

Heat Detection in Year-Round herds – Keeping it simple

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What is heat detection and why bother?

Efficiently detecting cows on heat and submitting them for mating at the correct time, either by artificial insemination (AI) or natural matings, is a key driver of reproductive performance and profit in a dairy business. Poor heat detection can result in wasted semen, longer dry periods for individual cows and poor overall herd reproductive performance. Common errors in heat detection include not prioritising it as a job, missing cows that are on heat, breeding cows too early or too late, and mating cows that are not on heat. Australian research approximately 15 years ago in seasonal and year-round calving herds indicated every missed heat in a herd costs \$200. This is likely higher in today's dollars.

How do we know if we have a problem or an opportunity to improve?

In year-round calving herds, one useful indicator of heat detection is the percentage of mature cows inseminated by 80 days after calving (80-day Submission Rate).

The Submission Rate is the proportion of eligible cows detected in heat during the mating period. A high submission rate shows that your cows are cycling and showing signs of heat and you have systems in place to detect heats. A low submission may mean you have cows that are showing heats but they are not being detected, or you have lots of 'non-cyclers' in the herd that are not displaying signs of heat, or a combination of both scenarios. A non-cycler is a cow that has not started normal heat cycles after calving. This may mean she had low body condition at calving, too much body condition loss after calving, lameness or other health problems.

To calculate your Submission Rate in a year-round herd, record the number of mature cows (>four years old) that were intended for mating, then count the number of these cows that were mated in the first 80 days after calving. A Submission Rate of less than 60% is indicative of a substantial risk that heats

were missed during the first 80 days after calving and reproductive performance in the herd has been diminished by a significant amount.



If you have more detailed breeding records available, you could do further investigation of your herd's reproductive performance with the [Heat Detection tool](#) for year-round calving herds.

What are we looking for? The signs of heat

Cows generally show signs of heat every 18 to 24 days, with an average of 21 days in mature cows. When a cow is well fed, comfortable, in good body condition and healthy, the average interval from calving to first heat is 30 to 35 days. A cow is most likely on heat if she is standing to be mounted by other cows and if her heat detection aids have been activated. She may be on heat if she is attempting to mount other cows, she is restless or bellowing, she has mucous around the vulva, she has mud on her flanks or she is spending time together with the 'hormonal' group in the herd. A training video on heat detection in dairy cows can be found on [Dairy Australia's YouTube channel](#).



On heat: standing to be mounted



May be on heat: trying to mount other cows

Remember that not all cows will display every behaviour of heat. Signs of heat may be harder to detect in high producing cows, lame cows, in hot conditions, where there are only small numbers of cows in heat and where cows have poor footing. Obviously, all cows are hard to detect on heat if we are not observing them at various times of the day, if we don't know what we are looking for, if staff are not trained to detect heats, or cows are poorly identified.

What are our options to improve heat detection?

Nothing beats time spent observing the herd to detect heats but there are heat detection aids available to assist the process. Tail paint and heat mount detectors (Kamars and scratchies) are



Correct placement of tail paint

Apply a strip

- no more than 20 cm long ›
- no more than 5 cm wide over the rear segment of the backbone
- no further back than the start of the tail
- sufficiently thick to cover the skin with some hair fibres still visible.

great visual aids for heat detection when used correctly. There are also a range automated heat detection systems and herd synchrony programs available that can be put in place with the help of your dairy vet. It is important to note that aids are just aids. Even automated heat detection systems will need human interpretation to ensure the correct decisions around mating are being made.



Applying a heat mount detector

- Follow the manufacturer's instructions for applying the heat mount detector.
- Use the recommended adhesive.

This heat mount detector signals that the cow has been mounted and is likely to be on heat.



A scratch-off heat mount detector



A heat detection collar

A very visual case study

Recently at our Sunshine Coast Heat Detective on-farm workshop, Brad Holt's practical herd heat detection system was a big take-away for many who attended. Brad and Casey Holt, and their family, operate a 220 cow, pasture-based dairy in Cedar Pocket on the Sunshine Coast. They also have several staff who work in the business. Given this, they have set up a simple heat detection system which is very visual and works well in their business.

At 35 days post-calving, cows have green tape wrapped on their tail and a scratchie applied. Cows are mated if they show signs of heat and the green tape and scratchie are removed. Each Friday, any cow that is 10-17 days post-mating is drafted off and has blue tail tape applied and



another scratchie. These cows are monitored until they are either confirmed pregnant with a pregnancy test, or they show another heat leading to another mating.

It is a quite simple, very visual heat detection system which works well in their production system. The cow groups are clear and any cow that has an actionable event upcoming will have tail tape;

- Fresh cows – **no tape, not ready to mate**
- Eligible but not yet mated – **green tape**
- Mated, not confirmed pregnant – **blue tape**
- Confirmed in calf – **no tape**

Time lags in the herd are greatly reduced with this system. If a cow is noted bulling or showing signs of heat and has no tape, she likely is fresh and isn't mated yet or may have lost her calf. She can then be investigated further. Everyone in the farm team understands the system and can see what's going on in the herd.



The Holt's regularly have herd health visits every two months and keep track of their herd reproductive performance through Fertility Focus reports. These reports give an overview of herd reproductive performance through submission rate, non-return rate and conception rate. You can access these reports and other heat detection and herd reproduction resources at [Dairy Australia's website](https://www.dairyaustralia.com.au). ■ ■

