

Feed Costs: How Much Feed Weighback

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Ensuring that a cow has free access to feed at all times is thought to be necessary to maximize feed intake. To ensure constant feed availability, more feed must be delivered to a pen of cows than will be consumed by those cows. Common recommendations range from 2 to 5% feed refusal or weigh back (if cows consumed 50 lbs of dry matter and you want 5% refusal you would offer the cow $50 \times 0.05 = 52.5$ lbs of dry matter/day. At current feed costs, 1 lb of dry matter of a 'typical lactation diet' costs \$0.10/lb of dry matter which means that feeding 5% extra adds \$0.25/cow/day to the cost of feeding her.

Some of that cost can be recovered if the weighback is eventually consumed by some animal. Options include: 1) blending it into new TMR and refeeding it to lactating cows; 2) feeding it to dry cows; 3) feeding it to heifers. In option 1 all feed costs are recovered eventually; however it might reduce profitability. TMR weighback has different nutrient composition than the original TMR and it probably is quite variable in composition. This variation may cause production or health problems. In addition, the refused feed may have been moldy (or had some other quality problem that caused cows not to consume it). Mixing moldy or low quality feed throughout a new batch of TMR may result in less feed intake and less milk production. The savings in feed costs are probably not worth the risks. Option 2 (feeding to dry cows) also has significant risk. Since the nutrient composition of the weighback will not be known, including it as an ingredient in a dry cow diet increases the risk of nutrient excesses and deficiencies which could increase health disorders. Option 3 (feeding it to growing heifers) has the least risk and feeding it to older heifers is probably the best option. The recovery value of the weighback (\$/lb) is not the cost of the lactating cow TMR, rather it is the value of the feed it is replacing. A typical diet for an older growing heifer costs approximately \$0.07/lb of DM.

Example Effect of Feed Refusal on Feed Costs (100 lactating cows)

Average dry matter intake = 50 lbs/head

Target weighback = 5%: $50 \times 0.05 = 2.5$ lbs/head \times 100 cows = 250 lbs of DM/day

Costs: $250 \text{ lbs} \times 0.10 = \$25/\text{day}$

Recovery value by feeding it to heifers $250 \text{ lbs} \times 0.07 = \17.50

Net cost = \$7.5/100 cows

Therefore, feeding to a clean bunk would save approximately \$225/100 cows per month if it had no adverse effects on milk production or health.

Does Amount of Weighback Affect Lactating Cows?

Feeding to a clean bunk is common practice for beef feedlots and for many dairy heifer growers. However, growing animals are very different from lactating animals. If nutrient intake is restricted for a growing animal, daily growth rate may be reduced but usually it will reach the same final weight as when it was not restricted (it will just take more days). Compensatory growth also occurs when an animal that was restricted in nutrient intake is fed more nutrients. Compensatory milk production does not occur and a reduction in milk yield that occurs today is usually not made up tomorrow. The lactation/gestation cycle also means that we cannot just milk the cow longer to replace the lost milk. We should be very careful extrapolating feed bunk management data obtained from growing cattle to lactating dairy cows.

There is very little data available evaluating the effect of amount of feed weighback on dairy cow performance. A study conducted a few years ago (French et al., 2005. J. Dairy Sci. 88 (suppl. 1):175) compared feeding Holsteins enough feed so that 5% of daily intake remained in the feed bunk 23 hours after the cows were fed to feeding cow the same diet but limiting it so that 2.5% of the amount offered was in the bunk 18 hours after feeding. This was a limited study (only 7 cows per treatment) but they found that dry matter intake (57.4 vs 56.3 lbs/day for high and low weighback) and 4% fat-correct milk yields (93.9 and 91.3 lbs/day for high and low weighback) were not statistically different. This suggest that you can reduce feed offered to about 102% of consumed rather than 105%. However, in that study cows fed for limited weighback (remember cows in that study still had some feed remaining in the bunk at 23 hours after feeding, they were not fed to a completely clean bunk) consumed their feed much more quickly than cows fed for 5% weighback. Cows fed for higher weighback spent almost 2 hours more per day eating than did cows fed for lower weighback. Increasing the rate of eating (lbs./hour) can reduce rumen pH. This was not measured in this experiment but reducing the degree of overfeeding might be a risk factor for ruminal acidosis. Additional research is needed to evaluate this but if your herd is prone to experiencing subacute ruminal acidosis, reducing feed weighback should be considered very carefully.

Bottom line: Feeding for less feed weighback (approximately 2%) compared with 5% does not appear to affect milk yield and will reduce feed costs. However it might be a risk factor for ruminal acidosis.