



Perth Region
NRM

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agricultural outcomes

Pasture management for horse owners

Key practices for good pasture management

Whether it is summer or winter, dry or wet, when you drive past a well-managed horse property, what stands out is the continuous pasture cover on their paddocks.

To achieve this on your own horse property, you need to undertake a range of good practices. To begin with, you need to change your perspective. Start viewing your paddock management in terms of what is best for the grass, rather than what is best for the horse. In essence you need to become a grass farmer, not a horse grazer. When considering paddock management from this perspective, there are two main areas that you need to get right.

Growing grass — becoming a great grass farmer

- Know your soil — soil testing
- Feeding the plant — pH, CEC and fertiliser
- Protect the soil

Harvesting grass — horses as lawn mowers

- Graze for ground cover
- Rotational grazing
- Sacrifice areas

Soil testing

Growing healthy pastures starts with the soil. The healthier your soil, the healthier your pasture will be. To get a good understanding of soil health, it is necessary to perform a soil test. Most soil testing companies will provide you with a soil testing and monitoring kit and guidance on how to go about testing and recording the information.

The best way to soil test is to randomly zig-zag across your paddocks taking multiple samples to the depth of the pasture's effective root zone and mixing them in one container. From the mixed accumulated soil, take enough soil to fill a sample bag. You may also like to separate areas of your property into sections that may have different management needs and test these separately, such as high and low areas.

Where possible, use an independent soil testing laboratory.



To compare soil tests from one year to the next, you should sample at the same time every year. Testing over summer works well. During this period (unless you are irrigating) the pasture is not actively growing and the soil is dry. Pastures should be soil tested every 2-3 years in order to provide a baseline for tracking changes in pH and fertility.

Understanding your soil test

There are four main areas you need to understand in a soil test:

pH

pH is a measure of the acidity or alkalinity of the soil. Soil pH can dramatically affect nutrient availability and plant growth. Ideally you want to maintain pH between 6.2 and 6.5 for grass-legume pastures. Most West Australian soils tend to be acidic. Applying lime or dolomite according to your soil test results will raise soil pH, increasing nutrient availability to plants.

Cation Exchange Capacity (CEC)

Cation exchange capacity (CEC) is a useful indicator of soil fertility because it shows the soil's ability to supply three important plant nutrients: calcium, magnesium and potassium. A low CEC indicates that your soil has a limited capacity to hold nutrients. Clay soils tend to have a higher CEC than sandy soils. CEC should be considered when applying fertiliser. A low CEC soil will not have the same capacity to hold the nutrients supplied as a high CEC soil. Fertiliser applications may need to be split into multiple applications or reduced overall in order to prevent nutrients leaching through the soil and becoming unavailable for the plants to use.

Organic matter

Organic carbon is a measure of the organic matter in the soil. It includes non-decomposed plant litter, soil organisms and humus. Soil organic carbon stores important nutrients, stabilises soil structure and feeds soil microbes.

Macro and micronutrients

Macro nutrients are commonly phosphorus, potassium and nitrogen. Adequate levels of these macronutrients are required for healthy plant growth. Where pastures contain nitrogen fixing plant species such as clover or medic, then it may not be necessary to apply nitrogen fertilisers as this will be produced by the plants.

Micro nutrients or trace elements are copper, zinc, molybdenum etc. These nutrients are often deficient in West Australian soils.

Macro and micro nutrients should only be applied after the soil pH and CEC have been corrected. Applying fertilisers to acidic or alkaline soils wastes nutrients as they become locked up and unavailable to the plants and can leach through the soil profile before the plants have a chance to utilise them.

Useful references

Interpreting soil test results: www.depi.vic.gov.au/agriculture-and-food/dairy/pastures-management/fertilising-dairy-pastures/interpreting-soil-and-tissue-tests

Feeding the grass

Once you have tested your soil and have a picture of your soil's health, you can apply lime or dolomite to correct the pH and CEC. Spreading lime and/or dolomite can be done in autumn prior to, or in conjunction with opening rains. Finding contractors to spread small amounts of dolomite or lime on small landholdings can be difficult. Be prepared to phone a number of contractors almost as soon as you receive your soil test results so you can book someone to complete the work in a timely manner.

