Rural Solutions SA

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MANAGING SMALL HORSE PROPERTIES

PREMIUM FOOD AND WINE FROM OUR CLEAN ENVIRONMENT

Government of South Australia
Primary Industries and Regions SA
Managing Small Horse Properties

- Pasture and Grazing Management
- Cross grazing with other Species
- Weed Management
- Managing Soils
Pasture and Grazing Management

- Often horse paddocks are incorrectly stocked and pastures neglected resulting in:
  - Bare patches
  - Weeds
  - Rank grass
  - Erosion
  - Compaction
  - Mud, dust and sand
Pasture and Grazing Management

• Long term poor pasture management results in horse health issues:
  – Respiratory problems
  – Colic
  – Thrush or other hoof health issues
  – Laminitis/founder
  – Obesity
  – Loss of condition
Benefits of Pasture

• Reduce purchased feed costs
• Less likely to develop behavioural issues seen in stabled and yard confined horses
• Horses thrive on a roughage diet for good gut function
• Horses can be allowed to interact with others and benefit from companionship
• Exposure to sunlight for vit D
• Allowed to exercise freely
• Less labour
Meeting Nutritional Needs

- A mature horse requires approximately 1.5% of its body weight per day in Dry Matter (DM) e.g. 500 kg horse requires 7.5 kg DM/day
- DM = Food with the water taken out
- Horses will eat more if given the opportunity up to 2-3%
- Pasture varies in its DM and value depending of the time of year and stage of growth
- Good pasture will meet the nutritional needs of most classes of horses
- In spring when pasture is at its highest in nutritional value it will sustain lactating mares and weanlings but mature dry pastures will not
Meeting Nutritional Needs

- **Digestibility (%)**
  - 75-80: active growth, green
  - 70-75: late vegetative, green
  - 65-70: early flowering
  - 60-65: mid-flowering, green & dead
  - 55-60: late flowering, in head
  - 50-55: dry grass & leaf
  - 45-50: dry stalks

- **Energy (MJ ME/kg DM)**
  - 10.8-11.6: high production
  - 9.9-10.8: moderate production
  - 9.1-9.9: maintain dry stock
  - 8.2-9.1: weight loss of dry stock
  - 7.4-8.2: dry grass & leaf
  - 6.5-7.4: dry stalks

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Meeting Nutritional Needs

- Pasture yields vary between 80 kg of DM per hectare in the peak of spring to 10 kg or less in dry/winter periods.
- Horse owners need to learn to evaluate and monitor pastures no different to a farmer.
- Stocking rate is the number of horses a piece of land can support without land degradation.
- This will be different between horse owners depending on stable and yard time and local council regulations.
- Generally 1 horse needs 2-3 acres (approx 1 hectare) of productive land.
DSE

- Stocking rate is calculated using DSE (Dry Sheep Equivalent). DSE ratings for horses are as follows:
  - 450 kg light horse 10 DSE
  - Pony 6 DSE
  - Horse in light work 13.5 DSE
  - Mare and foal 16 DSE
  - Horse in heavy work is 18.7 DSE
- Varies depending on the size of the horse and its status, i.e., lactating in hard work
- Mount Gambier DSE rating varies from 10-14 DSE per hectare (Ha) on well-managed pasture
Stages of Growth

- Pasture starts to grow with opening rains
- Ideally hold horses off paddocks for 4-5 weeks or the majority of grasses are at the 3 leaf stage
- Use a sacrifice area or paddock to hold horses off
- Allow horses out gradually to acclimatise the gut and give enough time for the paddock has regenerated
- Plants have 3 growth stages
  - Stage 1 vegetative (up to 5cm)
  - Stage 2 elongation (5-10cm) OPTIMAL
  - Stage 3 reproductive (more than 20cm)
Stages of Growth

• Aim to keep pastures at stage 2 of growth through controlled grazing, mowing or hay production
• Recovery time of pasture can be variable following grazing due to climate, rainfall, temperature, pasture species and time of the year
Pasture Species

