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P4.19 Smart computing system to monitor and abate the indoor concentrations of NH3, CH4 and PM in pig farms (LIFE-MEGA)

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Abstract

Intensive pig farming makes up most of the European swine production, but it has a heavy impact in terms of water, soil and air pollution. Large pig sheds develop poor air quality, with especially high levels of ammonia, methane, particulate matter and volatile organic compounds (VOCs). This poor air quality harms the health of both animals and workers.

The project "Smart computing system to monitor and abate the indoor concentrations of NH_3, CH_4 and PM in pig farms (LIFE-MEGA) [LIFE18 ENV/IT/000200]", has received funding from the LIFE Programme of the European Union. Project coordinator is the University of Milan (UMIL) and the associate beneficiaries are the Institute of Agrifood Research and Technology (IRTA – Spain) and two Italian companies Rota Guido srl and Nuvap srl.

The project has developed an online tool to monitor air pollutant concentrations in pig sheds and keep them below a threshold. It has also tested a dry scrubber, already used in other industrial context, and a wet scrubber prototype, leading to reductions in ammonia, particulate matter, GHG and VOCs emissions.

The prototypes have been tested in two fattening farms in Italy and in two weaning farms in Spain. Abatement efficiency of the scrubbers tested as well as the on line measurement of NH3, GHG, and PM inside the barns will be presented.