Comparing mortality and cull rates can highlight physical and financial losses

A matter of life and death

With more dairy cows culled in April 2013 compared to 2012, some producers are obviously taking control of their herd size to help streamline production. But what leads to a more profitable herd when you consider the cost of replacements?

text **Allison Matthews**

The statistics on mortality rates in dairy herds are vague. But they're an important indicator of herd profitability. That's why financial consultant Jason McMinn fails to understand why the number of cow deaths is often ignored and rarely recorded.

"We know that high mortality rates cost money, but no one ever questions how much," he says. "Every time a cow dies it would be useful to note the reason and what stage of lactation she was at. You can then measure your own mortality rate and spot any trends."

Jason McMinn: "A mortality rate of 2.6% is equivalent to 1ppl in profit"

Taking control

Calving is responsible for 31% of deaths in the dairy herd and 14% are due to 'undetermined' causes. An increase in cull cow numbers shows that producers are taking control of their herd size, one of the few controllable elements available in a tough year.

But as Mr McMinn digs deeper into the figures there is more to it than meets the eye. "There is actually a positive relationship between the live culling/sold rate and farm profit per litre. The most profitable farms are also those that achieve a higher price for cull cows."

"We are inclined to think that a low replacement rate is best. But the data shows that the important figure is actually the direct replacement cost, in other words the price of changing a cull cow into a new cow in pence per litre.

"When we compare profit per litre and track it against the mortality rate, the spread of figures is huge, but the best units are achieving 2% mortality.

"Overall there seems to be a relationship emerging that a mortality rate of 2.6% is equivalent to 1ppl in profit.

"In reality the average producer in the sample has a mortality rate of 4.5% at a cost of 1.24ppl, making the cost of changing a cull cow into a milking cow excessive in some herds."

Using the data in Table 1 it can be assumed that Producer A is 'ruthless' and will not tolerate 'passengers'. Cows more than 200 days into their lactation and not

Table 1: The financial cost of replacements when comparing culls with mortality rates

	producer A	producer B
herd culling rate (live) (%)	30	22
dairy herd mortality rate (%)	4	7
overall replacement rate (%)	34	29
cull cow price (£)	700	550
replacement heifer cost (£)	1,300	1,300
total income from cull cows (£)	21,000	12,100
less replacement heifer cost (£)	44,200	37,700
net replacement cost (£)	23,000	25,600

Risky business: calving is responsible for just under a third of deaths in the dairy herd

confirmed in calf are sold when they fall below economic milk production (between 12 and 14 litres).

Producer B likes to 'give them a chance' and doesn't mind if the odd cow slips round to the next breeding season. But some of these cows will not make it and Producer B has a higher mortality rate.

Because Producer A has a more ruthless approach they are selling cows in better condition and achieve better prices. It is likely that the calving index will be improved, which has a big bearing on profit.

"Producer B tends to wait until the cow looks like a candidate for the cull," adds Mr McMinn.

Highlight patterns

Thompsons' ruminant specialist Richard Moore acknowledges the ability of recorded data to highlight patterns that can be addressed.

"There will always be isolated events, such as cows becoming stuck and hurt in cubicles, and these events are impossible to eradicate. But where records exist it is possible to uncover areas for attention."

With calving being held responsible for just under a third of deaths in the dairy herd, Mr Moore believes that although this area is well documented the knowledge is not always put into practice on farm.

"Sub-clinical milk fever can go undetected and go on to be the underlying cause of retained cleansings, metritis and displaced abomasums, which are all capable of leading to lost cows," he says.

There are many reasons for high mortality rates, such as overcrowding, disease, lameness, poor housing and keeping cows for too long. But simple analysis of the current situation and the ability to identify problem areas can save money in the long run, as Mr McMinn explains.

"Recently a producer noticed that there were many casualties at calving time and it transpired that cows at the point of calving were being walked across a slippery yard. This might seem obvious to an outsider, but sometimes you need to take a step back and look at the whole picture."

Table 1 shows the cost differential of a low herd mortality rate with a higher cull rate. These are only examples, but what it shows are the cost implications of replacing cows.

"Producers must set clear parameters around their decision on when to cull cows – and stick to them. Deciding whether to treat or cull a cow is a very difficult one, but remember that income from stock sales is not just a by-product of dairying, and can make a big difference to your profit," adds Mr McMinn. |