



Efficient dairying is vital in today's economic climate. And breeding highly productive and trouble-free cows is key to efficient milk production. In this first article, in our seven-part series, we set out to help you to achieve this.

Part 1: **Lifetime production in the Netherlands**

Part 2: **Efficient production in block calving systems**

Part 3: **Fertility: a financial point of view**

Part 4: **Weight of fertility in block calving systems**

Part 5: **Dairy management in block calving systems**

Part 6: **Easy-to-manage Holstein cows**

Part 7: **Benefits of reliable breeding values**

Three cows pass the impressive 100,000kg of milk mark every day in the Netherlands. And every week another three are reaching the magical production milestone of 10,000kg of fat and protein.

In total, 27,000 Dutch cows have produced more than 100,000kg of milk with more than 2,000 cows achieving 10,000kg of fat and protein. This proves that high production, high components and durability all go together. And it's no accident that the average Dutch cow produces more than 30,000kg of milk, at 4.37% fat and 3.52% protein, during her lifetime. No other country in the world can match these high lifetime production figures. So what is the Dutch secret?

"It all starts with high producing cows," says CRV's global breeding specialist Theo Gieling. "And, of course, producer management skills are important. But most of all it's the result of breeding high producing cows with the conformation to produce persistently and to have the ability to be fertile and healthy year after year."

Trouble-free production

Mr Gieling looks back to the 1980s, more than 30 years ago. Producers were focusing on production and selecting their bulls for Inet. This total index is based on milk, fat and protein. "The weighting of factors in the Inet are chosen to improve milk production without lowering the components," says Mr Gieling. "Efficiency was also, indirectly, part

Dutch dairy cows have the highest lifetime production in the world

Focus on efficiency

Do you want production or components? You can have both with Dutch genetics. Today health and fertility and longevity are added to milk yield. The result is an increasing number of cows producing 100,000kg of milk and 10,000kg of fat and protein.

text **Alice Booij**



From Sunny Boy to Atlantic and Kodak

Sunny Boy is by far the top bull, delivering many cows producing 100,000kg of milk and 10,000kg of fat and protein. This son of Nehls, born in 1985, already has 217,873 daughters in his proof and still scores +385 days longevity. Producers who are looking for young bulls, that have the potential to sire daughters with a high lifetime production, can look at the top of CRV's bull list.

Delta Atlantic (by Ramos) offers +778 days of longevity and with 301 for NVI, making him a specialist in siring long life and productive cows.

For red-and-white Topspeed Kodak (by Kevin) would be a good choice. He



Delta Atlantic

combines +589 days of longevity with 203 NVI with very high components, +0.12% fat and +0.09% protein.

of the Inet formula. The amount and differences of energy that is needed to produce these kilogrammes of milk, fat and protein are included. It means that next to a high and 'rich' milk production, producers have also bred an efficient cow."

As the production of cows increased, producers also demanded trouble-free production. They wanted cows with good udder health and high fertility – both important traits for a long life and a high lifetime production. This was one of the main reasons to introduce the NVI in 2007.

"This total index sums up important breeding values (production, calving ease, longevity, health, fertility, udder and feet and legs) to sire high producing, low input and low labour cows, fit for the more and more exacting producer," he says.

In the future, Mr Gieling expects hoof health to be part of the NVI as well. "The hoof-trimming data from herds in the Netherlands and Flanders will lead to more and very precise information. This will make a perfect base for reliable breeding values."

He also expects more weighting in the NVI to account for the increased interest in efficiency. "Next to all the new breeding values that producers take into account, production and components stay on top. That remains important."

Lifetime production

The result of years of breeding is clear to see in the high lifetime production of Dutch cows. "A high lifetime production means more profit," says CRV analyst Ite Hamming. "To rear a heifer to the point

their cow produces 100,000kg of milk, but the herd book decided to up the ante and set the next goal – 10,000kg of fat and protein.

This milestone has already been reached by many cows, so the following question is: what will be the next level? Maybe 150,000kg of milk?

"I think the most progress will be shown in the increase of lifetime production for the average cow. It's possible that it will rise from 30,000 to 50,000kg of milk in the coming years."

Mr Hamming is an expert in analysing data from cows with a high lifetime production. "I think the sire is one of the most important success factors for a cow to get a high lifetime production," he says. "Some bulls just give their daughters a higher chance of becoming a 100,000kg cow."

He mentions Sunny Boy and Ronald as examples of successful bulls and he notices that excellent udders and extremely strong feet and legs are very typical for cows with this huge production.

"If you compare the first 100,000-kilogramme cows with the latest ones, you'll notice that the improvement of udders and feet and legs are huge. And their conformation is usually very balanced. Not too high, not too deep, not too heavy in the front end. These cows have optimal scores in all their characteristics to achieve maximum production." |

where she calves and joins the milking herd takes a lot of money. The more production a cow makes in her life, the lower the rearing costs per kilogramme of milk and the higher the return on the investment."

The first cow (recorded by the herd book) producing 100,000kg of milk was Clazina 48, in 1959. After a slow start, the number of cows achieving this huge amount of milk increased from the 1990s to more than 2,700 cows producing 100,000kg of milk. "There were so many cows passing this line that it almost became common," says Mr Hamming.

For producers it is still special when

Table 1: Lifetime production of Dutch herd book cows

year	kg milk	% fat	% protein	kg fat	kg protein	kg fat+protein
2013	30,751	4.37	3.52	1,344	1,083	2,427
2012	30,536	4.37	3.51	1,333	1,073	2,406
2011	30,318	4.36	3.51	1,323	1,063	2,386
2010	30,482	4.37	3.50	1,331	1,067	2,398
2009	30,543	4.38	3.50	1,337	1,069	2,406
2008	30,777	4.39	3.50	1,352	1,078	2,430
2007	29,851	4.41	3.50	1,315	1,044	2,359
2006	28,845	4.41	3.50	1,273	1,009	2,282
2005	27,701	4.42	3.49	1,223	967	2,190
2004	27,080	4.42	3.49	1,196	944	2,140
2003	26,358	4.42	3.49	1,164	919	2,083
2002	25,401	4.41	3.48	1,120	884	2,004
2001	24,980	4.40	3.48	1,100	870	1,970
2000	24,044	4.40	3.48	1,058	837	1,895
1999	23,883	4.42	3.48	1,056	832	1,888
1998	24,125	4.44	3.49	1,070	842	1,912
1997	23,255	4.45	3.50	1,035	813	1,848
1996	23,410	4.45	3.49	1,042	818	1,860
1995	23,950	4.46	3.49	1,068	836	1,904
1994	22,924	4.45	3.48	1,021	798	1,819
1993	22,666	4.44	3.47	1,006	787	1,793
1992	22,132	4.41	3.46	977	766	1,743