

Estrous Detection

A variety of tools/methods can be used to determine when cattle are in heat. Some of these methods can be combined to improve estrous detection rates and accuracy. Methods currently being used to detect heat in beef cattle may include but are not limited to visual observation, heat mount detectors, heat expectancy tables or records, paint sticks (crayon), chalk, paint, paste, detector animals, chin-ball markers and computerized estrous detection .

Postpartum Interval

The postpartum interval (PPI) for beef females can be defined as the period of time that elapses between parturition (birth of the calf) and the resumption of normal estrous cyclic activity (heat). The PPI is sometimes referred to as the anestrous period. This period of time can vary depending on many different factors. Research has demonstrated that normal estrus functions may resume by approximately 40 days after calving; by 60 days, approximately 90 percent may be cycling normally. However first-calf heifers may have an extended PPI, since they must undergo the stresses of parturition and uterine involution. Stressors such as calving difficulty, poor nutrition and disease can extend the PPI in all breeding females .

Visual Observation

One of the most common methods of heat detection for beef cattle is visual observation. With proper instruction on behavioral signs to observe, it is one of the simplest management tools and, with the exception of labor (time), is the least expensive. This method involves checking cattle for primary and/or secondary signs of estrus for 30 to 45 minutes, a minimum of two times per day, usually in the early morning and evening.

Standing to be mounted is the only true primary sign that a female is in heat. However, a variety of behavioral changes that occurs before and during estrus indicates that a cow or heifer may have normal estrus functions. Secondary signs of estrus include: swollen vulva, mucous discharge, nervousness, riding others in heat, head rubbing and separation from the herd. Scientists report that secondary signs of estrus may begin 4 to 48 hours before primary signs. As the onset of estrus approaches, estrous cyclic cattle will stand still and allow other cows or bulls to mount.

Record all cattle in heat and make note of those showing secondary signs of heat. Cattle showing secondary signs of heat may stand to be mounted during the subsequent detection periods.

Heat Mount Detectors

Heat mount detectors are inexpensive and easy to use. They are pasted or glued to the tail head area of the cow or heifer and will change color when the cattle are mounted. They provide “24-hour” surveillance of the mounting activity within the herd. Depending upon the type of detector, a capsule may be crushed or a thin film removed, causing it to change color and indicate estrus activity. Some heat mount detectors are “glow-in-the-dark” to provide additional help with late-night heat detection.



You simply glue a detector onto the skin covering the tail bone of each cow. Glue is provided with the detectors. When a cow wearing a heatmount is mounted by a herd mate, constant pressure from the brisket of the mounting animal turns the detector red - bright enough to be seen from a distance.

Three seconds of constant pressure is needed to release enough dye to turn the detector red identifying a true heat. This leaves a visible indication that the cow stood to be ridden and therefore is ready to mate.

Although heat mount detectors are useful, they do have a few disadvantages. At times, these devices may become partially activated, making it hard to tell if estrus has occurred. When using heat mount detectors, keep cattle on pastures that are large enough for them to avoid being mounted when not in estrus.

Heat Expectancy Table or Records

Heat expectancy tables or heat detection records are useful when observing cattle in heat. Begin observing cattle for heat. Cattle that exhibit signs of heat should cycle about 21 days later with a range of 18 to 24 days.

At the beginning of the breeding season, heat expectancy tables and records can be used to generate a list of cattle that should cycle during a given time. Take heat detection notes as primary or secondary signs of heat occur. Although the primary signs of heat indicate estrus and should be recorded to develop a breeding list, also note secondary signs for subsequent detection periods. Recording secondary signs of heat helps the observer focus on cattle that may begin cycling soon or may be more subtle with their expression of estrus.

Heat expectancy tables are also useful for estimating when individual cattle should be evaluated for their return to estrus. Since visual observation is used to determine when cattle are in heat, obtaining these notes can be labor-intensive. Cattle that haven't been observed in heat before the start of the breeding season may have expressed a silent heat or may have an extended PPI. With these cattle, additional tools that offer 24-hour heat detection should be used in conjunction with visual observation to detect reproductive problems. If these cattle fail to express estrus, they may need to be examined by a veterinarian to determine if reproductive problems exist.

