

WINTER FORAGE CROPS: MANAGEMENT DURING GRAZING

When grazing winter forage crops to maintain or improve stock condition, it is important to correctly feed animals to meet their nutritional requirements. Winter grazing also has high stock numbers in a confined area and is a relatively intensive land use. This may lead to increases in surface runoff which can carry increased loads of sediment, nutrients and micro-organisms. It is essential to consider how to reduce nutrient and contaminant losses to streams and waterways as well as minimising damage to soils and paddocks.

Key points for grazing

- Ensure Stock have adequate feed, shelter and access to loafing areas and are appropriately transitioned to the crop.
- Use narrow breaks with long faces that are moved more frequently to improve feed utilisation.
- Graze from the top of a paddock to the bottom.
- Backfence regularly.
- Keep stock out of damp areas in paddocks such as gullies and swales.
- Have a plan for adverse or bad weather events so that stock can be moved to minimise environmental damage and seek adequate shelter if necessary.

Research findings

Research undertaken by AgResearch in South Otago, as part of the Pastoral 21 Programme, found that implementing good crop grazing management, as detailed in this factsheet, resulted in:

- Reduced phosphorus and sediment losses by 80-90%.
- The cost of lost topsoil and nutrients from winter grazing may be up to \$50-\$60/ha per year.
- Reduced soil compaction in susceptible parts of paddocks, leading to a reduction in surface runoff.

Crop allocation and additional supplement

- Beef + Lamb New Zealand's FeedSmart tool can help determine feed requirements and help plan grazing.
- Make a feed management plan that considers the nutritional needs of the grazing animals to achieve the required weight gains or condition scores. Consider the dry matter content, nutrient composition and metabolisable energy in different

feeds.

- Allocate feed based on 'feed down the throat'; so account for any feed wastage in your feed management plan—and take steps to reduce wastage and increase utilisation.
- A gradual transition to crops is important to ensure good animal health and allows the gut time to adjust to the new feed. This may take 7-10 days for brassicas and up to three weeks for fodder beet. Seek advice from a vet or other professional for the appropriate grazing

Grazing management

- Crop tends to be utilised more efficiently by cattle when long narrow breaks are offered rather than short wide breaks (as shown in Figure 1).
- Make sure that you consider stock access to drinking water, loafing areas and adequate shelter.
- Where practical, to reduce wastage due to cattle trampling, move the fence once or twice daily rather than offering a few days feed at a time.
- Fence off a narrow strip along the length of the paddock to access gateways as this will stop stock remobilising sediment and nutrients over a whole paddock.
- Use a catch fence in front of the feeding face to minimise the impact if stock break out.
- If offering other supplements such as hay, silage or baleage, use feeders where possible to reduce the amount of waste.

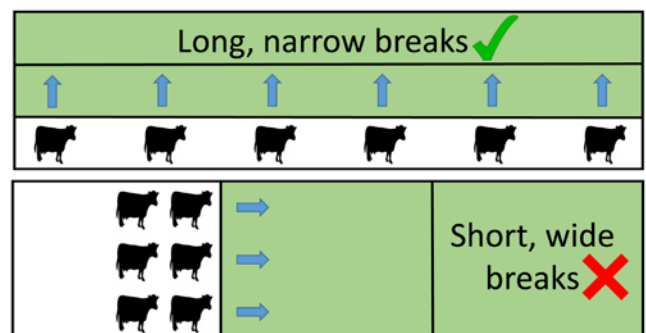


Figure 1: Diagram showing long, narrow breaks compared to short, wide breaks. Crop utilisation will be better on long, narrow breaks that are moved frequently. There will also be less chance of dominant cattle stopping smaller animals from feeding.

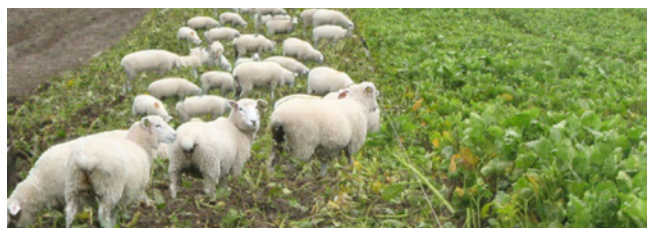


Image 1: Sheep breakfeeding on winter crop.

Protecting soil and waterways

Critical Source Areas (CSAs)

- Critical source areas are vulnerable areas in a paddock or on a farm that can contribute to relatively large amounts of nutrient and sediment losses to waterways (Image 2). They are often wet areas such as gullies and swales.



