Manure Management Plans and Nutrient Content of Organic Manures

Advisory Notes from AHDB RB209 Nutrient Management Guide

Livestock Manures

The nutrient content of livestock manures will depend on a number of factors, including the type of livestock, the diet and feeding system, the volume of dirty water and rainwater entering storage facilities and the amount of bedding used. Consequently, the nutrient content of manures produced on any particular unit may vary significantly from the typical values in the tables. Therefore, although the following tables provide useful information on the typical nutrient content of livestock manures, it can be worthwhile analysing representative samples.

FARMYARD MANURES

Note: to convert kg/tonne to units/ton, multiply by 2.

Table 1. Typical dry matter and nitrogen content of Farmyard Manure (fresh weight basis)

FYM	Typical Dry Matter (%)	Total nitrogen (kg N/tonne)	Total nitrogen (units/tonne)
Cattle	25	6.0	12.0
Sheep	25	7.0	14.0

Table 2. Percentage of total nitrogen available to next crop, following FYM applications

Application	Type of FYM	Autumn (Aug – Oct)		Winter (Nov – Jan)		Spring (Feb – Apr)	Summer, use on grassland
		Sandy/shallow soil	Medium/heavy soil	Sandy/shallow soil	Medium/heavy soil	All soils	All soils
Surface-applied	Old and fresh	5	10	10	10	10	10
Soil-incorporated 24 hours after application	Old	5	10	10	10	10	N/A
	Fresh	5	10	10	10	15	N/A

Table 3 Farmyard manure – phosphate, potash, magnesium and sulphur (fresh-weight basis)

FYM	Dry Matter (%)	Phosphate			Potash			Sulphur	Magnesium
		Total phosphate (kgP_2O_5/tonne)	Availability (%)	Available phosphate (kg P_2O_5/tonne)	Total potash (kg K_2O/tonne)	Availability (%)	Available potash (kg k_2O/tonne)	Total sulphur (kg SO_3/tonne)	Total magnesium (kg MgO/tonne)
Cattle	25	3.2	60	1.9	9.4	90	8.5	2.4	1.8
Sheep	25	3.2	60	1.9	8.0	90	7.2	4.0	2.8

CATTLE SLURRY & DIRTY WATER

Note: to convert kg/m3to units/1000 gallons, multiply by 9.

Table 4 Cattle slurry and dirty water

Type of slurry	Typical Dry Matter (%)	Total nitrogen (kg N/m^2)	Total nitrogen (units/1000 gallons)
Cattle	2.0	1.6	14
	6.0*	**2.6***	**23**
	10.0	3.6	32
Dirty water	0.5	0.5	4

*Typical dry matter and nitrogen contents of cattle slurry

Table 5 Percentage of total nitrogen available to the next crop, following cattle slurry and dirty water applications (% of total nitrogen)

Type of slurry	Dry Mater (%)	Autumn (Aug – Oct)		Winter (Nov – Jan)		Spring (Feb – Apr)	Summer, use on grassland
		Sandy/shallow soil	Medium/heavy soil	Sandy/shallow soil	Medium/heavy soil	All soils	All soils
Cattle slurry – liquid Surface applied	2	5	30	30	30	45	35
	6	5	25	25	25	35	25
	10	5	20	20	20	25	20
Cattle slurry – liquid Soil-incorporated 6 hours after application	2	5	35	25	35	50	N/A
	6	5	30	20	30	40	N/A
	10	5	25	15	25	30	N/A
Cattle slurry – liquid Shallow-injected	2	5	30	35	35	55	45
	6	5	25	25	30	45	35
	10	5	20	30	25	35	30
Dirty water Surface applied		10	35	35	35	50	30

Table 6 Cattle slurry and dirty water – phosphate, potash, magnesium and sulphur (fresh-weight basis)

Type of slurry	Dry Matter (%)	Phosphate			Potash			Sulphur	Magnesium
		Total phosphate (kgP_2O_5/m^3 or/tonne)	Availability (%)	Available phosphate (kg P_2O_5/m^3 or /tonne)	Total potash (kg K_2O/m^3 or/ tonne)	Availability (%)	Available potash (kg k_2O/m^3 or/ tonne)	Total sulphur (kg SO_3/m^3)	Total magnesium (kg MgO/m^3)
Cattle	2	0.6	50	0.3	1.7	90	1.5	0.3	0.2
	6	1.2	50	0.6	2.5	90	2.3	0.7	0.6
	10	1.8	50	0.9	3.4	90	3.0	1.0	0.9
Dirty water	0.5	0.1	50	0.05	1.0	100	1.0	0.1	0.1

For further information please see:
Nutrient Management Guide (RB209) https://ahdb.org.uk/nutrient-management-guide-rb209