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SCHEDULES

SCHEDULE 1

Regulation 3(2)

Livestock units of cattle

Livestock unit in respect of a bovine animal listed in Column 1 means the number of units specified in Column 2 opposite that bovine animal.

<i>Column 1</i>	<i>Column 2</i>
Dairy cow	1.0
Beef cow	0.8
Bull kept wholly or mainly for breeding	1.0
Other cattle	
Under 1 year old	0.4
Between 1 and 2 years old	0.6
Over 2 years old	0.8

SCHEDULE 2

Regulations 3(2), 9(2) to (5), 10,11, 14(1), 23(3) and (6),and 27(1)

Criteria for nutrient management

Table 1a

Regulations 9 and 20 – Nitrogen (N) and phosphorus (P) excretion rates for grazing livestock

<i>Livestock type</i>	<i>Nitrogen (N) produced per head per year</i> <i>(kg N/yr)</i>	<i>Phosphorus (P) produced per head per year</i> <i>(kg P/yr)</i>
Cattle		
Dairy cow	100	19
Dairy heifer (over 2 years)	45	8.3
Dairy heifer (1 – 2 years)	39	7.2
Beef suckler cow (over 2 years)	52	9.6
Bull kept wholly or mainly for breeding	52	9.6
Cattle (over 2 years)	45	8.3

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<i>Livestock type</i>	<i>Nitrogen (N) produced per head per year</i>	<i>Phosphorus (P) produced per head per year</i>
	<i>(kg N/yr)</i>	<i>(kg P/yr)</i>
Cattle (1 – 2 years)	39	7.2
Bull beef (0 – 13 months)	30	7.5
Bull beef (6 – 13 months)	23	5.8
Calf (0 – 1 year)	19	4.7
Calf (0 – 6 months)	7.0	1.7
Calf (6 – 12 months)	12	3.0
Sheep		
Ewe (over 1 year)	9.0	1.0
Ram (over 1 year)	9.0	1.0
Lamb (0 – 6 months)	1.2	0.3
Lamb (6 – 12 months)	3.2	0.3
Lamb (0 – 1 year)	4.4	0.6
Deer		
Deer (red) 6 months – 2 years	12	2.0
Deer (red) over 2 years	15	4.0
Deer (fallow) 6 months – 2 years	7.0	1.0
Deer (fallow) over 2 years	13	2.0
Deer (sika) 6 months – 2 years	6.0	1.0
Deer (sika) over 2 years	10	2.0
Horses		
Horse (over 3 years)	50	9.0
Horse (2 – 3 years)	44	8.0
Horse (1 - 2 years)	36	6.0
Horse (under 1 year)	25	3.0
Donkey or small pony	30	5.0
Goats		
Milking goats	15	1.7
Non milking goat	9.0	1.0
Kid (0 – 1 year)	4.4	0.6
Kid (6 – 12 months)	3.2	0.3
Kid (0 – 6 months)	1.2	0.3

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Table 1b

Regulation 9 – Nitrogen and phosphorus (P) excretion rates for pigs

<i>Livestock type</i>	<i>Nitrogen (N) produced per head per year (kg N/yr)</i>		<i>Phosphorus (P) produced per head per year (kg P/yr)</i>	
Adults pigs				
Boar	18		4.2	
Maiden gilt	11		5.7	
Breeding sow ⁽¹⁾	16		8.7	
	<i>Nitrogen (N) produced per pig (kg N)</i>		<i>Phosphorus (P) produced per pig (kg P)</i>	
Pigs weaned at 3 – 4 weeks				
<i>Approximate start weight (kg)</i>	<i>Approximate sale or transfer weight (kg)</i>			
6 – 8	18 (7.5 weeks)	0.09	0.08	
6 – 8	35 (11 weeks)	0.38	0.23	
6 – 8	105 (23 weeks)	2.38	1.09	
Growing and finishing pigs				
<i>Approximate start weight (kg)</i>	<i>Approximate sale or transfer weight (kg)</i>			
18	35	0.29	0.15	
18	105	2.30	1.00	
35	105	2.00	0.85	

(1) Breeding sows includes served gilts, dry and lactating sows and piglets to weaning.

