

Horse Keeping in Low Rainfall Areas



Low rainfall areas pose a special challenge for horse property owners to maintain adequate ground cover



Maintaining ground cover is the goal for horse properties. Lucerne and veldt grass feature on this property

Introduction

Managing a horse property in low rainfall areas can be challenging. Establishing pasture, maintaining ground cover and controlling weeds can be difficult when average annual rainfall is less than 400mm per annum. However, with careful management practices a horse property can be sustainable.

Protecting Soil & Pasture

A horse paddock can become degraded through poor grazing management practices. A paddock is at risk when adequate ground cover is not maintained resulting in a loss of ground cover and soil creating a dust nuisance for neighbours and health issues for the horse. Maintaining adequate ground cover on the surface reduces soil loss.

Table 1 – Surface cover needed to protect soil from wind and water erosion. (DWLBC 2008)

	Minimum Cover %	Desirable Cover %
Wind Erosion		
- loam	15	35
-sandy loam	20	50
- sand	50	70
Water Erosion		
-level land	60	75
- sloping land	75	85

Horse haven



Top and Above: This bare land was transformed into a horse haven, with grazing, in an area averaging 380 mm per annum. Photos: Jacqueline Raphael

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Pastures

A pasture improvement plan for a property will consider introduced and native grass species already present.

When choosing a pasture mix it is important to consider the purpose of the pasture, the grazing regime, rainfall and climatic factors. Weeds compete with pasture and in some cases can be toxic to horses. Areas of native grass pasture may need different management regimes from introduced species.

Pastures can be described as either perennial or annual. An annual pasture survives for one year, setting seed late spring which remains dormant over summer until rains promote germination the following season. If planning to include annuals in the pasture mix, annual rye grass and clover are commonly used in low rainfall areas.

Perennials live longer than 12 months and generally have deeper root systems. It can be difficult to establish and maintain perennial pasture in low rainfall areas unless irrigation is available. A suitable perennial for low rainfall areas is veldt grass (*Enrharta calycina*) a perennial grass ideal for sowing in sandy soils where the annual rainfall is as low as 300mm.

Weed control may be required to ensure your pasture remains productive. Annual weeds, such as capeweed and salvation jane,- germinate, grow set seed, and die in the same year. Biennial weeds - such as scotch thistle and spear thistle,- germinate and grow in one year, set seed and die the following year, while perennial weeds, such as horehound and onion weed, live longer than two years.

Seek advice on the best form of weed control to suit your property, budget and time. If spraying, it is best to do this while weeds are in their early growth stage, when roots and foliage are small. Early spraying also allows pasture plants to develop with minimum competition.

Integrated weed management (IWM) combines one or more components of a weed management system , for example, hand pulling, slashing, biological control, herbicides and grazing. The aim of IWM is to control weeds and prevent them from reproducing, so eventually the weed population declines and the amount of weed seed produced is reduced.

Contact your Natural Resource Centre for further information.

Shelter belts

Shelter belts are particularly useful on horse properties. They provide shelter for horses and reduce soil erosion caused by wind. Pastures also benefit from strategically placed wind breaks. Landholders can contact their local NRM office or Trees for Life to obtain a list of suitable trees and shrubs to plant to suit each locality.



A shelter belt on a horse property with an average mean rainfall of 399 mm per annum. Photo: Robyn Warren



Arranging for a soil sample to be analysed will help identify soil deficiencies. Photo: Andy Cole

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Establishing pasture for horses

It is recommended you seek professional advice before establishing or renovating a pasture.