- Perennials keep growing year after year – great for permanent pasture
- Annuals grow set seed and die in one year
- Legumes important in pasture as they fix nitrogen
- Legumes include clover, lucerne or medics
- Lucerne and clovers have good calcium content
- Buffle grass and kikuyu high levels of oxalates which can cause a calcium imbalance if horses are grazed exclusively
- Pasture species are variable in their palatability and grazing management will prevent a species becoming dominant
Pasture Species

- Some grasses are more persistent than others and are ideal for high traffic areas
- Ryegrass, kikuyu, phalaris, rhodes grass are all hardy species
- Some species have a higher nutritive value than others i.e legumes are higher in protein than grasses
- Ryegrasses can cause toxicity/staggers
- Speak to a qualified agronomist and get advice
Grazing Management

- Use of safe containment areas can help you increase or decrease a horse's time spent grazing and manage your pastures and horses better.
- Set stocking is when a horse has allowed access to the paddock all the time.
- Set stocking is more challenging when it comes to managing worms and pasture.
- Constant grazing pressure does not allow species to regenerate, horses will eat preferred species and it allows weeds to take over the pasture.
Rotational Grazing

- Rotational grazing means you have a few smaller paddocks that the horses are moved around.
- Helps manage over and under grazing
- Reduces bare, dusty and boggy patches
- Allows pasture species to recover and regenerate
- When pastures reach 5-8 cm the horses should be moved on
- When the horses are moved onto a new paddock the recently grazed paddock can be harrowed and or mowed and then rested and allowed to regrow.
Limited Grazing

- Removing horses from the pasture for part of each day
- Allows the conservation of pasture or regulate the amount a horse consumes
- This system should still have another mechanism in place that allows the pasture to rest for a period of time and be harrowed
- Reduces land degradation
- May vary from 4-12 hours depending on pasture and aims
- Removing horses for 4 hours may not impact consumption of pasture greatly as horse can condense their eating time into one long session is necessary but it will reduce the impact/damage a horse can cause in a paddock by loafing/sleeping
- Horses confined for more than 4 hours should be provided with alternative roughage as a horses stomach is not designed to cope with being empty
Strip Grazing and Block Grazing

- Strip grazing uses a temporary electric fence to monitor how much the animals eat each day.
- The horses are moved slowly across a paddock rather than eat what they want and trampling the rest.
- More labour intensive as the fence needs to be moved regularly.
- Easier to pick up manure of required.
- Water may need to be transported to each section depending on where the permanent water source is located.
- Block grazing is when a second electric fence is used behind the horses so that they cannot go back over what has been grazed.
- Block grazing is useful when it takes weeks to strip graze a paddock or the area is to be mowed or harrowed.
Coping with too much pasture

• Fire hazard
• Excess mature grass that has set seed is of a lower feed value and may be useful for horses that have weight issues
• Slash or mow what remains before the next growing season so that new grass can grow
• Use sheep, cattle or other animals to utilise excess feed
• Opportunity to make hay from the pasture or sow specific areas to a crop to make hay from
• Poor quality paddock feed makes poor quality hay
Pasture Topping

- Good practice if you are not using other species to eat down pasture that horses leave
- Mow or slash paddocks immediately after horses have been moved on
- Cut to a height of 5-8 cm
- Removes tough old dry pasture and encourages the growth of young green pasture
- More uniform growth of pasture
- Mowing before the pasture sets seed can help keep pasture in the more nutritious vegetative phase of growth where there is more leaf which is more nutritious than stems
- Mowing weeds before they set seed can help control them in the case of tall weeds such as thistles
Harrowing

• Spread manure around the paddock which helps the paddock to be grazed more evenly in the future
• Improves pasture from nutrients in the manure
• Harrow paddocks after grazing and the animals have been moved on
• Slash any long grass remaining in the paddock before harrowing
• Rest paddocks after harrowing
• Harrowing paddocks in summer or prior to a frost can help reduce worm populations
• If conditions are warm and humid then the paddock should be rested until hot/dry or frosty conditions occur
• Paddocks should be rested until pasture has reached a height of 15-20 cm
Cross Grazing

