



**Advanced performance
monitoring in livestock - new
sensors & the connected farm.**

PRESENTED BY DR EDMOND HARTY



DAIRYMASTER

Experience the difference
www.dairymaster.com

THE 6 SECOND RELATIONSHIP



COWS

Take a herd of 300 cows.

Say we spend 30 minutes in a day consciously monitoring the health and fertility of the herd...

30 minutes. 300 cows. That's 6 seconds per cow on average. That's 42 seconds a week, 2,190 seconds or 36.5 minutes a year with each cow.

HOW WELL DO YOU KNOW YOUR COWS?



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MOBILE PHONES

Outnumber people in the world today



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SMART TECHNOLOGY & SENSORS CHANGING OUR WORLD



Climate control
in houses



Heart rate
monitors



Automatic
parking



NFC payments

THE CONNECTED FARM



GPS & Mobile Apps



Drones for Imaging & crops



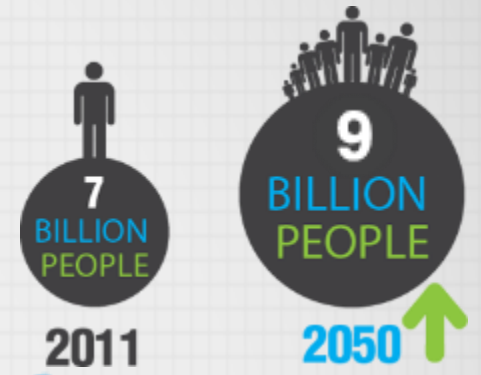
RFID ear tag identification



Nutrition



WORLD POPULATION



WORLD FOOD CRISIS

4 out of the last 5 years we didn't produce enough food

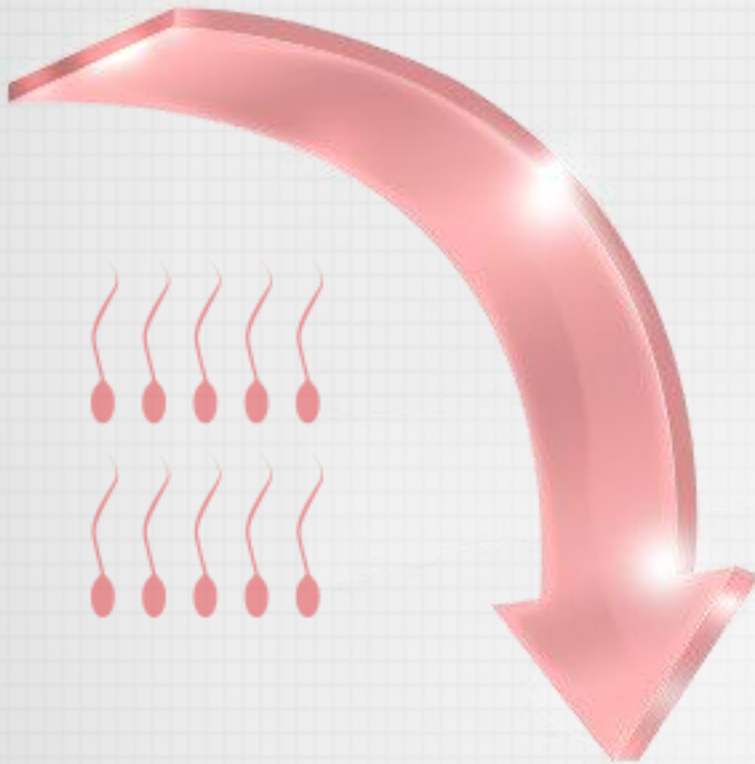


World needs another 100 billion litres of milk by 2020



COW FERTILITY RATES DECREASING

WORLD POPULATION INCREASING



OPPORTUNITIES & CHALLENGES FOR DAIRY FARMERS

- Price volatility.
- Increasing output.
- Drive efficiency.
- Focus on each individual cow.
- Using technology.
- Make life easier.
- More from less.



THINGS TO MONITOR FOR A SUSTAINABLE FARM



COW



MILKING



TANK



ENVIRONMENT



STAFF



DATA

FEED & WATER



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STAFF MANAGEMENT



Training



Locate



Educate



Motivate



Evaluate



INFRASTRUCTURE



Parlours



Housing



Ventilation



Hygiene



FEEDING



**Foundation
in life**



**Precision
Nutrition**



**Health
Benefits**



**Improved
Milk Yields**



PRODUCTION



**Advanced
Technologies**



**Better
Udder Health**



**Maximise
Milk Yield**



**Much More
Information**



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HEALTH

Disease/ Illness have a negative impact on milk production and quality. Most critical period is transition period importance dry cow & fresh cow management & feeding to prevent metabolic disorders lameness & mastitis after calving.



