

Dairy Developments

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Managing Director

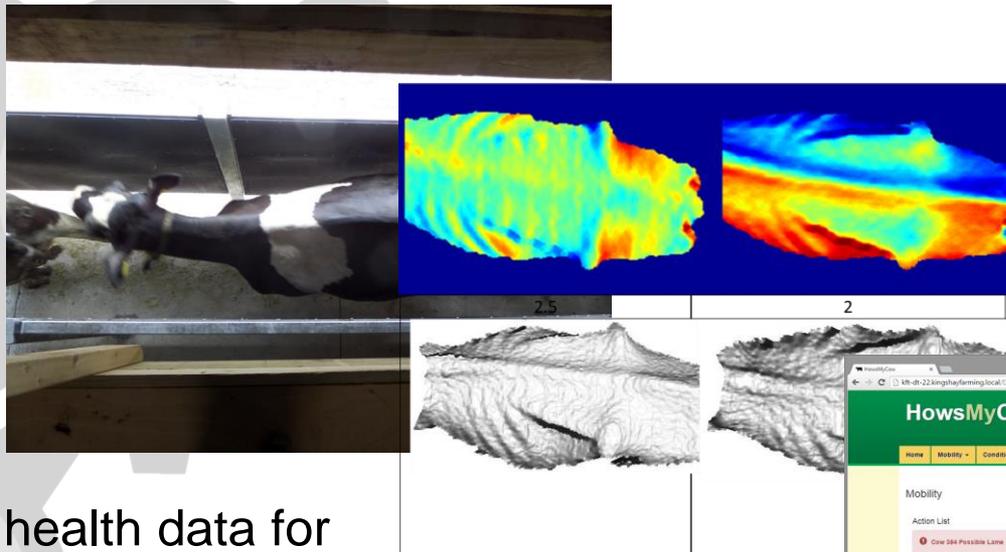


How's My Cow

Innovate UK

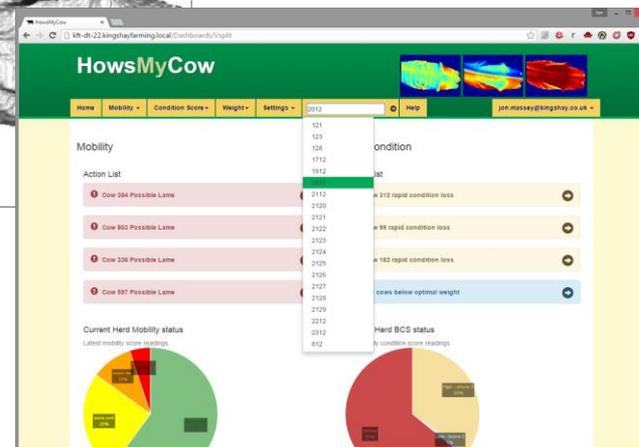
Technology Strategy Board

- Machine Vision for Better Cow Health
- Innovate UK funded working with Bristol Robotics Lab



- Body Condition Scoring
- Mobility Scoring
- Weight

Key health data for
Farmers, Nutritionists,
Vets, Researchers, Geneticists



DASIE

Dairy Animal Sensor Integrated Engineering

ICEROBOTICS

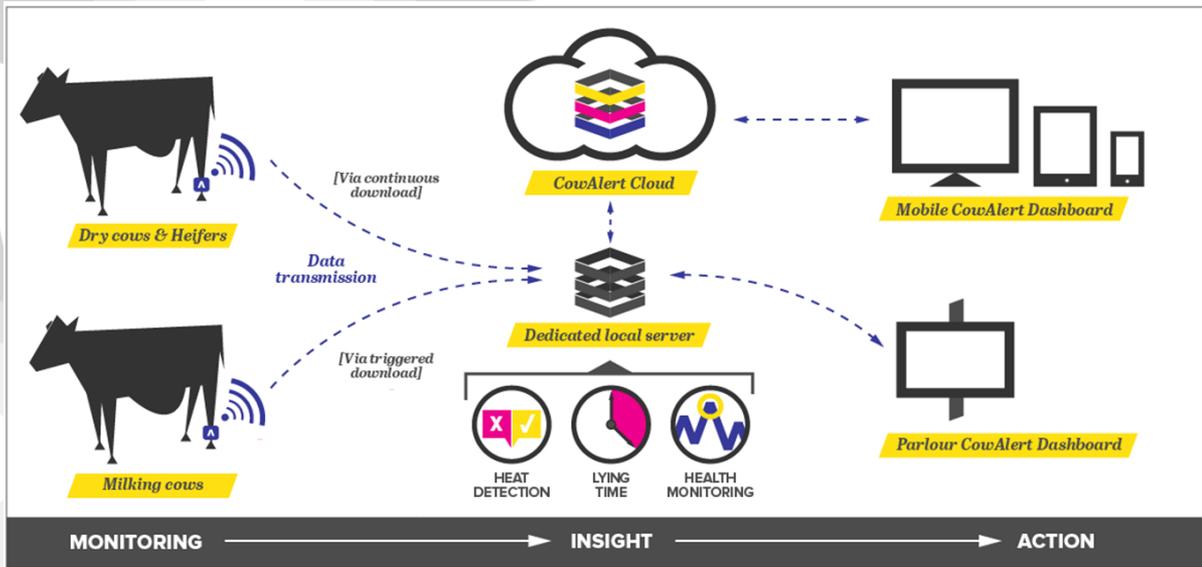
Pioneering use of accelerometry in dairy farming