• Disadvantages
  – Extra animals eat extra feed
  – Extra expenses looking after other animals

• Benefits
  – Animals will eat around the dung of other species but not their own (worms are often species specific)
  – Animals have different grazing behaviors
  – Other animals may eat ‘weeds’ that are harmful or unpalatable to horses
  – Other animals may provide ‘company’
  – Other animals can be used for meat, milk or fibre
Cross Grazing

- Horses tend to be dominant over other species including cows
- Need to have good grazing management in place otherwise it is just more mouths to feed
- Borrowing or sharing animals with a neighbor for cross grazing can sometimes work
Cross Grazing with Cattle

- Fencing requirements similar to horses and can easily be controlled with electric fences
- Cows can consume large amounts of feed (1-3% of its body weight in DM). Use small breeds of cattle if paddock feed is limiting
- Ideally use cows to clean up after horses have been in paddocks or graze cows with the horses
- Cows can be used to graze a paddock prior to a horse grazing if you need to manage an overweight horse
- Cattle hooves damage the land similar to what a horse hooves do
- Different grazing behaviors
  - Cattle tear the grass with their tongues and eat longer grass
  - Horses graze with their front teeth biting the grass off
Cross Grazing with Sheep, Goats, and Aplacas

- Sheep and goats will consume and tolerate many plants (weeds) that horses will not
- Some sheep breeds and alpacas do require shearing and some sheep may require crutching
- Fencing must be appropriate to keep goats and the shedding sheep breeds contained
- Some sheep breeds, goats, and alpacas tend to browse as well as graze
- Alpacas cause less damage to the soil compared to sheep and cattle
Soil Management

- Healthy soil is essential for healthy plants
- Grasses take nutrients from the upper layers of the soil while legumes reach further into the subsoil
- Soils have horizons (or layers)
- We see the topsoil which may vary in depth (a few centimeters to a metre)
- Often more than one soil type within a property
Soil and Nutrients

- The main nutrients soil provides to plants are Nitrogen (N), Phosphorus (P), Potassium (K), and Sulphur (S) referred to as NPKS
- Other elements/trace elements the soil provides are Calcium (Ca), Magnesium (Mg), Copper (Cu), Manganese (Mn), Zinc (Zn), Iron (Fe), Aluminium (Al), Molybdenum (Mo), Cobalt (Co) and Selenium (Se)
- These elements need to be present and in correct amounts or it will result in poor plant health
- Nutrients become depleted form the soil in many ways including leaching, making hay that is sold off the property, grazing animals/horses, collecting manure and soil erosion
Soil Health

- Soil requires:
  - good bacteria which occurs when soil conditions are optimal
  - Organic matter such as decomposing plants/roots and animal matter such as dung
  - Micro-organisms
  - Macro-organisms e.g. earthworms and dung beetles
  - Materials excreted by roots and by hyphae of fungi which help soil particles stick together and form aggregates
  - Water
  - Air
Soil Texture

- Soil texture is determined by the size of the particles it contains e.g. gravel, sand, silt, clay.
- Soil texture (amount of clay) will determine the soils stability to hold nutrients and water.
- Texture determines what management is required e.g. sandy soils will need protection from horses in dry weather and clay soils will need protection from horses in wet weather.
- Ideal soil type is a good mix of sand and clay e.g. sandy loam/loam soil.
Soil Structure

- Soil structure will determine the plants ability to access water and nutrients
- Soil structure can be destroyed through compaction and pugging from horses hooves and excessive ploughing and cultivation
- Soil structure can be improved by adding soil additives, getting soil tests done to correct deficiencies with fertiliser and aerating compacted soil.
Sandy Soils

- Often fragile when dry
- Do not hold moisture or nutrients well
- Nutrients and fertiliser can be leached out easily
- Easily eroded
- Often water repelling
- Aim to increase organic material by planting deep rooted legumes and grasses
- Sandy soils can be improved by clay spreading and delving
Clay Soils

