



Efficient dairying is vital in today's economic climate and spring block-calving is helping many producers to maximise milk production from grass and forage. Breeding cows suited to this system is vital to success

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How can genetics be used to increase herd profitability in a grass-based block-calving system?

# Improving 'grass to glass' efficiency

Managing a block-calving system starts with breeding the right type of cow to suit grazing and a tight calving pattern.

We spoke to a breeding expert and a renowned block-calving advocate to find out more.

text **Rachael Porter**

**B**reeding offers the opportunity to produce the 'right' genetics or cows that are required to deliver greater efficiency and, through this increased, profitability. 'Horses for courses' is certainly the case when it comes breeding cows for block-calving systems. "Two ways to improve profitability in a pasture-base system are to increase the net income per unit of feed consumed or to increase the number of units of feed or scale of the operation," says CRV Avoncroft's David Matthews. "Genetic improvement of dairy cows can help with the first part but requires the right performance indicators, the right breeding objective (focus) and a long term approach.

"In New Zealand, for example, farm production is usually described in kilogrammes of milk solids per hectare rather than in kilogrammes per cow. Milk solids are defined as the sum of fat and protein yield. For a pasture-based block-calving system production per hectare is the relevant performance indicator rather than production per cow."

## Longer-lasting cows

Production efficiency in a pasture-based system is all about the efficient conversion of grass into quality milk. Efficiency means that the focus is not only on growing output but also on input, in other words more production per unit of feed consumed.

Selection on longevity and fertility will not help directly with output, but will

help with the inputs and/or cost side. Longer lasting cows will result in the need for fewer replacements and lower direct rearing cost. Another way to look at this is to aim for higher life-time production.

"Sire selection is the key to herd improvement," adds Mr Matthews. "Selecting the sires most suited to your herd and its breeding objectives will result in a higher return on investment in semen and genetics. Matching genetics to a particular farming system is also essential. If you run a pasture based system, which mimics the New Zealand dairy management model, much more than the average all-year-round

calving system, then paying attention to breeding values and rankings from New Zealand adds value. Utilising genetics proven under a particular system will improve performance and increase efficiency."

So, what concepts from overseas can we apply to breeding programmes in the UK?

"The introduction of a genetic evaluation for live weight for both cows and sires in New Zealand was a necessary feature for economic efficiency comparison between animals of different breeds – Friesian and Jersey – that differ in live weight," explains Mr Matthews. "Inclusion of the breeding value for live weight in the National Breeding objective

*Kiwi cows: Utilising genetics proven under a particular system will improve performance and increase efficiency*



## Macca offers good fertility and easy calving

Marchel Fire Macca fits the model well with his exceptional balanced profile for all production, type and health traits. Backed by two very successful CRV Ambreed sires Macca is a son of super sire Firenze out of a Skelton cow. He throws predominantly black daughters – popular with many producers – that produce large amounts of protein from high component milk,

with low somatic cells. Daughter fertility is good and his calving difficulty is low. Daughters are moderate in size with good capacity.

But Macca's strongest feature is his daughters' outstanding udders, with superb attachments throughout and correct teat placement.

*A well-balanced Macca daughter*



David Lee: "I need trouble-free cows"

enabled New Zealand to improve the genetic trend for production, which is measured in kilogrammes of solids production, while decreasing the genetic trend and remaining positive for live weight.

### Economic efficiency

"The change in the average milk production yield and live weight during the past 10 years indicates that the average feed intake has increased by 9% and the partitioning of dry matter to milk production relative to maintenance has increased from 56% to 59%. This increase in economic efficiency resulted

in more production per unit of feed."

With 17 years of experience of running a block-calving herd, at his Shropshire-based unit, David Lee knows all about the importance of breeding cows to suit your management system. He moved from a more conventional all-year-round calving system in a bid to get cost under control. And he's not looked back since. "The figures stacked up so, for us, it seemed that moving to a spring-calving system was the only way to survive and thrive," says Mr Lee, who farms in partnership with his wife Rachel, son James and daughter Rebekah.

"It suited the shape of our unit and our grassland," adds the current chairman of the British Grassland Society.

Recognising that his high index Holstein herd – which was among the top 10% in the UK – was not ideal for the new system of management, Mr Lee started to cross breed. "For three years I used Jersey sires, but then I needed something different. I didn't want to end up with a herd of pure Jerseys. So I began using New Zealand Friesians to cross back,

as well as a few Montbeliardes and Shorthorns," he says.

### Cross-bred herd

Today Mr Lee is milking a 360-cow cross-bred herd – a mixture of Holsteins crossed with Jerseys. Mack and Selwyn are among the CRV Avoncroft sires that he's used extensively. "I'm looking for good fertility, obviously, but I also want good grazers and cows that are not too big. Good feet and legs are also essential and the cows have to be easy to care for – I need them to be trouble free. These sires certainly give me all those qualities." Since the switch, yields are around 5,800 litres at 4.7% butterfat and 3.7% protein, with the herd calving for a 10-week period starting from mid February. The herd is turned out 'once there's enough grass', which is also from mid February and stay out until mid December. "We do start to house the cows at night from late October, but again it depends on grass growth."

Mr Lee says that the first 5,000 litres is 'profit' – the rest is 'turnover'. "So the more of those first 5,000 litres you can get from grazing and forage the better." He's looking to expand herd size – up to around 400 cows, which will take his stocking rate to around four cows per hectare. This will be done with home-bred replacements, but it'll be a gradual process and he also sells some surplus young stock. "I've 420 cows and heifers to calve next spring and I won't be keeping them all. The amount of grazing and grass is the limiting factor on this unit. Not the cows. I can produce about four tonnes of dry matter per cow – that's about 16 tonnes per hectare. And I know that I have the cows that can get on and graze that – none of it is going to waste.

In addition to that, around 85% of the herd is due to calve within a six-week period – that's pretty good going." |

