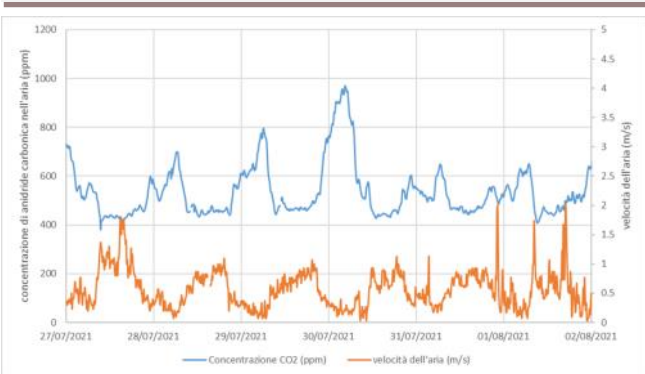


The collected data can be viewed in real time via a web application



Trend in the concentration of carbon dioxide and air velocity in the resting area. The highest concentration values correspond to limited air velocities.

Results

The monitoring system created allows to provide indications for timely intervention to:

- create an optimal environment in the barn
- Identify cows with abnormal condition

Farms partner of the project

- CEKFARM S.S. AGRICOLA Camisano (CR)
- SOC. AGR. BERTICELLI LUIGI S.S. Vailate (CR)
- SOC. AGR. EREDI MERIGO Capralba (CR)



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GALA - Integrated Environment Management System in dairy barns to improve the welfare and productivity of the cows



European agricultural fund for rural development: Europe support Rural Area

Rural development 2014-2020 for Operational Groups of Lombardy Region.
 Coordinator: Università degli Studi di Milano- DISAA
 Partners: Soc. Agr. Berticelli Luigi S.S., Soc. Agr. Eredi Merigo, Cekfarm S.S. Agricola e Associazione Regionale Allevatori Lombardia
 Program managing authority: Regione Lombardia

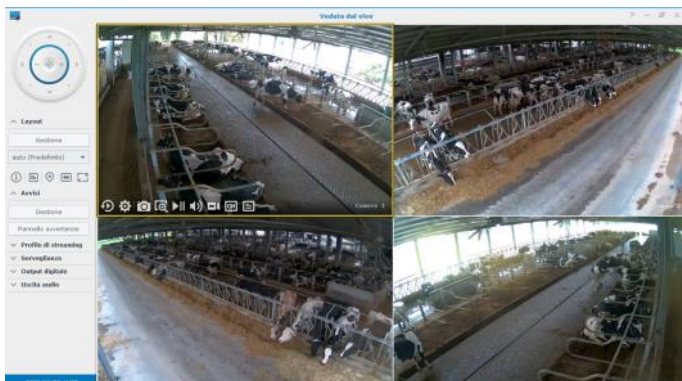
The Project GALA

Aim of the project

Implement a monitoring and control system to ensure optimal environmental conditions for dairy cows



Control unit for monitoring the quality of the environment (gas concentrations, noise)



Video recording system to monitor the behavior of animals in the barn

The project involved the development, construction and installation of an integrated system for data collection in the three partner barns of the GALA Operational Group

Parameters monitored in the barn

- microclimatic conditions (temperature, humidity, air speed, illuminance)
- quality of the environment, as gas concentration (ammonia, hydrogen sulphide, carbon dioxide) and noise level of the different areas of the barn
- temperature and humidity of the litter
- water consumption and water temperature in drinkers
- presence of flies



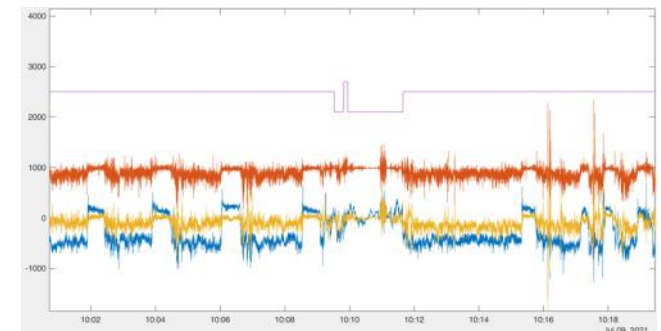
Litter temperature and humidity sensor installation



To understand if the cows are well, it is important to note:

- How long they eat
- How long they rest
- How long they ruminate

A collar with an accelerometer is used for this purpose.



Recording of the accelerations of the animal on the 3 axes