

Bulling and in-heat control



To achieve the best possible financial returns in milk production, most farmers prefer cows to calve once a year. This means that cows must be pregnant no later than 85 days following calving. Problems with detecting when cows are on heat at the right time means that in some herds, it can take a long time for cows to calve.

Cows are in heat every 21 days. This is an estimate, and we regard a variation of 17 to 24 days as standard. The time from the start of one heat phase to the start of the next one is called a heat cycle. The heat cycle can be split into three phases.

Pre-heat phase

The pre-heat phase usually lasts 1-3 days. Signs of this phase are not usually visible in the winter months. If you base heat control on mucous, you risk cows being inseminated too early. Being able to differentiate between the pre-heat and actual heat phase is often difficult.

Signs of the pre-heat phase

During the final hours of the pre-heat phase, the animals will display more and more behavioural signs. The animals become restless and become increasingly interested in their surroundings. They seek contact with other animals, rub themselves against neighbouring cows and lick them. Look out for damp patches after licking. Behavioural signs are mounting, head resting, head scuffing and sniffing the rear end. Some cows in the pre-heat phase react by not producing milk. Reduced appetite and feed intake can also be signs that cows are in an early heat phase. They may also ignore their food. The mucous membranes in their genitalia will become damp and reddish. The vulva becomes swollen. A tough, grey mucous plug can be seen at the start simultaneously with drops of clear mucous.

Heat phase	Duration
1. Pre-heat or preliminary phase	1-3 days
2. Heat	6-30 hours
3. Post-heat	1-3 days



During the pre-heat phase, the mucous is grey and tough, and then becomes thin and clear. The mucous is not stringy or sticky.

Heat

The transition from pre-heat to heat is gradual. Heat usually lasts approximately 18 hours, with a variation from 6-30 hours.

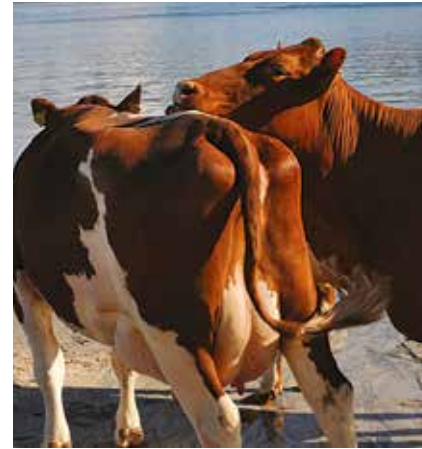
The heat phase consists of three periods:

- **Early heat** – the period from the first mounting activity until the cow stands ready for mounting.
- **Standing heat** – cows stand ready for mounting and are receptive to contact.
- **Late heat** – the period following standing heat and until mounting activity stops. In this phase there are usually few behavioural signs and time is of the essence to get the cow inseminated.

There is mounting activity in all three of the heat phases.

Signs in the heat phase

If you are lucky, you will spot the cows that

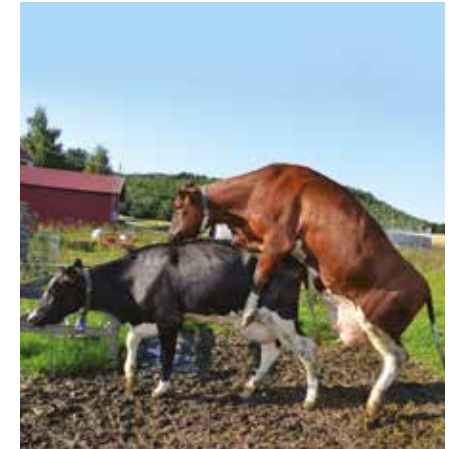


Head resting. Cows show increased awareness of their surroundings, here rubbing her head against another cow. In the early heat phase the cow in heat seeks contact, while during the actual heat phase cows become more and more receptive to contact from others.

are in standing heat (stand reflex). This is the most reliable sign of heat. Other important signs are mounting, head resting, sniffing rear end, reduced milk production and reduced feed intake. Cows are restless and have a glazed expression. They may stand and moo during the first half of the heat phase. The cow in heat will often remain standing when others are lying down. When whistled to or touched, they often lower their lower back. Some animals will also move the lower back and lift their tail or tail root when touched. Stringy mucous forms, which is crystal clear to blue in colour. The mucous can stick to the thighs and tail. Towards the end of the phase air sacs are visible in the mucous. The mucous membranes in the genitalia continue



Sexually active group (SAG). Two or more animals in heat at the same time will stay close to one another over time. They will give and receive signs such as mounting, head resting, licking and sniffing



Standing heat Cows stand for mounting. The standing reflex is the most reliable sign of heat. Cows that mount may also be in heat, and they may take turns mounting each other.

to be damp and red, and the vulva is swollen.

