

TAIL CHALKING

An Effective Heat Detection Program



Tail chalking is the heat detection system of choice in today's large dairy operations. This is due mainly to the high percent of heats that can be detected through this system, as it provides an efficient means to accurately identify cows that have stood to be mounted since the last heat detection period. It is also a rather low cost means of heat detection.

Tail chalking involves placing a mark on the cow's tail head, so that when she stands to be mounted, this mark will be erased, or at least changed. Therefore estrus can be diagnosed based on the absence or change to the mark, in combination with secondary signs of heat and farm records.

Herds that have adopted this system after using visual observation generally have experienced a significant increase in their heat detection rate. Tail chalking also allows detection of cows that are not very active during estrus, because of the "tell-tale" signs left behind after being involved in estrus related activities.

REQUIREMENTS

There are five basic requirements for the tail chalking system to work efficiently:

1. Every cow must be observed and the paint or chalk touched-up every day as needed to ensure uniformity in brightness of the marks.
2. There should be consistency in the way the mark is applied. Estrus diagnosis is based on the absence or change of the mark. As herd mates mount the mark will begin to be rubbed off. This is important because over 30 percent of cows do not express high levels of activity during estrus, and therefore do not stand to be mounted enough times for the mark to be totally erased. Changes to the mark induced by only a few mounts can be detected if these marks are being applied and checked in the same manner every day.
3. There should be a good record keeping system. Accurate records are one of the most valuable tools in any heat detection program. More often than not, the records will provide you with the necessary information to decide if a questionable cow should be bred or not, or to confirm your decision to breed a cow. There are many herds that use their records to anticipate potential return to estrus after a cow has been bred. When detecting estrus, technicians should walk the pens with a report on the reproductive status of the herd to be used as a quick reference, or if possible, a hand-held computer loaded with the herd's reproductive information. This report, or hand-held, should contain at least the following information on each cow:



Rub marks on the pins are produced when a cow is dismounting a cow in heat. After breeding a cow, the date should be written on her rump.

- a. Pen or group assigned to each cow
 - b. Ear tag or identification number of each cow
 - c. Reproductive status of each cow (BRED, NOT BRED, OK/OPEN, PREG)
 - d. Days in milk for each cow
 - e. Times that each cow has been bred
 - f. Days since last heat or breeding for each cow
 - g. Breeding code for each cow's last breeding
 - h. Sire to be used for each cow
4. Technicians should have a profound understanding and ability to detect secondary signs of heat. Heat detection in the tail chalking system uses secondary signs of heat to make the decision to breed approximately 20 percent of the time. It is imperative to provide training in this topic. Some secondary signs of heat most used by technicians are:
 - a. Rub marks on the pins that are produced when a cow is dismounting a cow in heat
 - b. The presence of mucus or discharge which is produced by the cervix mainly to serve as a lubricant for natural service
 - c. Swelling and/or coloration of the vulva is another secondary sign. Blood irrigation is increased in the reproductive tract during estrus.
 - d. The presence of saliva and lick marks on the back and/or rump area are the result of chin resting by other cows
 - e. Uterine tone is an excellent indicator. Rectal palpation can provide information on both uterine tone and mucus discharge.
 5. Headlocks: Even though there are many herds that successfully use the tail chalking system without headlocks, heat detection

▼TAIL CHALKING

and breeding can be accomplished quicker and more efficiently if cows are in headlocks. Overcrowding poses interesting challenges to the tail chalking system, therefore, whenever possible overcrowding should be avoided in breeding pens.

INTERPRETATION

A mark that has been completely erased is considered the PRIMARY sign of heat in the Tail Chalking system. If chalk or paint has been completely rubbed off within a normal heat or breeding interval, or within two to six days after a Prostaglandin injection, there should be no doubt in the technician's mind that the cow should be bred.

Because not every cow is highly active during estrus, there will be marks that are only partially rubbed off. In this instance good reproductive records and knowledge of secondary signs of heat become useful. A proper interpretation of secondary signs of heat is critical to breeding the right cows. In many herds there will be cows that are clean as from being mounted but it is due to licking (as shown in the picture to the right); the technician must be able to tell the difference. Some markers contain an agent to produce a bitter flavor designed to deter licking of the marks.

Be aware that many secondary signs of heat can be caused by reasons other than estrus-related activities. Therefore you must observe more than one secondary sign of heat to confirm estrus.

MARKERS

There are many markers available on the market: oil-based paints, water-based paints, chalks, and aerosols, each with a wide variety of colors and unique characteristics. It is important to take care not to over-apply any of these markers. Heavy application of a marker will make removal through common mounting and rubbing activity difficult, especially on cows that aren't very active when in estrus.

Once you have chosen which marker to use, it is important to promptly learn to apply marks in a consistent manner, and to accurately interpret changes to those marks.

Most large dairies use a combination of colors to quickly identify reproduction status. For example, blue may be used to identify fresh cows and cows still below the voluntary waiting period. Orange is often applied at the end of the voluntary waiting period or at first breeding to indicate cows eligible to be bred. A third color (green) is usually reserved for cows that have been confirmed pregnant.

RECOMMENDATIONS

When applying the marks with chalk, it is recommended to apply with both forward and backward strokes, to evenly coat the hair. The last stroke should be made against the direction of the hair to keep a high percent of hair in an upright position.

There must be someone responsible for heat detection on every farm, and this person should be properly trained and retrained to perform this task. In an ideal situation, several people on the farm would be properly trained and qualified to detect estrus. However, consistency is important, every employee must be on the same page when identifying cows to breed when using the tail chalking method.

When in doubt, never try to convince yourself that a cow is in heat. If a cow does not give enough reasons to breed her, move on to the next cow. Accuracy of heat detection should always be a major concern.



In many herds there will be cows that are clean as from being mounted, but it is due to licking.

Most experienced technicians draw a line on the back of the leg of the cows in heat making the cow easy to locate when returning with loaded guns. After breeding a cow, the date should be written on her rump.

Do not abuse rectal palpation in search for uterine tone and/or mucus discharge. This is only justified in less than ten percent of questionable cows.

Do not hesitate to re-breed cows. Under the tail chalking system, some cows will be bred too early and will be showing good signs of heat the next day. If the day after being bred a cow's mark is erased and the date on rump is at least somewhat disturbed, this cow should be re-bred.

SUMMARY

It is highly recommended that employees who are assigned to detect estrus utilizing a tail chalking system be properly trained to maximize efficiency and accuracy.

Heat detection is one of the most important chores on a dairy, when done correctly it allows for higher whole-herd reproductive performance.

Re-breeding will usually increase conception rate. It is a good idea for herds to have a re-breeding policy in place.

Rectal palpation in search of uterine tone and mucus discharge is a very useful tool, but it should not be abused. Palpation abuse is time consuming and will therefore keep cows locked up unnecessarily for longer periods of time.

It is very easy to detect cows that are obviously in heat. Special efforts need to be made to accurately detect questionable heats. The accurate detection of these questionable heats will have a positive impact on the herd's pregnancy rate. ♦



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