

Best Practice Information Sheet

Nutrient management

Sheet 34.0a

Fertiliser management

Why change?

Good fertiliser management aims to optimise profit and minimise environmental impact. By balancing accurate, well-timed fertiliser applications with the nutrients in your soils and manures to meet crop needs, you can benefit from:

- cost savings due to increased efficiency and reduced inputs
- optimum crop nutrition, yield and quality
- reduced risk of watercourse pollution, legal costs and fines
- improved habitat and fishery quality.



*Good FYM spreading practice –
Buffer strip along hedge*

Steps to success

- 1. Review the current situation** by examining fertiliser management on your farm. Consider your planning system, the accuracy and timing of your applications, the calibration of your machinery and the extent to which you account for the nutrient value in your soils and manures.
- 2. Identify potential opportunities** for improving your fertiliser management. If you can identify pollution, over-application and misapplication of fertilisers, as well as a mismatch between crop requirements and inputs, you could improve production, save money and protect the environment.
- 3. Calculate the cost-benefit of these opportunities** by estimating the cost of improving your fertiliser management, e.g. calibration of machinery, deflector plates, and planning time, versus the benefits of improved crop production, reduced inputs and lower risk of pollution.
- 4. Develop an action plan** for improved fertiliser management:
 - use a map-based fertiliser management plan to record crop types, timing and application rates of fertilisers, and crop results on a field-by-field basis
 - calculate fertiliser application rates accurately for individual fields. Assess fertiliser need by accounting for the nutrient reserves in your soils and organic manure applications, and subtract these from the nutrient requirements of your crop. Consider monitoring crop nutrient status as a means of accurately applying fertilisers throughout the growing period
 - avoid over-application and misapplication of fertilisers to save money and reduce pollution. Spread only when necessary and when crops can take up nutrients. Do not spread within 10m of watercourses or within 1-2m of field margins. Consider using deflector plates or tilt mechanisms to help you. Do not spread in strong winds or when the ground is waterlogged or frozen. Calibrate and maintain equipment regularly to ensure a uniform spread pattern and an accurate application rate
 - select fertilisers carefully. Consider cost-effectiveness, take account of the nutrient percentage and the availability of nutrients for crop uptake, and make sure that the physical quality of solid fertilisers will allow accurate spreading
 - establish buffer areas at field margins and adjacent to watercourses to minimise runoff of nutrients
 - observe mandatory guidelines for application of fertilisers if your farm lies within a Nitrate Vulnerable Zone (NVZ). NVZ and cross compliance helpline 0845 345 1302
 - refer to the **Fertiliser Recommendations Handbook** Defra RB209.
- 5. Check** the quality of the watercourses and wildlife habitats on your farm regularly for signs of pollution due to nutrient runoff. Aim to minimise nutrient losses to safeguard the environment and save money.

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Fertiliser management - Practical examples

Accurate applications reduce costs

There is a whole range of practical ways to reduce costs and wastage, which include **not spreading**:

- hedgerows
- woodland
- watercourses
- wetlands
- frozen or flooded ground
- on windy days
- high index soils
- low Ph soils until limed
- until the crop needs nutrients
- until the spreader is calibrated
- until a prill deflector is fitted
- before/during wet weather periods
- within the buffer zones required by Cross Compliance



Inorganic fertilizer is increasingly expensive.

Spatial targeting of fertilisers

In this example, a farmer decided to review his management of fertiliser applications on 6.7 ha of grassland, including some wetland areas. He restricted the application of 25:5:5 fertiliser to within 10m of the field boundaries. He consequently avoided encouraging unwanted weed species in the hedgerows. Other hedgerow plants, which cannot tolerate high N applications, were thus protected together with the insects, including valuable pest predators that they harbour.

He also avoided application onto wetlands because the N is rapidly gassed off in such areas, providing little or no benefit.

By doing this he saved some £1000 in fertiliser costs and three hours labour at £20/hour by not needing to put a prill guard on the spreader and by reduced application costs. This gave a total saving of £1060 a year, and a payback within a year, without any recognisable reduction in yield.



Targetted application saves time and

Remember

- Minimise fertiliser inputs to maximise economic returns and safeguard the environment. Calculate the nutrient requirement of the crop, and then deduct the nutrients supplied from manures and the soil reserves to give the balance that needs to be supplied as inorganic fertiliser.
- Apply fertilisers accurately to maximise crop uptake, minimise losses and avoid pollution. Do not spread within 10m of watercourses or within 2m of field margins.

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.



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