

Events around parturition have a big influence on subsequent fertility



Fertility starts at parturition

OENKERK [NL] ■ Poor fertility is one of the biggest problems currently being faced by the dairy sector and it has a big impact on dairy businesses' bottom lines. In this, and future issues of Highlights, we are going to discuss fertility from a practical point of view.

A lot of parameters have changed that make it more difficult to maintain good fertility. Milk yield per cow has increased enormously, as has herd size. Here, we already have two reasons why maintaining good fertility, in other words an acceptable calving interval and for cows to easily becoming pregnant again after calving, is a big challenge. The modern dairy cow is a top sports woman who, in this case, has specialised herself in producing milk of high quality. It is, however, with respect to the continuous profitability of the farm, vital that the cow gets in calf in time again in order to complete another lactation.

The day when it all starts

The day of calving may be the most important day, or days, during the life of a dairy cow. On this day, events, to a large extent, decide whether the cow in question gets pregnant on time again. The producers can play an important role in this. They are the 'top coach' responsible for an optimal environment in which their top sports women can perform well. One of the things the producer can do to contribute to good fertility in their herd is to provide an environment in which the cow can give birth with as little stress as possible. The problem with stress during calving is that it regularly interrupts calving. This could have consequences for the calf as well as the cow. For the calf, stress increases the risk of a stillbirth. For the cow, stress increases the risk of a retained placenta, which has negative consequences on her fertility.



A cow starts to 'bag up' a couple of days before calving. This cow was pictured five days before her third calving

The three stages of calving

We can distinguish three stages of parturition:

Stage 1: in this stage, the cow needs a quiet environment. During this phase the cervix dilates slowly and calving starts. Stage 1 varies in length per cow from four to even 24 hours. The dilation process takes longer in heifers.

Stage 2: in this stage the actual calving takes place. The calf is born. Several studies indicate that this stage takes between two and five hours. The role of the producer in this stage is to continually observe the calving cow to detect abnormalities – like breach presentations, twins, a big calf or a stillbirth – as soon as possible. These abnormalities can have a profound effect on the fertility of a cow when you do not detect them in an early stage.

Stage 3: after the calf has been born, one event still has to take place before parturition has really finished. The afterbirth or placenta must be expelled. To ensure a speedy recovery of the uterus after pregnancy, the cow needs to expel the afterbirth within 12 hours after giving birth. If this is not the case she has what's known as a retained placenta. The role of the producer is to watch and ensure that the placenta is expelled. In case of a retained placenta, they need to get the vet involved. Administering a drug can help the cow releasing the placenta.

Stage 1:
the start of parturition

Stage 2:
the actual parturition

Stage 3:
the afterbirth

- TIPS FOR PREVENTING STRESS DURING CALVING**
- The cow should calve in familiar surroundings.
 - Ample and clean calving accommodation, which provides a comfortable place to give birth.
 - Availability of sufficient water and feed.
 - When the calving yard is separate from the milking herd accommodation, the cow should be housed in the calving yard a couple of days before calving.
 - Prevent overcrowding in 'fresh' cow groups.
 - Consider making a separate group for heifers.

Retained placenta
A retained placenta has negative effects on fertility. Use a drug to help expel the placenta when necessary. Never try to peel off the placenta yourself since this causes wounds and inflammation of the uterus. In the first week, you can check the temperature of the cow and check her appetite.

Water intake after calving
After parturition, give the cow tepid water (25-75 litres of 30-35°C) as soon as possible, possibly with an electrolyte solution as addition. Good water intake encourages the cow to eat and to eat more and this lowers the risk of a displaced abomasum. For large dairy farms, it is recommended to add this to the calving protocol.

Negative energy balance (NEB)
A cow that uses a lot of body reserves before, during and after calving (NEB) needs more time to get into a regular cycle again. Cows with a large NEB usually need double the number of insemination to get back into calf, compared with cows with a limited NEB in early lactation.

The aftercare
The aftercare for the cow, or maybe we should even speak of preparation for the following pregnancy, starts after calving. It is important that the cow feels comfortable in her environment and that she has clean drinking water and quality feed all within easy reach. The palatability of the feed is more important than the quality of the feed in these first hours after calving. But the very first thing a cow that just gave birth needs is tepid water with possibly an addition of electrolyte solution. Intakes of as much as 25 to 75 litres of tepid water are not exceptional. The additional benefit is that the enormous amount of water (that fills the rumen) clearly decreases the risk of a displaced abomasum. The water intake is also important to stimulate the dry matter intake (1kg of dry matter/ 5 litres of water). The cow should have the opportunity to eat as much roughage (and feed) as possible from the day of calving onwards. Cows that had insufficient intake on day one still show a decreased intake three weeks postpartum. This leads to the use of body reserves to sustain her milk yield. The cow enters a stage of negative energy balance (NEB). This NEB has a strong relation with getting in calf and more specific with getting in calf on time again. When we are not able to restrict this NEB to a minimum, we already know that we will have difficulties getting the cow pregnant again. Almost every dairy farm has cows with fertility problems. The management around calving plays an important role, but it is the management at the begin of lactation that also influences fertility to a large extent. Through out these phases it is important that our top sportswomen – the dairy cows – have a top coach (the producer) at their disposal to support them through this challenging time. The guidance of your dairy cows from the day of calving plays a big role in lowering the hurdles that a dairy cow has to jump in order to get in calf again. Every minute that you invest in providing optimal conditions at calving is well spent as in return you will see more milk, a healthier cow and better fertility. •

Breeding for fertility
It is also possible to improve the fertility of the herd through selective breeding. It is, however, a long-term solution. And genetics only have a small influence on daughter fertility. The heritability of milk production, for example, is 0.57. This means that 57% of the variation in milk production between cows is explained by genetics. The heritability of daughter fertility is only 6% – just 6% of the variation in fertility is explained by genetics. As a producer, you can improve your herd's fertility mainly by optimising fertility management and, for a minor part, by using good genetics. CRV's sire Dudam Surprise, for example, sires cows with good fertility (daughter fertility 101). His daughter (pictured) is currently milking in her third lactation. Her average calving interval is exactly 365 days.

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