



# Feeding grain to sheep

## Summary

Energy is the major nutrient required for the maintenance of sheep, and cereal grains are a good source of energy. However, death from acidosis can occur from a heavy loading of the rumen with grain. Subclinical rumen acidosis often occurs on grain feeding regimes and is the main reason for poor weight gain. Acidosis can be prevented by proper feeding management.

Grain should be introduced to the diet slowly (50 grams per day) and increased incrementally to give the rumen time to adjust. Offer a range of feeds to stock, e.g. straw, some grain and a pick of pasture. This will reduce the problem of some animals refusing to eat a certain feed, and the mix is more likely to supply all the nutrients and minerals needed. Sheep which are fed grain need to consume other feed such as straw or hay.

## Practical pointers for grain feeding

- Wheat, oats or barley fed to sheep do not need to be processed for effective digestion. Wholegrain is better as it stimulates chewing and addition of saliva, and breaks down less rapidly in the rumen, reducing the risk of acidosis compared with feeding processed grains.
- Grain should be fed from a hopper, leaving a long narrow line on the ground about 40 mm deep and 100 mm wide. This allows enough room for all sheep to feed. Grain can be fed to sheep on dry ground near hedges or trees, or underneath a fence to avoid trampling losses. It is often better to distribute the grain and then shift sheep into the paddock.
- Sheep should not be starved before feeding grain, although some sheep are reluctant feeders.
- To attract hoggets to grain; add 3 kg of salt per 100 kg of grain fed.
- Feeding hay or straw first helps prevent gorging and stock losses.
- The safest grain to feed is oats, followed by barley, and then wheat. Wheat is the most dangerous and may require a longer introductory period than the usual 10 days.
- To avoid severe digestive upsets, sheep must be introduced to grain slowly. Start at about 50 g/hd/day (5 kg/100) for 10 days. Gradually build up over the next 7-10 days.
- About 0.50 kg/hd/day (50 kg/100) of barley provides half maintenance. Feeding grain above this level is not recommended.
- Sheep which have been accustomed to one type of grain cannot immediately adjust to another. Deaths can result from a sudden switch of feed. Even the same grain type obtained from a different source has caused losses.
- Sheep cannot be maintained on grain alone. Some other pickings from pasture stubble or any straw types should be fed. Saliva produced while eating straw or pasture is rich in bicarbonate, helping to neutralise acid in the rumen. In addition, fibre present in the rumen helps to neutralise acids. Where total weekly grain rations are 2.5 kg or more for weaned lambs and 3.5 kg or more for adult sheep, some roughage (hay or paddock feed) needs to be supplied.
- The quality of the straw is also important. The rougher the straw the better to stimulate saliva production while chewing. Straw is better than hay which is better than silage and barley straw is the best of the straws. Hay and silage are valuable to train the sheep to eat grain but the rough straws are needed with the grain when feeding larger daily grain quantities.
- Access to water is very important during a change in diet.
- Where grain constitutes a high proportion of the ration, mix 1.5 kg sodium bicarbonate (baking soda) per 100 kg grain to help offset the effects of grain overload. Bicarb can help to neutralise the acid in the rumen. Feed additives, including Eskalin® and Rumensin®, can also be fed with grain to reduce acidosis problems.

## Key points

- Cereal grains are a good source of energy for sheep.
- To reduce the risk of grain poisoning, grain should be introduced slowly and fed as part of a mixed diet.
- Rough straw should be fed with grain, as chewing it stimulates saliva production which helps neutralise acid in the rumen.
- The safest grain to feed is oats, followed by barley, and then wheat.
- Sheep not familiar with grain may take some days to accept it.

## Training sheep to feed on grain

- It is good practice to include in the mob some sheep that have been fed grain previously. This encourages the inexperienced sheep to feed. Untrained sheep are best educated in small paddocks.
- Start by scattering a highly palatable fodder such as lucerne or clover hay to encourage sheep to start feeding. Holding sheep near to the feed may also be necessary. Do not feed the sheep again until most of the hay is eaten. When the sheep are readily eating the hay, introduce a small quantity of grain.
- A general policy of educating lambs to grain feeding prior to weaning (even in good years) will eliminate the often laborious and time consuming task of starting sheep to feed. It has been shown that lambs who see their mothers eating from a grain trail will more readily adapt to hand feeding, even if some years pass before they are fed again. Just three or four feeds with their mothers will be sufficient - with the grains most likely to be fed at some time in the future.

## Nutritional value of different grains

Grain type	%DM	<sup>1</sup> Relative ME value on DM basis	ME concentration (MJ ME/kg DM)	% crude protein DM basis
Wheat	86	1.3	13.5	14
Barley	85	1.2	13.1	12
Oats	86	1.1	12.0	13
Maize meal	86	1.3	13.9	10

<sup>1</sup> Relative to leafy pasture with a value of 1.0 (ME concentration of 10.8 MJME/kg DM)

## Acidosis

Lactic acidosis (also known as ruminal acidosis, grain overload or grain poisoning) is caused by excess consumption of concentrates (grain) which results in high levels of acid being produced in the rumen. Affected sheep appear depressed and listless and may have abdominal pain. Acidosis can be a life-threatening condition. Affected sheep should be drenched with an antacid such as bicarbonate of soda (baking soda), or products containing magnesium carbonate or magnesium hydroxide.

## Further reading

- Beef + Lamb New Zealand (2013) Fact sheet: Rumen acidosis. <http://www.beeflambnz.com/Documents/Farm/Rumen%20acidosis.pdf>
- Beef + Lamb New Zealand (2012) A Guide to Feed Planning for Sheep Farmers. ISBN No. 0 - 908768 - 25 - 7, pp 60. <http://www.beeflambnz.com/Documents/Farm/A%20guide%20to%20feed%20planning%20for%20sheep%20farmers.pdf>
- Beef + Lamb New Zealand (2007) Dry Management Toolkit: Supplementary Feeding. <http://www.beeflambnz.com/PageFiles/1199/Supplementary%20feeding.pdf>
- Croker K and Butler R (2009) Getting into sheep. Western Australian Agriculture Authority, pp 50. [http://www.agric.wa.gov.au/objectwr/imported\\_assets/content/aap/sl/bn\\_getting\\_into\\_sheep\\_feb09.pdf](http://www.agric.wa.gov.au/objectwr/imported_assets/content/aap/sl/bn_getting_into_sheep_feb09.pdf)

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