A survey on sensors' availability on Italian dairy farms: potential tools for innovative cow selection

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Background & Aim

The **GenTORE** project (*Genomic Management Tools to Optimise Resilience and Efficiency across the Bovine Sector*) aims at developing new models for cow selection to improve animal **Resilience and Efficiency** towards environmental challenges, increasing also the sustainability of the bovine sector. In this context, **farm sensor systems** could provide precious phenotypical information on individual cows.

This survey investigated the actual spread of such devices in Italian dairy farms.

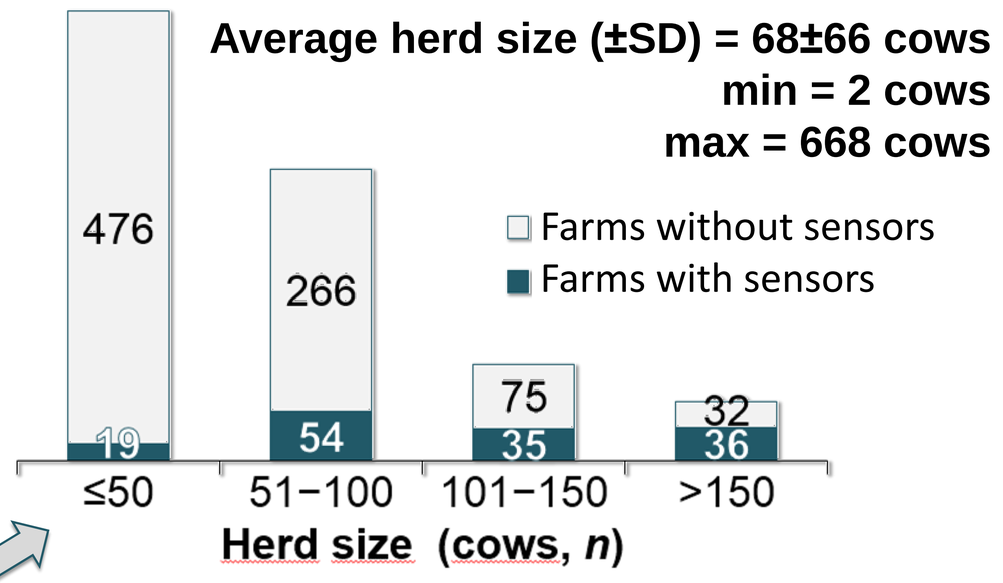
Material & Methods

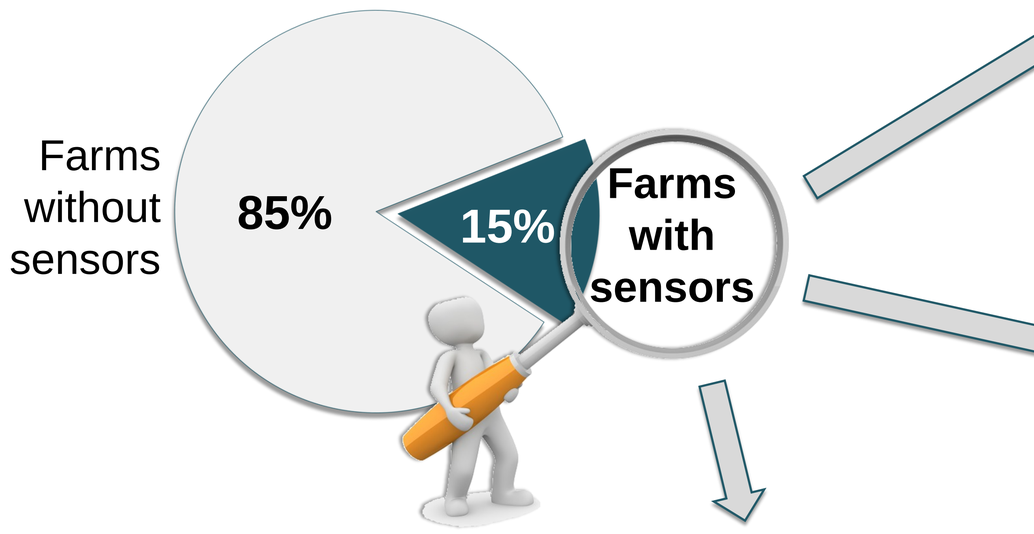
Questionnaires about type of sensor system installed (pedometer, collar, eartag, or none) and parameters recorded (activity, rumination, eating, resting, and localization in the barn) were submitted to **993** dairy farmers of the **northeastern Italy** by the breeders' association (ARAV) technicians in the year 2017.

Results

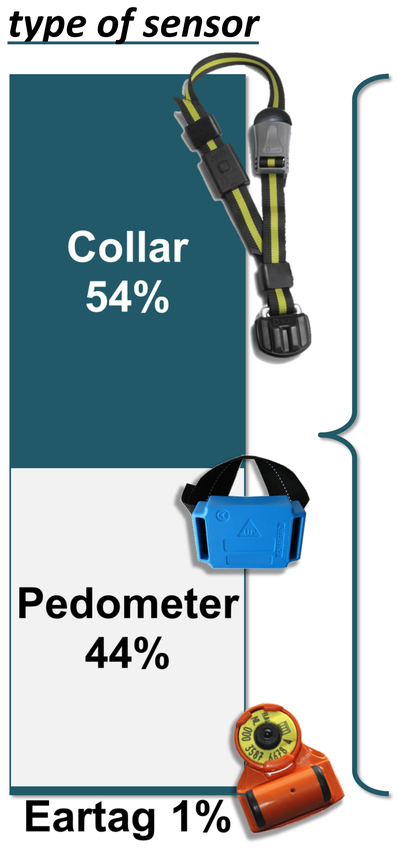
The **993 dairy farms** reared a total of **66 779 cows**, of which 72% were Holstein, 10% Crossbred, 7% Brown, 6% Simmental, and 5% Local breeds.

Farms' distribution (n) according to the herd size





Farms (%) by type of sensor



Parameter recorded	Sensors, %
Collar	
Activity	100%
Rumination	44%
Eating	39%
Resting	23%
Localization	3%
Pedometer	
Activity	100%
Eartag	
Activity	100%
Rumination	100%
Eating	100%
Resting	100%
Localization	100%

Conclusions

Refined parameters such as eating and rumination were available **only on 3%** of the overall dairy **farms**, covering 5% of the farms with more than 50 cows and **6% of the overall cows reared**.
Therefore, sensor systems are **not widely used** in Italian dairy farms, but there is **a huge potentiality** of data recording from such systems, particularly when sensors' data will be compared with individual cow productive, reproductive, and health data.

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