

## Milk progesterone testing

- Enables very accurate identification of cows in heat, which will have low milk progesterone levels. Best use is for rapid detection of returns to service (test 19 days post-service), or cows not sure of bulling.
- Advantages – cheap (£0.70 per test), very effective, identify cows with abnormal cycles.
- Issues to watch for – needs excellent records, hassle of milk collection and testing.

## Bulls – either natural service or teaser (vasectomised) bulls

- Penned bulls next to the collecting yard will attract cows in heat before milking. Teaser bulls can be prepared by your vet, and mark cows in heat with chin-ball marker.
- Advantages – bull will stimulate oestrus activity in cows, natural method of heat detection.
- Issues to watch for – lame bulls, handling and safety. Bulls getting too fat on TMR diets, too big for cubicles, injury and damage when mounting cows in cubicle houses. Too many cows for the one bull and spread of venereal diseases.

## Reproductive management systems (RMS)

- Contracting out heat detection and inseminations to an external Genus technician. Approx. cost £25–30 per cow.
- Advantages – increase heat detection by 15 - 20%, excellent record keeping and analysis, regular reviews of performance, allows staff to spend time on other work rather than heat detection.
- Issues to watch for – based on tail chalk and once a day observation so benefits marginal if heat detection is already reasonable/good on farm, works best when farm staff also involved in heat detection.

## Synchronisation

- Use of various hormone treatment regimes (either Ovsynch or PRID/CIDRs) with fixed time AI.
- Advantages – dispenses with need for heat detection, increases submission rates.
- Issues to watch for – needs excellent record keeping, conception rates to fixed-time AI generally lower than AI to observed heat, vet visits to administer hormone treatments, widespread use of hormones?

If you would like more information contact our office or visit our website.



## DAIRY HERD HEALTH & PRODUCTIVITY SERVICE



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# HEAT DETECTION IN DAIRY HERDS



## Why is heat detection important?

- Heat detection is critical for maximising the number of pregnant cows.
- Current figures suggest that less than 50% of heats are detected.
- Increasing heat detection is the most rapid and cost-effective method of improving overall herd fertility.

## Modern dairy cows - not making life easy!

- Larger herds with fewer staff has reduced time for heat detection.
- Cows often spend more time in the collecting yard waiting to be milked in larger herds, reducing the time available for showing signs of heat.
- Recent research has shown that modern dairy cows spend less time in heat (on average 7 – 10 hours), and are only mounted 8 – 9 times. Indeed 20% of cows are on heat for less than 6 hours.
- More all-year round calving herds means that the number of cows in heat at any one time is lower, which reduces the intensity of heat signs.
- Disease problems such as lameness, endometritis, cystic ovarian disease all reduce signs of heat.

Heat identification problems can be definitively diagnosed by milk progesterone analysis on day of service. If the milk progesterone is low the cow is likely to be in heat. If the milk progesterone is high the cow cannot be in heat.

## Signs of heat in dairy cows

- Standing to be mounted remains the only definitive sign of bulling activity in cattle.
- But recent research showed that less than 50% of cows in heat will stand to be mounted.
- Other signs that are suggestive of a cow being in heat include head mounting, attempting to mount other cows, restless behaviour, chin resting, bellowing, scuff marks on tail and flanks, sniffing or licking other cows, drop in milk yield, presence of clear bulling string.
- These secondary signs can be used as part of a scoring system to improve heat detection.

## Measuring heat detection and identifying problems

The following measures would suggest that **heat detection** (ie. missing cows in heat) is poor:

- If non-service heats are recorded, a long calving to 1st oestrus/heat interval (**aim for 45 days**).
- Long calving to first service interval (**aim for 60 days**, with a Voluntary Waiting Period of 45 days).
- Poor pregnancy rates of cows presented for vet PD (over 80-90% of cows presented for vet PD examination should be pregnant. Lower vet PD rates indicate that returns to service have been missed).
- Poor Heat Detection or Submission rates (**aim for over 70%**).
- Heat Detection Analysis or Interservice Intervals, which measure the intervals that cows return to service following a previous heat or service. **Aim for a peak of 60% returns at 18 – 24 days**. If heat detection is poor then this peak at 18 – 24 days is often below 40%, with most returns occurring at over two cycles.

The following would suggest that **heat identification** (ie. serving cows when not in heat) is an issue:

- High number of services (over 6%) occurring 0 – 17 days after previous heat or service.
- Disappointing conception rates.

## Maximising expression of heat signs

- Have an adequate loafing area for cows to display signs of heat. Avoid over-crowding.
- Provide non-slippery floor surfaces – groove concrete flooring if necessary.
- Avoid heat stress in the summer by improving ventilation and reducing relative humidity.
- Minimise negative energy balance/body condition loss in early lactation.

- Reduce social stress by minimising group changes, having adequate trough space, enough cubicles etc.
- Lamé cows are less active when in heat (roughly 50% less intensity of heat signs in severely lamé cows in a recent study). Have a plan for quickly treating lamé cows and controlling lameness.
- Reduce diseases such as retained cleansings, endometritis and cystic ovarian disease.

## IMPROVING HEAT DETECTION

### Observation of cows and recording

- Have a detailed plan of who, when and where heat detection is occurring.
- The ideal is for 3 periods of observation each day lasting for 20 – 30 mins.
- Evenly spaced throughout day: 6am, 2pm and especially in evening.
- Ensure cows are undisturbed: 2 hours after milking, feeding etc.
- Good cow ID essential: visible freeze brands, good lighting.
- Good record keeping, especially for picking up returns to service.

- Application of device to spine above the pelvis of cow, change in colour by pressure or rubbing.
- Advantages – relatively cheap (approximately £1 a cow), good visual signal of mounting activity.
- Issues to watch for – can be activated by cubicles or back brushes, especially if applied too far back.

**Activity meters** – examples include Heatime, Alpro, MooMonitor, Silent Herdsman etc.

- Electronic device attached to cow via neck collar or leg. When cow is in heat, activity will increase by 400% which is then flagged up by computer system. Costs vary according to system, but for a 100 cow herd are in the region of £100 per cow for collars, readers and software.
- Advantages – automatic monitoring of cows 24 hours a day, can be very sensitive, illness detection?
- Issues to watch for – need good records to work effectively, work best along with visual observation, compatibility with existing parlour system, false positive results due to turnout, foot trimming etc.

### Tail paint / chalk

- Apply paint or chalk on the tail head, that is rubbed off when the cow is mounted.
- Advantages – simple, cheap and effective.
- Issues to watch for – still need good observation, needs to be applied regularly, rubbed off with brushes.

**Heat mount detectors** – example include Kamars, Bovine Beacon, Estrus Alert etc.