COWALERT

- INTEGRATION
- PERFORMANCE
- VALIDATION



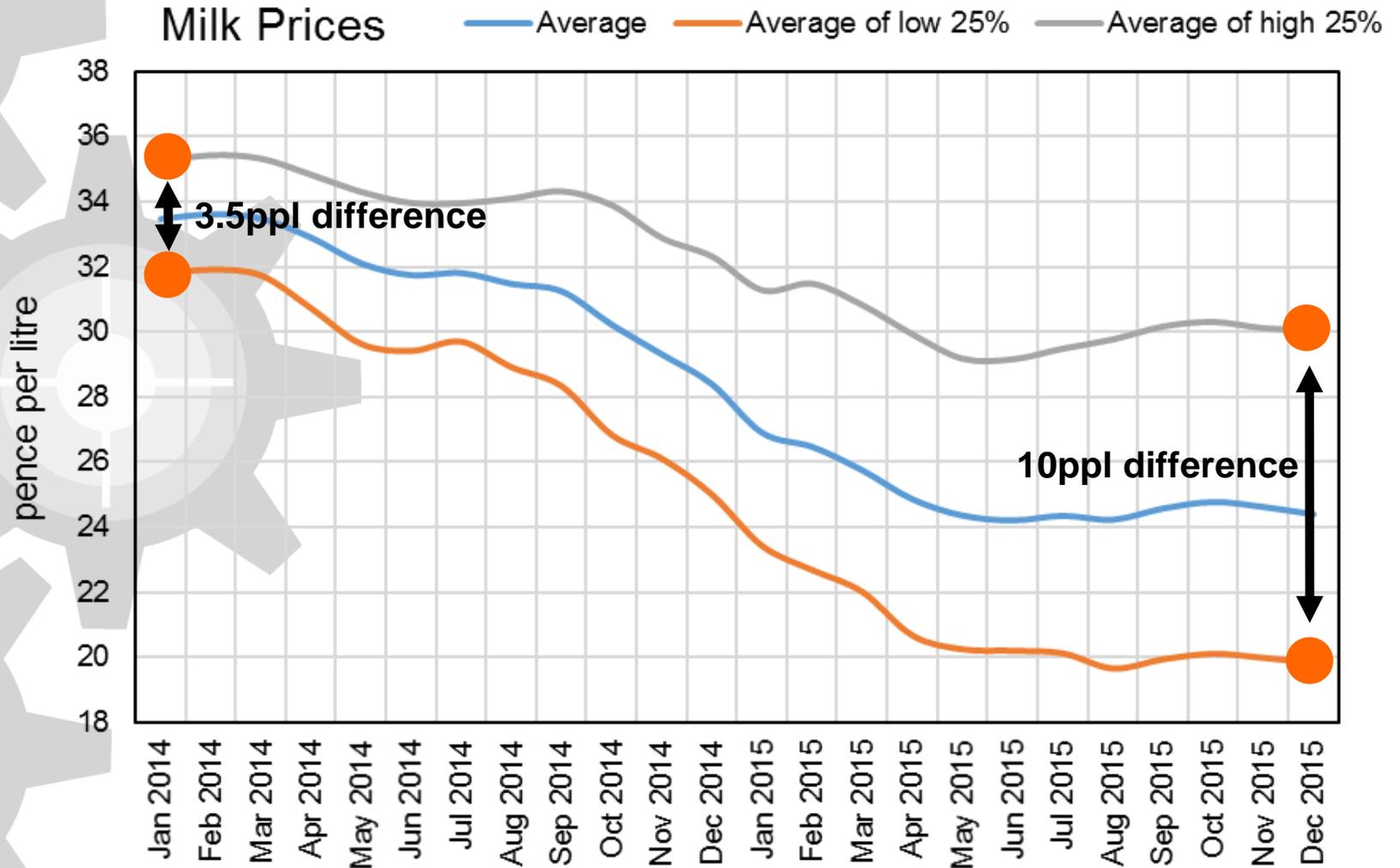
Harper Adams
University



Potential in Dairying

- Massive range in dairy **profitability** across farms
 - Not just about milk price
- **Variability** at all levels
 - Business
 - Herd
 - Animal
 - Environment

Milk price



Business Profitability



Business Sustainability

- Exploit the peaks
- Survive the troughs
- **Measurement:** The key to management
- **Precision:** The key to informed decisions
- **Opportunities** at every level to make variability a positive asset

