Slide 1

Cow monitoring technology
Revealing her secrets to unlock her true potential

Evine van Riemsdijk | Balchem Real Science Lecture Series
April 4th, 2023

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Slide 2

Balchem Real Science Lecture Series
Content

1. Cow monitoring development
2. Reveal her secrets
3. Practical application on the farm
4. Data driven strategies with experts
5. Success by connecting the dots
6. Match the technology to your goals

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Slide 3

Cow monitoring development

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Slide 4

Cow monitoring development
45+ years in dairy farming

RFID
Identification & basics for PLF

Automation
Efficiency & consistency

Information
Informed decision making

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Slide 5

Cow monitoring development
Identification is the basics for PLF

- Feeding
- Milking + recording + separation
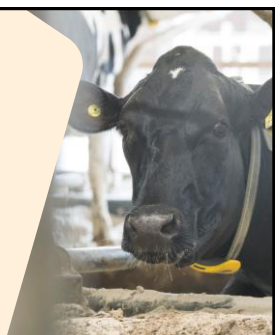- Sorting + routing
- Monitoring + locating

Know who she is, where she is, what she does, 24/7

- Individual monitoring while in a group
  - *Manage by exception*
- Work routinely and minimize disturbance in the group
  - *Let cows be cows*

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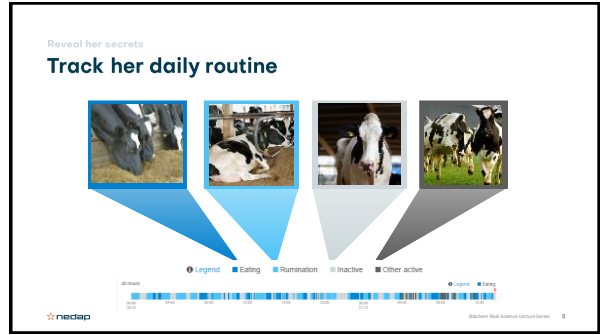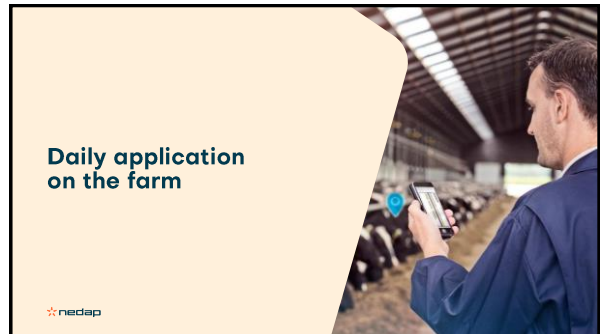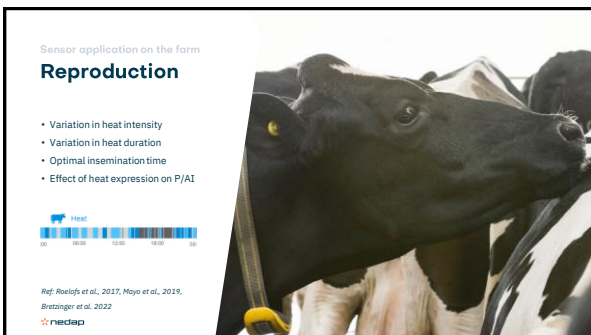Balchem Real Science Lecture Series 5

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Slide 6

Reveal her secrets

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Reveal her secrets

Track her daily routine

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Reveal her secrets

Manage by exception – let cows be cows

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**Daily application
on the farm**

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Sensor application on the farm

Reproduction

- Variation in heat intensity
- Variation in heat duration
- Optimal insemination time
- Effect of heat expression on P/AI

Ref: Roelofs et al., 2017, Mayo et al., 2019, Bretzinger et al. 2022

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Sensor application on the farm – Reproduction

Heat detection + optimal insemination time
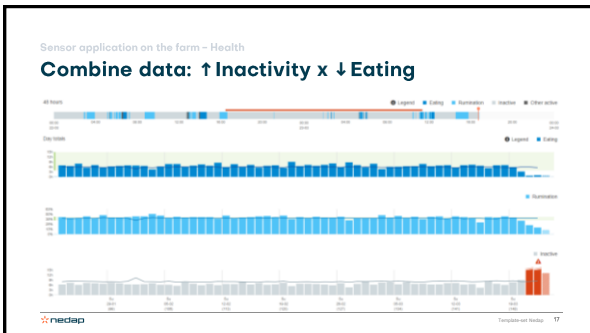
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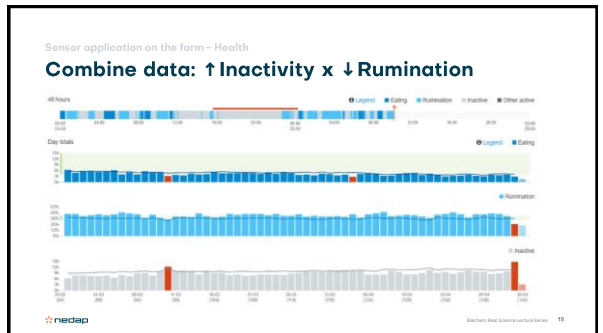
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Slide 19

