

Prof G N Purohit



Estrous detection in cows

Physical methods

- Visual observations
- Record keeping
- Heat expectancy charts
- Marker Animals-Teaser bulls, Gomer bulls
- Heat mount detectors- chalks, tail painting, Kamar
- Plasma progesterone
- Cervical mucus fern pattern

Electronic devices

Vaginal electrical resistance
probes

Pedometers

Closed circuit camera

Pressure sensitive telemetric
devices

Visual observation

- Increased physical activity
- Bellowing
- Mounting
- Drop in milk yield
- Mucus discharge from vagina
- Redness and swelling of vulva

Bellowing Restlessness & Excitability





Timeline for Heat Signs in Cattle

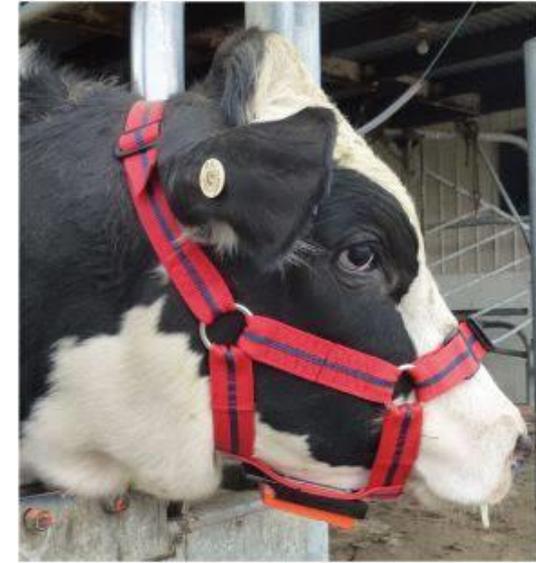
	Coming into Heat	Standing Heat	Going out of Heat
	(8 hours)	(18 hours)	(14+ hours)
Heat Signs	<ul style="list-style-type: none">• Stands and bellows• Smells other cows• Head butts other cows• Attempts to ride other cows but will not stand to be mounted• Red, moist, slightly swollen vulva• Clear mucous discharge from vulva	<ul style="list-style-type: none">• Stands to be mounted• Rides other cows• Bellows frequently• Nervous and excitable	<ul style="list-style-type: none">• Attempts to ride other cows but will not stand to be mounted• Smells other cows• Clear mucous discharge from vulva

When Cows Show Heat

Time	Cows showing heat signs, per cent
6 am to noon	22 per cent
noon to 6 pm	10 per cent
6 pm to midnight	25 per cent
midnight to 6 am	43 per cent

Marker animals

- Vasectomised males
- Gomer Bulls
- Androgenized females



Chin ball Marker

- The device placed under the chin of the bull, causes paint to be smeared on back of the cow if mounting takes place.
- The efficiency of estrus detection is around 50-70 percent.



Heat mount detectors for cows

Tail Painting



Tail paint should be applied from the base of the tail forwards



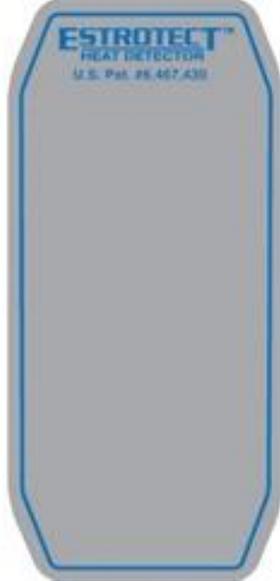
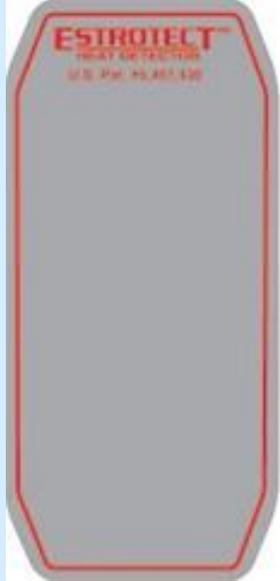
Pressure sensitive Heat mount detectors

Kamar Heat Detector

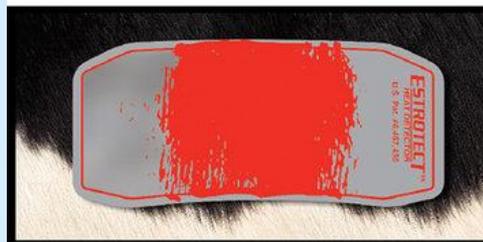


A positive response on a heat mount detector is usually obvious





Don't Breed



Breed

Heat Detection Aids - Chalk

Tail-Chalk



Freshly applied chalk positioned between hip bones to vertical descent of tail

Milk Progesterone Tests

- Measures Progesterone Level in Milk
 - Progesterone is at Low Level Just Before, During and Just After Heat
 - Progesterone Levels Indicated by a Color Reaction
 - Lower Level = Greater Reaction



Plasma/milk progesterone

- Daily sampling is required
- High cost
- Errors in interpretation



Cervical mucus fern pattern



Electronic devices

Vaginal
electrical
resistance



Pedometers



Pedometer for heat detection

This device is used along with a computer to determine how far an animal has walked. Animals in heat are usually restless and may walk long distances.



