

Secondary Signs of Estrus



Detection of estrus (heat) is often cited as the most costly component and undoubtedly, the major limiting factor to the success of A.I. programs on many dairy farms. Traditionally, the cow that stands still and allows others to mount her is in “standing heat.” Standing is the primary sign of estrus and determines the time of insemination since ovulation occurs 25 to 30 hours after the onset of standing activity. However, the average period of “standing heat” is usually less than 10 hours and consists of about one standing event per hour. Secondary signs of heat may be an indication that the cow will soon display standing estrus, is currently in estrus, or has already gone out of standing heat. Since the degree of these advanced signs vary in length and intensity, a combination or having multiple secondary signs increases the reliability of the decision to breed. It can also help to increase the amount of cows submitted to A.I. by allowing you to breed those showing subtle heats or those that cannot be detected otherwise. Dairy Herd Improvement summaries have reported that approximately 50 percent of the possible heat periods are detected. Observing for secondary signs of heat dictate that a series of questions and observations of the cow are followed in an effort to gather more information to make an accurate decision to breed or not breed to confirm the decision to inseminate when standing heat is not observed.

SECONDARY SIGNS OF HEAT

Secondary signs are caused by elevated levels of estrogen on the day the animal is in heat. They are also most likely caused by estrus-related activities and events. The primary sign of estrus is a cow standing to be mounted by another cow(s) even though she could have resisted the mounting activity. The reason why secondary signs of estrus get this name is they can also be caused by events other than estrus and are secondary to standing to be mounted as a definitive sign. Therefore, a single secondary sign of estrus should not be enough to make the decision to inseminate; if a cow is not seen standing to be mounted and is suspected in estrus, it will be necessary to have a combination of secondary signs to confirm that the cow is really in estrus. Below are some of the most commonly recognized secondary signs of estrus.

Rubbed marks: When a cow dismounts another, she slides down her tail head and rump. Therefore she puts considerable pressure on the pin bones and backbone, and this repeated abrasive action pulls out hair and may produce red, bloody or swollen sores. Size,



Rubbed marks are one of the most reliable secondary indicators of estrus.

appearance, and freshness of these marks along with the fact that few other events can cause similar signs; make these rubbed marks one of the most reliable secondary indicators of estrus. Additionally, you may find that the flanks of the cow in question have dirt or manure marks from the hooves of other cows riding them and are another indication that riding events have recently happened.

Mucus: Many technicians would state that mucus is the most preferred secondary sign of estrus. Experienced inseminators put a profound credence on this sign when deciding to breed or not to breed a cow, and sometimes they even massage the cervix and anterior vagina to express a mucus discharge. Discharged mucus dries quickly so finding dried mucus on the tail, flanks or legs is just as good a secondary sign as seeing a string of clear viscous mucus coming from the vulva.

Sweaty appearance: Some cows will develop a sweaty appearance when in estrus. This “wet” appearance, even though it is easily detected, is frequently overlooked and may be where the slang term “hot” cow originated.

Swollen Vulva: Rapidly growing follicles produce high circulating levels of the hormone estrogen that increase blood flow to the reproductive tract. The vulva increases in size and takes on a pinkish swollen appearance. Upon opening the labia an intense dark pink to red and highly moistened vagina is present if the cow is in estrus. In contrast, the vagina will appear dry and pale to white in color when the cow is not in estrus.

▼ SECONDARY SIGNS OF ESTRUS

Chin resting: Chin resting is thought to be testing by herd mates to determine if an individual is receptive to be mounted. This testing is performed by first resting a chin on the back of the cow. Considerable salivating and licking usually takes place during this testing process so you should inspect topline for saliva.

Bellowing and urination: There is a tendency for increased urination. The cow will begin holding her ears erect, become restless and nervous. Cows coming into heat will become more active and will spend more time walking around rather than lying down chewing their cud. Be aware that during movement, like to and from the milking parlor, is an ideal time for a cow to mount another and therefore a great time to detect mounting activity. Some cows may appear to be standing when in fact they just couldn't get away because of crowding. Extra care should be taken to avoid false indicators like this one.

Bloody discharge: A streak of blood in the mucus usually means that cow had a high peak of estrogen one to three days prior. It is therefore recommended to record that heat and date it as two days ago. This only indicates that she has been in heat. It has no relationship with timing ovulation or whether or not she conceived.

Grouping: Cows in heat tend to look for willing partners to get involved in estrus-related activities. These sexually active groups are a clear indication that at least one cow inside one of these groups is in estrus.



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Records: A good record keeping system is one of the most valuable tools in any detection program, mostly because it will increase the accuracy of your decisions. All heats must be recorded even if the cow is not bred at that heat. The pivotal question is when the last insemination occurred. Having an interval of 18 to 24 days makes the decision to inseminate easy. Breedings that occur with an estrus interval of four to 16 days usually result in less than desired conception rates and should be avoided unless the secondary signs strongly sway the decision to inseminate. Also knowing if the cow's



Chin resting is thought to be testing for receptivity to be mounted by herd mates.

previous breeding was a result of timed A.I. or from a standing event may alter your decision. These off-cycle cows could be palpated for the presence of thick, clear mucus as the final and definitive secondary sign to confirm the decision to inseminate.

SUMMARY

Traditionally the cow that stands still and allows others to mount is in "standing heat." Standing is the primary sign of estrus and determines the time of insemination since ovulation occurs 25 to 30 hours after the onset of standing activity. Secondary signs of estrus may be an indication that the cow may soon display standing heat, is standing now, or has already gone out of standing heat. Since the degree of these advanced signs vary in length and intensity, a combination or having multiple secondary signs increases the reliability and the result of the decision to breed. Making the decision to inseminate many times will require the use of secondary signs of estrus. There is a fine line when using secondary signs to make the decision to breed or not to breed that will only come with experience. ♦



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