



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 article we look at a new tool to help you improve fertility – and health.

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**

Genetics do play a role in fertility. It's possible to improve the fertility of your herd through sire selection, even though fertility has a low heritability of just 6%. It's also important to consider other sire traits, such as calving ease. "Remember, production diseases and any other stresses on the cow will impact on her health and fertility. The key is to breed a 'trouble-free' cow – that typically means few disease, calving or other management problems, and good fertility," says CRV Avoncroft's David Matthews.

He explains that sire fertility expresses itself both directly and indirectly. "The 'direct' fertility of a sire is the fertilising capacity of his semen. Or how easily cows get back in calf after AI with a bull's semen.

"The fertility of a sire's daughters is a measure of his ability to 'transmit' fertility to his offspring. This is 'indirect' fertility and, for producers running block calving systems, this is of particular interest."

### Fertility traits

Fertility is a trait that can be measured in many different ways. Definitions that are often used are non-return percentage after 56 days (NR56), non-return percentage after 28 days (NR28), number of open days, calving interval, the interval between calving and first service, and the number of inseminations per pregnancy. But if producers want to select sires for indirect fertility, which traits should they be looking for?

Fertility traits can be divided into two groups: interval traits and fertility scores. For interval traits, the number of days

Good daughter fertility plays a key role in tightening calving patterns

# Fuss-free and fertile cows

Fertility is vital to the success of any dairy herd, but it's even more critical when running a block-calving system. We spoke to two producers to find out how sire selection plays an important role.

text **Rachael Porter**

of a certain fertility situation is determined, such as the number of days between calving and first heat or the number of days between two calvings.

For fertility score, a percentage of the animals that are in a particular stage

of the reproductive cycle is measured. Examples of this are NR56 and NR28.

"Good fertility in a cow can be defined as a lactating animal that clearly shows its heat in time and conceives after the first insemination. If an animal complies with these two requirements, she will

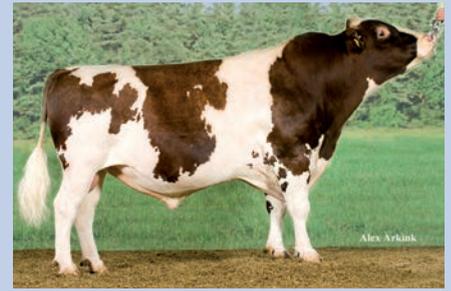


## Topspeed Kodak – balance and distinction

The daughters of Topspeed Kodak have great balance and display three highly distinctive traits.

The first is rib depth. “These are no delicate little cows – they have plenty of weight and depth of chest. And they also have good udders and excellent locomotion,” says CRV Avoncroft’s David Matthews.

Kodak produces daughters that suit today’s commercial herds – cows that offer the complete package of type and production. “They produce good constituent levels throughout each lactation. And they don’t stand out in the herd – they’re trouble-free. This is particularly desirable these days,” adds Mr Matthews.



Topspeed Kodak

automatically achieve a desired calving interval. And this cow requires little labour and is easy to manage. This cow also needs just one dose of semen for a pregnancy.

“The breeding goal here is a short calving interval and as few inseminations per pregnancy as possible,” adds Mr Matthews.

Breeding for fertility takes time. The sire passes half of its breeding value on to its daughters. A sire with a breeding value for calving interval of 104 has daughters with a calving interval that is, on average, 7.7 days shorter. A breeding value of 104

for NR56 means that those daughters have a 2.8% better non-return on 56 days than on average. For the interval calving to first insemination, the daughters from a sire with a breeding value of 104 have an interval 4.4 days shorter than daughters from a sire with a breeding value of 100.

### Calving ease

Combining information produces breeding values with good highest reliability and breeding values are a useful instrument for keeping an eye on the genetic level of the herd. Bulls can also be selected for their daughter fertility. Despite the low heritability and low reliability of the breeding values there is considerable variation between sires.

That’s why it’s important, particularly when selecting sires to use on a block-calving herd, that producers take a close look at fertility score, as well as other traits that are vital to breeding trouble-free cows. So says Shropshire-based producer Tim Downes. He runs a 250-strong spring calving organic herd near Shrewsbury and says that fertility is one of the key traits he considers when selecting sires. “They have to score a minimum of four and all the bulls we’ve used recently have scored five. But I’m not blinkered by the fertility figure. I look at the bull as a whole and other traits, such as SCC.

“We want it to be as negative as possible as we’re trying to reduce antibiotic use to close to zero,” explains Tim.

Calving ease is also important for this predominantly New Zealand Friesian cross-bred herd – a difficult calving can lead to fertility problems. “So we use sexed semen on our best maiden heifers – at the moment that’s Topspeed Kodak with a calving ease score of 111. He’s ‘super easy calving’. And we use an easy-calving cross-bred beef sire on the rest. To lose one heifer with a difficult calving is devastating and it’s more than £2,000 down the drain.” He says that the bull

average for calving difficulty is around 3.05. “So we look for sires that are around 0.8.”

Production is also important to Tim. “But we avoid anything that’s too extreme. Any sire with more than 1,000kg doesn’t go hand in hand with how we farm. So we avoid those bulls.” Alastair Cliff runs two herds in Cheshire – one spring and one autumn calving – that are about three miles apart.

“So fertility is definitely key when we’re selecting sires,” he says. “We’re particularly ruthless in how we manage the herds and cows have just one chance to get in calf, so we like to make sure that their genetics maximise their chances.”

### Beef semen

Anything that’s not in calf after first service is then put to a beef bull. “We use ‘fertility plus’, which are straws of mixed beef breed semen, including Angus, Belgian Blue and Limousin.”

For dairy sires, Alastair uses CRV Avoncroft sires and sets his minimum score for fertility at four. “That said, we’ve used Topspeed Kodak because he scored so well on the other traits that are vital to good fertility, such as calving ease and lifespan score. I had to use him – he’s just too good.”

There are Kodak daughters milking in Alastair’s herd and he’s pleased with them so far. “They’re a little slow to mature, but then that’s probably why they’ll last longer in the herd. They certainly have the type that means they should milk for several lactations.”

He is ‘wary’ of using any sire that offers more than 500kg.

“I want medium-sized cows that are going to be trouble-free. Too much milk, and you can run into problems. And not just with fertility either. You have to look longer term and at the bigger picture when managing block-calving herds.” |

Heat detection: strong signs of oestrus are key to cow fertility