The SCR Heatime® HR System is a stand alone, long-distance, terminal-based system that provides a complete reproduction and health monitoring solution, with no PC required. It comprises robust, multi-functional neck tags that each have a proprietary movement sensor and a rumination recorder

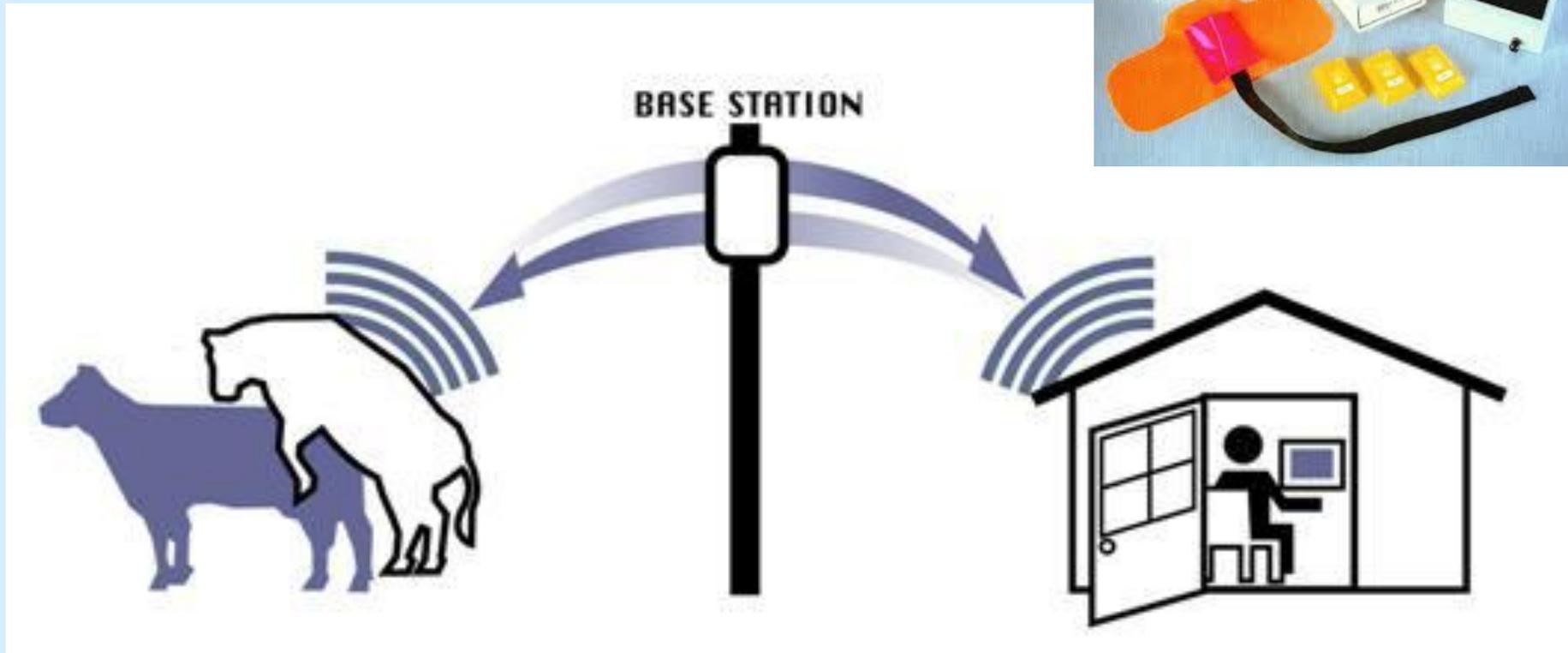


Video camera and recording using CCTV

This system of recording is unique for round the clock observation and data recording of herd.

It is applicable in intensive system of housing (close housing).

Pressure sensitive radio telemetric devices



Infra red spectroscopy and magnetic resonance spectra

- Infrared spectroscopy and nuclear magnetic resonance spectra are carried out to detect estrus related change (inflammatory reaction) in vaginal, vulva and vestibule.

Bovino

- Pheromone based sensor system.
- Detection of sex pheromones that are secreted by cow exclusively in estrus.
- The pheromones are released by dung of cow in estrus.
- Pheromones are volatile fatty acids i.e Acetic Acid and Propionic acid.

- The above lectures are also explained in video lectures at my YouTube Channel Govind Narayan Purohit
- Kindly share the videos and subscribe to my channel if you like them
- Thanks