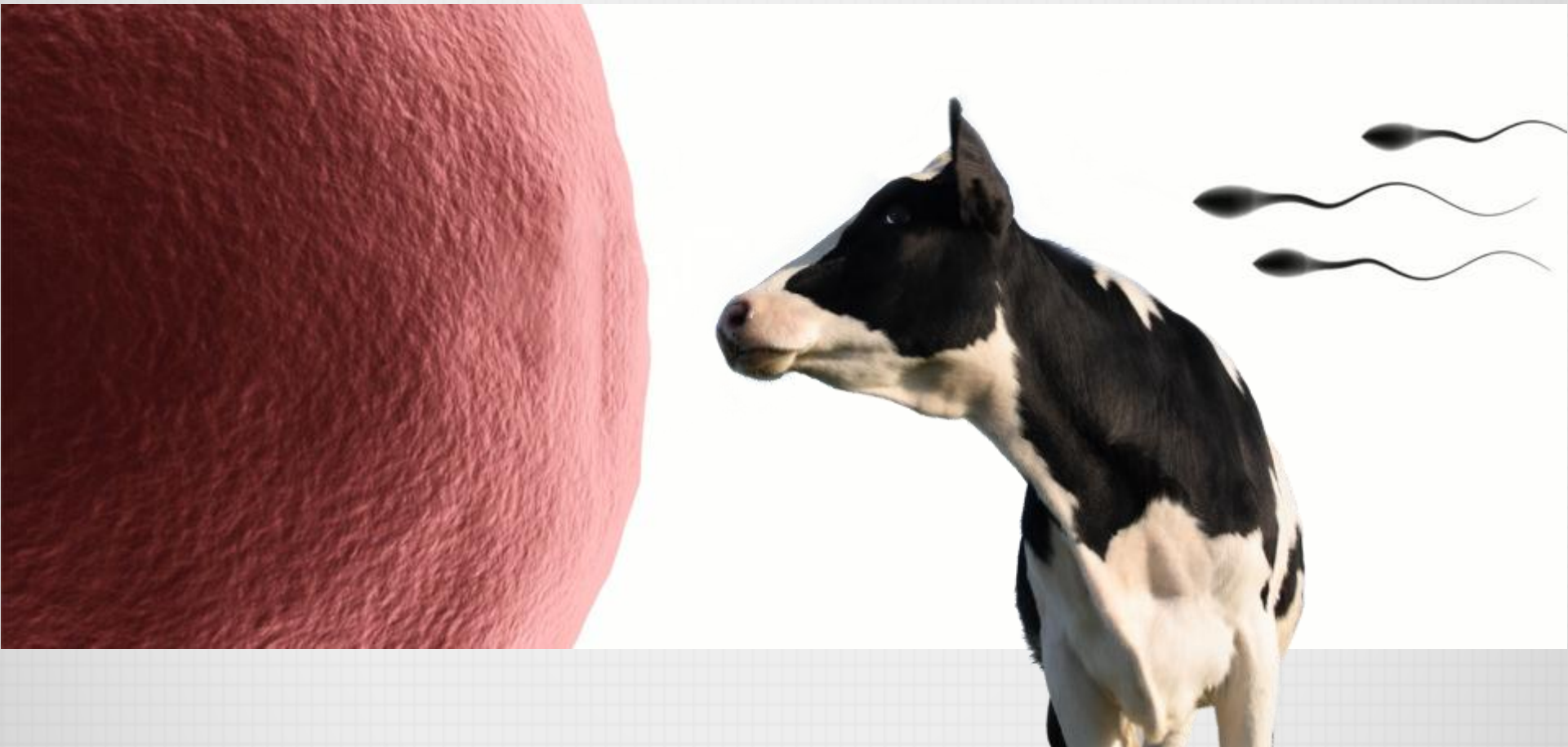
ILLNESSES

- Ketosis
- Milk Fever
- Retained Foetal Membranes
- Abomasal Displacement (DA)
- Mastitis
- Lameness
- Sub-Acute Ruminant Acidosis (SARA)