Animal performance

- Two cows: similar genetic merit in the same herd

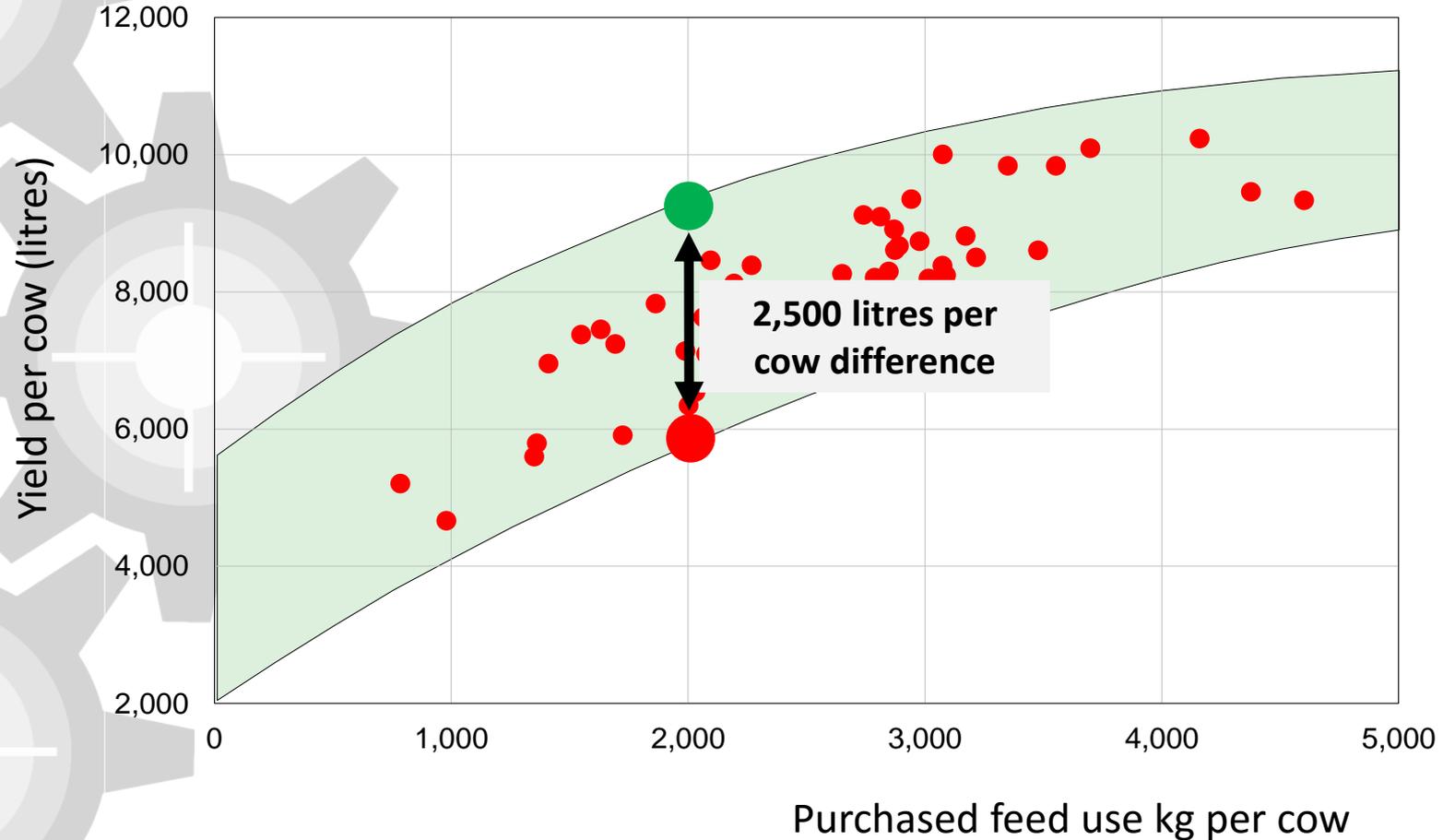
Cow no.	Lactation No.	Milk Yield 305 day kg	Average butterfat	Average protein
388	3	12,615	3.95%	3.33%
693	3	3,317	3.88%	3.12%

- Both have completed 3 lactations under
 - same herd
 - same management
 - same environment
- Massive performance **difference**
- **Opportunities** to learn more about what makes a top performer



