Canter For Climate

PASTURE GROWTH AND RECOVERY

FACTSHEET #2

FACTSHEET 2/5

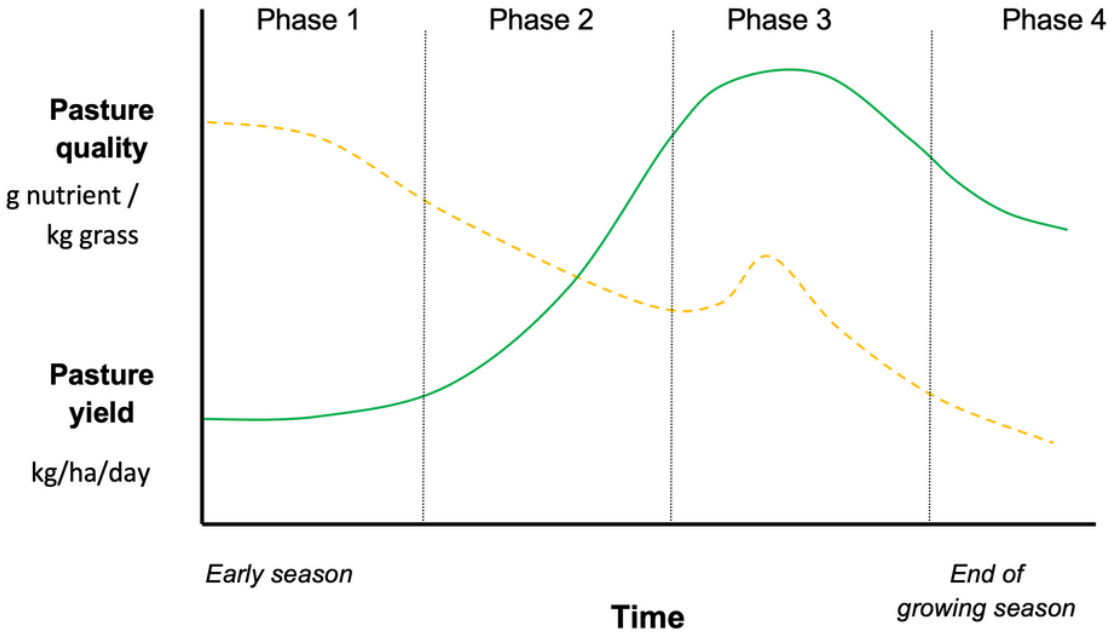
PASTURE GROWTH AND RECOVERY

Factsheet 2 explains in more detail pasture grasses' growth patterns and how grazing influences the quality and quantity of grass grown.

Actively managing your pastures will improve production, reduce feeding costs and improve the sustainability of your property. To understand how to manage your pastures you need to understand how pastures grow.

Phases of grass growth

Most pasture grasses go through four phases of growth. The actual time and quantities produced will differ dramatically with plant species and climate zones but the general trend applies to most grasses.



Seedlings and heavily grazed plants at the start of the growing season are in Phase 1 and are usually very slow at producing leaf as they put most of their effort into producing an extensive root system. The leaf that is there is usually of very high quality, containing lots of nutrients and protein and is especially high in sugars. This is why stock love the young pick. But the total amount of plant material produced [kilograms of dry matter grown per hectare per day (kg/ha/day)] is low.

During Phase 2 the plants grow much more quickly producing much more bulk per day (kg/ha/day). During this time the quality [grams of nutrition per kilogram of grass (g nutrient/kg grass)] is beginning to fall, but the total amount of nutrition provided per hectare is increasing, mimicking the yield graph.

Phase 3 is when plants are maturing and seeding. Nutrition provided can spike as the seeds are forming but then drops off quickly as they mature and fall, as does the total bulk in the plants as they "hay off".

In Phase 4 the old rank pastures produce very little new feed and have stagnant root development. Grasses in this phase are generally unpalatable to horses (see later for management options).

Grazing and slashing effects

The amount of plant material removed through grazing (utilisation rate) or slashing height can determine how quickly a plant recovers. Removing too much can slow recovery and if done repeatedly will dramatically weaken the plant.

There is much debate on how much is “too much” and this will depend on your grass species, the health of the plants root system and current climate. Only experience on your own property will determine this.

Following are some basic utilisation rates that are routinely recommended. Very healthy swards can cope with occasional heavy grazing but still need time to recover.

Generally removing more than 75% of the total plant (usually 4/5 of its height), especially from young plants or those with weakened root systems, will make them slow to recover.

Removing 90% of the plant can cause most of their roots to stop growing, in some cases the plants don't re-grow any new roots for more than two weeks, significantly slowing the plant’s ability to re-grow.

Continually removing large amounts of the plant material without adequate recovery will dramatically reduce the size of the root system and the size and vigor of the plant.

However, pasture species have evolved with grazing animals and do respond to being grazed. A pasture that is not grazed at all is not stimulated to develop big deep root systems. Pasture also benefits from tamping and soil disturbance as this helps break up old grass clumps and buries seeds.

Image: Rhodes grass in Phase 3 growing phase.