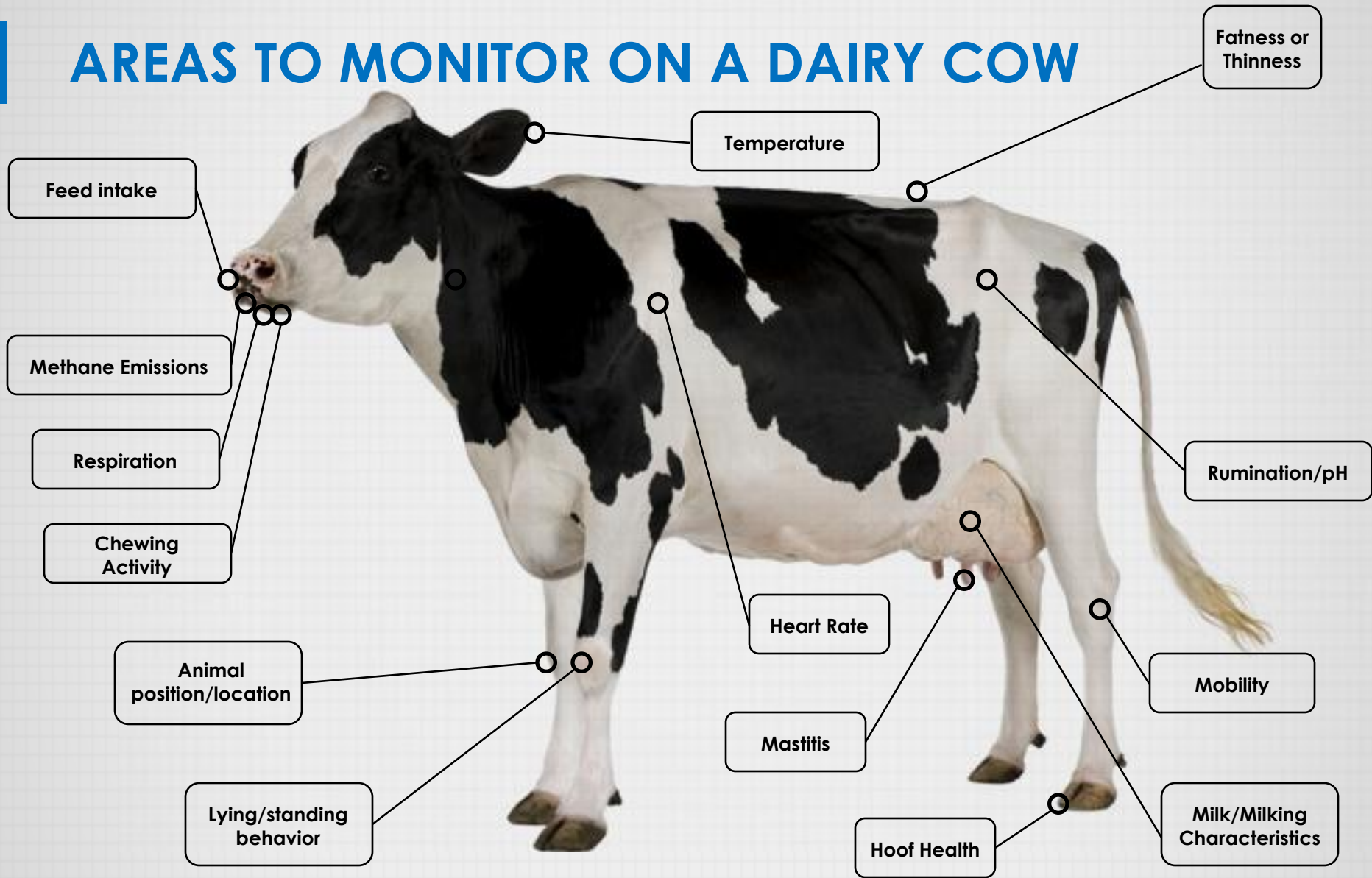


CRITICAL PROCESS – COW PREGNANCY

- Cows cannot produce milk sustainably without getting pregnant



AREAS TO MONITOR ON A DAIRY COW



A DAY IN THE LIFE OF A DAIRY COW

Lying down and resting

12 ½ hours/day



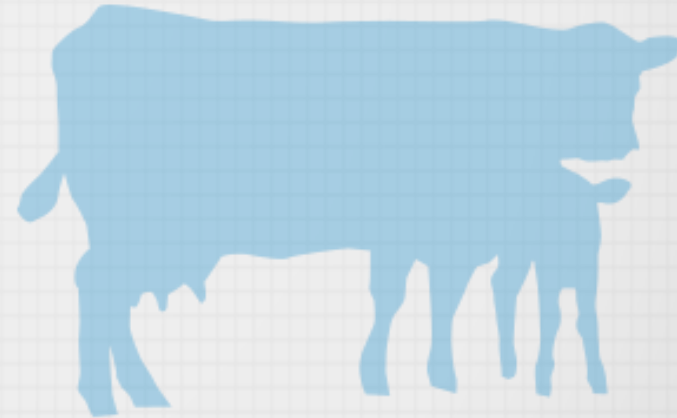
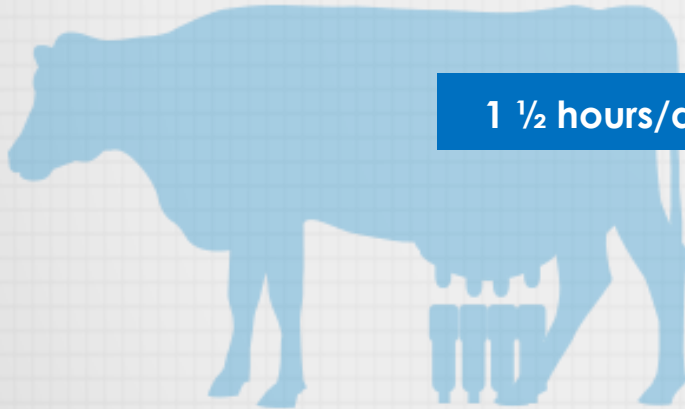
Eating, drinking, chewing cud, exercising and socialising

