

Information Sheet:

Manure and Slurry - Poultry

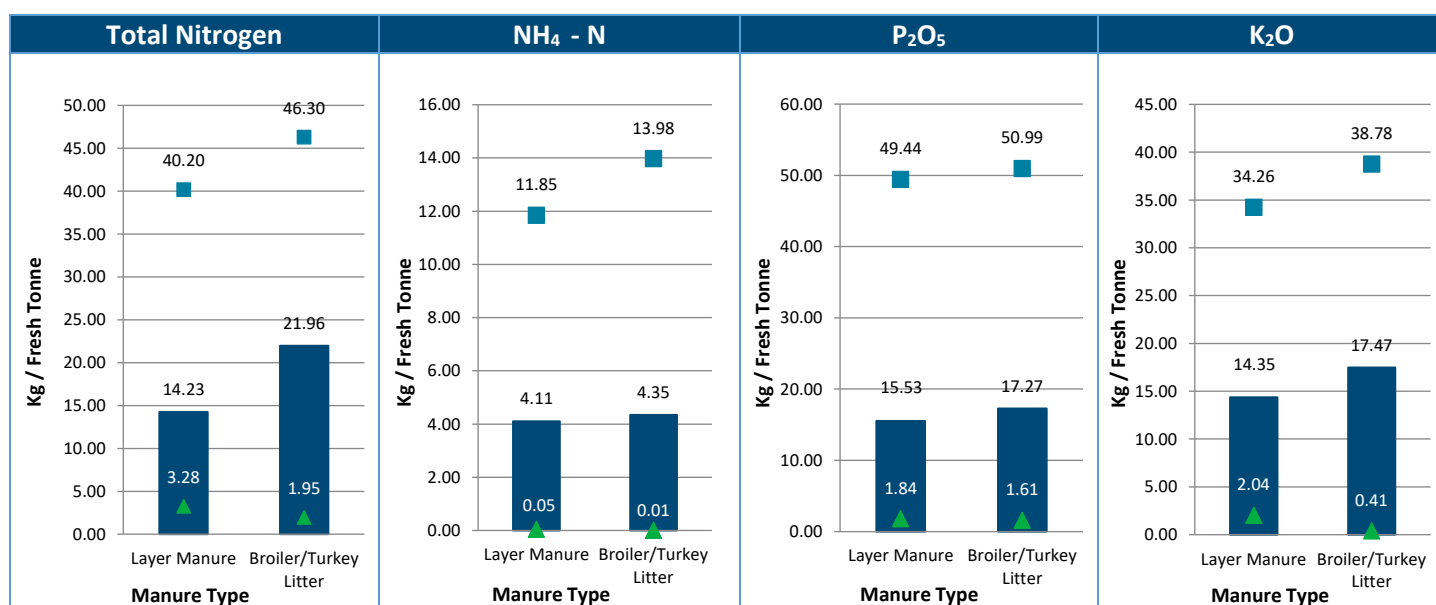
NRM has conducted a review of agricultural manures and slurries going back to January 2011 to identify the mean values and variation in nutrient content. As well as looking at the variation, we have investigated the potential financial value of a typical manure/slurry within each category. This review uses standard manure analysis package results over this period. These samples were taken throughout the UK, covering many different farming practices within each category. The categories chosen are a selection of those highlighted in RB209 as types of organic fertilisers.

The purpose of this review is to highlight the possible variation there is in nutrient value and see how this translates to the value of the material when it is spread to land. The variation in nutrients for each material can highlight the importance of getting it tested so that it can be used in the most efficient way. This saves land managers money on fertiliser application or ensures that enough additional fertiliser is applied if manure values are low.

The full report can be found on the NRM website at <http://www.cawood.co.uk/resources>.

This document focuses on poultry manure and provides a brief summary of the variation in financial and nutrient value for each material. Using current fertiliser prices and the mean nutrient values, we have produced a spreading scenario to show the potential financial savings in a real-life situation. This has been done with the use of the MANNER NPK software and takes into account a number of factors when it comes to spreading the material.

