

Best Practice Information Sheet

Organic by-products

Sheet 4.0a

Making the most of FYM

Why change?

FYM is a valuable resource. Using recent prices for nutrients, the manure produced during winter housing has a potential value of £70-80/dairy cow. By taking action to manage FYM effectively you can often:

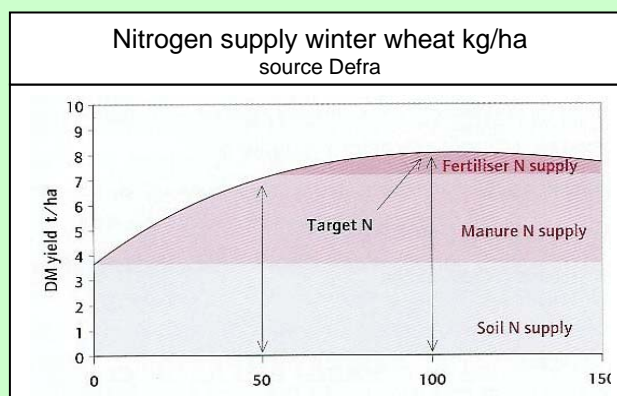
- reduce application costs
- save on nutrients, minerals and trace elements
- improve soil structure and yields
- reduce the risk of pollution.



Farm yard manure.

Steps to success

- 1. Review your current situation** by identifying how much FYM you produce (use typical guideline quantities if necessary), and establishing the nutrient content of your FYM at the time of application by analysis or by referring to standard values. Minimise any losses from storage and plan to supply a calculated amount of the crop nutrition from your FYM.
- 2. Identify potential opportunities** by considering your cropping regime, the availability of FYM and windows of opportunity to gain good access to cropland, such as forage maize. E.g. cattle FYM applied in spring before forage maize saves approximately £360/ha in reduced mineral fertilisers. Consider composting.
- 3. Calculate the cost-benefit of these opportunities** by following these practical steps:
 - estimate the total nutrients in your FYM
 - estimate available nutrients in your FYM
 - estimate the crop requirements
 - identify soil nutrient reserves
 - calculate the application rate to meet 50-60% of the difference between soil reserves and crop needs
 - identify the inorganic fertiliser top-up needed
 - calculate the saving in reduced fertilisers



Develop an action plan that identifies any information, systems and advice you may need. This should include typical application rates to supply known amounts of total N and delivery rates of applicators.

Implement the action plan taking care to follow application timing strategies for FYM:

- winter cereals from mid-July to the end of October
- spring cereals from January to mid-March, and August to the end of December
- potatoes from January to the end of March, and mid-August to the end of December.

- 6. Check** to ensure suitable weather and soil conditions, and that you are making accurate, uniform applications.
- 7. Review/monitor progress** by checking crop yields and soil nutrients to avoid excessive build-up. Make inspection of watercourses for runoff after FYM application a routine task.

Organic by-products

Sheet 4.0b

Making the most of FYM - Practical examples

Livestock manures on arable crops

In this example, a farm with 300ha of combinable crops, roots and 100 dairy cows spread manure during autumn. The nutrient value was not accounted for. As a result, problems involving low sugars and high amino acids occurred in sugar beet, whilst the potato crop suffered from excess nutrients.

After independent advice, the farm developed a nutrient management plan taking full account of organic manure for both previous and future applications.

Soils in all fields were sampled on a three-year cycle, and top-up fertiliser was applied on an individual field basis to exact crop and yield requirements.

The new system saved over £6,000/year and made a positive improvement to farm performance.



Understand the value of your FYM

Broiler litter on potatoes

In this example, broiler litter applied in spring and incorporated within 24 hours is estimated to have an **available** nutrient value of N 13.5 kg/t, P 15 kg/t, and K 16.2 kg/t. When applied at a rate of 8t/ha this supplies 108 kg/ha of N, 120 kg/ha of P and 130 kg/ha of K for the following potato crop.

The soil indices of P and K are both assessed as 2.

The crop requirements are 220 kg/ha of N, 180 kg/ha of P and 300 kg/ha. However, making allowance for soil reserves and the broiler manure, only 112 kg/ha of N, 60 kg/ha of P and 170 kg/ha of inorganic fertilisers are needed.

The saving against the nutrient requirements of potatoes reduces the NPK fertiliser inputs for this crop by approximately £420/ha. The total saving on NPK fertiliser inputs over the crop rotation is about £520/ha.



Application can be as critical as harvesting

Remember

- Good management of FYM will reduce application costs, save on nutrients, minerals and trace elements, improve soil structure and yields, and reduce the risk of pollution - but take specialist advice first.
- FYM can be applied at any time subject to weather, soil conditions and crop growth.
- Applications are limited in Nitrate Vulnerable Zones (70% of agricultural land in England).

For further information: Defra (www.defra.gov.uk), Environment Agency (www.environment-agency.gov.uk), ECSFDI (<http://www.defra.gov.uk/foodfarm/landmanage/water/csf/delivery-initiative.htm>), Natural England (www.naturalengland.org.uk), Cross Compliance Helpline 0845 345 1302 (www.crosscompliance.org.uk) and ART (www.associationofrivertrusts.org.uk)



This information sheet is part of a series providing farmers with advice on land management practices to protect water bodies, produced by Association of Rivers Trusts with support from the England Catchment Sensitive Farming Delivery Initiative. The advice will also enable farmers to use farm resources more efficiently and help meet Nitrate Vulnerable Zone and Soil Protection Review requirements under Cross Compliance and environmental regulation.



Based on Information Sheets originally created by the Westcountry Rivers Trust (www.wrt.org.uk) and developed with EAGGF objective one funding and published under permission by DEFRA and ART