Feed Efficiency

Kingshay Milk Map ©



Source: Kingshay Dairy Manager

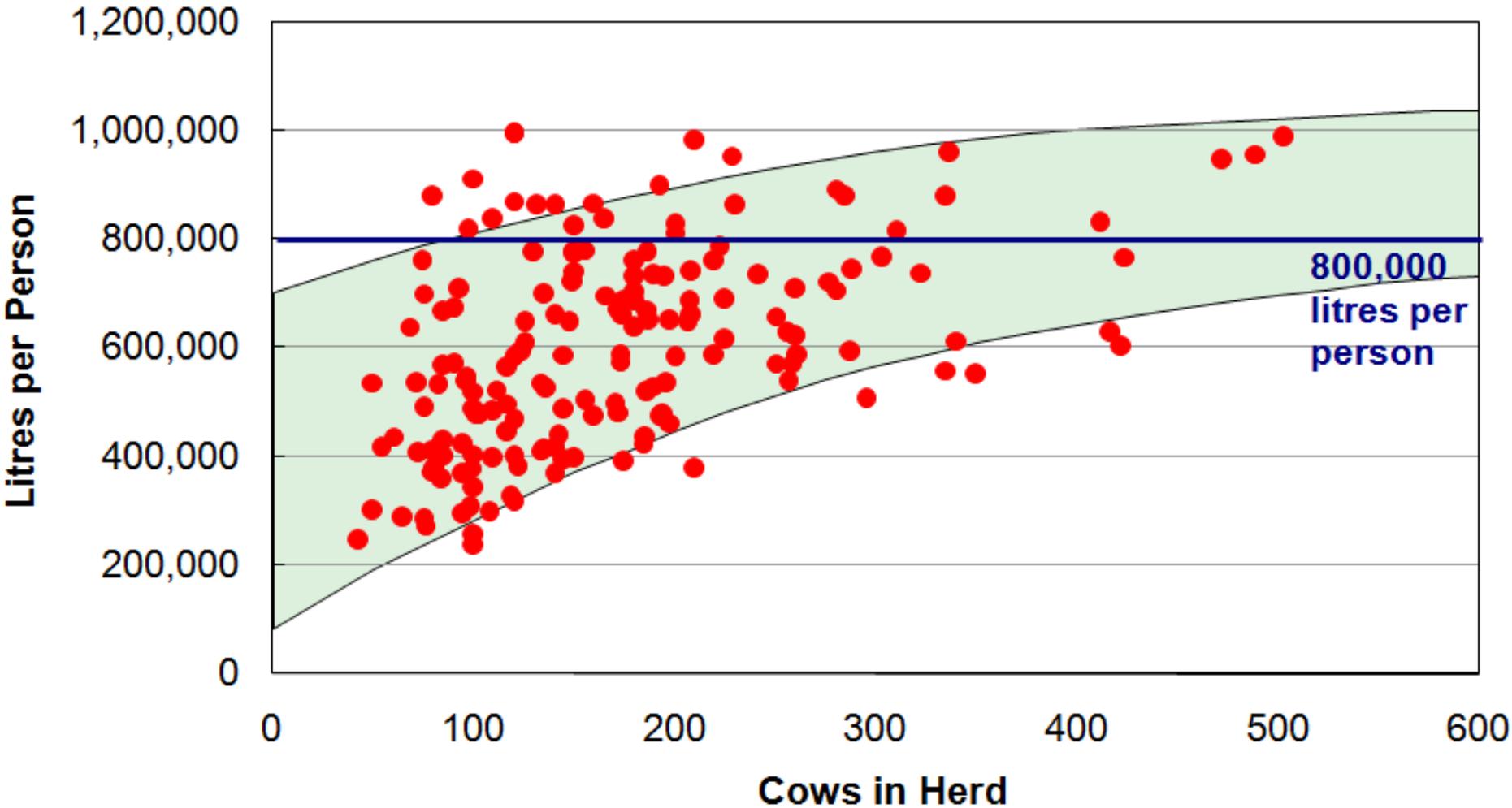
Milk from Forage

7,000 to 8,000 litre herds	Highest 25% Milk from Forage	Lowest 25% Milk from Forage
Yield per Cow (litres)	7,485	7,588
Yield from Forage (litres)	3,865 (52%)	1,507 (20%)
All Purchased Feed Cost (p/litre)	5.41	8.39
Saving (p/litre)	2.98	