The following steps are a guide only;

1. Alternative paddocking for horses will need to be found until pasture is well established.
2. Plan early. Check on the availability of equipment and/or contractors.
3. Soil test in summer, the year before sowing, to check fertility levels, and seek advice on a suitable fertilizer program.
4. Control weeds & pests a year before sowing. This may involve a combination of herbicide application and slashing. Graze paddocks over autumn to 2cm to clear plant residues.
5. Allow full weed germination after the autumn break (normally 3 weeks after opening rains).
6. Spray appropriate herbicides & insecticides to control weeds and pests (e.g. red legged earthmite).
7. Direct seed pasture in late April- June provided significant rain (>12mm) is likely soon afterwards.
8. Check weekly for any pasture pests and treat problems promptly.
9. First graze when plants are 10cm tall and well anchored, and rest the pasture when plants reach 4-5cm. Reduce grazing pressure in spring to allow seed formation.

Resting pastures from grazing is essential to ensure long term survival. Rotational grazing which allows a period of grazing followed by a period of rest is considered one of the best ways to utilise pastures throughout the year.

The condition of the pasture and percentage ground cover will determine when to rotate horses. Rotational grazing may not be practical on small properties. Landholders can make use of yards or stables to restrict the time horses are grazing pastures.

If grazing is limited yards and shelters should be an integral part of a horse keeping property to protect soil and pastures.

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*A "sacrifice paddock" or yarding will form an essential role in horse property management on small properties.
Photo: Jacqueline Raphael*



Trees will need protecting from the impacts of horses and live-stock. Photo: Jacqueline Raphael



Electric fencing is a useful tool to manage grazing regimes, protect trees or fence off wet areas. Photo: Jacqueline Raphael

On small properties, especially in low rainfall areas, horse yards are a very important tool to help property managers to keep pasture & ground cover year round. Horses may be yarded for extended periods at some times of the year or yarding may form part of permanent paddock management programs.

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Tips for preparing horse yarding

Ideally, horse yards are surfaced, well-draining and provide each horse with shade, shelter while allowing access to neighbouring horses for socialisation. A well drained yard will also reduce the likelihood of foot problems such as greasy heel.

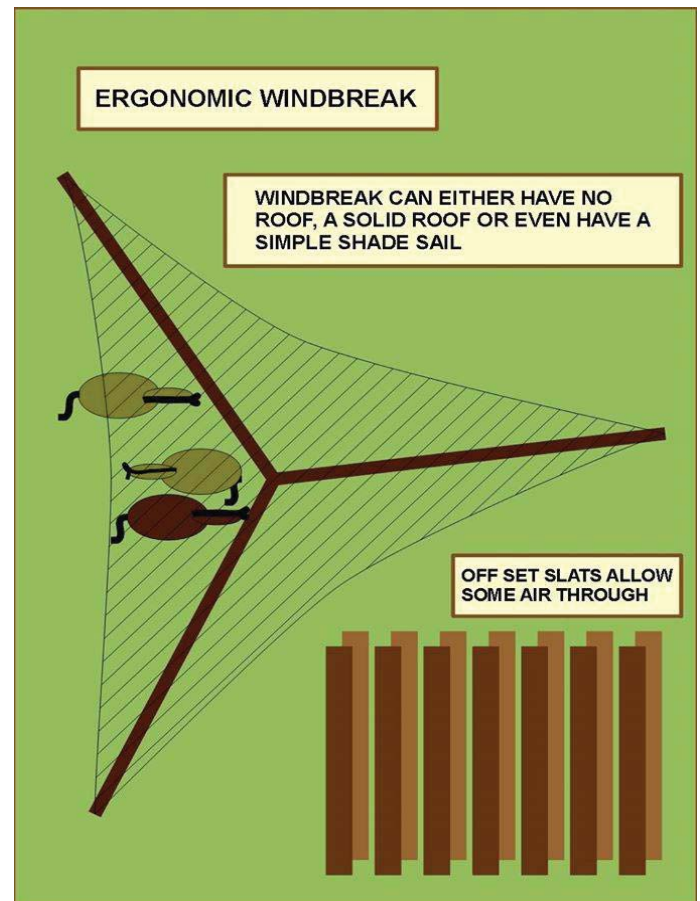
Ideally, yards are constructed with a firm base with a minimum slope of 1 in 30 to allow drainage. One method is to lay a 10cm base of road rubble or dolomite gravel on the prepared ground. Once compacted, the rubble can be topped with a 15cm layer of arena sand. A wooden border or other suitable barrier should be installed around the base of the fence to prevent the wind causing a loss of surface material. Traditionally designed walled yard shelters should be lined to a height of at least 1.5m with material that will reduce injury to the horse if kicked.