During growing season, fertilisers can be used to correct any nutrient deficiencies. Select fertilisers based on your soil test recommendations. To reduce nutrient run off, consider splitting your fertiliser applications into two or three smaller doses throughout the growing season and avoid applying fertilisers prior to heavy rains.

If you are planning on splitting your fertiliser applications, the best time to apply fertiliser is directly after the horses have grazed the paddock. This provides the grass with a dose of nutrients just when it is actively growing and helps to improve pasture vigour and regrowth.

Protect your soil

Maintain a sustainable stocking rate

Most shires have a stocking rate determined by soil type for your property. It is usually in the range of 1–2ha per horse. If land area is limited, grazing must be controlled to maintain healthy pastures. Your grazing management is critical. Generally, high stocking rates are only approved when paddocks are irrigated and/or grazing is restricted through stabling or yarding. Don't forget to take into consideration any other animals that are contributing to your grazing pressure, including wild ones such as kangaroos and rabbits.

Useful references

Stocking rate guidelines for small rural holdings: <http://sustainableagriculture.perthregionnrm.com/node/3383>

Remove horses from paddocks when pastures are waterlogged or inundated

Hoof action can seriously damage established pastures during wet periods of the year. Place horses in a dry paddock or use a sacrifice area and feed hay when the soil is soft.

Harvesting grass

When looking at pasture management from a grass growing perspective, our horses become the equivalent of lawn mowers. Like a lawn, the grass needs to be harvested evenly, without damaging the grass or exposing the soil.

Rotational grazing: subdivide paddocks

Establish two or more paddocks and graze them rotationally. Maintaining horses in a herd is often better for rotational grazing. Alternatively if your paddock horses graze individually, then splitting the paddock in two halves, so that the halves can be rotationally grazed is preferable.



Figure 1 Measure the heavily grazed grass on the right side of the photo to determine if you need to remove stock. This paddock is overdue to be rested. The longer grass on the left can be slashed and the manure distributed to spread nutrients more evenly across the paddock.

(Photo: Sandy Pate)

Graze according to ground cover and leave plenty of leaf area

Do not graze closer than 5–10cm and maintain ground cover at 70% or higher on fragile soils or sloped paddocks. Leaving plenty of leaf area results in faster regrowth and helps maintain a vigorous pasture. Horses tend to graze some areas smooth like a lawn. Monitor these areas and rotate horses to a fresh paddock when heavily grazed areas are at 5–10cm or gaps in the pasture cover start to appear. Slash ungrazed areas of the pasture to prevent them from becoming rank and unpalatable and to maintain even grazing pressure/ground cover across the paddock. Once your paddocks have dried off going into summer, do not slash the paddocks. This ground cover once dry is much more fragile and needs to last all summer until opening rains the following year, particularly if you have kangaroos or feral animals that will continue to provide a level of uncontrolled grazing pressure.

Distribute manure piles

Harrow or drag pastures after horses are removed, to distribute manure piles and encourage uniform grazing. If you must pick up manure, compost it and reapply to your paddocks so that the nutrients and organic matter are recycled, rather than lost. Alternatively, use collected manure to cover any small bare patches in the paddock. This will discourage horses from eating plants that are trying to cover this soil.