Sexually Active Groups (SAG)

During the heat phase, free-roaming cows or cows in pastures will form so-called sexually active groups. Cows that are in heat will stay close to one another (within three metres distance) over time and display visible heat signs. If only one cow in the herd is in heat, animals in the pre-heat phase or not in heat may form SAG groups together with the cow in heat. In such groups the partner of the cow in heat may vary. Cows in standing heat can join sexually active groups up to a 1/3 of the time. It is important to keep an eye on such groups because at least one cow in heat will be part of that group.

Post-heat phase

Signs of post-heat phase

The cow's willingness to mate is gone. There may still be some tough, clear mucous. Towards the end of the phase, there may be some blood mixed with the mucous. The lips of the vulva are pale and constricted. A clear bleed can be observed one to two days following the end of the heat phase. The next heat phase can be expected from 17 to 20 days following bleeding.

Rest phase

Lasts until the next heat phase.

In-heat control

A successful insemination requires thorough and planned follow-up of each animal. Fixed times and excellent routines form the basis of successful results. Useful aids include barn tables, a heat calendar or notebook where any interesting observations are noted. Heat control must be performed regularly for all cows and heifers.

Even if the cows are not to be inseminated during the next heat phase, the heat phase and length should still be noted. This also applies to the state of the mucous and the time of the bleed following the heat phase. If cows have not resumed a normal heat phase within 60 days following calving, they should be examined by a vet.



During the heat phase, the mucous is stringy and can be stretched between the fingers. The mucous is sticky and sticks to the tail, backside and thighs. Check for any dried-on traces of mucous, as many animals only have a little mucous.



It is easier to spot stringy mucous when the cow is lying down. Check for swollen vulva lips and red, shiny mucous in the vagina during heat.

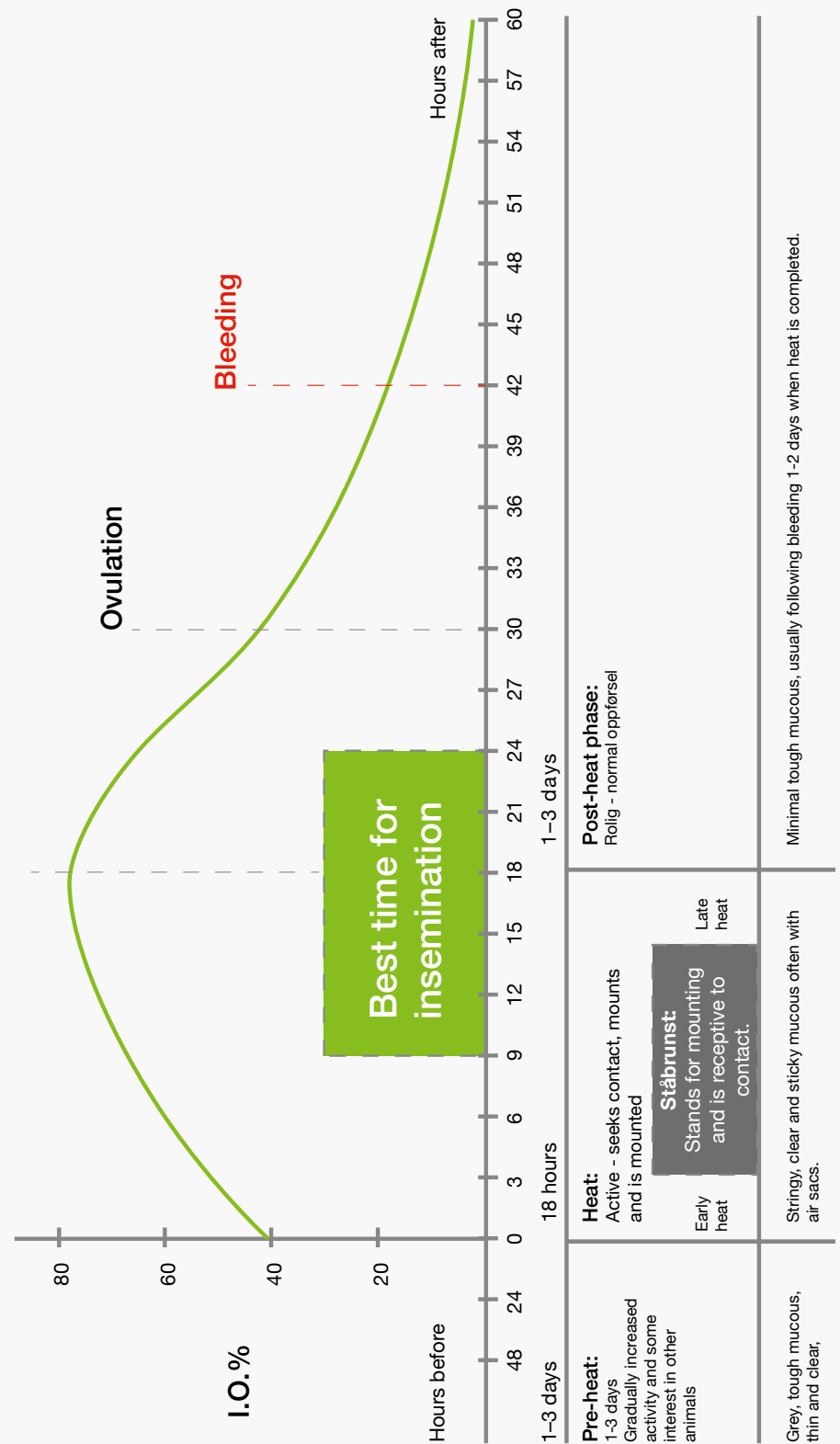
Heat control should be performed at least twice daily after the morning and evening mucking-out.