Strategic use of yards during spring, when paddock feed is high, will enable feed intake of ponies and horses to be controlled thereby reducing the risk of founder.

When a horse is removed from a paddock which provides trees, grasses, water, slopes and other aspects of the natural environment, property managers will need to consider recreating these benefits naturally or artificially.

Some "tree benefits" include:

- shade from sun
- shelter from wind & rain
- place to "loaf around"
- socialisation focus point
- somewhere to scratch & rub
- relief from flies otherwise provided by leaves or other horses' tails
- variety in diet (avoid sudden changes)
- variety in eating styles e.g. grazing, browsing
- browsing variety (eat at different heights & locations)
- somewhere to hang out for mutual grooming



Top & above: Paddock shelter design at Bathurst Equine Agistment www.bathurstequineagistment.com

Horse shelter design by Jane Myers of Equiculture www.equiculture.com.au

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Horse health check: sand colic and sand induced diarrhoea

Two very common horse health issues that result from ingestion of sand are colic and diarrhoea. Colic is a broad term for painful digestive tract disorders. Horse owners should have a basic understanding of the function of the horse's Gastro-Intestinal Tract (GIS).

Common causes

Ingested sand is a problem because it mechanically irritates the lining of the small intestine or large intestine causing inflammation. In some cases sand prevents the large intestine from reabsorbing water resulting in diarrhoea.

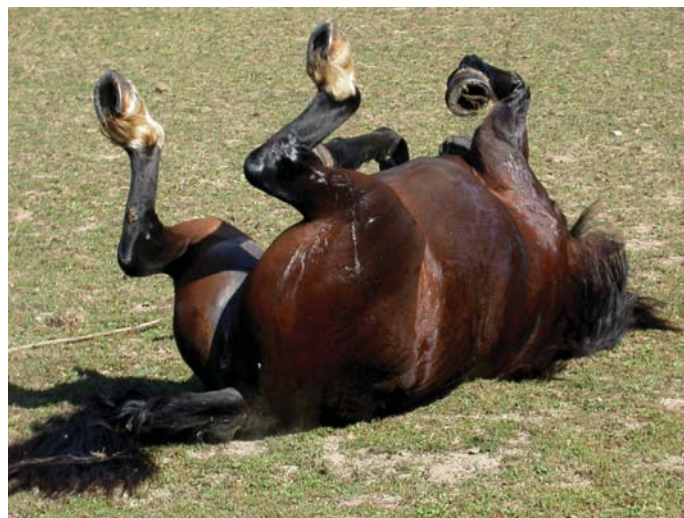
In severe cases, sand accumulates in the large intestine causing a complete blockage which can lead to an extension of the bowel wall, compromised blood supply and death of a section of the bowel wall. If the blood supply of the horse's intestine is severely compromised, or the bowel ruptures, the horse can die.

Symptoms and treatment

Treatment of colic can be drawn out and expensive. The veterinarian may have to visit several times, or the horse may require surgery or perhaps humane destruction.

Symptoms include diarrhoea, rolling, pawing the ground, off their feed, unusual stance or behaviour, kicking or looking at the stomach, depression, not drinking and prolonged amounts of time laying down.

Sand colic can progress to a potentially fatal outcome. Call your veterinarian as soon as you notice any symptoms and follow their advice. Take time to record your observations while waiting for the veterinarian, which will assist in planning a treatment program.