Savings of **£33,578** for a typical 150 cow herd

Source: Kingshay Dairy Manager

Labour Efficiency

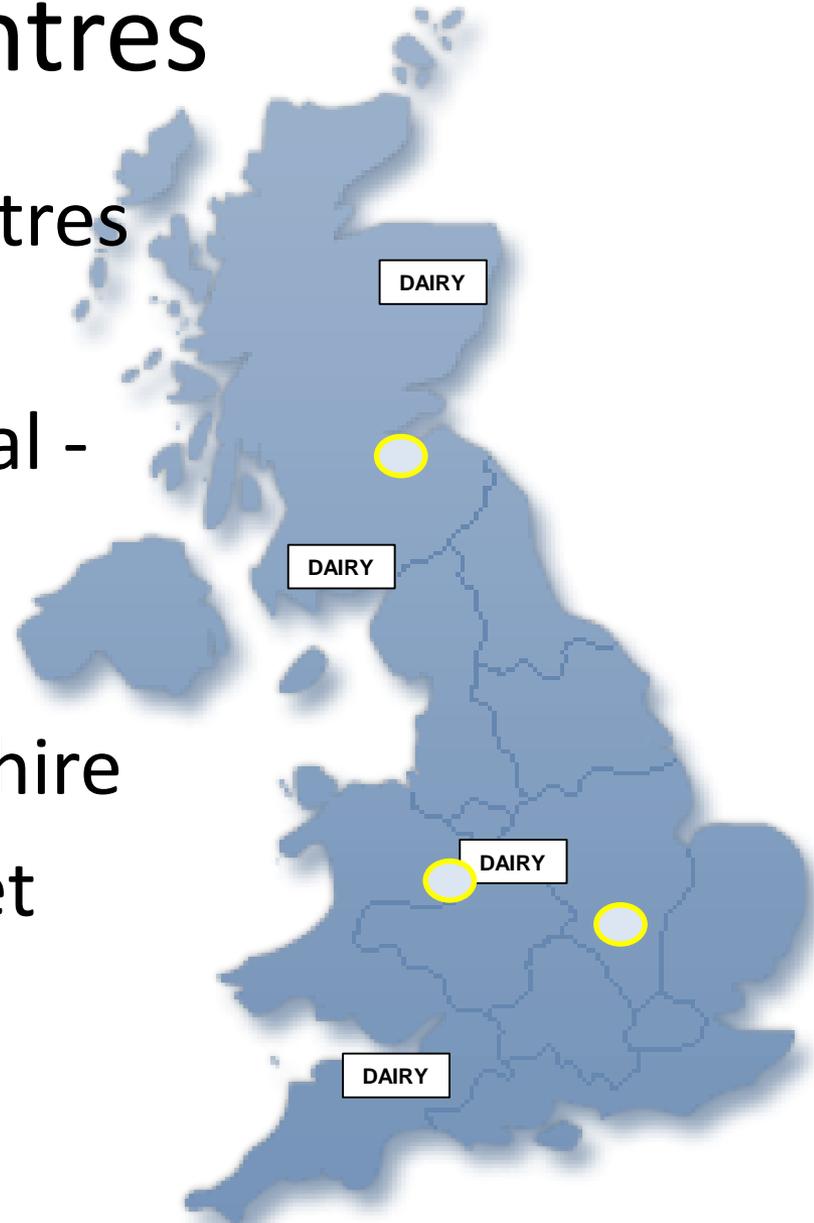


Source: Kingshay Profit Manager

Dairy Centres

Three main dairy centres
and a satellite

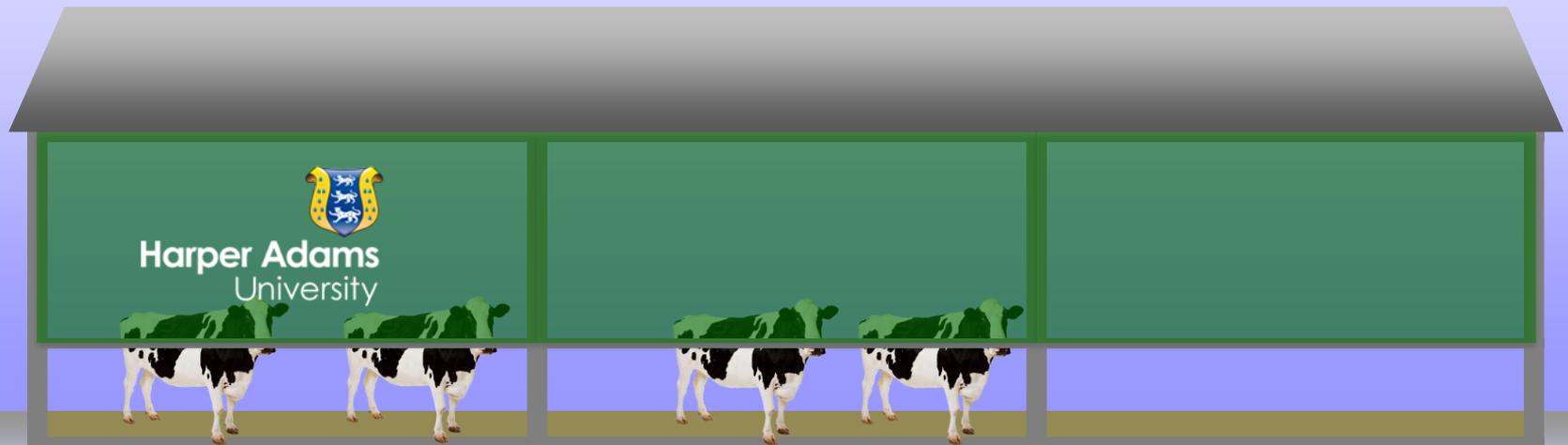
- SRUC Crichton Royal - Dumfries
- Harper Adams University - Shropshire
- Kingshay - Somerset