10 hours/day

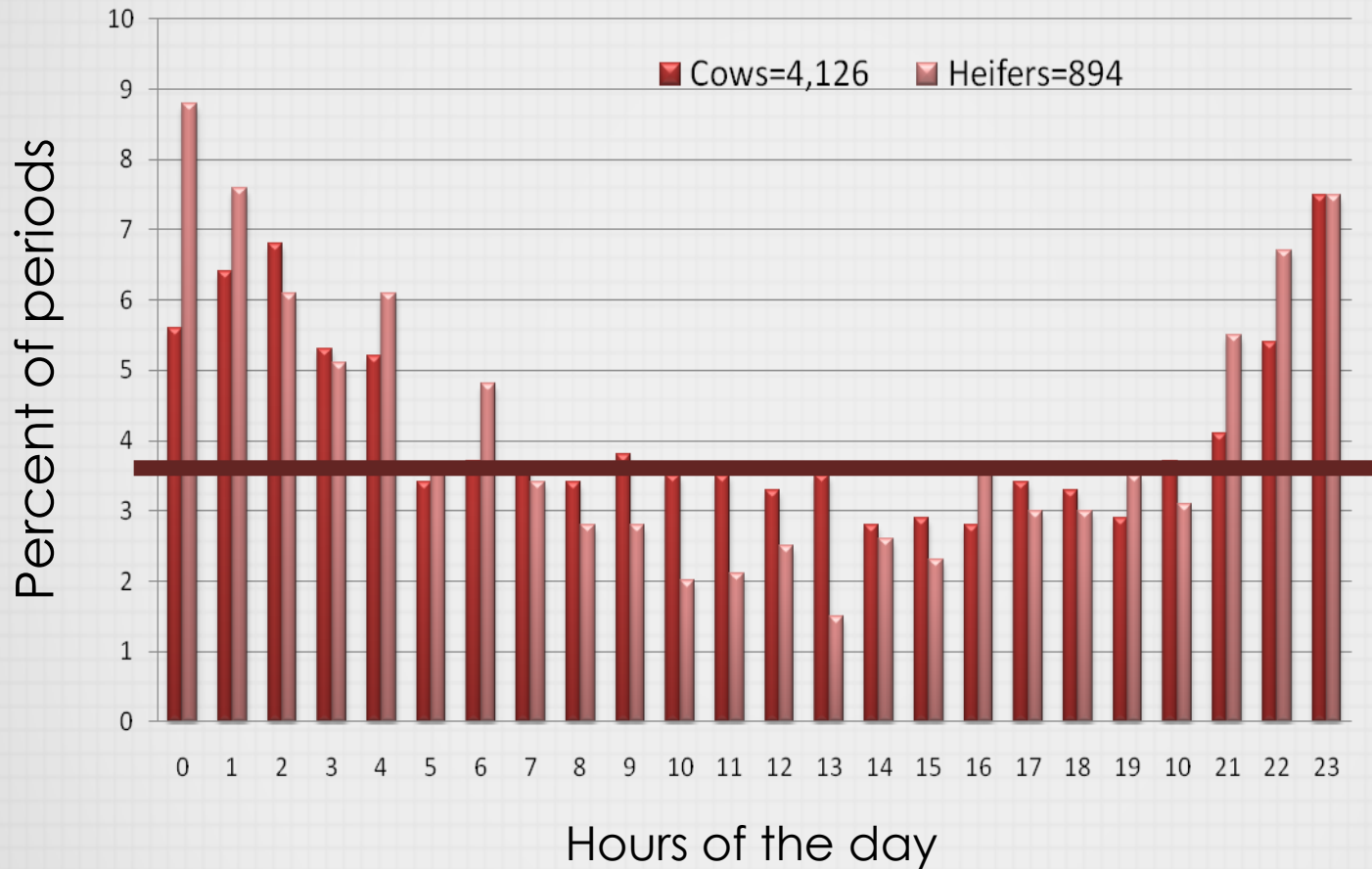


1 ½ hours/day milking

1 ½ hours/day

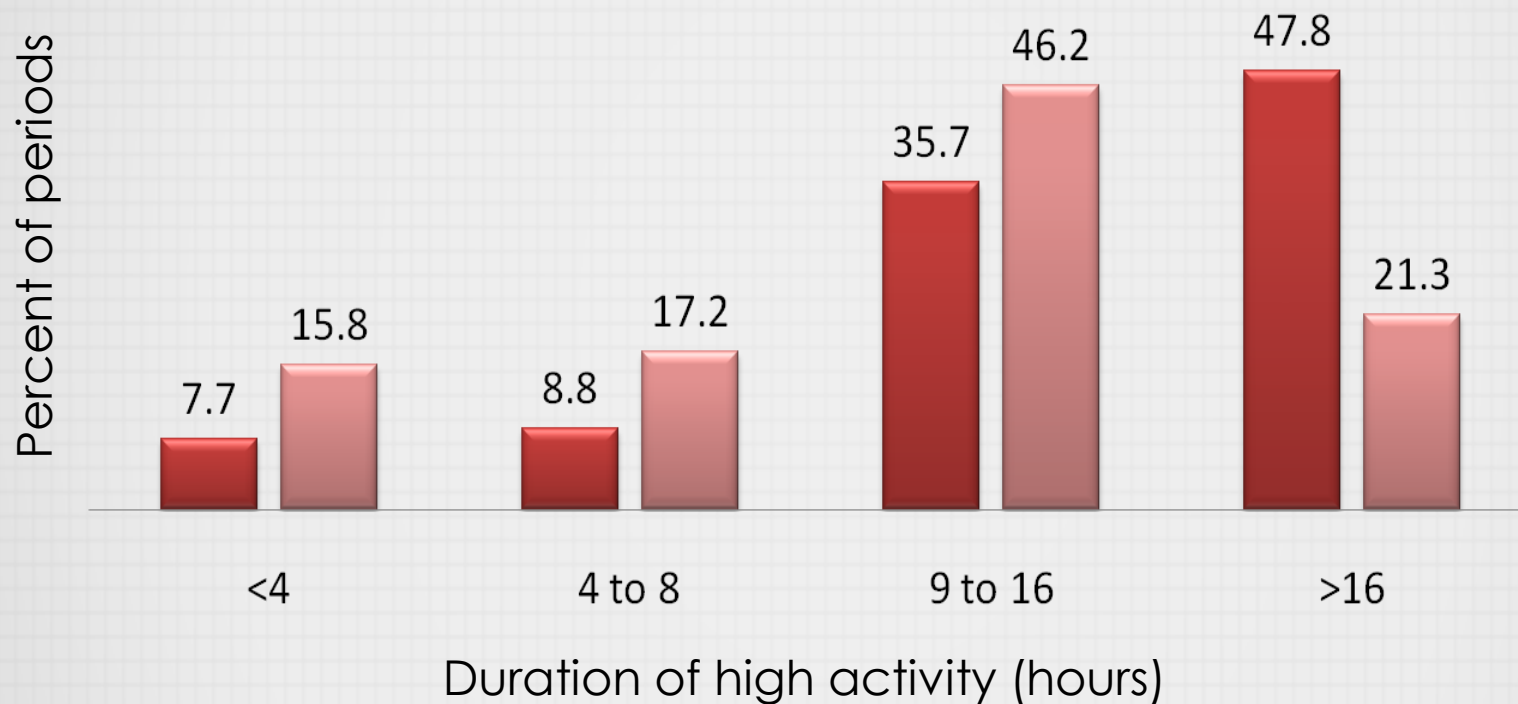


WHEN DO HEATS START?



HOW LONG ARE THEY VISIBLE?

■ Heifers=894 ■ Cows=4,216



Take-home message: Over 30% of cows have heats < 8 hours.

Half of these are less than 4 hours!