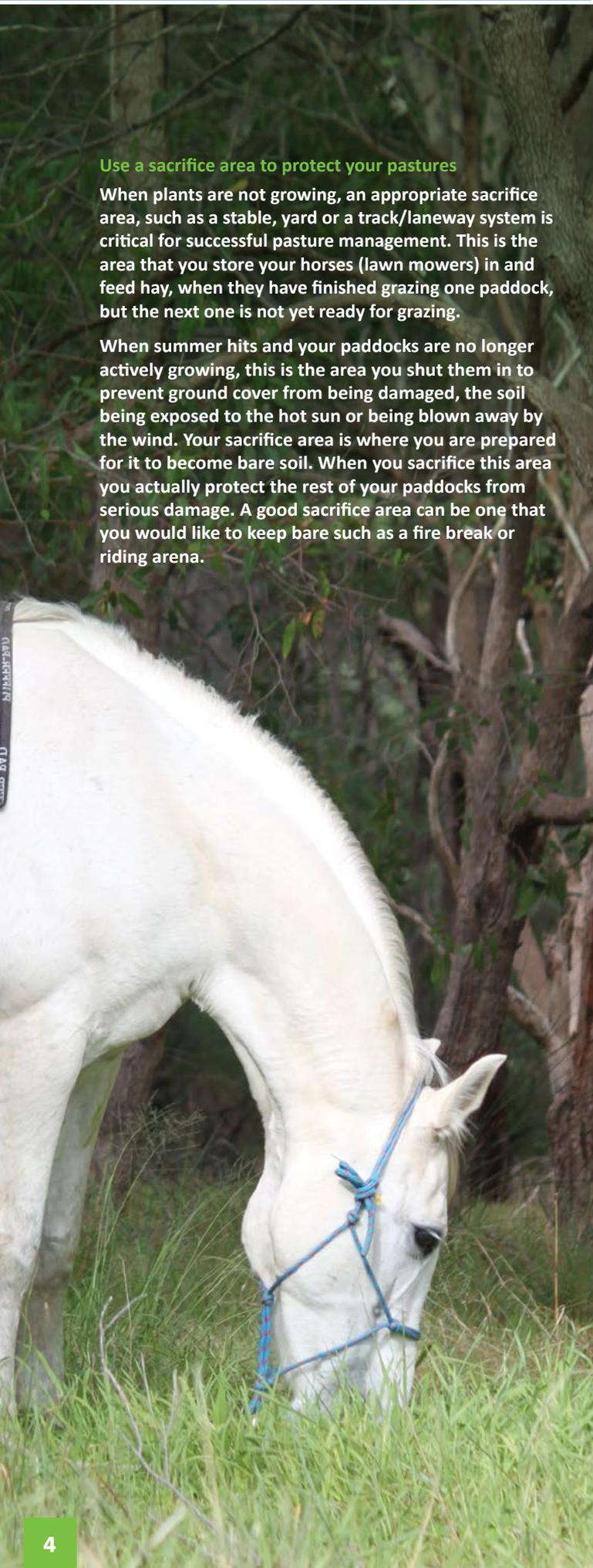
Rest pastures between grazing events

Resting pastures allows plants to replenish food reserves. This makes them more resilient to grazing pressure. Allow pastures to regrow to a height of 15 to 20cm. Rest periods will be longer in the middle of winter, as plant growth slows when temperatures and sunlight hours are low. In spring, rest periods will be shorter as plants grow faster due to the increase in temperature and day length.



Figure 2 Limited ground cover leading to soil erosion.

(Photo: Sandy Pate)



Use a sacrifice area to protect your pastures

When plants are not growing, an appropriate sacrifice area, such as a stable, yard or a track/laneway system is critical for successful pasture management. This is the area that you store your horses (lawn mowers) in and feed hay, when they have finished grazing one paddock, but the next one is not yet ready for grazing.

When summer hits and your paddocks are no longer actively growing, this is the area you shut them in to prevent ground cover from being damaged, the soil being exposed to the hot sun or being blown away by the wind. Your sacrifice area is where you are prepared for it to become bare soil. When you sacrifice this area you actually protect the rest of your paddocks from serious damage. A good sacrifice area can be one that you would like to keep bare such as a fire break or riding arena.



Figure 3 Horses on a track system sacrifice area. Good ground cover is maintained in the paddock on the right, while the horses are fed hay on the fenced firebreak.

(Photo: Sandy Pate)

Useful references

Managing horses on small properties
Jane Myers Equiculture, Landlinks Press 2005

Paddock Paradise — A Guide to Natural Horse Boarding
Jaimie Jackson, Star Ridge Publishing 2007

Pasture Health Kit
Meat and Livestock Australia www.mla.com.au/News-and-resources/Publication-details?pubid=3998



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