



Managing wet soils: On-off grazing

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Frank Mickan, Ellinbank

Grazing paddocks when soils are wet results in pugged pastures and soil damage. This note outlines on-off grazing, a method that can be used to reduce the damage when grazing during wet periods.

The technique

On-off grazing is a practice that can reduce damage to soil and pasture when grazing wet paddocks. Cows are allowed to graze their next daily allocation for a short period (usually 2 – 4 hours) and are then moved off the pasture to a stand off area to reduce damage from pugging. If cows are not removed after this period, they tend to keep searching for clean pasture or seek shelter from rain/wind. They usually consume very little extra pasture, but pugging damage increases substantially.

Requirements

Research and farmer experience has shown that there appears to be negligible detrimental effect on daily milk production, when using on-off grazing. However for this strategy to be successful several conditions must be met.

1. Pasture cover must be sufficient to maintain or extend the first (and possibly second) rotation to avoid a feed shortage.
2. Pastures being grazed must have good length and density to allow high and rapid intakes. Pastures should have a height of approximately 10 – 15 cm (2200 – 2500 kg DM/ha). Alternatively, pastures should be in the 2 – 3 green leaf stage.
3. Cows should be healthy, have no lameness and low in mastitis incidence.
4. Magnesium supplementation may be necessary.
5. Cows must be in good condition.

When using on-off grazing there are a number of options for standing off areas for cows, see agnotes:

AG0954: *Managing wet soils: What off paddock system?*

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

Intakes

One of the keys to successful “on-off” grazing is to offer cows adequate pasture to ensure high intakes in a relatively short time cows must have access to pastures

with at least 2 to 3 leaves/tiller, usually at the top end of the “pasture wedge”, ie. 10 – 15 cm height or 2200 – 2500 kg DM/ha. If pasture is in sufficient supply, cows are also less likely to walk around the paddock in search of feed and causing additional pugging damage.

Some farmers actually “fill” their cows at the shed with grain and/or silage before sending to the pasture. They feel that the cows are so full, they rest soon after returning, thus reducing damage. They would then graze a short period before the afternoon milking. Obviously the supplement should be of high quality to minimise any decrease in milk production.

Dry cows will usually consume their daily pasture requirements in this period, but milking cows may require supplementary feeding at the stand off area to maintain current milk production levels. If necessary, cows should be supplemented with high quality silage/hay and concentrates/cereal grain mixes, to meet their daily requirements (16-20 kg DM/cow/day).

Research in south-west Victoria studied the effect of on-off grazing on pasture intakes and subsequent regrowth on two sites. This research has shown that cattle can consume about 6 - 10 kg DM/cow in 2 – 4 hours grazing provided that pasture cover is high. By extending the grazing period beyond this period severe pasture damage due to pugging occurred, greatly reducing regrowth rates.

After two hours of grazing the cattle had eaten about 70% of the pasture that they would eat over the full twelve hour grazing period. After four hours grazing 77 to 88% of the pasture was eaten. The lower intake (of 77%) was due to the lower initial pasture cover (2120 versus 3100 kg DM/ha). On shorter pasture cows need to take a greater number of bites per kilogram dry matter intake and walk further to achieve similar intakes.

The extra pasture intakes of 1.5 kg to 2.1 kg DM/cow does not warrant leaving cows on pastures after about 4 hours. If the paddocks are extremely wet and serious pugging damage is likely, then removing cows after 2 hours will be warranted. Also some soil types are more prone to pugging damage after varying periods of grazing at the same moisture content.

Pasture Regrowth

New Zealand research data (comparing 24 hour block grazing with on-off grazing) suggests that regrowth rates for on-off grazing increased in early spring by 18% to 52%.

Recent research in south west Victoria has found major improvements in pasture growth and utilisation when grazing wet pastures when using the “on-off” grazing technique during the late winter – spring period. Relative to an unpugged – dry soil, all day grazing (7-8 hours) suffered a 30% reduction in pasture yield and a 23% reduction in utilisation. In comparison, the 2 and 4 hour “on-off” grazing treatments only suffered a 3% and 9% reduction in yield and an 8% and 3% reduction in utilisation respectively.

The “on-off” grazing treatments also resulted in considerably less pugging damage to the pasture than the 7-8 hour grazing. Perennial ryegrass tiller densities by the end of spring had fallen to 1800 tillers/m² for the 7-8 hour grazing compared to 3250 and 2800 tillers/m² for the 2 and 4 hour “on-off” grazings.

Check list of handy hints

Pasture

- Paddocks should have high pasture mass to achieve intakes of 6 – 10 kg DM/cow with minimal walking.

Grazing

- Grazing should take place in square/rectangular shaped areas, not long, narrow blocks to avoid cows walking up/down the fence line.
- Some farmers recommend starting grazing from the rear of the paddock so that cows are not walking over grazed areas (most prone to pugging).
- Consider temporarily fencing a laneway down the side of the paddock to restrict damage to this area only (this area will become severely chopped up).
- No need to worry about access to water troughs in the paddock, enough moisture is consumed via the grass.
- Ensure that the animals are hungry when they enter the paddock so that they instantly graze with minimal walking.
- Alternatively, “fill” them up with a supplement before they return to the paddock so that they lay down upon returning.

- Graze the paddocks likely to be a problem (grey clay loams, flats) before the wet season sets in, and the lighter (sandy, loamy) soil types later.
- When cows are normally allocated a paddock all day to graze, split the paddock with an electric wire to minimise damage to the whole paddock in the first grazing.
- If very wet weather is forecast, consider grazing the fronts of some paddocks. This will allow easy access and less damage when grazed in the very wet period. If the wet weather does not occur, remember to graze these sections immediately to minimise effects on pasture quality and yield.

Supplementing requirements

- If feeding in the paddock, feed before cows enter the paddock.
- If feeding in the paddock, feed under an electric wire if offering very small amounts of feed. (Sacrifice paddock advice).
- Feed all supplements in the stand off and area not in the paddock being grazed.

Stock movements

- For dry cows, move them to the next break early in the morning before they start walking needlessly over yesterday’s break.
- Allow cows to leave the paddock slowly, at their own leisure, by training them to return to stand off area using the attraction of silage/hay/grain etc.
- If cows are staying on the paddock, ensure they enter with full stomachs to avoid too much needless walking.
- Ideally they should enter and leave via different gateways, if possible.
- Save paddocks with some protection (plantation, leeward hill slope, buildings) for the very worst weather.

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