VISUAL HEAT DETECTION VS AUTOMATED HEAT DETECTION SYSTEMS



4-5 seconds



24 x 7

ACCESS YOUR DATA ANYWHERE ANYTIME



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CONTACTLESS DATA ENTRY



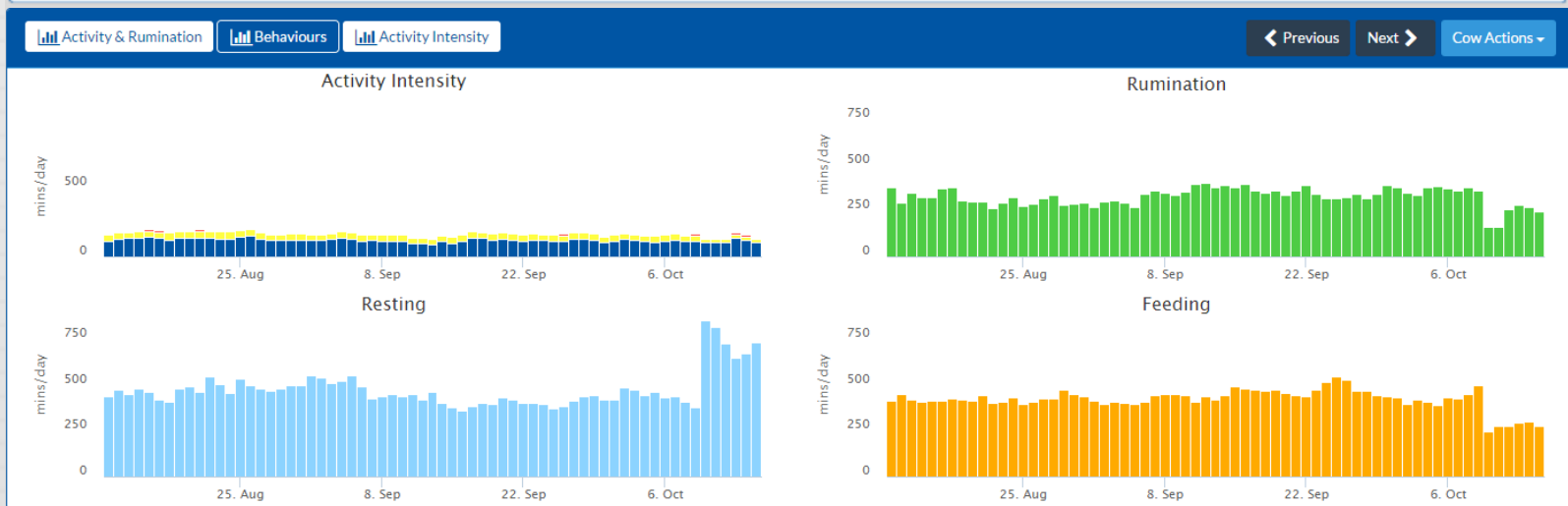
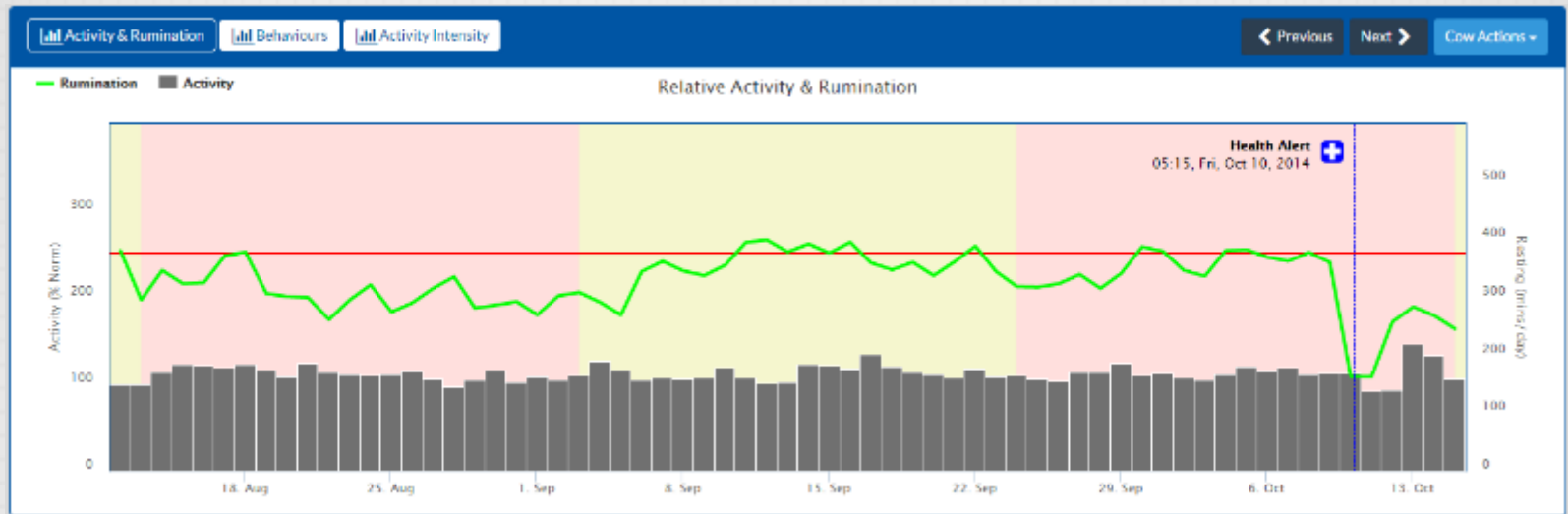
Simply swipe your phone over a tag to read the information contained within.
This is the same technology used in contactless credit card payments.



