ECOMONDO
THE GREEN TECHNOLOGY EXPO

Odor and ammonia emission from intensive pig farms: abatement efficiency of a dry and a wet scrubber

Session - Emissioni odorigene: dalle tecnologie di abbattimento alle nuove strategie di controllo

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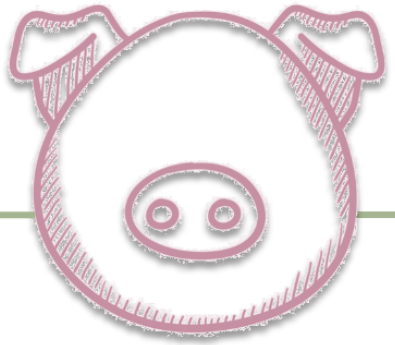
PSR 2014 2020 LOMBARDIA L'INNOVAZIONE METTE RADICI

Regione Lombardia

Fondo Europeo Agricolo per lo Sviluppo Rurale: l'Europa investe nelle zone rurali

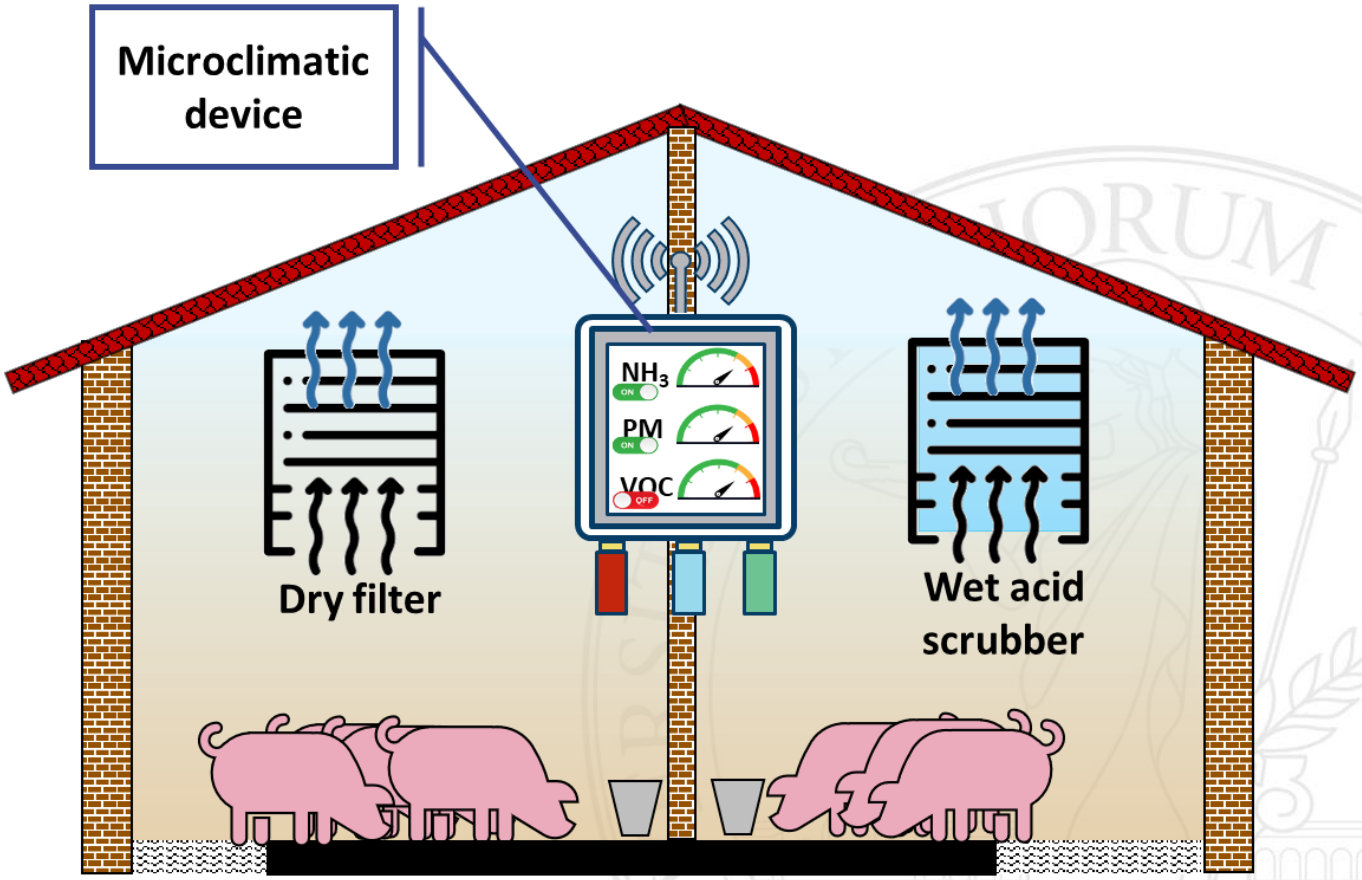
Sistemi filtranti per la riduzione di polveri, odori e ammoniaca e per migliorare il benessere di animali e operatori all'interno delle porcilaie



