

TECHNOLOGY FOR N RECOVERY AS AMMONIA AND GRIT-POOR MANURE READY FOR MONO/CO-FERMENTATION STARTING FROM POULTRY MANURE WITH "POUL-AR®" STRIPPING AND ACIDIC WASHING PROCESS



Keywords: • poultry manure • decontamination • ammonia • stripping • biogas

Key facts:

- **Category of the technology:** stripping + Scrubbing: poultry manure pre-treatment prior to AD
- **Input:** poultry manure
- **Output product(s):** ammonia- and grit-poor manure ready for mono- or co-fermentation
- **Available capacity:** economical minimal input per day is 15 ton dry matter
- **Focusing geographical areas:** EU28
- **Technology status:** TRL7
- **EC/MS Authority permits:**



Summary of the technology:

Poul-AR® pre-treats chicken manure before going into a (CSTR/thermophile) digester. The treatment consists of mixing poultry manure and digestate from the digester, whereby grit, other contaminants as well as the ammoniacal nitrogen are removed from the mixture. The end product can then be fed to a (thermophilic) manure digester without causing anaerobic digestion problems. With the Poul-AR® installation up to 80% of the nitrogen is removed, making the substrate useable in a mono-poultry manure digester (or a co-fermenter). This makes the system interesting for large poultry farms or clusters thereof. In addition, in terms of biogas production, chicken manure is comparable to maize. Replacing maize with chicken manure can therefore bring considerable economic and ecological benefits. The Poul-AR pre-treatment consists of 2 steps: (1) the ammonification, a batch process (24h) in which the ammonia is set free from the manure. (2) the de-ammonification, where the ammonia is stripped from the manure (and washed with an acid to produce N-fertilizers).

Competitive position and advantages:

- Making available poultry manure for digesting
- High biogaspotential (cfr maize) with lower gate fees/costs
- Production of N-rich scrubber water (fertiliser)
- Use of waste heat on biogasite with CHP
- Current TRL: 7 - during 2019 the first full-scale installation will come into operation, so TRL level from 2020 onwards will be 9.
- no liquid fraction to offset, all liquids are circulated internally

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