Note: Tussock grass species, like most Rhodes varieties, need to seed every few years to persist in the long term.

Regenerative grazing is when pastures are grazed at high stock numbers for short periods and then spelled or rested.

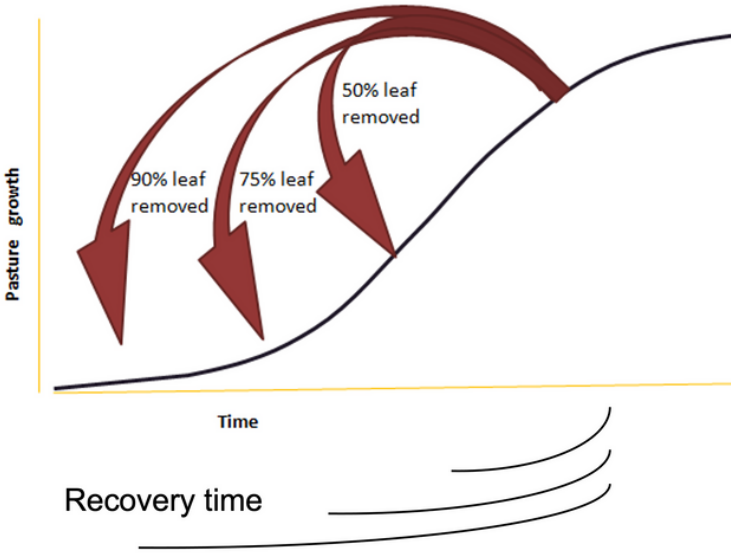
Productive pasture species usually need up to 25% leaf left after grazing/slashing if you want to have the pasture rebound as quickly as possible.

If a plant has leaves then it can continue to photosynthesis to feed its roots and produce new growth. If it has stem left, it can use these reserves to grow new leaves.

If almost all of the plant, all leaves and most of its stem is removed, as in a heavy grazing or low mowing, then the plant has to grow back from root reserves. This can weaken the plant and make recovery slower.

A pasture where 90% of the plants have been removed can take 3 or more times longer to recover compared to if only 50% was taken.

Some pastures in very good condition with extensive root systems can have large amounts taken but must be given sufficient time to recover.



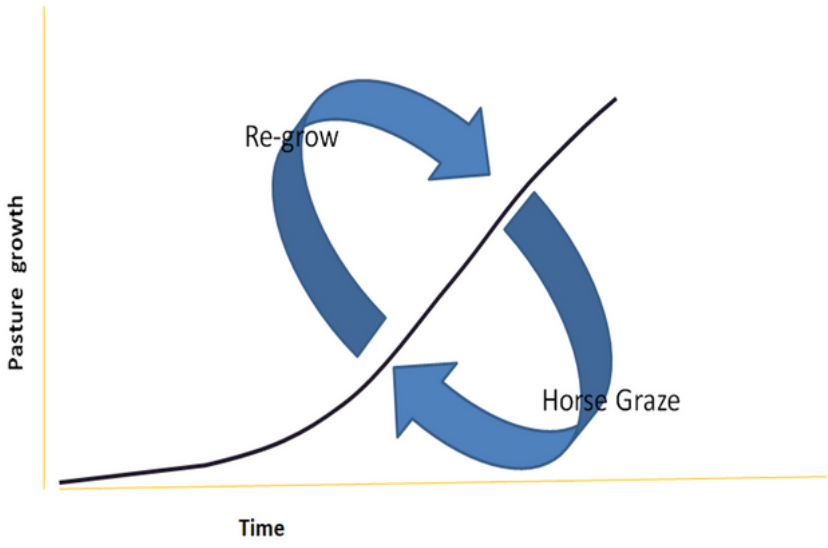
Usually you will achieve maximum volume of good quality pasture by grazing up to 75% utilisation and leaving to rest until recovered.

All grazing animals do not eat a pasture evenly, and will graze some plants harder than others. The figures given here are an average of many pastures.

If plants are allowed to recover before re-grazing, they maintain a healthy root system that makes them;

- Produce more total feed volume per day.
- More resistant to long periods of dry.
- Have access to more nutrients.

Desirable grazing



Additional climate benefits:

Healthy root systems feed the soil biology allowing more carbon to be stored in the soil. This increase in soil organic carbon stores can be a major part in removing CO2 from the atmosphere.

Summary

Effective pasture management involves considering grazing intensity, allowing for plant recovery, and recognising that both overgrazing and under-use can compromise pasture health and the quality of feed produced for your horse.

Key points;

- Being continually grazed is not good for pastures.
- Taking too much can damage your plants, with "too much" being determined by your species, climate and health of sward.
- Plants need to recover before being grazed again.
- Healthy pastures produce the most feed of the best quality for your horse.
- No grazing is not beneficial to pastures.

References

Article: Root-growth stoppage resulting from defoliation of grass by Franklin J Crider
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NQ Dry Tropics NRM - Healthy Soils Project
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Queensland Department of Agriculture and Fisheries (QDAFF)
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Resource Consulting Services (RCS)
www.rcsaustralia.com.au