The focus is on improving efficiency – not increasing cow numbers – on the unit of Danish producer Troels Bjørn. As well as improvements to the management system, a consistent breeding strategy lies at the heart of achieving a productive, profitable herd. In other words: cows that require a low labour input, are easy to manage and with high lifetime production. The numbers certainly seem to support his story.

Danish producer Troels Bjørn has plenty of plans for his herd. But he does not want to milk more cows. "We want to be 'better' – not bigger," he says. Troels is personally in the parlour at five of the 21 milking sessions every week, and takes responsibility for herd management. He also devotes plenty of energy to optimising the operational and financial aspects of the farm he acquired after a bankruptcy.

Clear protocols
Troels' goals and his strategy are clear in his mind. Two and a half years ago, the Danish producer became the owner of this dairy unit near Hobro, acquiring the farm and the existing herd from the previous owner. The first few years went into overdue maintenance and refurbishment and there is currently no room for expansion, but Troels still sees plenty of opportunities for developing the herd and dairy business.

"The unit is at capacity in terms of cow numbers, but with the existing size we can still produce more milk," Troels says. He adds that just small changes can make a big impact on a herd of 350 cows. As an example, switching to milking three times a day significantly boosted milk production. And, purchasing the Ovalert system took away all the worries associated with fertility and heat management (see box). Establishing clear protocols has guaranteed a uniform working method for the employees. This also frees up time for Troels to focus on improving herd and business efficiency.

Lower culling rate
The average milk production per cow has now risen by 1,000kg to reach almost 12,000kg, with a further increase to 12,500kg well within feasible reach according to Troels. However, he sees the better health status of the cattle and the lower replacement rate as even more important than higher production. On other Danish farms with similar production, the replacement rate is 60%, whereas on his farm the replacement rate is 27.4%. "Lowering the culling rate and increasing lifetime production are a good way to ramp up profits," he says. "It gives us a way to save a lot of money on rearing young, replacement stock."

There are currently still 350 head of young stock on the farm, but this stocking density will be reduced to 250 in the coming period. The farmer has half of his cows inseminated with Belgian Blue semen. This avoids him having to keep on too many cattle and increases the revenue on the sales of calves. It also helps book considerable advances in general herd genetics as the lower scoring percentage of the herd is excluded from the breeding programme.

Breed ‘n Care consultant Lars Juellund advises the best bulls for both health traits and efficiency

FARM PROFILE

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Breeding makes all the difference

Efficient cows
Troels is convinced that breeding is absolutely key to achieving good herd productivity. “A healthy and highly productive herd is the foundation for an efficient and profitable dairy business. Cows that easily achieve high lifetime production are efficient. They are more economic to manage because they require little labour and convert more feed into milk” says Troels. “My ideal cow is an invisible cow. She continues to produce milk lactation after lactation and rarely appears on attention lists.” Differences in genetic inheritance go a long way to explain the differences in the performance of animals within the herd, according to an extensive analysis (see box). The Danish farmer wouldn’t go as far as to label himself a breeder: He is happy to leave bull selection and mating advice to the specialists. But his advisor does have a clear remit. “We want to use the very best bulls available for both health and efficiency traits. Breeding can help us to further optimise our dairy herd as we move forward. And that is essential to create a firm foundation for our farm for the future”, says Troels with conviction.

Breeding for improved health and efficiency works. This is shown by an analysis of the performance of the cows in Troels Bjørn’s herd, where an extensive cattle registration system has been maintained. As a result, not only have all the production figures and fertility results been recorded, but also all the data on udder and hoof health from a total of over 700 cows.

High yields
In order to show the effect of breeding on efficiency, the cows in the dataset are divided into groups with a high and low genetic inheritance on the Better Life Efficiency index (see below). The breeding values of their sires form the basis. The bottom 25% of the herd averaged -2.3% for Better Life Efficiency, while the top 25% scored, on average, +4.6%. This difference of 6.9% is expressed in practice, among other things, in large differences in milk production. The leading group produced on average lactation 1-3: 11,053kg of milk with 3.99% fat and 3.47% protein. This is 1,520kg of milk and 47kg of fat and 49kg of protein more than the lowest group.

Difference in performance between the top 25% and bottom 25% of the herd (average lactation 1-3)

<table>
<thead>
<tr>
<th>Trait</th>
<th>Top 25%</th>
<th>Bottom 25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better Life Efficiency</td>
<td>6.9%</td>
<td>-2.3%</td>
</tr>
<tr>
<td>Milk production</td>
<td>1,520kg</td>
<td>1,225kg</td>
</tr>
<tr>
<td>Fat</td>
<td>47kg</td>
<td>35kg</td>
</tr>
<tr>
<td>Protein</td>
<td>49kg</td>
<td>40kg</td>
</tr>
</tbody>
</table>

Healthy cows
A similar analysis has been made for Better Life Health. On this breeding trait, the difference between the bottom and top 25% of cows in the herd was 4.1%. This difference results, among other things, in 31% fewer cases of mastitis and a cell count that (on average across lactation one, two and three) is almost 54,000 cells/ml lower for the group with the highest score for Better Life Health. A similar effect was found on hoof health. In the leading group, among others, 22% fewer cases of digital dermatitis were registered. In terms of fertility, the calving interval was 20 days shorter in the top 25%.

Difference in performance between the top 25% and bottom 25% of the herd (average lactation 1-3)

<table>
<thead>
<tr>
<th>Trait</th>
<th>Top 25%</th>
<th>Bottom 25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better Life Health</td>
<td>4.1%</td>
<td>-3.1%</td>
</tr>
<tr>
<td>Mastitis</td>
<td>-31%</td>
<td>-20%</td>
</tr>
<tr>
<td>Somatic cell count</td>
<td>-54,000 cells/ml</td>
<td></td>
</tr>
<tr>
<td>Digital dermatitis</td>
<td>-22 cases</td>
<td></td>
</tr>
<tr>
<td>Calving interval</td>
<td>-20 days</td>
<td></td>
</tr>
</tbody>
</table>

The calving interval was 20 days shorter in the top 25% cows for Better Life Health

What are the Better Life breeding figures?

Better Life Efficiency
Better Life Efficiency is an index developed by the AI organisation CRV that says something about the genetic inheritance of an animal to efficiently convert feed into milk. Breeding values for milk and longevity are important parts of this breeding trait, but persistance, late maturity, fertility and weight are also taken into account. A score of 1% Better Life Efficiency corresponds with an extra 1,500kg milk production in a cow’s lifetime.

Better Life Health
Better Life Health indicates the extent to which an animal is able to produce milk without problems. In this index the breeding values for ketosis, udder health, hoof health, daughter fertility, calving ease and calf vitality are combined. Bulls with 5% Better Life Health or higher improve every health trait.