Robotic milking

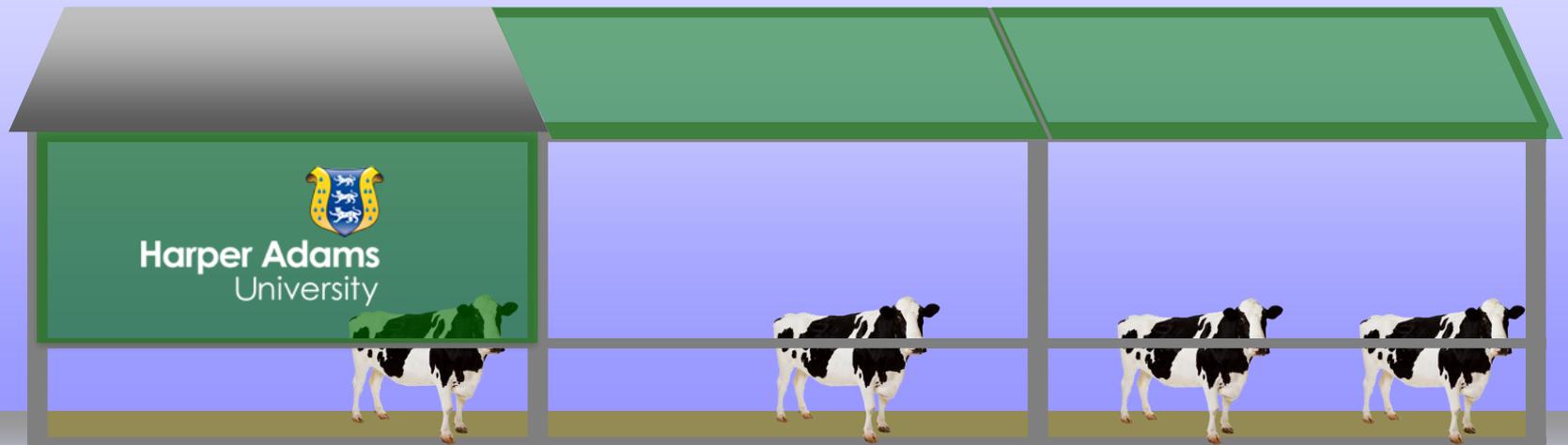


Future 'smart' housing?



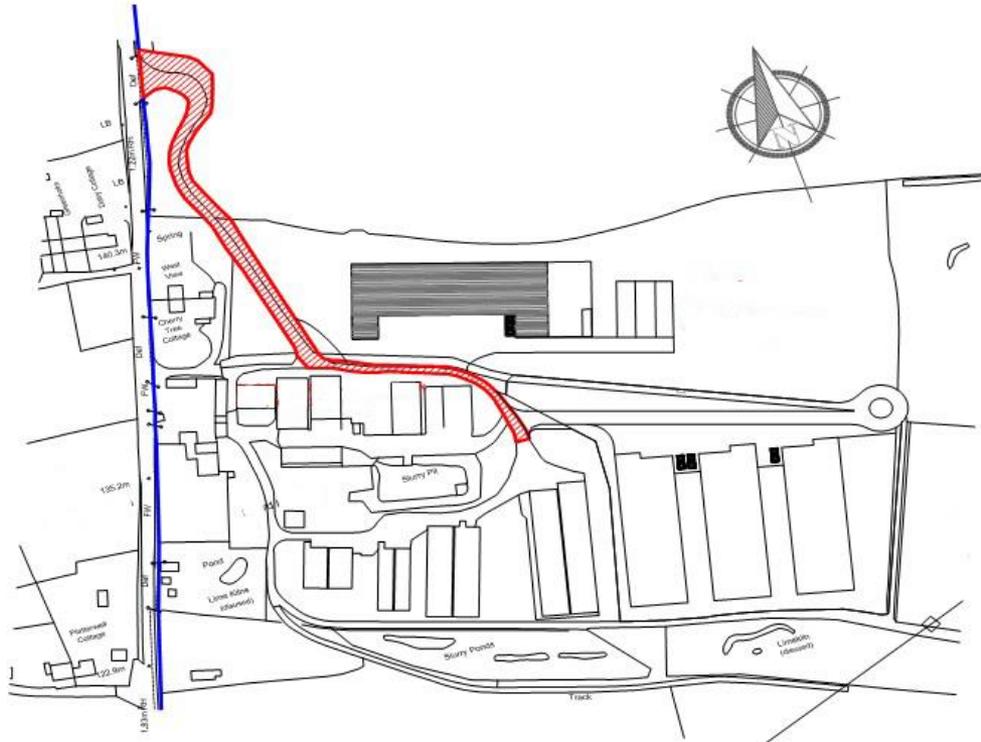
- Ventilation responds to cow position/behaviour
- Facilitates individual choice in the cows

Future 'smart' housing?



- Could retractable roof panels be used...
- ...to bring the 'outdoors' to the cows?