Table 1c

Regulation 9 – Nitrogen (N) and phosphorus (P) excretion rates for poultry

<i>Livestock type</i>	<i>Nitrogen (N) produced per 1000 birds per crop (kg N)</i>	<i>Phosphorus (P) produced per 1000 birds per crop (kg P)</i>
Broilers – hot water heating	33.8	7.0
Conventional broilers	40	8.4
Free range broilers	44.9	11.4
Turkeys ⁽¹⁾ 0 – 6 weeks	229	55
Turkeys ⁽¹⁾ 6 weeks – kill	305	73.8

(1) Male and female turkeys

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<i>Livestock type</i>	<i>Nitrogen (N) produced per 1000 birds per crop</i>	<i>Phosphorus (P) produced per 1000 birds per crop</i>
	<i>(kg N)</i>	<i>(kg P)</i>
Turkeys ⁽¹⁾ 0 – kill	534	129
Fattening ducks	139	65

(1) Male and female turkeys

<i>Livestock type</i>	<i>Nitrogen (N) produced per 1000 birds per week</i>	<i>Phosphorus (P) produced per 1000 birds per week</i>
	<i>(kg N)</i>	<i>(kg P)</i>
Broiler breeders 0 – 18 weeks	2.9	2.0
Broiler breeders 18 – 60 weeks	7.2	3.9
Broiler breeders 0 – 60 weeks	5.9	3.3
Pullets	4.7	1.7
Layers	12	4.6
Free range laying hens	5.4	2.2

Table 2

Regulations 3, 9 and 13 – Total nitrogen (N) and phosphorus (P) contents of fertilisers and proportion of total phosphorus to total nitrogen (all on a fresh weight basis)

<i>Liquid / slurry manure types</i>	<i>Dry matter content (%)</i>	<i>Total Nitrogen (N) content by volume (kg N/m³)⁽¹⁾⁽²⁾</i>	<i>Total phosphorus (P) content by volume (kg P/m³)⁽¹⁾⁽²⁾</i>	<i>Proportion of total phosphorus to total nitrogen</i>
Liquids				
Dirty water	0.5	0.5	0.04	0.08
Cattle slurries				
	2	1.6	0.26	0.16
Cattle slurry	6	2.6	0.52	0.20
	10	3.6	0.79	0.22
Separated cattle slurries (liquid portion)				
Strainer box	1.5	1.5	0.13	0.09
Weeping wall	3	2.0	0.22	0.11
Mechanical Separator	4	3.0	0.52	0.17
Pig slurries				

(1) Figures in bold are the most common values.

(2) For calculation purposes assume 1m³ of slurry weighs 1 tonne

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<i>Liquid / slurry manure types</i>	<i>Dry matter content (%)</i>	<i>Total Nitrogen (N) content by volume (kg N/m³)⁽¹⁾⁽²⁾</i>	<i>Total phosphorus (P) content by volume (kg P/m³)⁽¹⁾⁽²⁾</i>	<i>Proportion of total phosphorus to total nitrogen</i>
Pig slurry	2	3.0	0.35	0.12
	4	3.6	0.65	0.18
Separated pig slurry (liquid portion)	6	4.4	0.96	0.22
	3	3.6	0.48	0.13

(1) Figures in bold are the most common values.

(2) For calculation purposes assume 1m³ of slurry weighs 1 tonne

<i>Solid manure type</i>	<i>Dry matter content (%)</i>	<i>Total nitrogen content by weight (kg N/t)</i>	<i>Total phosphorus content by weight (kg P/t)</i>	<i>Proportion of total phosphorus to total nitrogen</i>
Poultry manures				
Broiler – hot water heating	72	33.8	7.0	0.21
Free range broilers 0 – kill	57	26.4	6.7	0.25
Broiler breeders 0 – 18 weeks	55	17.5	11.8	0.67
Broiler breeders 18 – 60 weeks	60	20.7	11.0	0.53
Broiler breeders 0 – 60 weeks	59	20.2	11.2	0.56
Conventional broiler	66	33	7.0	0.21
Turkeys 0 – 6 weeks	58	24.8	6.0	0.24
Turkeys 6 – kill	58	24.8	6.0	0.24
Turkeys 0 – kill	58	24.8	6.0	0.24
Pullets	72	32.7	12.0	0.37
Layer	30	16	5.7	0.36
Free range laying hens	46	18.8	7.5	0.40
Duck	25	6.5	2.4	0.37
Farmyard manures				
Cattle manures	25	6.0	1.4	0.23
Sheep manures	25	7.0	1.4	0.20
Goat manures	40	9.5	2.0	0.21
Pig manures	25	7.0	2.6	0.37
Horse manures	25	5.0	2.2	0.44

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<i>Solid manure type</i>	<i>Dry matter content (%)</i>	<i>Total nitrogen content by weight (kg N/t)</i>	<i>Total phosphorus content by weight (kg P/t)</i>	<i>Proportion of total phosphorus to total nitrogen</i>
Miscellaneous manures				
Spent mushroom compost	35	8.0	1.5	0.19
Separated cattle slurry (solid portion)	20	4.0	0.87	0.22
Separated pig slurry (solid portion)	20	5.0	1.60	0.32
Other organic manures	Dry matter content, total nitrogen content and total phosphorus content to be declared in accordance with the Waste Regulations. Proportion of phosphorus to total nitrogen to be calculated from these analyses.			
Chemical fertiliser	Dry matter content, total nitrogen content and total phosphorus content as certified by the producers. Proportion of total phosphorus to total nitrogen to be calculated from these analyses.			

