

EIP-AGRI thematic practice abstract

Short title:

The use of **digestate** as fertilizer in Northern Europe.

Summary:

Digestate is a fertiliser obtained from anaerobic digestion process where microorganisms break down organic materials in the absence of oxygen. Input material: all kinds of biodegradable organic wastes including animal manure, farmyard manure, green manure, food waste, food-processing wastes, municipal waste, corn silage, sewage sludge, effluent from wastewater treatment plant etc.

Digestate contains a good amount of nitrogen, phosphorus and potassium. After anaerobic digestion, the percentage of readily available nitrogen is higher in digestate compared to the same organic material in its raw form, thereby increasing its fertilising value. The recovery of nutrients from digestate as crop fertilizer can help to close the nutrient loops and contribute to a more sustainable agriculture. Additionally, organic matter in digestate can build up the humus content in the soil which is particularly crucial for arid and semi-arid lands with low carbon content.

The main bottleneck for the application of digestate in Northern Europe is that this product is still regulated as manure according to the Nitrate Directive (91/676/EEC), which means no more than 170 kg total N from digestate is allowed to be applied to the field. As 30-50% of the digestate N is organic, which is not directly plant available, the actual effective N supply may not fulfill the requirement of crop and thus need supplement from synthetic fertilizers. Besides, the slow-degradable organic matter from digestate may increase the risk of post-harvest N leaching if applied improperly.

For more information:

- https://nutriman.net/farmer-platform/product/id_264 (Belgium)
- https://nutriman.net/farmer-platform/product/id_270 (Belgium)