Dairy Unit development

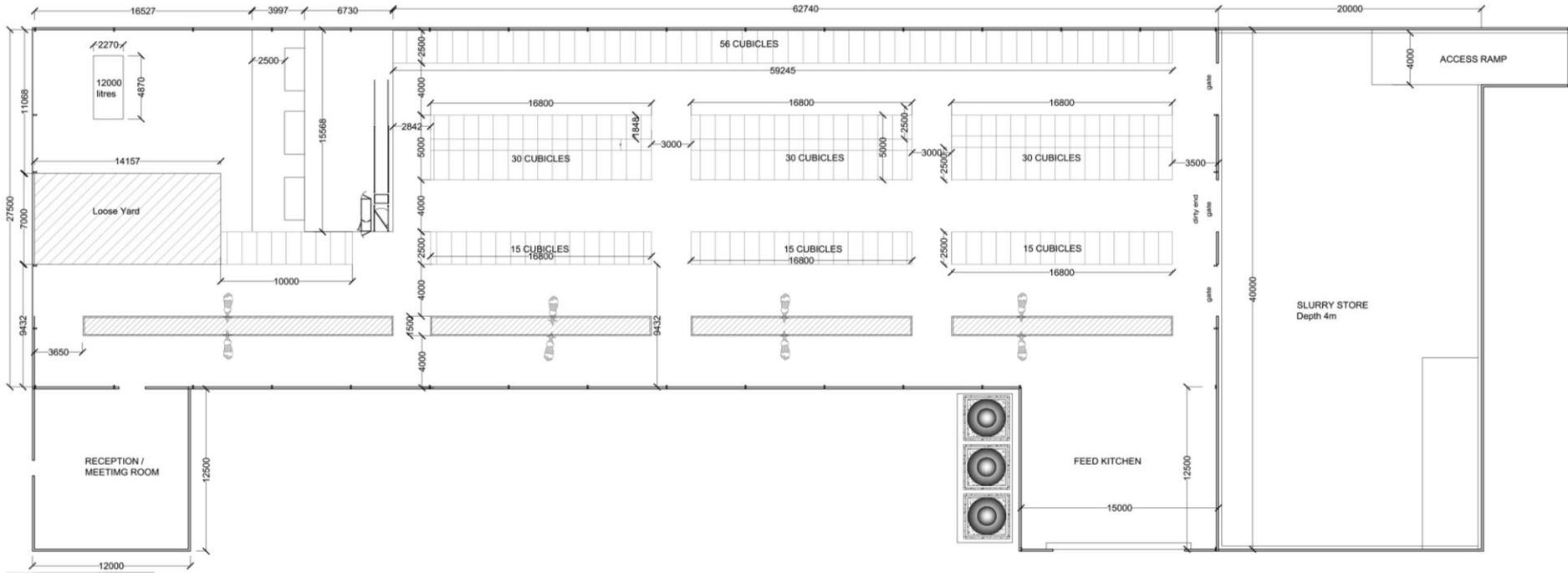


Location Plan

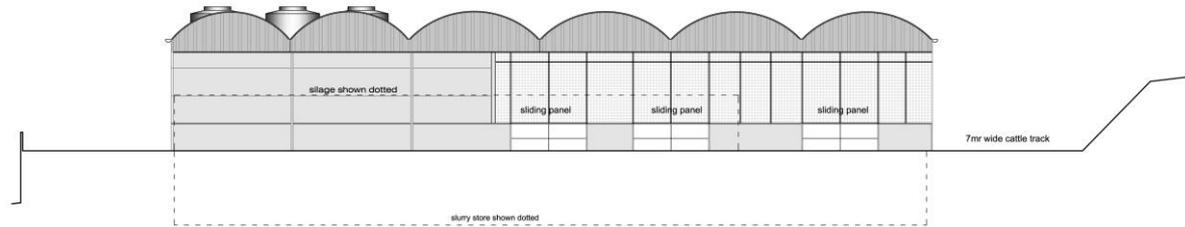
Dairy Unit development



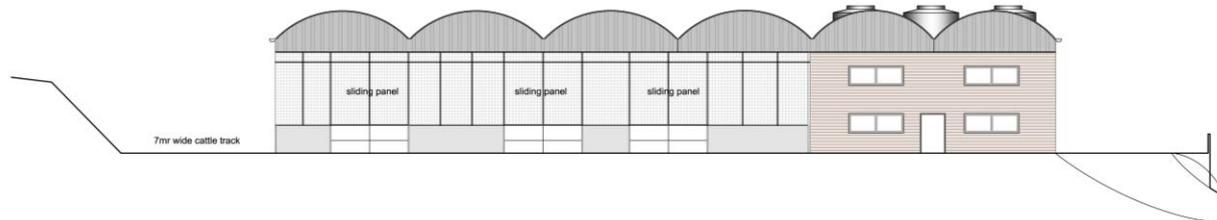
South West Elevation



Dairy Unit development

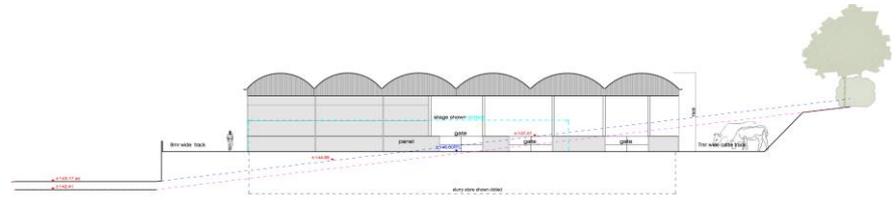


North West Elevation



South East Elevation