Variation in financial value and nutrients of Poultry Manure											
Manure	N					P			K		
	Nitrogen (Kg/t)	NH ₄ N (Kg/t)	N Efficiency %	Crop Available N	£ / tonne	P ₂ O ₅ (Kg/t)	Crop Available P ₂ O ₅	£ / tonne	K ₂ O (Kg/t)	Crop Available K	£ / tonne
Layer Manure											
Mean	14.23	4.11	40	5.50	4.95	15.53	9.32	9.52	14.35	12.92	6.10
Max	40.40	11.85	40	17.00	12.40	49.44	29.66	30.31	34.26	30.83	14.56
Min	9.10	0.05	43	1.40	2.48	1.84	1.11	1.13	2.04	1.84	0.87
Broiler/Turkey Litter											
Mean	21.96	4.35	40	9.00	6.20	17.27	10.36	10.59	17.47	15.73	7.43
Max	46.30	13.98	40	19.00	13.27	50.99	30.59	31.26	38.78	34.90	16.48
Min	1.95	0.01	44	0.90	0.87	1.61	0.97	0.99	0.41	0.36	0.17



Layer Manure spreading scenario

Potential financial value of manure application **£165/ha**

Application Details	
Manure type	Layer Manure
Cropping	Spring Cereal
Application date	15/02/16
Application rate (t/ha or m ³ /ha)	8
Application method	Broadcast spreader
Method of soil incorporation	Plough

Manure analysis (using Layer Manure mean values)		
DM (%)	Kg/t	41.6
Total N		14.2
NH ₄ - N		4.11
Uric Acid - N		4.1
Total P ₂ O ₅		15.5
Total K ₂ O		14.3

Nitrogen in application							
		Nitrogen losses (kg/ha)			Crop available N (kg/ha)		
Total N (kg/ha)	Mineralised N (kg/ha)	Nitrate-N	Ammonia-N	Denitrified-N	Current crop	Following crop year 2	N use efficiency (%)
114	11	3	14	2	29	3	51

P & K in application			
Total P ₂ O ₅ (Kg/t)	Available P ₂ O ₅ (Kg/t)	Total K ₂ O (Kg/t)	Available K ₂ O (Kg/t)
124	74	114	103

Financial value	
Crop available N (£/ha)	£40
Total P ₂ O ₅ (£/ha)	£76
Total K ₂ O (£/ha)	£49
Grand total (£/ha)	£165

*Based on 69 p/kg N, 61 p/kg P₂O₅ & 43 p/hg K₂O

Assumed soil index values: P ≤ 2, K ≤ 2+

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Broiler/Turkey Litter spreading scenario

Potential financial value of manure application **£193/ha**

Application Details	
Manure type	Broiler/Turkey Litter
Cropping	Spring Cereal
Application date	15/02/16
Application rate (t/ha or m ³ /ha)	8
Application method	Broadcast spreader
Method of soil incorporation	Plough

Manure analysis (using B/T Litter mean values)		
DM (%)	Kg/t	53.5
Total N		21.9
NH ₄ - N		4.35
Uric Acid - N		3.7
Total P ₂ O ₅		17.2
Total K ₂ O		17.4

Nitrogen in application							
		Nitrogen losses (kg/ha)			Crop available N (kg/ha)		
Total N (kg/ha)	Mineralised N (kg/ha)	Nitrate-N	Ammonia-N	Denitrified-N	Current crop	Following crop year 2	N use efficiency (%)
175	27	3	14	4	72	8	41

P & K in application			
Total P ₂ O ₅ (Kg/t)	Available P ₂ O ₅ (Kg/t)	Total K ₂ O (Kg/t)	Available K ₂ O (Kg/t)
138	83	139	125

Financial value	
Crop available N (£/ha)	£50
Total P ₂ O ₅ (£/ha)	£84
Total K ₂ O (£/ha)	£59
Grand total (£/ha)	£193

*Based on 69 p/kg N, 61 p/kg P₂O₅ & 43 p/hg K₂O

Assumed soil index values: P ≤ 2, K ≤ 2+

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