APPROAch

The APPROAch project aims at reducing emissions from pig farming.

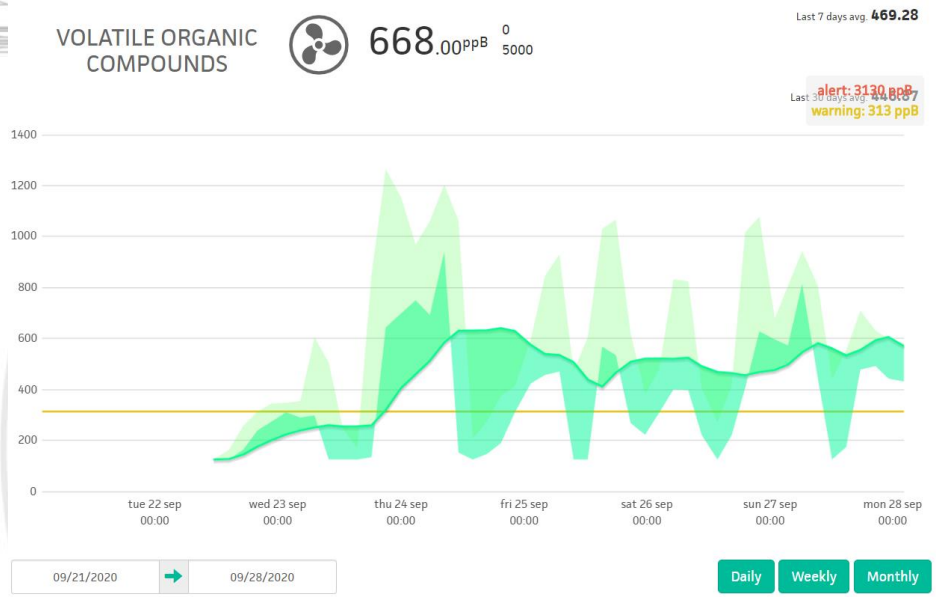
A dry filter and a wet acid scrubber prototype will be test for the abatement of NH_3, PM and VOCs emissions in fattening barns. Pollutants emissions and environmental parameters will be monitor by a microclimatic tool.



