

Weekly discharge of slurry and collection and destruction of methane gases from covered manure slurry storages can more than halve climate gas emissions from pig production

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In Denmark, there has recently been intensive focus on reducing emissions of climate gasses from animal production in order for Denmark to reach goals for agricultural production in 2030. One newly implemented strategy is removing the manure weekly from the barns in order to reduce the production and emission of methane from the manure. This implies that more organic matter is transferred to the external manure storages for short or long-time storage. Accordingly, this increases the need for technology to handle the production and emission of methane from the storages. A well-proven technology is anaerobic digestion on biogas plants with a significant positive climate effect.

For manure that cannot be processed at a biogas plant, the storages can be covered and the produced methane gases can be collected. A new technology initially designed and used for decades for destroying methane from landfills has been customized and implemented by the company AgroGas in pig production for manure handling. This technology has demonstrated a high efficiency to collect and destroy methane from pig production with combustion of methane in a flaring unit.

In the LESS project, a work package is on development of covers on slurry tanks with a low-tech gas collection system connected to a flaring unit that can handle gases produced with varying flow and methane concentration. The collection and flaring system will be further developed and documented. The advantage with a flaring unit is that it is relatively easy to measure ingoing gases, retention time and flare temperature for documentation of the combustion efficiency. Moreover, it is a flexible on-off technology that can be scaled and implemented on a large number of farms.

The potentials are great as methane is emitted both from raw slurry storages as well as from digested slurry. In Denmark, it is estimated that the potential of covered slurry storages with flaring can reduce climate gas emissions from pig production with up to 50 percent

As methane is a short-lived greenhouse gas, all solutions to reduce methane will have a fast effect on the climate, thus emphasising the importance of methane mitigation technology. Denmark and 109 other countries last year signed the "Global Methane Pledge" to reduce the methane emissions by 30 percent in 2030, and therefore this new flaring technology can prove valuable for the animal production to succeed to reach both national and international emissions targets by 2030.

In the Low Emission Slurry Storages (LESS) project, several technologies to reduce methane emission from manure slurry storages will be developed by a consortium consisting of Aarhus University, Department of Biological and Chemical Engineering, Landia A/S, AgroGas Aps, and SEGES Innovation. The project is funded by the Danish Green Development and Demonstration Programme, GUDP.