Digestate from grass - a liquid fertiliser

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Anaerobic digesters on farms have a valuable role in producing energy from biogas for heat and electricity, and a very valuable liquid fertiliser called digestate. Some farms growing their own feedstock are using grass which is cheap and easy to grow, cost effective and uses the existing farm infrastructure. Annual cultivations are not required; making it a more sustainable and environmentally friendly option compared to maize.

Liquid digestate (compared to slurry) is a high N P K (nitrogen, phosphate and potash) product and is just as good at growing grass as manufactured compound fertilisers.

It's important however to make sure it's applied in ways that limit the losses of those nutrients (ammonia and nitrous oxide) to the atmosphere. The greatest losses will happen if its surface spread but the best way is to spread using direct injection into the soil or with a trailing shoe machine. This way losses can be reduced by **40-50%.**

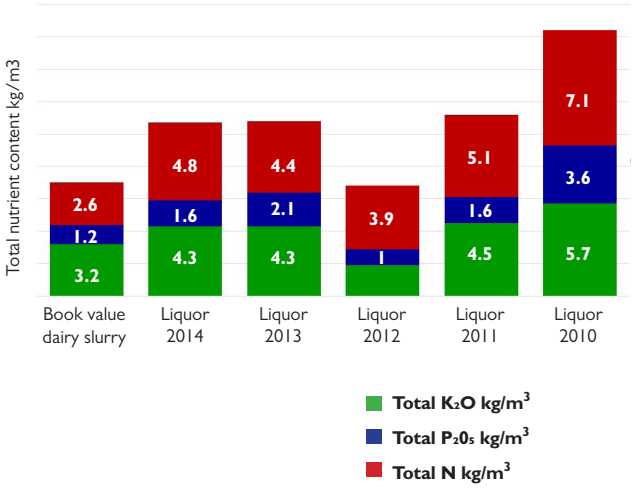
Because the nutrient content can be variable depending on the feedstock, it is advisable to

- Analyse digestate for N, P, and K regularly
- Apply in accordance with a Nutrient Management Plan to meet grassland needs as detailed in RB209

Digestate in practice

On a dairy farm involved in a research project with Aberystwyth University, the liquid digestate produced always had more nutrients than the "book value" for dairy slurry and was worth between £10 and £20 more per 1000gal. The chart shows the N P K content over several years.

Bank Farm: Nutrient Content of Digestate Liquor



At Newton Farm (a Farming Connect Demo farm at Scethrog) digestate from food waste was applied and compared to compound fertiliser and no fertiliser treatments. Grass growth after 7 weeks was equal to or better than compound fertiliser with significant cost savings. Digestate has been shown to be a viable option for farmers within the catchment area, not only being much more economical compared to compound fertiliser but also by helping to restore natural recycling of nutrients and recycling scarce nutrients, such as phosphorous. By using digestate instead of some synthetic fertilisers derived from natural gas, we can also save energy, cut consumption of fossil fuels and reduce our carbon footprint.

Further information:

Using digestate as a renewable biofertiliser (YouTube)
The National Non Food Crop Centre (NNFCC) www.biogas-info.co.uk
Digestate and Compost Use in Agriculture (WRAP) www.wrap.org.uk
Digestate Use in Agriculture (Gwefan prosiect WRAP) www.wrap.org.uk

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