



Fertility and fertility control in cattle

geno

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The cow takes more notice of her surroundings. Here with her head leaning on the other's back (chin resting)

To maximize the milk output from cattle, most farmers try to ensure that their cows should calve once a year. This means that each cow should be pregnant approximately 85 days after calving. Difficulties in determining when cows are in the correct true heat mean that in many herds this target is not met.

The heat in cattle occurs every 21 days on average with a normal variation from 17 to 24 days. The heat can be characterized in three phases.

Coming into heat (Preliminary phase)

Lasting 1 to 3 days, this phase can (especially in the darker winter months) have few

if any obvious signs. At other times it can be so marked, as to be confused with the actual true heat. Whether the cow is coming into heat or is in true heat, is important but often difficult to decide. However, this determination is one of the most important and deciding factors in the outcome of an attempted insemination. Far too many cows are inseminated in the preliminary phase.

Phase	Duration
1. Coming into heat (Preliminary phase)	1 to 3 days
2. True heat (oestrus)	6 to 30 hours
3. Going out of heat	1 to 3 days

The cows may become more restless and aware of their surroundings. They seek con-



tact with other cattle. They may nuzzle or lick their neighbours. Be aware for damp blotches after licking. The last hours prior to true heat, the cows express more and more behavioural signs. These are mounting, chin resting and anogenital sniffing (sniffing behind).

Mucous membrane of the vagina will become moist and redden and the labia will swell. A grayish discharge of slime can occur at the beginning though a clear discharge may also be found.

True heat

The change from the preliminary period to the true heat is gradual, and the behavioral signs increases.

Signs of true heat

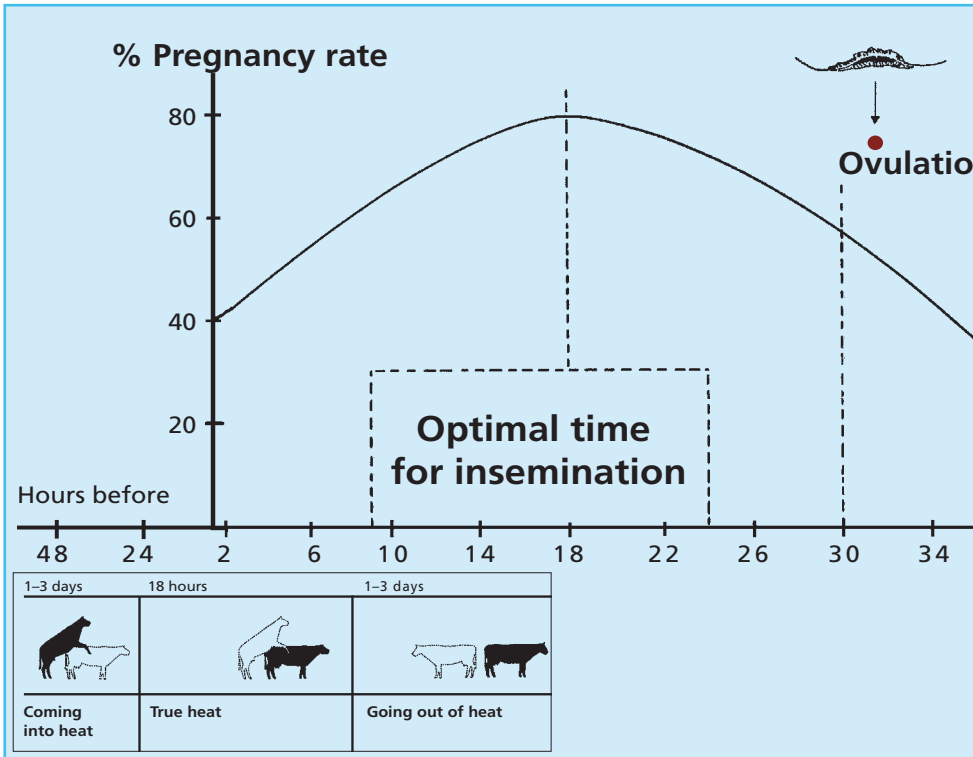
If you happen to see the cow standing still when mounted (standing reflex), this is the definite sign of true heat.

Other important signs: mounting, chin resting, sniffing behind, reduced milk let down and reduced feed consumption.

Cows are restless and watchful. They may bellow and often stand while others lie down. Whistling or gently touching the back/ loins will often result in lowering of spine. Some animals will move their spine up and down and raise the tail or tail root.

