



Canter For Climate



PASTURES FOR HEALTHY HORSES

FACTSHEET #4

FACTSHEET 4/5

PASTURES FOR HEALTHY HORSES

Horse paddocks are often not the lush green pasture we would like to see our horses grazing.

Bare ground is either mud in the wet or dust in the dry and does not allow water to enter the soil resulting in additional runoff and erosion and the soil not storing moisture for the later dry periods.

The lack of grass also makes us reliant on bough feed which is expensive.

If the horse paddock has grass, it is frequently more lawn like than pasture. This short, sweet grass is not the healthiest for our horses to eat.

By changing the way we graze our pastures we as can improve the pasture's composition, quality and persistence for the benefit of our horse health, our budget and the environment.



Horses need constant access to roughage

Pastures for healthy horses

Horses need constant access to roughage as their gastrointestinal tract is an enormous organ and it needs to be kept full for gut and metabolic health.

Most grazing animals cannot 'digest' fibre themselves but need bacteria in their guts to ferment fibre to convert these structural carbohydrates into useful energy.

Horses, unlike the vast majority of grazing animals, don't have a rumen that is specifically designed to house the billions of bacteria to digest fibre. Horses have to digest fibre in the small intestine also known as the hindgut, that provides the bacteria somewhere safe and warm to live and fibre to feed on. In return, the bacteria pass on to the horse much of the energy contained in the fibre. (The rest is lost in farts.)

How fibre contributes to the horses health:

1. It is the fibre in a horse's diet that provides the bulk to keep the gut full and healthy and to trigger the "I'm full" feeling to cause cessation of grazing.
2. Fibre provides an important source of energy/calories for horses.
3. Important vitamins like vitamin B1, biotin and vitamin K are produced during the bacterial fermentation of fibre in the hind gut.
4. Fibre soaks up and holds water in the gut to act as a water reserve when horses need it.

Lack of fibre can lead to:

1. Severe colic - if a horse's gastrointestinal tract is not kept full it is prone to twisting, potentially causing serious blockages requiring surgery.
2. Diarrhoea - low fibre diets very often result in loose sloppy manure, leaving the horse prone to problems with dehydration and electrolyte deficiency.
3. Dehydration - fibre in the gut is a water reserve helping to buffer periods of heavy sweating or time off water.



4. Energy deficiency – chaff and hay are not just fillers but are important energy sources.
5. Vitamin deficiency – the bacteria that ferment fibre in the hindgut also produce several vitamins.
6. Gastric ulcers - horses' stomachs are constantly releasing gastric acid and the horse relies on eating fibrous feeds as the chewing required generates a lot of saliva which acts to buffer the gastric acid.
7. Boredom – not eating leads to boredom which can lead to cribbing, weaving and chewing on strange objects.
8. Constant hunger - because fibre is the part of the diet that provides the 'gut fill' feeling, a diet low in fibre will leave a horse always feeling hungry even when their calorie requirements are being met. This can then cause its own set of problems including behavioural issues and even sand colic
9. Sand colic – hunger and boredom can lead to horses consuming dirt and this can lead to sand accumulating in their hindgut causing blockages or diarrhoea. A high fibre diet not only helps prevent ingestion of sand in the first place but is also effective in flushing out the sand.

What type of fibre is best

Without a rumen, horses cannot efficiently digest fiber as coarse as cows and other ruminants so they do poorly on very old rank grasses. As explained above however, they still need a diet high in fibre to maintain gut health and normal weight.

The reason horses prefer short grass is because it is “sweeter”, literally. Short grass is high in Non-Structural Carbohydrates (NSCs), which are sugars and simple starches. Generally as the grass grows its cells have more fibre and less NSC.

Almost all grazing animals [cows to kangaroos] will usually choose the short, young, sweet grass as it is also generally has higher concentrations of protein, vitamins and minerals.

However if this short sweet grass makes up the majority of the horses diet it can lead to Equine Metabolic Syndrome (EMS), an endocrine condition that leads to poor insulin regulation, overweight issues and possibly laminitis. The risk of Cushing's is also increased with a high NCS intake.

And it is not good for your horse to graze grass species that contain oxalates, that bind up and prevent the absorption of calcium, generally the shorter the plant the higher the concentrations of oxalates.



Horses should not eat only short grass

A healthy horse eats until they have a specific volume of fibre in their stomach before stopping. So eating short grass with a high sugar and low fibre ratio means a horse consumes a lot of high-sugar grass before enough fibre is ingested to trigger that 'full enough' feeling and finish their grazing bout. This is why so many ponies on short grass are overweight.

If you have an overweight horse/pony or one that suffers from EMS, laminitis or cushing's you should focus on increasing your pastures' fibre content (longer grass), not just restricting the time they graze.

However, NSC levels can still fluctuate quickly with changes in the weather so owners of horses susceptible will have to remain vigilant. Cold night-time conditions with sunny days can cause an increase in NSC. Spring growth of grasses can cause higher levels of NSC. Frost, rain or wind can cause rapid changes in NSC concentrations.

Horses walk more when grazing longer, more diverse pasture as they seek out different plants. A diverse range of pasture species to select from helps them receive the correct range of nutrients, mimicking their grazing in the wild.

