

Oestrus

Duration: 12-24 hours

Day 0 or 21 of cycle

Behaviour:

Oestrus or 'heat' begins at the start of puberty. It occurs at regular intervals (usually every 21 days) and is a sign of readiness to mate in the female bovine. There is a temporal and functional link with ovulation.

A cow in heat is restless and bellows frequently. She mounts other cows at the head or tail and stand stills herself when mounted from behind. This is called the 'standing reflex' or a 'standing heat'. If you press on her lumbar area she arches her back downwards without resisting. Animals in heat usually produce slightly less milk. From the outside, the vulva appears swollen and a clear vaginal discharge can be observed. This mucus is elastic and can be stretched between the fingers. Ovulation takes place at the end of the main phase of oestrus or in early post-oestrus.

The egg (ovum) is capable of being fertilised for 12 to 24 hours.

Oestrus is usually described as occurring on day 0 (or 21) of the bovine oestrus cycle (ref.: Grunert-Berchtold). Ovulation occurs on day 1, in post-oestrus.

Ovulation occurs on day 1, in the post-oestrus phase. If a heat is observed it should always be recorded, even if, for example, it is still too soon after calving to inseminate. If a cow is to be inseminated, correct timing is vital. The 'morning-evening' rule is very useful in this respect: if the cow 'stands' in the morning, she can be inseminated in the afternoon. If she 'stands' in the afternoon or evening, she can be inseminated the following morning.

The cow is therefore inseminated in the second half of the main oestrus phase, or even at the beginning of the post-oestrus phase (metoestrus or post-oestrus).

Ovary:

During oestrus, the follicle reaches its maximum size very quickly, growing to a diameter of 1.5 to 2 cm. The follicle contains a fluid that surrounds and cushions the egg. The 'yellow body' (corpus luteum) from the last cycle may still be present. It can be on the same ovary as the follicle, or on the other ovary.

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In exceptional cases, two follicles can mature at the same time. This can also be on the same ovary, or one follicle can mature on each ovary. This results in non-identical (dizygotic) twins. Identical (monozygotic) twins are produced if the fertilised egg divides at an early stage of development.

Uterus and vagina:

During oestrus, the muscles of the uterus contract as much as possible. This is why the uterus is small and firm on examination.

The vaginal mucous membranes are usually pale pink and moist, as the uterus and cervix produce a (clear, stretchy) oestral mucus. The cervix may be open, up to the diameter of a pencil.

From the outside, the vulva appears swollen and there is a clear, stretchy mucous discharge which is produced mainly in the cervix but also in the uterus.

Hormones:

During oestrus, levels of the oestrus hormone (oestrogen) are high. Oestrogen is produced by the follicle and transported via the bloodstream, causing the typical oestrus behaviour and changes in the reproductive tract. Towards the end of the main phase of oestrus, rising levels of LH (luteinising hormone) trigger ovulation. Luteinising hormone is produced in the pituitary gland (hypophysis) and is carried to the ovary via the bloodstream.

Oestrus is triggered by rising oestrogen levels in a complex pattern of hormonal interaction.