Table 3

Regulation 9 – Nitrogen availability in organic manures and chemical fertilisers

<i>Fertiliser</i>	<i>Nitrogen availability (%)</i>
Chemical	100
Pig slurry	50
Poultry litter	30
Farmyard manure	30
Cattle slurry	40
Spent mushroom compost	20
Other organic manures	40

Table 4

Regulation 10 – Nitrogen application standards for grassland crops

	<i>Dairy Cattle⁽²⁾</i>	<i>Other livestock⁽²⁾</i>
Balance of crop nitrogen requirement (kg N/ha/yr) (e.g. from chemical fertiliser or organic nitrogen supply other than livestock manure) ⁽¹⁾	272	222

(1) This table does not imply any departure from regulation 9(1) which prohibits the application to the agricultural area on a holding of livestock manure in amounts which exceeds 170 kg N/ha/yr, including that deposited by the animals themselves.

(2) The dairy cattle figures (dairy cows and heifer replacements) apply where it can be demonstrated that more than 50% of the livestock manure applied to the agricultural area, both by land application and by the animals themselves, arises from dairy cattle. In all other cases the figures for other livestock will apply.

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Table 5

Regulation 11 – Maximum permitted nitrogen application and standard yields for cereal crops

<i>Crop type</i>	<i>Maximum permitted nitrogen (kg N/ha)⁽¹⁾</i>	<i>Standard yield (t/ha)</i>
Winter Wheat	220	8.0
Spring Wheat	180	7.0
Winter Barley	170	7.0
Spring Barley	140	5.0
Winter Oats	140	6.0
Spring Oats	110	5.0

(1) For all crops in the table, an additional 20 kg N/ha is permitted for every tonne that the expected yield exceeds the standard yield. Evidence of this must be demonstrated by overall farm crop yield in any of the previous three years.

Table 6

Regulation 20 – Livestock manure production figures

<i>Livestock type</i>	<i>Volume of excreta produced per animal per week (m³)⁽¹⁾</i>
Cattle	
Diary cow	0.37
Suckler cow	0.23
Cattle (over 2 years)	0.23
Cattle (1 – 2 years)	0.18
Calf (6 -12 months)	0.09
Calf (0 – 6 months)	0.05
Sheep	
Adult ewe or ram	0.03
Fattening lamb (6 – 12 months)	0.01
Adult pigs	
Maiden gilt or boar	0.05
Dry or lactating sows and served gilts	0.08
Pigs weaned at 3 – 4 weeks	
<i>Approximate start weight (kg)</i>	<i>Approximate sale or transfer weight (kg)</i>
6 – 8	18 (7.5 weeks)
6 – 8	35 (11 weeks)

(1) The standard figures for slurry produced by animals do not include water for cleaning buildings.

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<i>Livestock type</i>		<i>Volume of excreta produced per animal per week (m³)⁽¹⁾</i>
6 – 8	105 (23 weeks) (Meal fed)	0.06
6 – 8	105 (23 weeks) (Liquid fed)	0.08
Growing and finishing pigs		
<i>Approximate start weight (kg)</i>	<i>Approximate sale or transfer weight (kg)</i>	
18	35	0.02
35	105 (Meal fed)	0.03
35	105 (Liquid fed)	0.05
Poultry		
1000 laying hens		0.81

(1) The standard figures for slurry produced by animals do not include water for cleaning buildings.

SCHEDULE 3

Regulations 3(2) and 13(2)

Criteria as to nutrient management for phosphorus

Table 1

Phosphorus (as orthophosphate (P₂O₅)) limits for grassland on soils of different soil phosphorus index

	<i>Soil phosphorus index</i>					
	0	1	2-	2+	3	4
	<i>Phosphorus recommendation (kg P₂O₅ ha⁻¹)</i>					
At grass establishment	120	80	65	50	30	0
Grazing ⁽¹⁾	80	50	35	20	0	0
Silage cut ⁽¹⁾						
1st	100	70	55	40	20	0
2nd	25	25	25	25	0	0
3rd	15	15	15	15	0	0
4th	10	10	10	10	0	0
Hay ⁽¹⁾	80	55	43	30	0	0

(1) The amount of phosphate applied for establishment shall be deducted from the first season's grazing, silage or hay crop requirement for phosphorus.

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Table 2a

Maximum phosphate fertiliser application limits (kg P₂O₅ per hectare) for extensively managed grassland (under 60 kg chemical N/ha/year or under 120kg manure N/ha/year loading).

