

PRACTICAL USE OF MANURES

WHAT`S IN IT?

To use dairy cow slurry or FYM as a fertiliser, you need to have a reasonably good estimate of the how much nitrogen, phosphate and potash it contains. You can get this from:

- Laboratory analyses
- Standard values
- On farm tests
- Computer programs

LABORATORY ANALYSES

This is by far the best method of assessing nutrient content of the slurry or FYM on your farm and involves sending a sample off to a reputable lab. It essential that you send a sample that is **representative** of all the slurry/FYM in the store or spread on land. Sending a sample scraped from the top or one corner of the store is a waste of time and money because the nutrient content will vary from one part of the store to another.

STANDARD VALUES

These are published in the *Managing Livestock Manures* series of booklets and in other advisory literature. They give “typical” values for total nitrogen, phosphate and potash and so should only be used as a guide. Slurries and FYMs are very variable commodities and that on your farm may be far from “typical”.

ON FARM TESTS

- **SLURRY N METERS**

These include the Quantofix and the Agros Meter both of which are available commercially. They measure the available N content in a representative sample of slurry.

- **SLURRY NPK GRAPH**

This is specifically for dairy cow slurry. It is based on the standard values but enables adjustments to be made according to the dry matter content of the slurry on your farm. The main factor affecting the nutrient content of a particular type of slurry is how much water has been added from rainfall, yard run-off, parlour etc. Thick, undiluted slurry contains more nutrients per cubic metre than slurry that has been diluted with a lot of water. The Slurry NPK Graph is based on Standard Values for dairy cow slurry but makes allowances for how much water has been added so gives a better estimate for the slurry on your farm. 10-12% dry matter slurry, or “porridge”, has no water added to the dung and urine scraped from the floor of the building whereas 6% dry matter, or “medium soup” is typical of the slurry in many stores.

COMPUTER PROGRAMS

Both `MANNER` and `PLANET` are available for free. The former estimates available N applied in manures from fairly straightforward input data. The latter is a much more comprehensive system for fertiliser and manure management on your farm.

How to take a representative sample

It is essential that you take a representative sample of slurry or FYM for laboratory analysis or if you intend using any of the on-farm tests for slurry.

Details of how to do this for slurry and FYM are given in *Managing Livestock Manures Booklet 3 Spreading systems for and solid manures*. These draw attention to the important SAFETY aspects of collecting samples from stores, heaps and spreaders.

Where safe and feasible, the general principle of all sampling is to collect a number of samples (e.g. from different parts of the store), bulk them together, mix them and take a representative sub-sample to send away.

- Slurry stores. Take at least 5 samples, mix together and sub-sample. For above ground tanks, it is best that the slurry is fully agitated and samples taken from the reception pit. It is more difficult to deal with lagoons, unless it has been well mixed, and often better to take samples during spreading (see below).
- FYM heaps. Provided that it is safe to do so, identify at least 10 locations that appear to be representative of the heap. Clear away any weathered material, dig a hole about 0.5 m deep and take about 1 kg sample from each location. Break up large lumps, mix samples together and take a representative sub-sample to send away.
- Spreading. It may be safe and feasible to take samples from the stationary slurry tanker at intervals during spreading or from the exposed face of an FYM heap. A good method is to place suitable containers or trays (e.g. ice cream containers weighted with a stone) in the field before spreading begins. Collecting them up afterwards, bulking, mixing and sub-sampling will provide a representative sample of what has been spread.

Slurry samples can be sent off in suitable screw cap plastic containers and FYM in 500 gauge polythene bags. Store in a fridge for a maximum of 7 days if you cannot post samples immediately.

Sample analyses

Get the sample analysed for dry matter, total nitrogen (N), phosphate (P_2O_5), potash (K_2O), sulphur (S) and magnesium (Mg). You may also get ammonium-N (NH_4-N), a measure of the N that is potentially available for uptake by your crops. The actual amount available will depend on the time of year that you spread (see Table 2). Similarly, if not already done, you will need to convert the total values for phosphate and potash to available using the table.

Finally, although it may seem a bit of a chore, getting a good estimate of slurry or FYM nutrient content is well worthwhile because it will enable you to save on purchased fertiliser. Unless your management or feeding regime changes, there is no need to get an analysis every year.

Where to send your sample

You can send your sample to one of many labs.