

# PRACTICAL USE OF MANURES

## CROP FERTILISER RECOMMENDATIONS

In order to work out the most economic and environmentally sound bag fertiliser and manure applications, you will need to know the fertiliser recommendations for target crops on your farm (see "How much to apply" form). This information is contained in the Defra publication Fertiliser Recommendations for Agricultural and Horticultural Crops (RB 209). Copies can be purchased from The Stationary Office, Publications Centre, PO Box 29, Norwich, NR3 1GN (0870 600 5533) or downloaded from the Defra website;

[www.defra.gov.uk/farm/environment/land-manage/nutrient/index.htm](http://www.defra.gov.uk/farm/environment/land-manage/nutrient/index.htm)

The following notes and tables are intended for guidance only. They refer to those crops most likely to be grown on dairy farms in the South West and to receive manures. For more information, or if in any doubt, refer to RB209 or seek further advice from a qualified professional.

### NITROGEN

Recommendations for nitrogen are based on SOIL NITROGEN SUPPLY or SNS. This is defined as the amount of nitrogen in the soil that is available for plant uptake during its entire life. It can be determined by sampling and analysis for Soil Mineral Nitrogen + total crop nitrogen content + estimate of mineralisable nitrogen (N made available from break down of organic matter). This is an expensive procedure and it is often feasible to use a less accurate but simpler field assessment method. Described in RB 209, the method gives an SNS index from 0-6 for arable crops and low, moderate or high for grassland. It takes into account previous cropping or grassland management, previous fertiliser and manure use, soil type and winter rainfall.

Generally, for arable rotations, Index of 1 or 2 would apply to most medium to heavy soils in high rainfall areas such as the South West.

One index should be added where manure is applied annually. Similarly, moderate or high would apply to most intensive grassland.

#### PHOSPHATE AND POTASH

Appropriate recommendations for these nutrients should be based on regular soil sampling and laboratory analysis every 4 years. This will give a measure of the amounts of nutrients available for uptake by crops often expressed as P and/or K Index ranging from 1 (deficient) to 9 (very large). High P Indices should be avoided because there is a risk of pollution from losses to water. Maintenance (M in tables) is the application rate needed to replace that removed from the soil in the harvested crop without affecting the soil index.

#### OTHER NUTRIENTS

In addition to nitrogen, phosphate and potash, magnesium, sulphur are required by crops in relatively large quantities and are commonly applied as fertilisers. Calcium is applied in lime to correct soil acidity. Manures contain useful quantities of magnesium and of sulphur. Typical amounts of these found in manures are given in tables in RB209 and in the series of booklets "*Managing Livestock Manures*". Manures also contain a wide range of trace elements needed by crops.

#### NOTES

**Abbreviated fertiliser recommendations for FIRST CUT GRASS SILAGE**

	kg/ha				Units/acre			
Nitrogen	Soil Nitrogen Supply (SNS)				Soil Nitrogen Supply (SNS)			
	Low	Med	High		Low	Med	High	
	150	120	120		120	96	96	
Phosphate and potash	Soil Index				Soil Index			
	0	1	2	3	0	1	2	3
Phosphate	90	65	40 M	20	72	52	32 M	16
Potash	80	80	80 (2-) 60 (2+)	30	64	64	64 (2-) 48 (2+)	24

NB 1. For N, apply 40 kg/ha (32 units/acre) in mid February – early March and the remainder in late March – early April at least 6 weeks before cutting.  
 2. M = maintenance dressing. 3. If in doubt, consult RB 209!

**Abbreviated fertiliser recommendations for MAIZE SILAGE**

	kg/ha					Units/acre				
N	Soil Nitrogen Supply (SNS)					Soil Nitrogen Supply (SNS)				
	0	1	2	3	4	0	1	2	3	4
	120	80	40	20	0	96	64	32	16	0
P & K	Soil Index					Soil Index				
	0	1	2	3	4	0	1	2	3	4
Phosphate	110	85	60M	20	0	88	68	48M	16	0
Potash	230	205	180(-2) 124(+2)	110	0	184	164	144 (-2) 124 (+2)	88	0

NB 1. M = maintenance dressing 2. If in doubt consult RB209

## Abbreviated fertiliser recommendations for 2<sup>nd</sup> and 3<sup>rd</sup> CUT GRASS SILAGE and STUBBLE TURNIPS

	kg/ha			units/acre		
	Soil Nitrogen Supply, P & K Index			Soil Nitrogen Supply, P & K Index		
	1	2	3	1	2	3
<b>2<sup>nd</sup> Cut grass (15t/ha)</b>						
Nitrogen	110	100	100	88	80	80
Phosphate	25	25M	0	20	20M	0
Potash	100	90M (2-) 60M(2+)	40	80	72M (2-) 48M (2+)	32
<b>3<sup>rd</sup> Cut grass (9t/ha)</b>						
Nitrogen	80	80	60	64	64	48
Phosphate	15	15M	0	12	12	0
Potash	80	80M (2-) 40M (2+)	20	64	64M (2-) 32M (2+)	16
<b>Stubble Turnips</b>						
Nitrogen	90	80	60	72	64	48
Phosphate	50	25	0	40	20	0
Potash	75	35	0	60	28	0

NB 1. M = Maintenance dressing. 2. For N, 1,2 and 3 = low, moderate and high Soil N Supply. 3. Assumes 68–70 D silage. 4. If in doubt refer to RB209!

## Abbreviated fertiliser recommendations for some autumn/winter sown crops and grass establishment

	kg/ha				units/acre			
	0	1	2	3	0	1	2	3
<b>Oil seed rape</b>								
Nitrogen (seedbed)	30	30	30	30	24	24	24	24
Phosphate	100	75	50M	0	80	60	40M	0
Potash	90	65	20 - 40	0	72	52	16 - 32	0
<b>Wheat and feed barley</b>								
Nitrogen (seedbed)	0	0	0	0	0	0	0	0
Phosphate	110	85	60M	20	88	68	48M	16
Potash	95	70	20 - 40	0	76	56	16 - 32	0
<b>Grass establishment</b>								
Nitrogen (seedbed)	0	0	0	0	0	0	0	0
Phosphate	120	80	50	30	96	64	40	24
Potash	120	80	40 - 60	0	96	64	32 - 48	0

NB 1. M = maintenance dressing; 2. Rape is likely to be responsive to sulphur, some of which will be provided by cattle slurry. 3. If in doubt, refer to RB 209!