Sensor application on the farm
Nutrition

When are they eating...

More importantly:

... when are they not?

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Slide 20
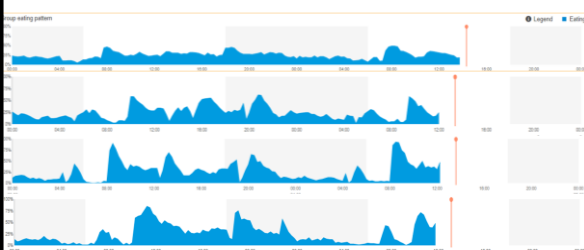

Sensor application on the farm – Nutrition
Feed availability (...or quality?)

The cows are talking to us...
...are we listening?
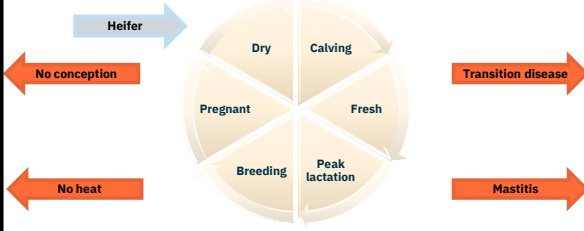
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Data driven strategies with experts

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Slide 22

Data driven strategies with experts
Optimize productivity & Keep momentum

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Slide 23

Data driven strategies with experts
Transition Health and Reproduction

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Slide 24

Data driven strategies with experts
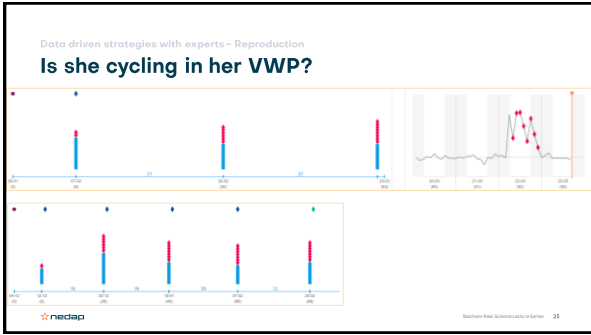## Reproduction

Conclusion by Bretzinger et al., 2022:
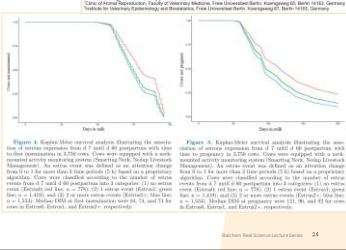
- *"Results from the present study provide further evidence that early postpartum estrous expression influences fertility in lactating dairy cows.*
- *Cows with no estrous expression detected by an AAM system from d 7 until d 60 postpartum had inferior reproductive performance compared with cows that displayed estrous activity.*
- *Cows with stillbirth, RP, metritis, and subclinical ketosis were more likely to be anestrous within the VWP.*
- *Future studies should address intervention strategies in these cows to improve their reproductive performance."*