A slimy discharge is often crystal-clear, long and may adhere to tail and legs.

Towards the end of the true heat, air-bubbles appear in the slime. The vagina



remains moist and red, and the entrance is swollen.

Going out of heat

The oestrus behaviour disappears. A discharge of tough shiny slime may continue. Towards the end, there may appear some blood in the slime. The labia become pale and contract. A substantial discharge of blood may be seen one to two days after the true heat has ended.

A new heat can be anticipated about 17 to 20 days after the bleeding has been observed.

Heat detection routines

A good result requires thorough and planned regular observation of the animals. Fixed times and good routines lie behind successful results.

Good use can be made of such aids as: a cowshed data board, fertility calendar, and a good note-book or journal to record all ob-

servations and occurrences of interest.

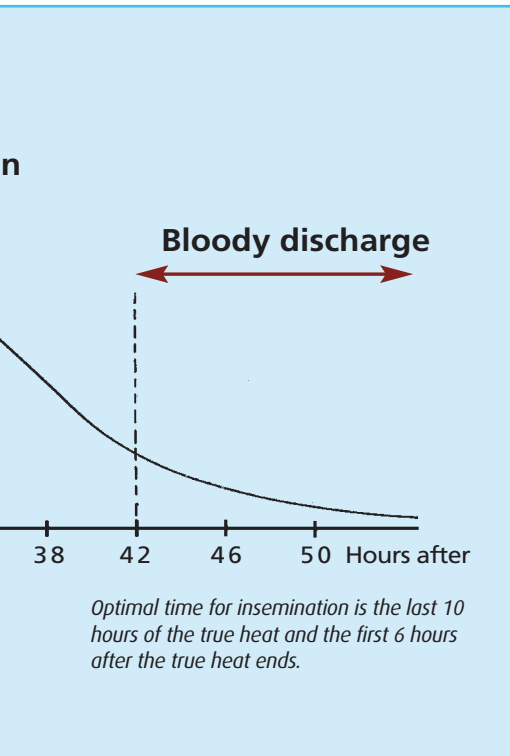
Heat detection must be carried out regularly for all cows and heifers.

Even if it is not intended to inseminate an animal in heat, the dates and length of the period should be noted, with details of the vaginal discharge, and the timing of the bloody discharge, following the heat.

In the event of any abnormality, the animal should be examined by a veterinarian. A recommended rule of thumb is that any animal that does not show signs of a normal heat within 60 days after calving, should be examined by a veterinarian.

Observation of heat signs should be carried out at least twice daily, following the morning and evening routines. In addition, a mid-day check, and no less important, an evening inspection round of the cowshed when the herd is quiet, will pay dividends.

Note that if the observations are taken while the animals are eating, or being milked, signs can easily be overlooked. Discharges



The first sign of the preliminary phase (coming into heat) is a slime discharge. The slime is thick and greyish, often appearing like a mucus plug.

are more easily seen when the animals are lying down.

Get into a routine

1. Stop in the cowshed door, or other chosen observation points. Check out all the animals:
 - Look for changes in behaviour.
 - Are there any that are standing, while the rest are lying down?
 - Are there any that are showing more attention than others?
 - Have a closer look at any that lie down earlier than the rest, or remain standing after feeding or milking.
 - In cowsheds where the animals are free to come and go, make a note of any that are more active than the others. Are there groups of animals that are more active than others?
2. Examine individual animals that are to



Look out for a swollen labia and red mucus membrane in the vagina during the heat.



During the true heat, the slime is thread-like.



Bleeding from the uterus membrane shows that true heat has passed.



Registration booklets is obtainable from Geno to keep comprehensive notes on each cow.

