EIP-AGRI practice abstract

Short title:

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

Summary:

Poul-AR® pre-treats chicken manure at an economical minimal input of 15 tonnes (dm)/per day to make the poultry dung for further anaerobic digestion (biogas). 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 treated poultry manure can then be fed to a (CSTR/thermophile) digester without causing high ammonia-related problems.
With the Poul-AR® installation up to 80% of the nitrogen is removed, making the substrate useable in a mono-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 N-removal though stripping and acidic washing leads in its own right to an ammonia-fertiliser. More particularly 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). Current at TRL7, the technology is – after the 2019 start-up of a full-scale installation – expected to become TRL 9 from 2020 onwards.

For more information: https://nutriman.net/farmer-platform/technology/id_282

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