Paint Sticks (crayon), Chalk, Paint and Paste

Paint sticks (crayon), chalk, paint and paste are all used in a similar manner to detect estrus in beef cattle. These products are applied to the tail head area, and the hair is combed or pushed forward. Markings should be 2 to 3 inches wide and extend from the hocks to the tail head.

As estrus activity begins and mounting occurs, the coated hair will be ruffled and pulled back. Although these methods can be used effectively, they are easy to misread and mistakes can be made. Low branches, gates and even other cows can cause this hair to lose its smooth appearance and possibly lead to a false determination of mounting activity. Every few days, these products will begin to fade or lose their luster and may have to be reapplied. Humidity and rain may negatively affect the producer's ability to accurately detect heat with this type of detection aid.





Detector Animals

Detector animals (teaser animals) can be used to help producers determine estrus. A commonly used detector animal is the surgically altered gomer bull. It offers an accurate, natural method of estrous detection. When bulls undergo castration, they become steers and lose their sexual drive. Altering bulls by vasectomy, penile deviation or both can be used to prevent bulls from successfully breeding without performing castration.

Since gomer bulls are used to detect heat and not for breeding purposes, selection criteria should focus on bulls that won't become excessively large in size and weight and those that have good dispositions. Vasectomized gomer bulls are still capable of penetrating a cow's reproductive tract; therefore, for heat detection purposes, they should be home-raised or obtained from a herd free of diseases. In order to prevent the spread of diseases from bulls purchased from an auction market (unknown source), they should be penile-deviated. Although penile-deviated bulls are manipulated to prevent copulation, in some

cases they may successfully complete intromission. Therefore, if penile-deviated bulls are used, they may need to have a vasectomy to ensure that pregnancy does not occur.

Androgenized cows, heifers (freemartins) and steers can also be used to help producers detect estrus. Teaser animals developed through this method are generally easier to handle than a gomer bull. A veterinarian must treat this type of detector animal, since procedures involved in this process are federally regulated due to drug withdrawal time. Response to treatment varies from animal to animal, so you will need to include alternative methods of heat detection to ensure maximum success.

Chin-Ball Marker

Detector animals are usually fitted with a marking device such as a chin-ball marker when a detector animal mounts and begins to slide off and the chin rubs the back of the female, the chin-ball marker is activated and marks the back and rump of the mounted cow. Although chin-ball markers are very useful, maintenance is necessary for continuous use. Straps made of leather may break or stretch, leading to the loss or misplacement of the marker in the pasture. They must be checked periodically (every few days depending on activity) and refilled with paint.

Using chin-ball markers will allow 24-hour estrous detection. Maintaining heat records twice daily will allow an observer to determine when cattle have been active during unobserved times. Reading the markings may take some experience to accurately determine heat. Markings located around the rump or tailhead area indicate that estrus behavior has occurred. Other markings may be the result of chin resting. Careful evaluation will enable the observer to accurately determine if

the primary sign of heat has occurred in cattle that had previously displayed secondary signs of heat.



Computerized Estrous Detection

Current computerized estrous detection devices (radiotelemetry) available to producers can be used effectively and efficiently. Patches equipped with transmitters are glued to the tailhead of the cow. When mounting activity begins, the transmitter is depressed and a signal sent to a receiver. Mounting activity data includes the transmitter number, date, time and duration of the mount. This information is sent from the receiver to a buffer that stores this data until it is downloaded into a computer. Once this data has been downloaded, it is processed into reports capable of being viewed on the computer screen or printed.

Although costs related to this method are higher than other methods, around-the-clock surveillance that provides the transmitter number, date, number and duration of mounts can be readily accomplished. Some items that may need to be bought or used with this type of estrous detection include patches, glue, transmitters, buffer, receiver, computer and printer. Transmitters can be lost in the field if patches aren't glued properly or if they're not secured properly in their pouch. Recovering these devices can reduce the yearly expense of maintaining this estrous detection method. Although costs associated with computerized estrous detection are higher than other methods, the benefits may pay off with increased estrous detection accuracy.



.Other methods used T.V and video, or using special dos can used to Estrous detector.