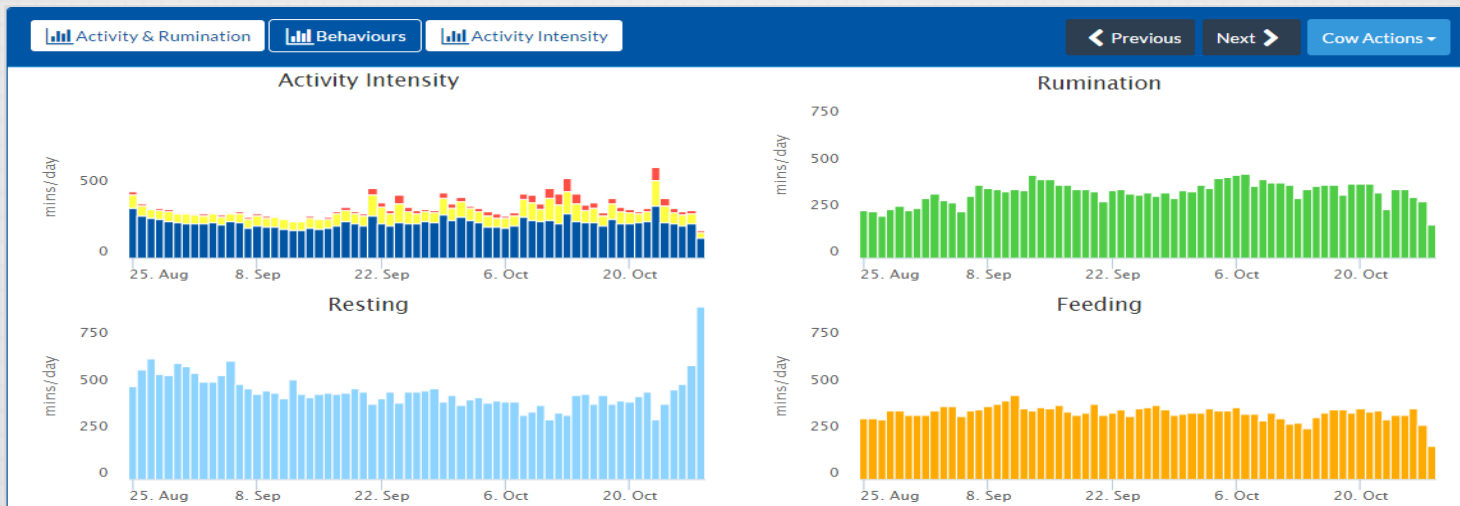
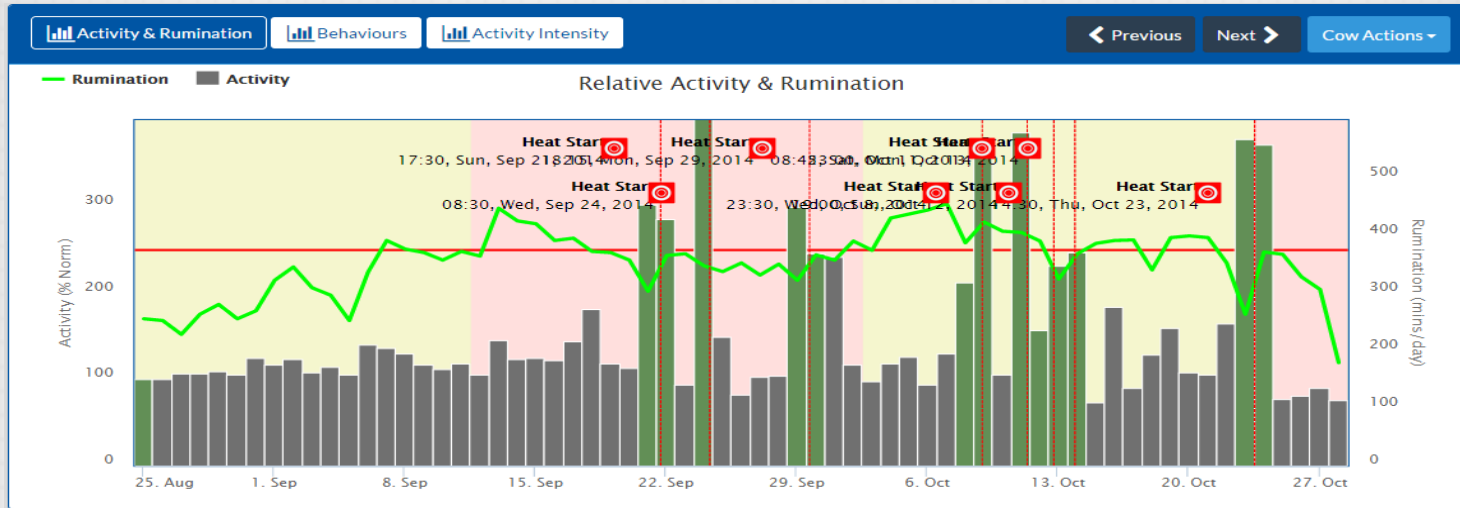
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