

# To Breed or Not to Breed



**T**o breed or not to breed? That is the question all technicians ask when standing behind a cow that appears to be in heat, but is not showing enough signs of heat to make a breeding decision.

When using visual observation for heat detection, a cow is determined to be in standing heat when she has been observed standing for mounting by other cows without trying to avoid it. Using the tail-chalking system, the equivalent condition to a standing heat is finding tail-chalk or paint rubbed away due to mounting activity. In addition, confirmation that the cow is truly in heat is facilitated by several secondary signs of heat and analysis of records to indicate a correct between-heat interval.

Regardless of the heat detection program implemented on the farm, the goal is to achieve an approximate 65 percent heat detection rate (HDR). The remaining cows are made up of a combination of undiagnosed heats and/or anestrus cows.

## MISDIAGNOSED HEATS

Misdiagnosed heats mainly occur due to an aggressive attitude towards heat detection. Pregnant cows are sometimes bred by mistake either because of an aggressive heat detection or because some pregnant cows do show some signs of heat.

## QUESTIONABLE HEATS

A questionable heat is the result of a cow that was not seen standing to be mounted and/or is not showing enough secondary signs of heat. Making the decision to breed cows with questionable heat is the greatest challenge for new technicians. This is when most heat detection errors are made. At least 25 percent of detected heats presented are classified as questionable. A questionable heat could be one that at first glance does not convince you that the cow should be bred. These cows will require closer observation,

a review of records and may need to be palpated to analyze the uterine tone and/or mucus discharge. This investigation will help you make a decision on about half of the questionable heats. There will still be a number of questionable heats for which you just can't find enough reasons to breed, even though some may truly be in heat.

Records should be routinely used in the decision making process to breed or not to breed cows showing questionable heats. Information is the most valuable tool of any heat detection program. Records usually provide the necessary information to make the right breeding decision.

Records should always be in the hands of the technicians and should contain the following information:

- Identification of every cow and the pen she is in
- Reproductive status: open, bred, pregnant or cull
- Days in milk: Is she eligible to be bred?
- Number of times bred
- Days since last heat or A.I.
- Interval between heats prior to this one
- Breeding code (trigger) of last A.I.

If there is still doubt about whether or not to breed after analyzing the records and having searched for secondary signs of heat, cows can be palpated for uterine tone and mucus as a last resort. *Never abuse this practice.*

Experienced technicians develop a system of observing the cows for detection of heats. Most technicians feel confident in their heat detection efficiency using their own system. Regardless of "what the cows tell you," there should be a follow-up with records to confirm that this estrus detection system really works. Most importantly, the technician must be willing to adapt and modify this system if it proves to be inefficient. The approach and attitude towards heat detection can influence the number of resulting pregnancies. Aggressive heat detection may be an asset or detriment to a breeding program.

As a result of aggressive heat detection, farms will

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usually have a high HDR in combination with a low conception rate (CR). Other indicators of being too aggressive with heat detection are a high number of services per conception, too many cows being bred off-cycle and cows found pregnant to an earlier breeding when checked for pregnancy.

On the other hand, being overly cautious will result in missed heats, yielding a low HDR but a high CR. Indicators of poor HDR include: long days open, insufficient number of pregnant cows in the herd, extended days in milk at first service, a very high percent of cows submitted to estrus synchronization, among others.

The example below describes the relationship between HDR and CR, and its effect on pregnancy rate (PR). Note the various scenarios and the impact on the PR.

HDR	x	CR	=	PR	Scenario
50		35		18	Suboptimal
65		45		29	Optimal
80		30		24	Aggressive heat detection
40		55		22	Conservative heat detection
100		30		30	Total timed-A.I. program

Every farm should have a protocol in place that is used to decide if a cow showing a questionable heat should be bred. Below is an example:

### BREED

1. She received prostaglandin within the last two to six days.
2. The interval from her previous breeding to now is between 18 and 24 days, and she has two or more secondary signs of heat.
3. She has not been bred before and is showing two or more secondary signs of heat.

### DO NOT BREED

1. She is showing only one secondary sign of heat.
2. She is still inside the voluntary waiting period.
3. The records indicate that she is pregnant.

This example should lead to the development of your own decision-making program. This process is illustrated in the following example. Keep in mind that what you are trying to

develop is a guide that can be useful in most cases.

EXAMPLE OF THE DECISION-MAKING PROCESS		
Sign of Heat	Present?	
Chalk/paint rubbed off	<b>YES</b>	No
Vulva swollen, red and moist. Rubbed marks between hooks and pins.	<b>YES</b>	No
Mucus on tail, flanks or pooled behind cow	Yes	<b>NO</b>
Sweaty or ruffled hair on tail-head	Yes	<b>NO</b>
Records show heat interval of 18-24 days	<b>YES</b>	No
Uterine tone and mucus discharge (only palpate as final resort)	Yes	No
<b>INSEMINATE THIS COW</b>		

### TAKE HOME MESSAGE

- The HDR and CR both influence pregnancy rate; it is important to find a balance of these two to generate a greater number of pregnancies.
- Because it is so difficult to decide whether or not to breed cows showing questionable heats, technicians should have a protocol in place for such a circumstance.
- A profound understanding of secondary signs of heat is a must when using the tail-chalking system because these signs are necessary to confirm estrus when a cow is showing a questionable heat.
- Consistently monitor records to evaluate the aggressiveness of heat detection and make changes whenever a less than optimal level is detected.



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