- Can hold too much water and can be prone to water logging
- Retain nutrients well as long as they are not washed off the top
- Can be improved by altering the pH and increasing organic matter through deep rooted grasses, perennials and legumes which allow air and water to infiltrate the soil
Soil and Plant Tissue Testing

- Soil tests will tell you what is and isn’t in the soil and how fertile it is and gives you a pH to determine how acidic (0-6) or alkaline (8-14) with (7) neutral
- Ideal range is a pH of 6-7
- Outside this range plants suffer deficiencies as pH affects what nutrients are available to the plant
- Acidic soils prevent legumes from fixing nitrogen on their roots
- Plant tissues tests are also useful in determining what the mineral levels are in the plant which reflects plant health and availability of minerals to the horse
- Take samples that represent the whole paddock and aim to repeat samples every 1-3 years
- Soil test deeper than 10 cm
Soil Additives and Fertiliser

- Always soil test before adding anything
- Common soil conditioners/fertilisers are lime and gypsum
- Lime is used to correct the pH of acid soils
- Gypsum improves soil texture, drainage and aeration in clay soils and is useful in soils that need the sodium:calcium balance restored also known as sodicity in soils e.g black cracking soils which become very boggy when wet
Soil Additives and Fertiliser

- Alternative fertilisers such as poultry manure, kelp, composts and fish emulsions may add organic matter and nutrients
- Composted horse manure may be an excellent resource on your property
- Fertilisers generally add nutrients but not organic matter. Improving plant growth will result in more organic matter
- High levels of fertiliser are required when a crop (hay or grain) is being exported/sold off the property
- There is some nutrient recycling that occurs if the crop/pasture is fed to resident animals
Soil Additives and Fertilisers

- Over fertilisation is costly and can lead to excess run-off resulting in algae blooms in waterways, kills earthworms and destroys microbiology in the soil.

- Including legumes in the pasture mix is important as they have the ability to fix nitrogen from the air using a bacterium called rhizobia that live on nodules (lumps) on the roots of legumes.

- Legume crops include peas, beans, vetches, lupins, clovers and lucerne.
Weed Management

• Weeds in a horse paddock are plants that are dangerous to the health of horses/livestock, are of little or no feed value, highly invasive, declared.

• Weeds take up space and compete with pasture plants for moisture, sunlight and nutrients

• Examples of some common weeds found in the South East include Salvation Jane (Patersons Curse), Soursob, Sorrel, Blackberries, Gorse, Boxthorns, Caltrop, Thistles, Clammy Goosefoot, Lesser Loosestrife, Flat Weed

• Bracken can be toxic to horses but is protected under certain circumstances

• Often an indication of soil health and pasture management
Where do weeds come from?

- Blow in from neighboring properties and roadsides
- Carried in by birds through droppings
- With loads of gravel or soil
- Stick to car tyres or animals
- Come in with new or visiting horses in their droppings
- With hay or other fodder bought onto the property
Control of Weeds

• **Mechanical control** e.g. mowing, whipper snipper, hand pulling or hoeing by hand

• **Organic control** e.g. burning, steaming, cross grazing, pasture management, mulching, improving the soil, biological control

• **Chemical Control**
  – Get advice for the right chemical for your situation and the right time to apply it and read the label
  – Be careful of dams, creeks and wetlands
  – Can use a contractor
  – Animals may need to be removed from the paddock
  – Some chemicals can make weeds more palatable/toxic
Prevention of Weeds

- Be careful where you purchase hay and if in doubt feed in yards, stables or sacrifice area to easily monitor and control weeds. Use feed pads and bins. This does not prevent seeds being transported on animals or in droppings to the main paddock
- Good paddock and pasture management – Don’t allow bare areas to occur
- Remove manure and left over feed from visiting horses and compost it
- Establish shelter belts to neighbouring properties or roadsides if they are a continual source of contamination
- Buy certified pasture seed that is free of weeds
- Quarantine all new horses on the property to a yard ideally 10-14 days
- Source hay and fodder from sources where the weed status is known
Thank you