Agriculture Notes

Managing wet soils: grazing techniques

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Frank Mickan, Ellinbank

Grazing wet soils causes pasture and soil damage through pugging. There are several techniques that farmers can use to minimise potential pasture and soil damage. This note suggests grazing methods that can reduce this damage during wet periods.

For other techniques to minimise damage see

AG0954: Managing wet soils: What off paddock system?

AG0955: Managing wet soils: Feed pads and stand-off areas.

Introduction

Excessively wet soils lose their inherent strength and are easily pugged by dairy cows when grazed. The treading and pugging damage destroys pasture and soil structure, making it harder for rain to infiltrate readily down the profile, and making the problem worse for later grazings.

Recent work in southwest Victoria showed that even in a dry winter (1999), pugging damage from one grazing in August reduced the regrowth of pasture considerably over following months.

Depending on the severity of the pugging event, improved pasture species such as perennial rye and white clover can often be replaced by poorer species such as winter grass, docks, buttercups, fog grass etc. Severely pugged areas do not recover readily, particularly on heavier (clay) soil types and may need renovating and resowing.

The following grazing management techniques can be used to reduce the effects of pugging. Note that even surface and subsurface drained paddocks will need to follow some of the following grazing principles or use a stand off area during and immediately after rainfall to protect the soil and drainage system.

Grazing management techniques

Several grazing techniques and other management options can be used to minimise problems on wet soils. These are:

- Allocate day and night feeds separately
- Shift the fence several times a day
- Allocate a larger grazing area.
- Slow the rotation
- Backfence as often as possible
- Longer grass
- Nitrogen fertiliser
- Destock

Allocate day and night feeds separately.

- By allocating about 2/3 of the 24 hour's allocation of pasture during the day and 1/3 at night less contamination of the night feed will occur. Cows will not have the opportunity to walk over and foul the night's allocation.
- Graze in blocks rather than strips. Cattle will tend to walk up and down a narrow strip causing substantial damage.
- Pastures should be at the 2 – 3 green leaf stage, i.e. approximately 2200-2400 kg of dry matter per hectare (kg DM/ha) or 10 – 15 cm height.
- Extensive pasture damage can occur if grazing pastures shorter than those recommended above. In this situation cows should be taken 'off' the paddock. They will probably need extra hay/silage/grain to meet the shortfall in feed.

Shift the fence several times a day

- Using the above technique of 2/3 day, 1/3 night, consider shifting the fence 2 to 3 times during the day to further reduce contamination and pugging on the day allocation of pasture. However, if cattle rush about on hearing the sound of a bike or tractor, they may cause more damage than that saved by the several shifts.
- Consider feeding hay, particularly small and large rectangular bales (strings uncut), a few days ahead while weather is fine and paddocks are trafficable. Place them in the next few blocks to be grazed. On the day of grazing, preferably before cattle enter the block, spread the biscuits. This minimises trampling damage and wasted hay.
- If feeding along a narrow strip of pasture in extremely wet conditions, where severe pugging is unavoidable, consider feeding the silage or hay on the fresh grass, and then set the fence just behind it before the cattle enter.

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Allocate a larger grazing area.

- Usually not recommended as this speeds up the grazing rotation resulting in less grass being available at the next grazing. If used, this technique should only be used for 1 to 2 days at a time.
- Although not obvious from the laneway, the total amount of pugging damage in a large grazed area will be as bad if not worse than if the grazing was restricted to the correct allocated area. Fouling will occur over the larger area reducing intakes anyway, particularly if the am and pm feeds are not allocated separately.
- If pasture is short (less than 2 leaves or under 8 – 10 cm, under about1800kg DM/ha) then severe pugging damage can be expected. Pastures will need renovating or take a long period to fully recover.

Slow the rotation.

- Begin in early autumn with a slow rotation to allow a feed wedge to develop for winter. Aim for 2 – 3 green leaves, 10 – 15 cm or about 2200-2400 kg DM/ha of pasture before grazing. This will require supplementary feeding to allow the wedge to grow and initial grazings may need to be at slightly lower, albeit undesirable levels, to allow the wedge to get started.
- If the rotation is too fast, then the pasture cannot reach optimum growing height. As a result more supplementary feed will be needed in winter to fill the gap. Also the cows will return to the wet, damaged paddock sooner, causing far greater damage, depending on weather conditions at that time.

Backfence as often as possible

- In wet conditions, backfence when cows graze a paddock over more than 1 day. This will prevent cows backtracking over the previously grazed areas, which would reduce pasture re-growth and result in greatly increased pugging damage in that area.
- The more times a wet soil is walked over, the weaker the soil becomes and the greater the pugging damage.

Longer grass

- Cows find it easier to eat their pasture requirement and so are less likely to walk around the paddock searching for extra feed.
- Regrowth will be faster from the taller pasture.
- However, the next grazing may need to ensure that the pasture is grazed well, ie. may need to be “cleaned up,” to maintain pasture quality.
- Grazing longer grass is claimed to have a flotation effect and prevents the cows “sinking” into the soil compared to shorter grass. However, in some soils the long grass can be buried, fouled and not eaten. Sometimes it will rot when buried under the soil (mud) in anaerobic conditions. The result is reduced growth and very unpleasant smelling pastures.

Nitrogen fertiliser

- Nitrogen applied early (autumn, early winter) will aid the build up of a feed wedge for winter.
- Do not apply to waterlogged pasture, as response will be poor, and some nitrogen may be lost to the system.
- Ensure other elements such as phosphorus and potassium will not be limiting pasture growth.

Destock

- If available, agistment, or some other arrangement to get dry animals off the property, is an attractive option. This assumes the agistment is reasonably priced, fencing and watering are adequate and that the animals are checked regularly.
- Sell cattle only in extremely wet conditions as a last resort. Cattle prices would probably be low if wet conditions were widespread and other farmers also were forced to sell animals. Restocking may then be at a time when demand is high, and so is the repurchase price.

Figure1. Soil damage caused by pugging

Figure 2. Separate day/night feeds with backfence

Figure 3. Backfence behind

The previous version of this note was published in February 2002.