Image 2: A winter-grazed paddock showing a pathway for environmental losses. The area around the small water way is the critical source area and needs careful management to reduce losses.

Good management practice

- Create a grazing management plan that will reduce environmental losses by following strategic grazing principles and good management.
- Start planning before the crop is sown to select paddocks that are appropriate and suitable for winter forage crop grazing with considerations of soil type, slope and critical source areas.
- Place water troughs in a position that is relatively dry and minimises stock movements.
- Make sure stock have adequate feed as underfed stock wandering in search of feed can add to potential soil losses through physical damage and sediment entering waterways.
- Reduce the amount of time heavy machinery is used on a paddock once it is wet to reduce soil damage. If baleage is being used, place in the paddock before grazing if possible.

Strategic grazing

- Keep livestock out of critical source areas, waterways and wet areas of a paddock by temporary or permanent fencing.
- Where practical, begin grazing paddocks at the point furthest from the waterway to keep the crop as a buffer area between animals and waterways or critical source areas.
- It is recommended that a buffer of at least three metres width should be maintained near waterways with larger buffers providing more protection on sloping land. Check regional and national regulations for minimum buffer widths around waterways in your area.
- Break fences should be fenced across the slope with grazing starting at the top of a slope. The breaks should move in a downhill direction (Figure 2).
- Where possible, leave CSAs uncultivated and ungrazed with pasture cover left intact. If the CSA is cropped, only graze lightly and when soil conditions are suitably dry to prevent pugging and soil damage.

- Regularly backfence stock off land that has already been grazed. Whilst this will require provision of a portable water trough, it will also help minimise the extent of soil treading damage and thus runoff risk.

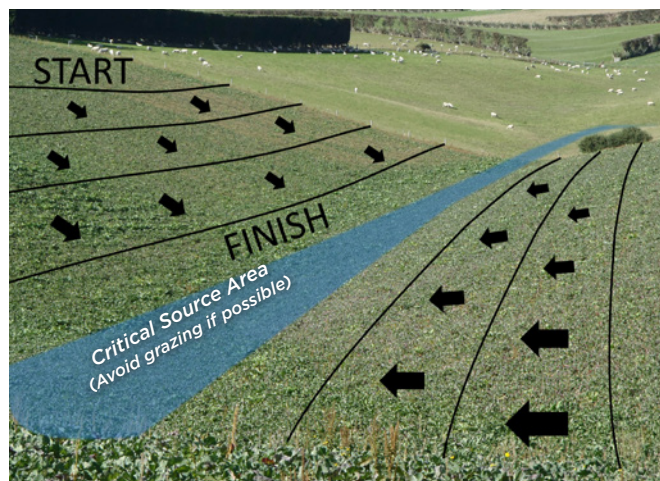


Figure 2. Strategic winter grazing to minimise environmental losses. Start grazing at the top of a slope and move breaks downhill. The gully at the bottom of this paddock is a Critical Source Area (CSA) that is dry in summer but gets wet in winter and after heavy rain. It should be left ungrazed if possible or only grazed when conditions are dry.



Image 3: A grazed winter crop paddock with the critical source area in the gully left ungrazed.

Additional information and acknowledgements

Beef + Lamb New Zealand would like to acknowledge AgResearch Ltd for their assistance with this fact sheet, which documents some of the findings made in the Pastoral21 research programme.

Other B+LNZ resources available on our website include: Farm Environment Plan, Land Environment Plan, A guide to feed planning for sheep farmers, Management practices for forage brassicas, and FeedSmart User Guide.

www.feedsmart.co.nz - app to calculate feed requirements for animals, allowing you to calculate pasture/crop usage when moving animals to paddocks.

Podcast: Good management practice for winter grazing - Ross Monaghan, Soil Scientist, AgResearch - <https://beeflambnz.podbean.com/>

Orchiston, T.S., Monaghan, R.M., Laurenson, S. 2013. Reducing overland flow and sediment losses from winter forage crop paddocks grazed by dairy cows. Fertiliser and Lime Research Centre, Massey University. http://flrc.massey.ac.nz/workshops/13/Manuscripts/Paper_Orchison_2013.pdf

Monaghan, R.M., Laurenson S., Dalley D.E., Orchiston T.S. 2017. Grazing strategies for reducing contaminant losses to water from forage crop fields grazed by cattle during winter. *NZ Journal of Agricultural Research* (In press).

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