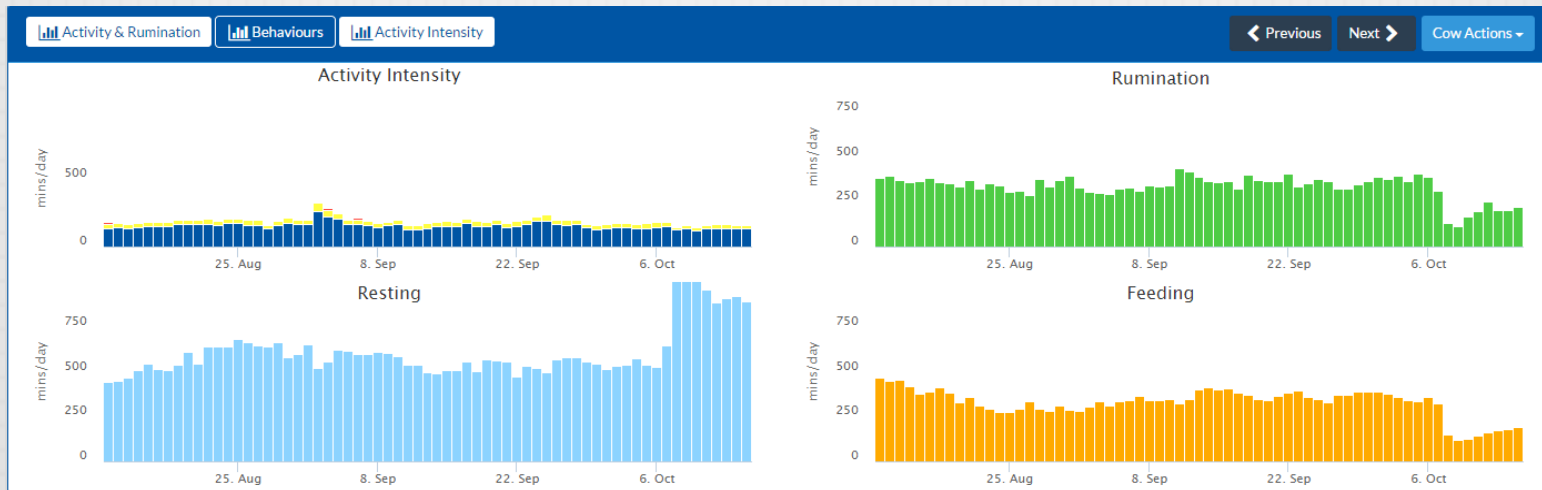
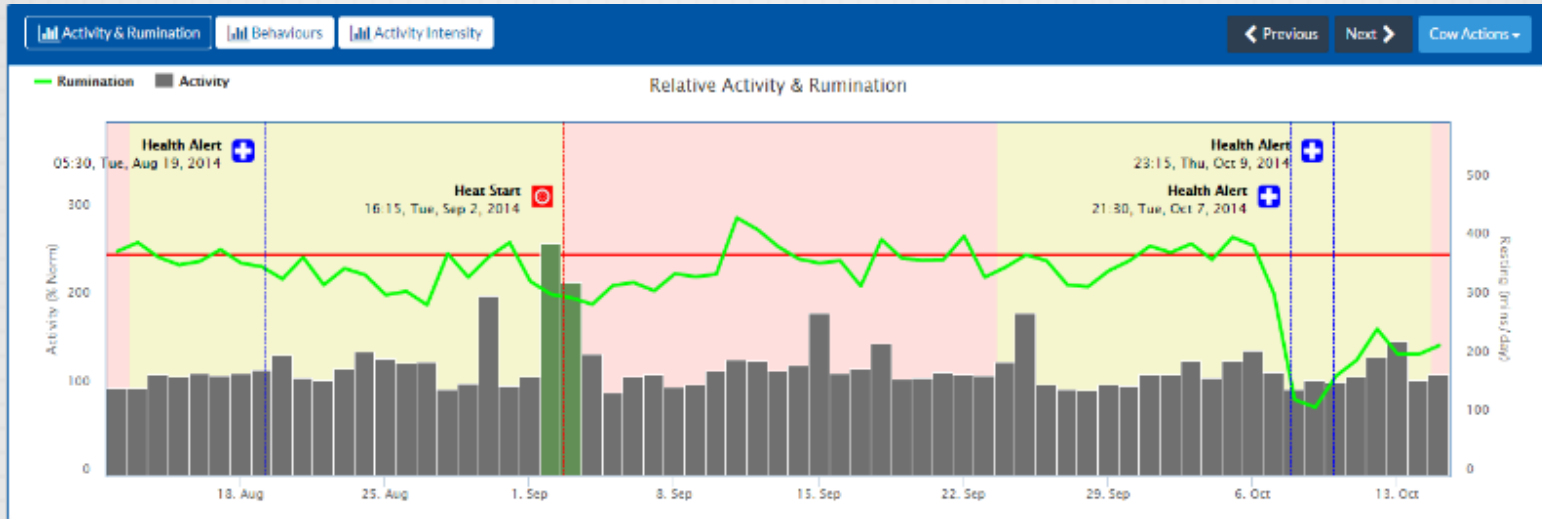
MASTITIS



