

LIQUID AND SOLID (DRIED) FRACTION DIGESTATE FROM MANURE AND ENERGY MAIZE BY 'AGROGAS' PROCESS



Keywords: digestate • liquid ('thin') fraction digestate • dried solid ('thick') digestate • fertilizer • soil improver

Key facts:

- **Focusing geographical areas:** EU28
- **Product category:** Dried digestates is PFC 1 A (solid organic fertiliser) or PFC 3 A (organic soil improver)(or in blend). In general digestate products with Vlaco-certificate should be eligible to be categorised as Component Material Category (CMC) 5 ('other digestate than energy crops digestate') cfr Fertiliser Regulation.
- **Product status:** available on market
- **Input material:** manure, organic wastes (cfr Vlarema (Flanders) and positive list FOD (B)) and/or energy maize
- **General appearance:**
 - **Liquid fraction:** liquid, dark
 - **Dried solid fraction:** dry, powdery or coagulated, dark
- **Nutrient content N-P-K:**
 - **Liquid fraction:** 5,7-9,9 N% (dry matter), 2,1-6,4% P₂O₅ (dm), 5,4-8,9% K₂O (dry matter),
 - **Dried solid fraction:** 2,4-3,1 N% (dry matter), 3,7-5,5% P₂O₅ (dm), 1,5-4,2% K₂O (dm)
- **Other macro elements:**
 - **Liquid fraction:** 1,8-5,6% CaO (dm), 2,1-4% SO₃ (dm)
 - **Dried solid fraction:** 2,9-4,4% CaO (dm), 1,9-2,8% SO₃ (dm), 1-1,6% MgO (dm)
- **OC (Organic Carbon):**
 - **Liquid fraction:** 29,5-35,6% (dm)
 - **Dried solid fraction digestate:** 34,5-40,5% (dm)
- **DM:**
 - **Liquid fraction:** 3,5-8,5% (dm)
 - **Dried solid fraction:** 80-90% (dm)
- **pH:**
 - **Liquid fraction:** 8,4-8,6
 - **Dried solid fraction digestate:** 8,5-9,3
- **Permit availability:** all Agrogas products applied on land have the required permits(Vlaco (1y) & FOD (5y)) from the certification body and authorities to guarantee its quality and allow its use



Summary:

Characteristics of digestates in general are: multi-nutrient (N, P, K,..) soil improver or fertiliser that have been homogenised, mostly hygienised (cfr EC1069/2009 (animal by-products)) and have a higher NRV compared to the initial feedstocks. The digestate of Agrogas is produced along a 'vegetal' line and an 'animal' (animal manure status) line. The digestate is separated into a liquid and a solid fraction. It must be kept in mind that the composition of digestate can vary depending on the flow of input materials that are digested. To give a representative view of value and variability of parameters a 30-percentile to 70-percentile range is given in this sheet – more specifically data spanning 3 years of sampling & analyses on digestate product-types. A 'vegetal' or animal manure status liquid fraction with a dry matter-content of 3,5-8,5% – issue of the digestate passing a screw press – may be used directly or be further post-treated (MBR, RO and/or evaporation). Agrogas' solid fraction digestate (with animal manure-status) – issue of the digestate passing a ('sieve' or 'screen') belt press – is usually dried until reaching a dry matter-content of 80-90%.

In the new Fertiliser Regulation dried digestate can be categorized as PFC 1 A (solid organic fertiliser) or PFC 3 A (organic soil improver)(or in blend). Prices for digestate can vary between negative prices – depending on NPK-content and whether or not the digestate has an animal manure status (competition with manure in e.g. Flemish region) and positive prices (35€/ton) for dried digestate with high DW (85-90%).

How to use:

- **Type of farming:** low input, conventional
- **Cultivation methods:** open field, greenhouse
- **Recommended crops:** cereals, fresh vegetables and strawberries, potatoe, sugar beet, fresh vegetables and strawberries, grapes, permanent crops (fruit trees), permanent grassland, ..
- **Application doses:**
 - **Liquid fraction:** on average 30 tonnes/ha (depending on soil, season, crop,...)
 - **Dried solid fraction digestate:** on average 2 t/ha (depending on soil, season, crop,...)

Key product features:

- Homogenised end products with optimised (ammonium) nitrogen level
- Hygienised digestate is guaranteed free of pathogens, insect larvae and weed seeds
- Multi-nutrient
- Conform strict requirements (organic & inorganic/physical contaminants) (ARC (Flanders) and Fertiliser (EU))
- Input/output inspected on visual contaminants

Key product benefits:

- Closing material and nutrient cycle: secure source of carbon, nitrogen, phosphor, and other macro-/micro-elements
- End products of energetic recuperation leading to negative footprints (CPF) according to Vlaco-'s CO2-tool
- Fertilising and/or soil improving qualities
- Dried digestate guarantees an optimized storage & transport, and longer shelf life of the product

Competitive position and advantages:

- Closely monitored and quality-certified products cfr most strict EU quality levels (ARC (Flanders))
- Digestates have relatively low prices per ton nutrient
- Dried digestate improves soil biodiversity by increasing carbon levels

Contact

Name: Sven Bogaerts

Company: Agrogas

Web: <https://www.facebook.com/Agrogas/>;
<https://www.vlaco.be/vlaco-vzw/producten/agrogas>

e-mail: sven.bogaerts@agrogas.be