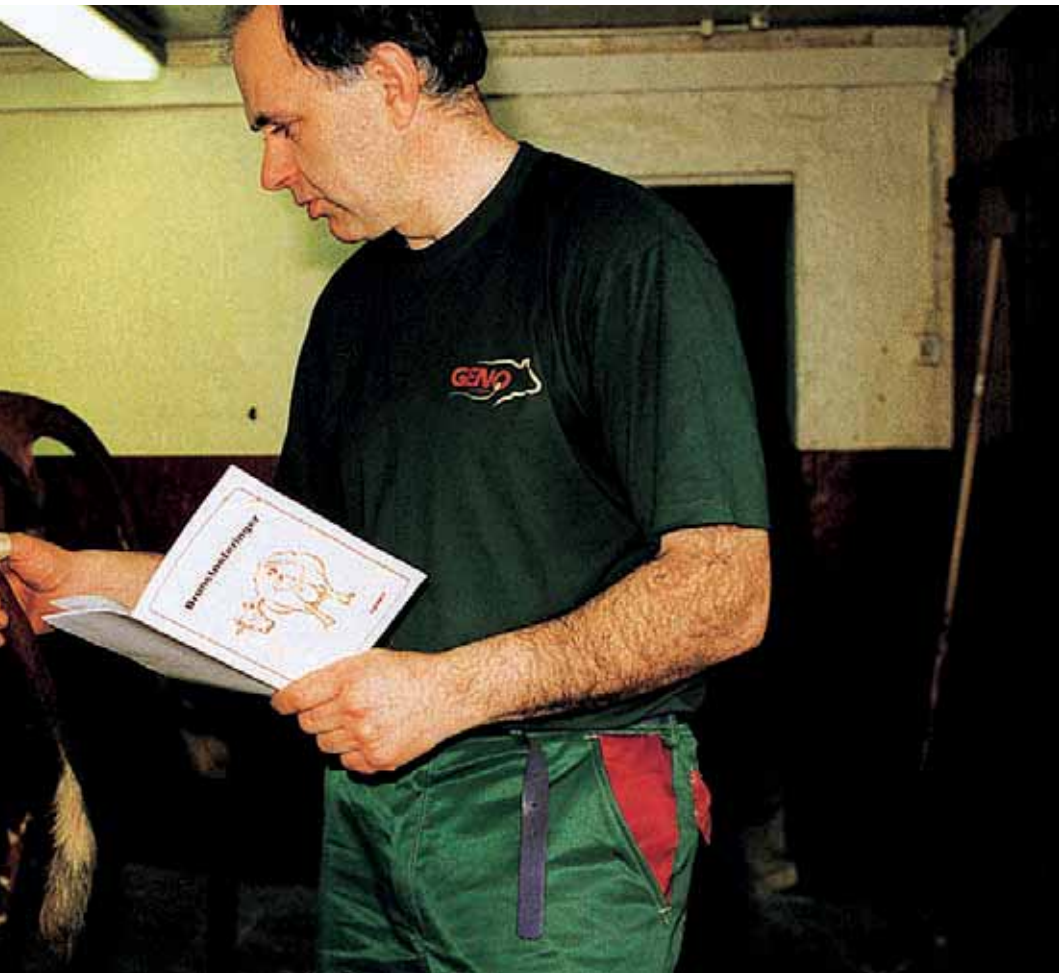
be inseminated. Check for reddening of the vaginal lips and look for discharges - check tails and legs for slime. Look out for slime stains on nearby animals.

3. Check the animals' reaction to gently touching the back/ loins.
4. When animals are in open grazing, check the tail-roots for signs of mounting (tail-root paint)
5. Check your previous notes for the animals, and make new notes.

Timing of insemination

The uterus take a certain time to return to the normal size, and to cleanse after calving. If insemination is carried out too soon, the result will most often be unsuccessful. It is recommended to wait a minimum of six weeks after calving.

It is preferable that the animal has been through one complete oestrous cycle before the cycle in which you want it to be inseminated.



Time of day

Recommendation

1. Animals that are in true heat in the morning, should be inseminated in the afternoon of that day or early the next day (at the latest).
2. Animals that are found to be in the true heat later in the day, or in the evening, should be inseminated the next day.



Research has shown that use of a "Fertility Calendar" improves productivity by several percent. The Fertility Calendar is obtainable from Geno.

Geno

Geno Breeding and AI Association, is a cooperative owned by 13 000 Norwegian dairy farmers.

Geno is the breeding organization for NRF – Norwegian Red, the main dairy breed in Norway.

Geno's main product is high quality semen of the best NRF sires. Our breeding program is based on science and continuous research and development in the areas dairy cattle breeding and genetics, fertility and artificial insemination.

Geno's vision:

Breeding for better lives!

Locations

Geno's Head Office is located at Hamar, 130 km north of Oslo.

Geno A.I Centre Store Ree is located at Stange, 15 km south of Hamar.

Geno Performance Test Station is located at Øyer, 80 km north of Hamar.



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