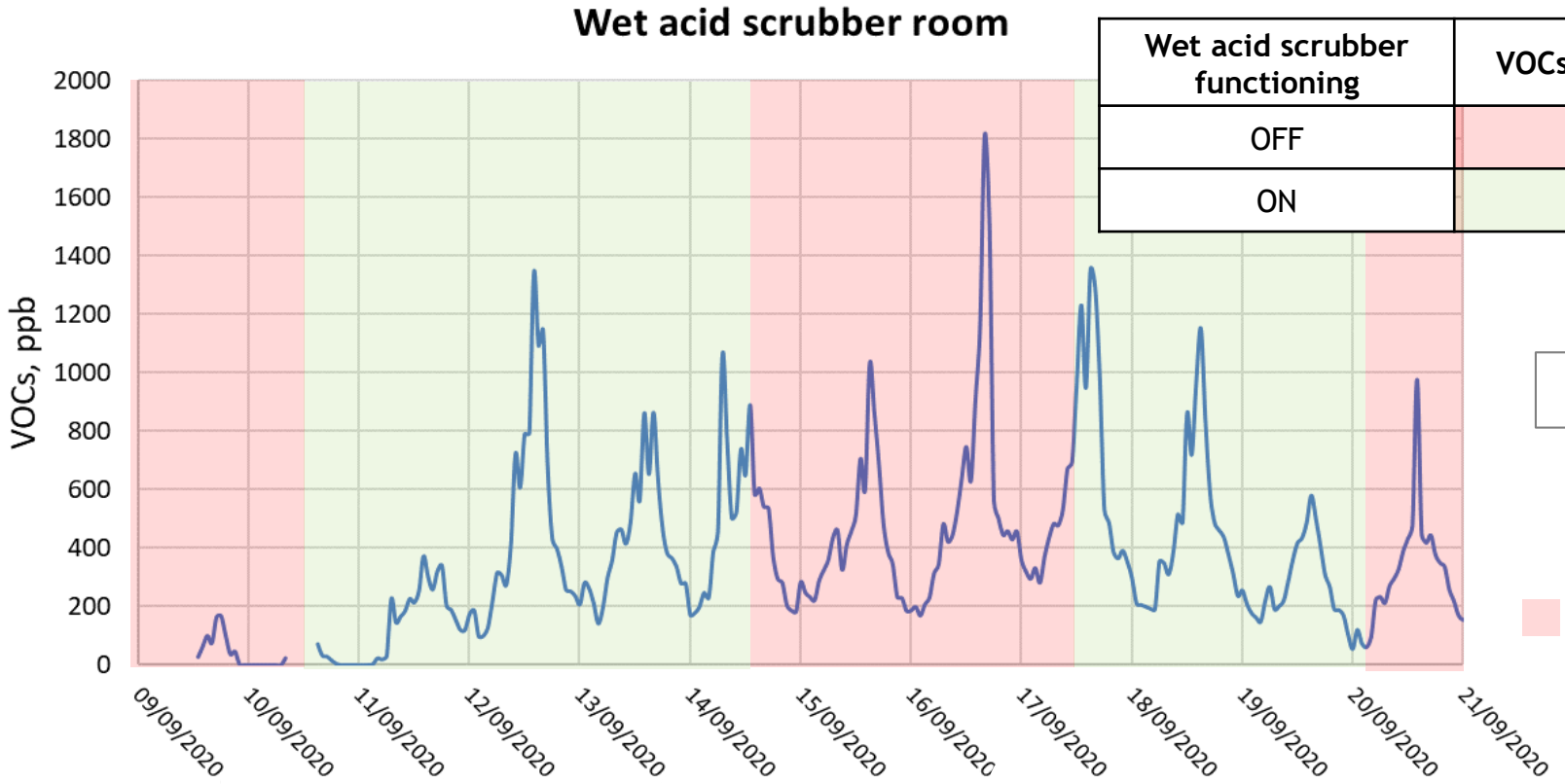
APPROAch – microclimatic device

Dedicated Sensors

- Ammonia
- Methane
- Temperature
- Humidity
- Particulate Matter PM_{10}
- VOC volatile organic compound
- Carbon Dioxide



