

Longevity Pays

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Holstein Journal, April 2006

Milk yield and herd size have risen dramatically over the last 10 years, while fertility and longevity have declined. Poor longevity represents a huge cost to the dairy industry. The national non-pedigree average is now roughly 2.7 lactations per cow. A goal for a well-managed herd should be 4. Fortunately, good management and nutrition can tackle most of the factors involved with involuntary culling. David Donaldson, General Manager for Agri-King Ltd, looks at the factors involved and how to improve longevity and therefore profitability.

Culling is inevitable and in terms of genetic improvement, it is desirable to replace the poorer performers. Involuntary culling, for reasons such as infertility, somatic cell counts, health and disease problems are to be controlled. Replacement policy can then centre around positive criteria such as increased milk yield, cow type, milk constituents etc.

Cost of longevity

Herds with poor longevity require more replacements, which is a cost to the business. These replacements require extra feed, building space and labour and these costs have to be recovered.

Also, heifers have lower milk yields than the mature cows. Cows typically reach peak yield between their fourth and sixth lactations. Yet very few cows in the UK ever get to this age. Check the average yield per lactation in your own herd to see how much of a difference this could make.

	Typical	Your herd
Heifers	7000 ltrs	?
2 nd lact	8000 ltrs	?
3 rd lact	9000 ltrs	?
4 th and >	9500 ltrs	?

Milk per cow per day

Another way to look at the cost of poor longevity is to look at milk per cow for each day of their life. At the end of the first lactation the heifer has been alive for around 1100 days and has given 7000 litres, or only 6.4 litres for every day of her life. Assuming a calving index of 380 days with a milk yield of 8000 litres in her second lactation and 9000 litres in each subsequent lactation gives the following figures:

Lact	Days	Yield	l/day
1	1095	7000	6.4
2	1475	15,000	10.2
3	1855	24,000	12.9
4	2235	33,000	14.8
5	2615	42,000	16.1

Moving from the typical 2.7 lactations per cow to 4 lactations, the cow would generate an extra 2.6 litres per day to pay for her rearing and overhead costs.

This equals almost 50 pence per cow per day or over £18,000 per year for a 100 cow herd. It does not allow for the extra health costs associated in herds with high involuntary culling rates. Finally, there will be extra heifers for sale each year.

Key management factors

The exact cause of culling on each farm will be a little different, but the key ones would be fertility, feet, somatic cell counts and other health issues.

Fertility

Some countries have introduced a financial measure for longevity into their bull proofs. Recent work in Ireland shows that for the period 1990 to 2001, bulls have the potential for +200kg of milk, + 4 days on calving interval and -0.8 of a lactation.

One major goal of breeding is high milk yield. These cows tend to sacrifice bodyweight and therefore remain in negative energy balance for longer than lower yielding cows. This has knock-on effects for cow health and fertility.

Just increasing the energy level of the diet is not always the solution, especially for high yielding cows. They will usually be fed a lot of concentrates anyway. Additional concentrates may cause acidosis and other digestive upsets.

The best way to influence energy balance in early lactation is to manage the dry cows better. Dry cow goals are:

-  getting cows in the correct body condition
-  ensuring an easy calving with no complications such as milk fevers
-  balancing the diets to achieve high intakes and good mineral/vitamin supplementation

This will get cows off to a better start in the lactation.

Cows will have more energy, bigger appetites, lose less weight, achieve higher peak yields and are able to hold a flatter lactation. Heats should be stronger and fertility improved. (We will cover cow fertility in the next issue of The Journal)

Feet problems

Cows with poor feet tend to get up fewer times to eat and show fewer signs of heat.

Lame cows are thinner and have more health issues compared to normal cows.

Management issues such as cubicle design, rough concrete, stony walkways and dirty passages cause physical damage to the hoof. Diseases such as digital dermatitis, warts and foot rot allow infections to develop.

On the nutrition side, avoid overfeeding starch and protein. Avoid ketosis, as the ketones in the blood inflame the sensitive hoof tissue. Trial work has shown the importance of Zinc and the B-Vitamin Biotin.

Health Issues

Health is the single biggest factor involved in involuntary culling. This is a subject in its own right, but it is worth going over the principles. There are three key areas:

-  reduce the exposure to infection
-  reduce stress on the cow
-  maintain a good immune system

Reduce the environmental sources of infection by maintaining clean milking and bedding areas. Work with your vet to maintain a good vaccination programme and dry cow therapy. Also, try to minimise new sources of infection from bought-in animals.

Stress at any time initiates hormonal changes in the cow, which make her more prone to disease and injury. Avoid sudden changes in ration/management, especially at the key times such as calving, breeding and at peak milk. Also, avoid simple feeding stress such as overcrowding at the feed fence, water intake problems, stray voltage and unpalatable or mouldy feeds.

Enhancing the cow's immune system will allow her to fight off and control conditions before they require further treatment.

Basically, this involves providing the cow with her full nutritional requirements each day. Test her feed and water regularly and adjust the diets to avoid nutrient deficiencies.

Most importantly, feed a balanced ration with adequate levels of trace minerals and vitamins. Cows will not show signs of deficiency straight away. Underfeeding may have gone on for some time and problems may not be noticed until her body reserves are depleted.

Finally, look at your herd and determine the main causes of involuntary culling. Tackle these and your vet and replacement cost will fall. Time spent patching up will be reduced and milk yields and profit will improve.

Longevity pays!