Constant grazing and frequent short mowing only allows a few grass species to survive. Achieving longer pastures is usually achieved by Regenerative strip grazing.

See Factsheets 3 and 5 for why and how.

Problems that may occur with horses on taller grass

While taller grasses are better for both pasture and horse health, there are several things to be aware of which can cause problems when grazing horses in tall grasses.

Weeds seeding

Allowing pastures to grow taller resulting in increased weed seeding is often considered a potential problem but one that isn't usually realised long term.

Forbs (annual broadleaf plants) that many of us consider weeds are there because the pasture is not growing well, and are not stopping the pasture from growing. They are doing the landscape a favour by covering what would otherwise be bare soil, preventing erosion and dust. Also weeds roots are feeding soil biology that will also aid grass growth. With rotational grazing many of these fordes (blue top/billy-goat weed, cobblers peg, fleabane etc) will generally fade out as the pasture becomes thicker and taller. If the weeds begin to seed and this has proved to be an issue, then the paddock can be slashed. But slashed high to ensure sufficient grass is left to enable it to re-grow quickly and leaving the weeds alive to do their job.

Serious weeds such as Parthenium and Giant Rats Tail grass or anything poisonous to your animals will need to be controlled.

Grass seeds in eyes

Grasses do not need to be allowed to seed to achieve lower NSC/sugar intake, it usually only needs to be longer than 30cm.

If the pasture is going to seed the paddocks can be slashed high after each graze, if seeds have proved to be a problem.

Ticks

Ticks can become more of an issue with long grass. The main thing is to identify what species of ticks are in your area and what affect they might have on your animals at what time of year.

An adult horse can often cope with quite a large number of cattle ticks (*Rhipicephalus microplus*) but one or two paralysis ticks (*Ixodes holocyclus*) on a young horse could cause serious symptoms.

Ticks can also give your horse or you Rickettsial infections or Q-fever and many suffer reactions at he bite site.

In Australia there has been no conclusive evidence of Lyme disease through testing in humans and animals and attempts at isolation from ticks.

As pastures become more diverse and house more natural predators, tick numbers may be contained naturally.

If ticks are causing issues, then sprays including insecticide or natural deterrents (i.e. eucalyptus or tea-tree oil) can usually successfully limit tick infections.



Advantages of rotational grazing for you and your horse

- 1) Provides more feed of a quality that is best for horses.
- 2) Reduced need for worming.
- 3) Reduced need for picking up manure.



1) Provide more feed of a quality that is best for horses

See Factsheet 3 for details

2) Reduced need for worming

Rotational grazed pastures, where you are moving horses onto new pasture every couple of day, usually have high soil biology activity that incorporates manure into the soil destroying worm eggs. Longer grass also allows horses to graze higher reducing the likelihood of consumption of lava. All this reduces the intake of immature worms which frequently results in removing the need for worming.

See Case Studies for details: (all three have worm egg counts done)

- Gavin Heywood, New England New South Wales - 11 years of rotationally grazing, 200+ horses, only needs to drench every 2-3 years.
- Glenn Giessler, Gold Coast, Scenic Rim South East Queensland - 2.5 years of rotational grazing, 7 horses no worming.
- Diana O'Donnell, Far North Queensland – 3 yr rotational grazing, 3 horses, only one horse wormed once.

If you need to worm your horses, it is best to leave them in a confined area for a day so that the anthelmintic does not interfere with dung beetles in the grazing area.

3) Reduced need for picking up manure

A horse can produce over 5 tonnes of manure/dung a year. Manure is a wonderful biologically active addition to the soil. It is also usually full of all the mineral supplements we feed our horses.

It is possible to only pick up manure if it has not incorporated into the soil before returning horses to that paddock. See Case Study (Diana O'Donnell) for details.

Summary

Horses need large quantities of fibre in their diet. Consumption of a high proportion of short sweet grass leads to physical and mental issues.

There is a significant increase in the risk of Laminitis, Equine Metabolic Syndrome (EMS) and Cushings in horses grazing grasses with high sugar (Non structural carbohydrates). Horses on low fibre diets are also more at risk of developing colic and becoming dehydrated during work.

Also stabled horses that don't have hay to chew on will often find something else to chew on out of hunger and/or boredom.

You can provide a high fibre diet from hay but this is expensive. Longer pasture does the job perfectly. Letting your grass grow to 30cm before grazing will provide large amounts of good quality, high fibre feed. With tropical pastures this will also provide grass with lower oxalate levels, compared to that grass when shorter.

Rotational grazing your property, by only allowing your horses access to small parts of the pasture at any time, allows the grass to grow taller on the areas being rested (not grazed). This grazing system allows your pastures to be healthier and provide a healthy diet to your horse

*Horses need large quantities of fibre
in their diets in order to be healthy*



References

Equiculture

www.equiculture.net

Article: [Short grass or long grass for horses? Which is best?](#)

Equi Life Magazine

Article: [Get down and dirty for a better environment](#) (email required to read)

Kentucky Equine Research

Article: [Carbohydrates in Equine Nutrition](#)

Feed XL

www.feedxl.com

NQ Dry Tropics NRM - Healthy Soils Project

www.nqdrytropics.com.au