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Slide 32

Slide 33

Slide 34

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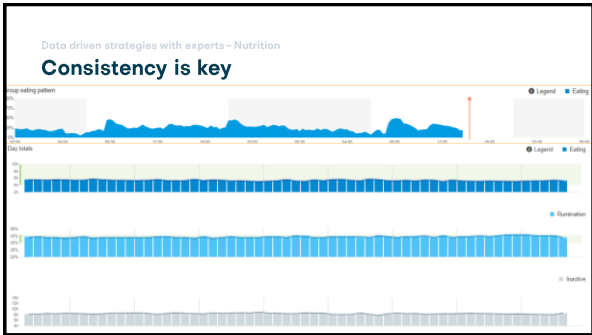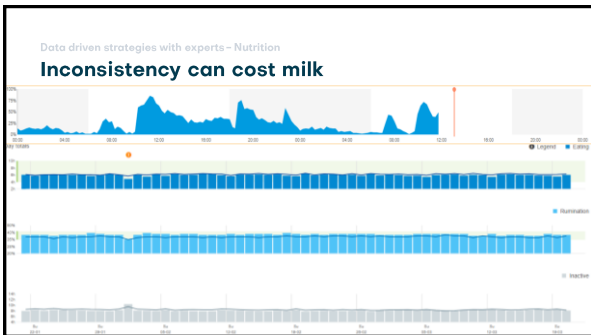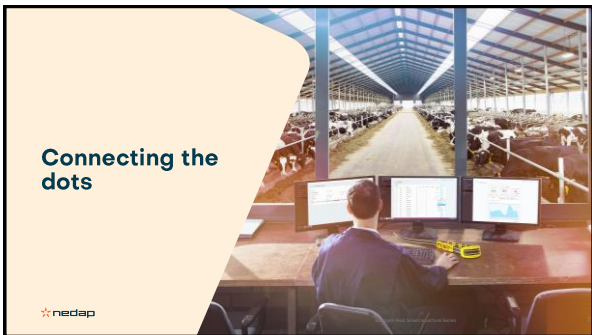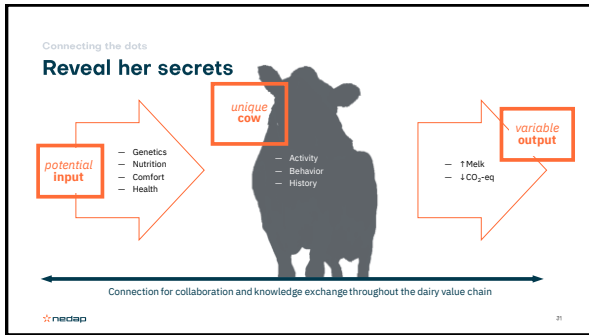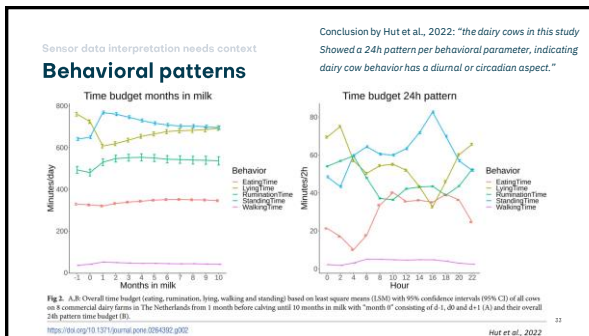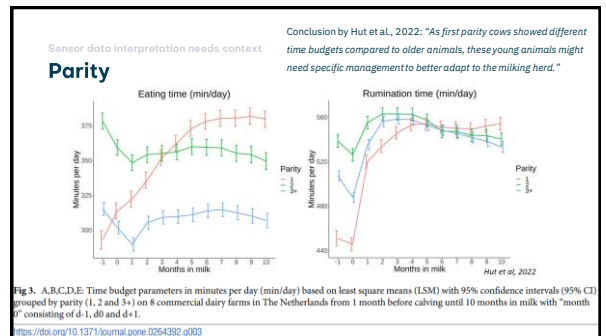
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Match the technology to your goals

Fit to your management strategy

- AMS vs parlor
- Indoor vs grazing
- Family farm vs large operation
- Seasonal vs all-year round
- …

Adapt the technology application to management and goals

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Farm proof?

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Cow monitoring technolog

Take home message

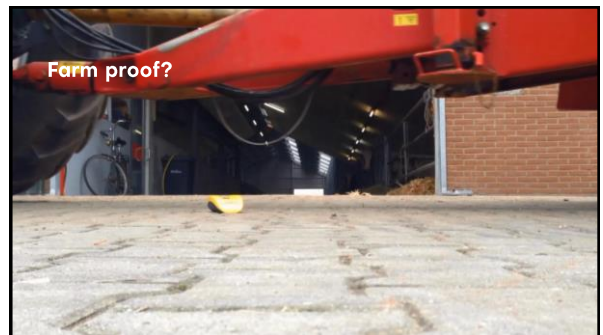- Even with 45+ year history in dairy development, cow monitoring is more relevant than ever

- The cows are talking to us, but are we listening?

- Cow monitoring as automation and information tool supports daily farm productivity and efficiency

- Including the expertise from experts can allow for more data driven strategies in the long term

- Connecting all the dots throughout the dairy value chain is key to close knowledge gaps

Reveal her secrets to unlock her true potential!

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Questions?

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