A further visit to the barn at noon and another in the evening when all is quiet, increases the chances of detecting heat. Mucous is most visible when the cow is resting

Getting started

1. Stop at the barn door or other suitable observation post. Check all the animals and note if any of them have changed their behaviour.
 - Are some animals standing when others are lying down?
 - Which animal stands up first?
 - Are there some animals that appear more aware than others?
 - Look closer at the animals lying down first or the ones which remain standing after feeding and milking.
 - In open barns, note those animals that are more active than others. These could be both individual animals and groups.
2. Check each individual cow to be inseminated for different heat signs. These could be reddening vulva lips, traces of mucous, mucous on the tail, thighs and sometimes traces of mucous on the ground. Check also if neighbouring cows have wet hides from licking.

When to inseminate?





A good sign that a cow is in heat is when a cow lowers her lower back and lifts her tail. You can encourage such behaviour by placing a hand on the cow's back or by gently whistling.

3. Check to see if the cow reacts to you touching her back and tail.

4. In open barns and pastures, a small scrape of the hair at the tail root will indicate whether the cow is or has been on standing heat.

5. Check your notes and make new notes.

When to inseminate after calving

After calving the womb will need a certain amount of time to contract to its normal size and to eliminate any impurities. Inseminating too early usually results in repeat attempts. We recommend waiting a minimum of six weeks following calving. The cow should preferably have at least one heat phase after calving and before the first insemination.

Time of insemination

It is often hard to determine when the heat phase starts, but the general rule is:

1. Cows in heat in the morning should be inseminated in the afternoon of the same day or early the next day.
2. Cows in heat later in the day or evening, should be inseminated the following day.



Stringy mucous with air sacs is a good sign that you have chosen the right time to inseminate.



Bleeding shows that the cow has been in heat. Bleeding comes from the womb's mucous membranes 1-2 days after heat completion.

Brunstkalender 2013 - 2014

BRUNSTKALENDER 2014
12. mai - 26. oktober (side 2)

Heatime = RuminAct
- brunstovervåking med nye muligheter

Aktivitetstester godt egnet både i hofles og laasdrift

Bruksanvisning

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The organisation

Geno is a co-operative organisation owned by 10,500 Norwegian cattle farmers. Geno conducts research and development for cattle breeding in Norway and the production and distribution of genetic material.

Geno's vision

Breeding for a better life!

Offices

Geno's head office is in Biohuset in Hamar.

Store Ree AI (Artificial Insemination) station is based in Stange in Hedmark.

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Geno SA, Holsetgata 22, 2317 Hamar

Tel.: + 47 950 20 600

Email: post@geno.no

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