Horse owners should familiarise themselves with the range of signs and symptoms of colic. Photo: iStock

Tips for preventing sand colic and diarrhoea

- develop an ongoing preventative strategy (don't wait until something goes wrong) which includes how and where horses are fed to reduce the likelihood of sand ingestion
- feed a balanced diet high in roughages and fibre avoid sudden dietary changes
- familiarise yourself with the ideas in "Tips for the Care of Confined Horses" so that opportunities for behaviours related to boredom or stress are reduced
- ask your veterinarian about suitable vitamin and mineral supplements
- monitor levels of sand in the manure
- share ideas with friends



'How to take your horse's vital signs'



'Colic in horses: Horse Vet explains what owners should know' signs & symptoms of colic



'Sand colic- stop it before it starts' How to test your horse's manure for sand



Tips for the care of confined horses. Click through or download from www.horsesa.asn.au

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Buying Hay

When pasture quantity and quality drop late autumn and early winter hay is commonly used as a supplementary feed source. It is recommended when purchasing hay to look at a sample bale to assess the quality, ensure that the bale has good colour, is free of weeds and weed seed, and is sweet smelling with a good percentage of leafy legumes and free of mould.



Assessing hay samples during an educational farm walk

Legal Responsibilities of Horse Owners

Horse owners need to be aware of their legislative responsibilities as land managers. Under the Natural Resources Management Act 2004 (NRM Act) all persons have a statutory duty to act reasonably in relation to the management of natural resources within the State. The NRM Act incorporates the management and protection of land and water resources and the control of animal and plants

Horse keeping is defined under the Development Act 1993, as: 'The keeping or husbandry of horses where more than one horse is kept per three hectares [7.4 acres] of land used for such purposes or where hand feeding of a horse is involved.'

It is recommended that you check the horse keeping requirements of your local council as development approval may be required.

The Native Vegetation Act 1991 protects native vegetation and approval is required before any activity that could cause substantial damage to native vegetation is undertaken. Contact your local council or Natural Resource Centre for further information.

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Education Programs



Educational programs, such as the farm walk above, are often run for horse property managers. To find out about events join the Horse SA or your regional Natural Resources email list or check websites for news and updates.



Participants on an educational farm walk testing soil pH levels



Visit Horse SA's pinboard: Horse paddock - common weeds in low rainfall regions



Harley's story. Property improvement in a low rainfall area. Click through or visit www.slideshare.net and search for Horse SA.

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Tips for keeping horses healthy on sandy soils

- Provide hay *ad lib*
- Use a heavy feed bin that is difficult to tip over or hang feeder on the “wrong side” of a solid, well constructed fence so that the horse cannot reach dropped feed on the other side
- Consider a small hole haynet, a haybag with a small hole or Google ‘slow feeders’ and research the many solid construction designs. Slowing down eating replicates the time spent grazing, with the bonus of keeping feed off the ground
- Use a rubber mat directly under feeders. Sweep the mat regularly
- Avoid shallow troughs where sand cannot settle and water heats up. Allow at 50 - 70 litres of water per horse per day, even though your horse may not drink this much
- When cleaning troughs check for excess sand and partially chewed feed. The horse may be frequently washing out his mouth due to sharp teeth or being irritated by the amount of sand being picked up with food
- Regularly observe your horse, he may need to keep occupied (refer to “Tips for the care of confined horses”). Horses in large, empty paddocks may display behaviours similar to yarded horses.



Old horses are more likely to have poor teeth, which inhibits the ability to graze and chew. Special care and diet is needed to avoid weight loss and sand ingestion. Photos: (top) Shan Daw (below) Sandy Doig



Summary

While it is not easy to grow and maintain suitable pasture on small properties in this low rainfall areas, implementing a few key strategies will result in sustainable land management, healthy horses and good environmental outcomes. Horse property managers are encouraged to:

- develop a property management plan
- avoid overgrazing of pastures and control weeds
- establish shelterbelts with native trees and shrubs
- manage manure
- conserve soil by maintaining ground cover
- consider how your horse property management regime can contribute to water quality and conservation

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