw.gov.au

You may also contact your nearest Local Land Services office on 1300 795 299 or visit our website: www.lls.nsw.gov.au

Local long-range seasonal outlook updates are available via the Bureau of Statistics (BOM) website: <http://www.bom.gov.au/climate/ahead/?ref=fttr>