

Improving dairy feed and water intakes

Practical Guide



Housing conditions can have a significant impact on dairy cow productivity, health and welfare. Poor housing can reduce yields and farm profitability, which will also have a negative effect on the farm carbon footprint.

Cow yields can be significantly impacted by feed and water availability. Not only must it be well presented to the cows, it must be clean, palatable and easily reached for the herd. In some circumstances significant investments



may be needed, however all farms could make small changes to improve intakes and therefore productivity.

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This practical guide looks at helping to maximise performance of housed dairy cattle by improving feed and water intakes.

Water intakes

A cow will typically drink 10 to 15 times per day, drinking over 10 litres at a time. Each drinking session will last for around 30 seconds. This means that there must be a flow rate of 20 litres a minute to replace the water being drunk by the cow. Having a large reserve in the trough allows the flow rate to be reduced, however the water can become staler and need emptied more often.

The temperature of the water, particularly in cold weather, can influence intakes. Water from a plate cooler can be used in the water troughs to reduce this issue. This gives a use for the heat recovered from the milk and also reduces the energy used by the cow to heat the water once drunk. Ideally the water should be at 17°C. During the summer this can cause rapid bacterial growth and so troughs should be cleaned more frequently.

Websites

www.farmingforabetterclimate.org
www.fas.scot/
www.agrecalc.com



Scottish Government
Riaghaltas na h-Alba
gov.scot



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Lighting

Good lighting above the feed fence will encourage feed intake. Having 200 lux for 16 hours per day will increase feeding time by the cows whilst also improving milk production and fertility. Fitting LED lights with a timer and light meter will mean they are automatically turned on and off as required. These systems have a great payback, in some cases less than a year.

Space requirements

A high yielding cow can consume over 200 litres per day. Water troughs must be accessible with 100mm of trough space per cow. Its important to keep them clean; fit tipping water troughs and have a hand brush at each one to encourage cleaning. Cleaning the trough once a week will stop the water tasting stale which will reduce intake. The water should be at least 70mm deep, this is enough for the cow to submerge her muzzle and drink.

Feed barrier design can be a major factor in determining feed intake. A poor barrier can reduce intakes by over 1kg (dry matter) per day, even if feed is pushed up. Barriers which rub at the necks of cows are likely to be uncomfortable and reduce the time spent eating. Consider moving the barrier up or away from the cow to allow her easier access to feed.

The space at the barrier is important, especially when young and old cows are housed together. Each cow should have a minimum of 600mm space at the barrier. If this is reduced



bullying can reduce the time heifers and young cows spend eating. This would require large investment to construct more feed space, so instead consider housing heifers separate to reduce bullying. This feed space is even more important when housing dry cows. They also become wider when in late pregnancy and their feed intake reduces so every attempt should be made to give them large access to feed.

Ration considerations

The feed presented to the cows should be palatable in order to encourage intakes. Refusals should be removed before feeding as this can cause spoilage of the fresh feed, reducing palatability and could cause disease. Mouldy or spoiled feed should not be put into the ration for the same reason. Having a good feeding surface, for example polished concrete or stainless steel, will make cleaning easier and will also increase feed intakes. This feed surface should be 100-150mm above the level of the cow as this is the most comfortable position and encourages saliva production.

Assessing your cows is vital to ensure the ration is adequate for their needs. There are 2 important things to check – rumen fill and manure. When scoring for these take a representative sample of the herd.

Rumen fill is assessed by looking at the area below the loin on the left hand side, just behind the rib cage. This area should be slightly noticeable in a lactating cow, and should be rounded with the loin and ribs in dry cows. If it is less than this then the feed intake of the herd is too low. How the feed is presented and fed should be assessed. It is worth noting that the best ration in the world cannot do its job unless the cow can reach it. Ensure it is pushed up several times a day to allow less dominant cows the chance to eat. If feed intakes are good then the rate of passage through the rumen may be too high. Speak to your nutritionist to increase the forage in the ration.

The next assessment is the dung. **Dung** should pile 20-30mm high and be consistent throughout with very little undigested material. Problems can be caused by protein or energy levels, forage levels or diseases within the herd.