EIP-AGRI practice abstract

Short title:

Technology for N&P recovery as liquid or dried digestates with "Agrogas" separation, drying, membrane filtration and/or reverse osmosis combined with post-treatment system

Summary:

Anaerobic digestion (AD) is a well-established method for the treatment of organic (waste) streams and for biogas generation. Compared to the initial feedstock the digestate is homogenised, mostly hygienised (cfr EC1069/2009 (animal by-products)), and has a higher nutrient replacement value due to a parcial transfer of the organically bound N to ammoniacal nitrogen.

Agrogas digestate fractions come through several mesophilic and thermophilic digesters and separation (screw press or sieve belt), drying, MBR (membrane filtration) and/or Reverse Osmosis (RO): the digestion and post-treatments occur along a 'vegetal line' or a 'manure/other animal by-products'-line which are completely separate lines. This allows to offer two different types of digestate to the market: with a non-animal manure-status or with an animal manure-status. In the latter case, compulsory hygienisation is achieved through a thermophilic post-digester, followed by separation and drying of the solid fraction, while the thin fraction of the hygienized digestate is mostly further treated at the biological water treatment plant with membrane filtration (MBR). These post-treatments allow Agrogas to reduce volume and transport cost for NPK and organic carbon, and to increase product shelf life. In the post-treatment polymers are used for the screen (or 'sieve') belt press and iron chloride, antifoam and carbon source for biological water treatment. Agrogas treats 70.000 t/y into 60.000 t/y liquid fraction digestate (including concentrated and/or, thickened effluent) and 3.000 t/y dried digestate, leaving 1.000 to 2.000 t/y raw digestate and/or solid fraction digestate.

For more information: https://nutriman.net/farmer-platform/technology/id_263

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