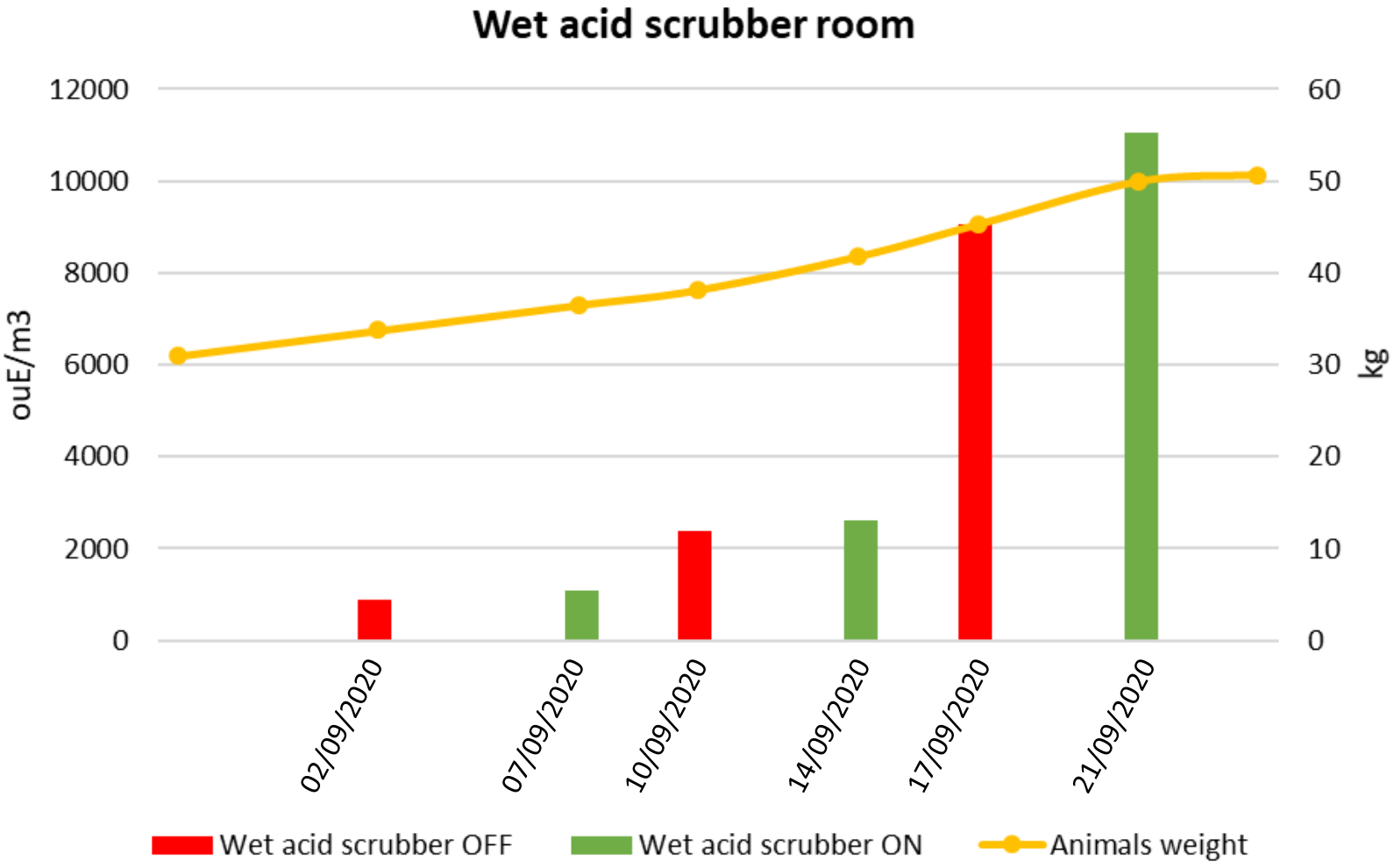
VOCs recorded by the microclimatic device



Wet acid scrubber functioning	VOCs average, ppb
OFF	439.71
ON	365.41

- 17%

- Daily peaks during feeding time
- Low values during night
- VOCs higher when the wet acid scrubber is not operating



- A clear relation between odors and animal weight exist → as the weight increases, the odor increases

- Odor sample and olfactometric analysis also in dry filter room
- GC-MS injection of odor samples
- PM concentration will be monitored through a real-time particulate air-monitor (Haz-Dust model SKC EPAM-5000) portable device
- NH_3 measurements with Drager CMS chip measurement system

→ Validation of the microclimatic devices with GOLD STANDARDS

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THANK YOU FOR YOUR ATTENTION !

For further information, please visit the web site:
https://approach.aral.lom.it/