Dairymaster MooMonitor
The app for heat detection & results of on-farm studies.

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Experience the difference...
www.dairymaster.com
Dairymaster Global Headquarters
Dairymaster

- Established in 1968.
- Head office in Causeway, Co. Kerry, Ireland.
- We export >70% of production.
- Dairymaster has always recognised that it’s not about what our product does but rather how does our product make dairy farming more profitable, enjoyable and sustainable that matters.
- We have always aimed to make a better product.

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A video from Ireland...
Farm Safety

Safe Handling of Livestock

• Research indicates that 65% of all farm injuries are livestock related.
• Bulls are responsible for 59% of livestock related fatalities.
• The bull is the most dangerous animal on the farm.
Artificial Insemination

- Superior genetic progression.
- Health & Safety.
Reduction in labour

- Advancement in technology.
Cow fertility?

- Fertility is very important for farm profitability!
- Better fertility management is possible.
- It makes economic sense to breed better cows!
  - AI should be used where possible.
Heat detection?

• Teagasc estimates missed heats to be up to €230 per cow.

• Esslemont and Kossaibati concluded that poor heat detection was the main reason for the estimated £200 million per year lost by the UK dairy industry from missed heats.

• Senger estimated that the U.S. dairy industry loses more than $300 million annually due to failure and/or misdiagnosis of estrus.
Eighty nine years ago was first published recognition that female mammals display a predictable increase in physical activity when in estrus (Wang, 1923).

Farris (1954) described the first potentially useful field application of pedometry in dairy cows.

Kiddy (1976) reported that cows in free stalls were about 2.75 times as active during estrus as when not in estrus. There was relatively little variation within cow in activity from day to day among cows not in estrus.
Counting steps? Real activity?

Clearly more precise activity measurement is required.
Accelerometers were developed first for the military, aerospace and automotive industries...

Now they are becoming more popular in industrial, medical and consumer devices for specific types of movement...

Dairymaster was at the start of this curve with state of the art animal activity monitoring...

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How do MEMS accelerometers work?
Accelerometer internal micro structure.
Inside Average Daily Activity Levels

Daily Activity for Housed Cows
Outside Average Daily Activity Levels

Daily Activity for Cows on Pasture

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Designed for both...

Pasture-based systems

Housed systems

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Base station communicates to Desktop via:
- Hardwire
- Bluetooth
- GSM network (Mobile Phone Network)
Base station in collecting yard or housing.

Communicates data through Radio Waves
Remote base station - typically off farm heifer rearing.

1. GSM / 3G
2. Hardwire
3. Bluetooth

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• Summary screen appears on loading.

• Tabs show individual data.

• Most used items appear on “Other tasks” list.
User interface

- Background shading changes every 21 days.
- Easy to see last cycle is 21 days.
- Previous cycle is 19 days.

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Hourly measurement
Silent heat
Other Reviewing Capabilities:
Cystic Cows and Non-Cycling Cows

Detect cystic cows

Detect non-cycling cows
More herd information anytime, anywhere

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Heat
Non Cycling
Lost Calf
Cystic
Mobile App

Getting more information to the farmer and A.I. Technician sooner

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Mobile app

- The app allows the user to view the data directly on a mobile phone allowing for 24-hour remote monitoring.

- The AI technician or dairy producer can now remotely see data on one or many herds.
System Overview

Dairymaster Cloud Server

Data upload to cloud server

App

Instant on-demand download

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First Heat after Calving
Conception rates from 4,126 services were recovered from 19 herds located in 8 states.

Dairy personnel recorded time of A.I. in the Analysis Program and time of first “red bar” was used as onset of high activity to determine interval from onset of high activity to breeding.

LS means analysis of variance was used to determine the effects of herd, parity, service no., duration of high activity, interval from onset of high activity to AI, and all two-way interactions in a backwards stepwise regression.
Onset of High Activity

Hours of the day

Percent of periods

Cows=4,126  Heifers=894
Onset of High Activity

Take home message: Nearly 70% of activity is at night!
Duration of High Activity

Take-home message: Over 30% of cows have heats < 8 hours. Half of these are less than 4 hours!
Conception Rate by Duration of High Activity

Cows with shorter duration heats have lower conception rates!
Effect of Interval from Onset of High Activity to A.I. on Conception Rates

Correct timing of insemination improves conception rates!

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Summary

• More confidence and better judgment in knowing when to AI cows
• Increase profits.
• Less labour.
• Safer farm.
• 24 hour monitoring.
• Identify problem cows sooner.
• More management information for better decisions.
• Increased rate of genetic advancement.
Dairymaster is looking to work with key partners all over the world....
Heat detection is now an app, not an art!