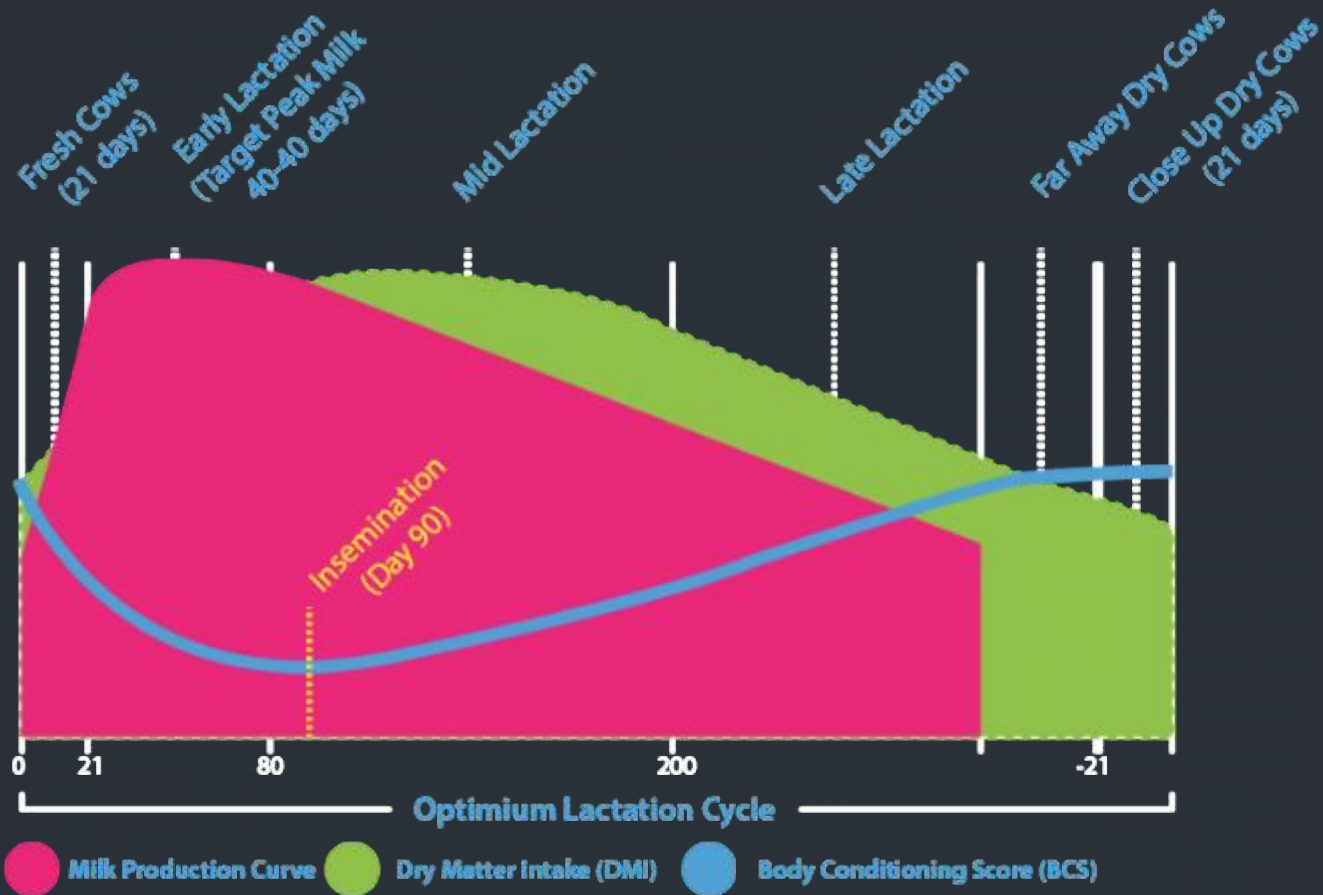
CYSTIC COW



COW SALMONELLA



PRODUCTIVITY & LACTATION



“What happens today is a result of what happened yesterday”

HEALTH = FERTILITY = PRODUCTIVITY



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TARGETS – WHY USE SENSORS?

- 20% increase in Submission Rates
- Live Birth Rate of 97% for cows
- Mastitis cases less than 10%
- Ketosis less than 5%
- Milk Fever Less than 5%
- Retained Fetal Membranes less than 5%
- LDA's less than 1%

THE FUTURE...



PHENOTYPING



IMPROVED PRODUCTIVITY



CARBON FOOTPRINT



SUSTAINABILITY

Video



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MILK COOLING & SUSTAINABILITY



**Reduced
Energy**



**Better
quality**



**Optimised
Transport**



**More
Connected**



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DAIRYMASTER PRODUCT CATEGORIES



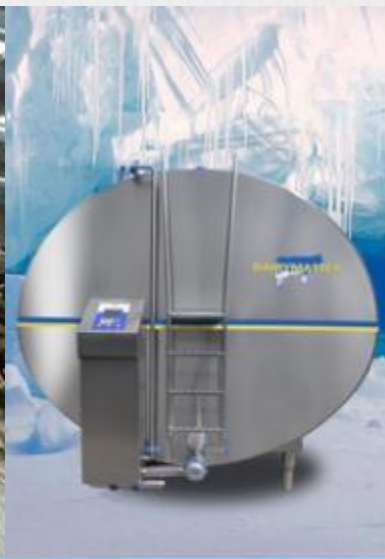
**Milking
Equipment**



**Feeding
Equipment**



**Manure
Scrapers**



**Cooling
Equipment**



**Heat Detection &
Health Monitoring**



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OUR MISSION

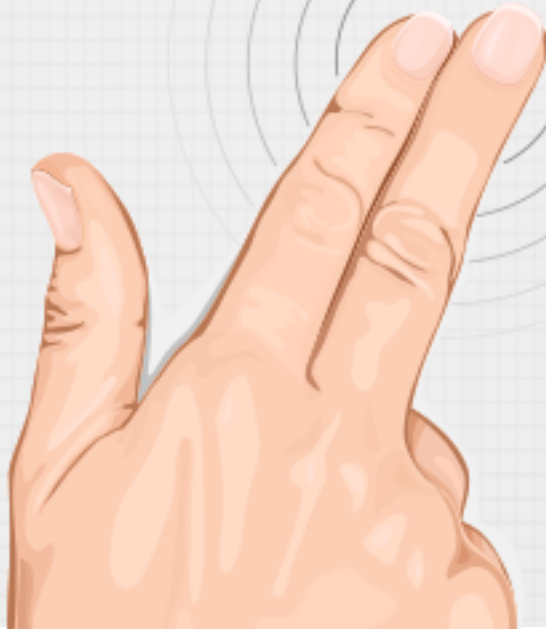
We use Science and Technology to make dairy farming more profitable, enjoyable and sustainable.



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SENSORS MAKE SENSE



HOW WELL DO YOU KNOW YOUR COWS?



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