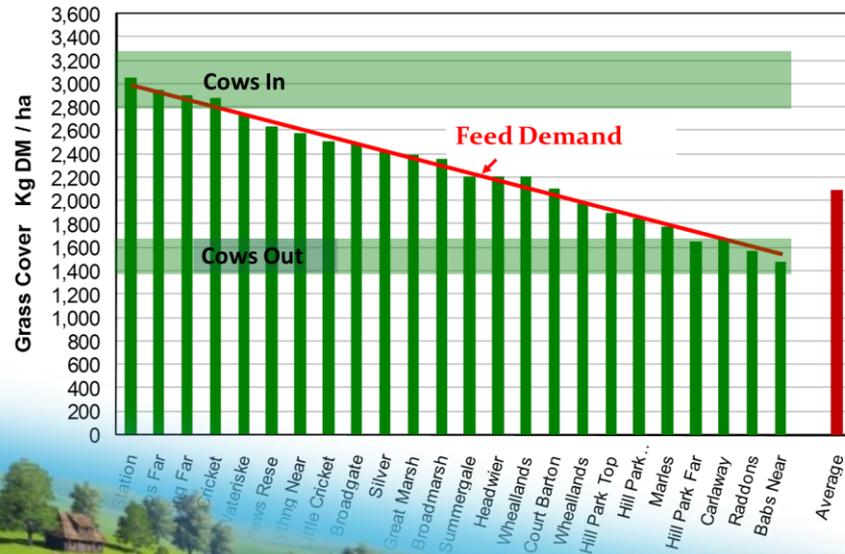
State-of-the-art housing



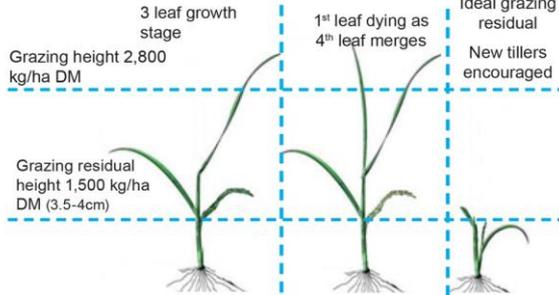
Kingshay

Independent Dairy Specialists

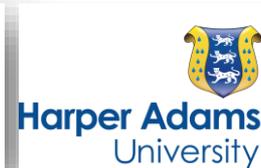
Precision grazing

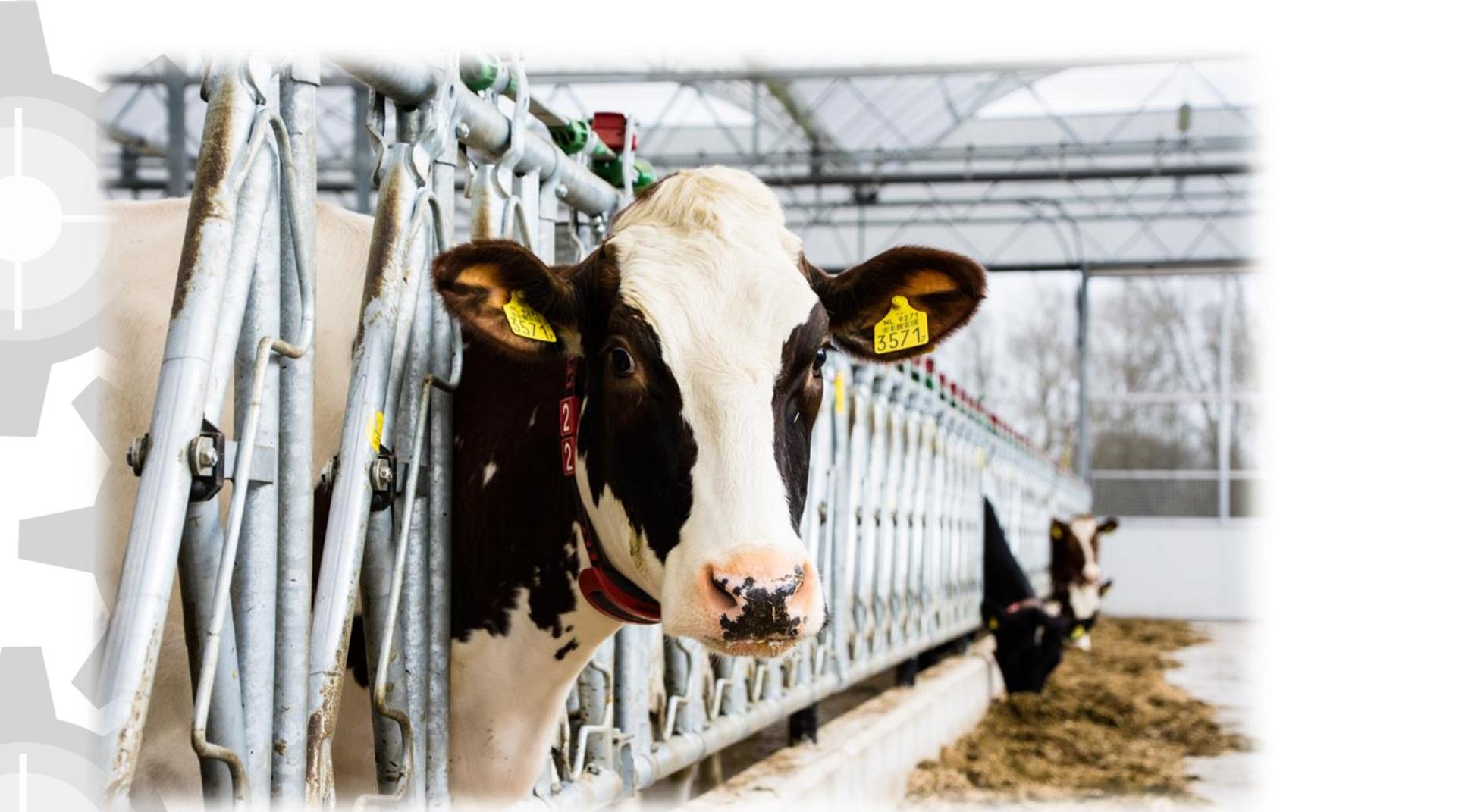


GRASS GROWTH STAGES



Demonstration and research





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