

## Manure and nutrient management in grasslands

### Goal

Sustainable manure and nutrient management in permanent grasslands

### Short description of the measure

Provisions for good agricultural practice codes regarding fertilization practices are listed in Council Directive 91/676/EEC, concerning the protection of waters against pollution caused by nitrates from agricultural sources (EEC, 1991), and should be consulted. These provisions cover:

- a) the appropriate periods and procedures for the application of fertilizers;
- b) the adequate capacity and construction of storage facilities for fertilizers.

According to Annex III of the same directive, for each farm or livestock unit, the amount of livestock manure applied to the land each year (including by the animals themselves) must not exceed the limit of 170 kg/ha for nitrogen. Some Member States may have justified the need for a different limit and therefore, depending on the location at stake, regulations should be consulted.

Organic fertilizers are recommended and therefore the possibility and advantages of their use must always be considered. Both liquid (also designated as slurry – a mixture of faeces, urine and water, with no significant quantities of bedding) and solid manure (from a variety of livestock species) should be applied after composting (which provides a dark, friable, stabilised, high dry matter final product) (Figure 1). Rapid incorporation after application decreases losses of nitrogen as ammonia (Shepherd et al., 2002) (Figure 2).



Figure 1 – X. Photo credits: © pixabay.com

In order to prevent nutrient run-off into existing water bodies, manure must not be applied on:

- a) water-saturated or flooded soils;
- b) deeply frozen soils;
- c) soils covered with snow.

Buffer zones, between seasonal and permanent water bodies and the areas where organic fertilizers are to be applied, should respect a minimum of 10 meters in width, in order to be effective. These should be primarily composed of native vegetation and situated along each border of the water bodies. Some Member States may require larger buffer zones and therefore local regulations should be consulted.



Figure 2 – Application of organic fertilizer.

**Quality elements of soundly implemented biodiversity measures**

- The amount of livestock manure applied did not exceed the limit of 170 kg/ha or higher (if the Member State requires so) of nitrogen;
- Organic fertilizers have been given priority;
- Buffer zones of at least 10 meters or higher (if the Member State requires so) next to the water bodies, have been respected;
- Enough storage facility has been made available.

**Effects on biodiversity**

(ecosystems, species, soil biodiversity)



- Clean and healthy water bodies allowing for richer and more stable trophic webs of plant and animal communities;
- Higher Soil Organic Matter (SOM) allowing for richer soil and insect biodiversity.

**Other positive effects/benefits for the farmer**

- Adequate manure and nutrient management of pastures allows for:
- Higher SOM and therefore higher crop and pasture growth, yield and quality (palatability, digestibility and nitrogen content);
- The replenishment of phosphate and potash taken from the soil after cutting grass for silage or hay;
- Reduced impact on global nutrient cycles;
- Prevention of diffuse pollution.

<b>Indicator/key data</b>	<ul style="list-style-type: none"> <li>■ Nitrogen concentration measured in the soil;</li> <li>■ Phosphate and potash concentrations measured in the soil;</li> <li>■ SOM measured in the soil;</li> <li>■ Soil biodiversity;</li> <li>■ Flora and fauna observed in local water bodies.</li> </ul>
<b>References</b>	<ul style="list-style-type: none"> <li>■ EEC, 1991. Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources. Off. J. Eur. Communities L 375, 1–8.</li> <li>■ Shepherd, M., Gibbs, P., Philipps, L., 2002. Managing manure on organic farms. ADAS Gleadthorpe Research Centre and Elm Farm Research Centre, Mansfield and Newbury, UK.</li> </ul>

## Further information: [Knowledge Pool](#)

This Action Fact Sheet belongs to the training package for product and quality managers of companies and was developed within the project LIFE Food & Biodiversity (Biodiversity in Standards and Labels of for the Food Industry). The main objective of the project is to improve the biodiversity performance of standards and sourcing requirements in the food industry by helping standard organisations to integrate efficient biodiversity criteria into their schemes and motivating food processing companies and retailers to include comprehensive biodiversity criteria into their sourcing guidelines.

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