	<i>Soil phosphorus index</i>					
	0	1	2-	2+	3	4
At grass establishment	80	65	50	30	0	0
Grazed grass (whole season)	50	35	20	0	0	0
First cut silage ⁽¹⁾	70	55	40	0	0	0
Hay ⁽¹⁾	55	43	30	0	0	0

(1) Subject to Table 2b.

Table 2b

If silage or hay crops receive under 80 kg chemical fertiliser N/ha/year, the following maximum phosphate fertiliser application limits apply.

	<i>Soil phosphorus index</i>					
	0	1	2-	2+	3	4
First cut silage	100	70	55	40	0	0
Hay	80	55	43	30	0	0

Table 3

Available phosphate (P₂O₅) values for fertilisers

<i>Liquid or slurry manure types</i>	<i>Dry matter content (%)</i>	<i>Soil phosphorus index of 0 or 1, available phosphorus (kg P₂O₅/m³)⁽¹⁾</i>	<i>Soil phosphorus index of 2- or greater, available phosphorus (kg P₂O₅/m³)</i>
Liquids⁽²⁾			
Dirty water	0.5	0.05	0.10
Cattle slurries⁽²⁾			
	2	0.3	0.6
Cattle slurry ⁽³⁾	6	0.6	1.2
	10	0.9	1.8

(1) For potatoes and vegetable crops, these availabilities should be used regardless of soil phosphorus index.

(2) 50% phosphate availability assumed at soil phosphorus index of 0 or 1 and for potatoes and vegetables.

(3) Figures in bold are the most common values.

(4) 60% phosphate availability assumed at soil phosphorus index of 0 or 1 and for potatoes and vegetables.

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<i>Liquid or slurry manure types</i>	<i>Dry matter content (%)</i>	<i>Soil phosphorus index of 0 or 1, available phosphorus (kg P₂O₅/m³)⁽¹⁾</i>	<i>Soil phosphorus index of 2- or greater, available phosphorus (kg P₂O₅/m³)</i>
Separated cattle slurries (liquid portion)⁽²⁾			
Strainer box	1.5	0.15	0.3
Weeping wall	3	0.25	0.5
Mechanical separator	4	0.6	1.2
Pig slurries⁽²⁾			
	2	0.5	1.0
Pig slurry ⁽³⁾	4	0.9	1.8
	6	1.3	2.6
Separated pig slurry (liquid portion)	3	0.8	1.6
<i>Solid manure types</i>	<i>Dry matter content (%)</i>	<i>Soil phosphorus index of 0 or 1, available phosphate (kg P₂O₅/t)</i>	<i>Soil phosphorus of 2- or greater, available phosphate (kg P₂O₅/t)</i>
Poultry manures⁽⁴⁾			
Broiler litter	66	9.6	16
Layer manure	30	7.8	13
Turkey litter	60	15	25
Duck manure	25	3.3	5.5
Farmyard manures⁽⁴⁾			
Cattle manures	25	1.9	3.2
Sheep manures	25	1.9	3.2
Goat manure	25	1.7	2.8
Pig manure	25	3.6	6.0
Horse manure	30	3.0	5.0
Miscellaneous manures⁽²⁾			
Spent mushroom compost	35	1.7	3.4
Separated cattle slurry (solid portion)	20	1.0	2.0
Separated pig slurry (solid portion)	20	2.3	4.6

(1) For potatoes and vegetable crops, these availabilities should be used regardless of soil phosphorus index.

(2) 50% phosphate availability assumed at soil phosphorus index of 0 or 1 and for potatoes and vegetables.

(3) Figures in bold are the most common values.

(4) 60% phosphate availability assumed at soil phosphorus index of 0 or 1 and for potatoes and vegetables.

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<i>Liquid or slurry manure types</i>	<i>Dry matter content (%)</i>	<i>Soil phosphorus index of 0 or 1, available phosphorus (kg P₂O₅/m³)⁽¹⁾</i>	<i>Soil phosphorus index of 2- or greater, available phosphorus (kg P₂O₅/m³)</i>
Other organic manures	Dry matter content and total phosphorus content to be declared in accordance with the Waste Management Licencing Regulations (Northern Ireland) 2003(1). 60% phosphate availability assumed at soil phosphorus index or 0 or 1 ⁽¹⁾ , 100% phosphate availability assumed at soil phosphorus index greater than 1.		
Chemical fertilisers	Dry matter content and total phosphorus content as certified by the producer. Phosphate availability assumed to be 100% for all soil phosphate indices.		

(1) For potatoes and vegetable crops, these availabilities should be used regardless of soil phosphorus index.

(2) 50% phosphate availability assumed at soil phosphorus index of 0 or 1 and for potatoes and vegetables.

(3) Figures in bold are the most common values.

(4) 60% phosphate availability assumed at soil phosphorus index of 0 or 1 and for potatoes and vegetables.

SCHEDULE 4

Regulation 8(2)(f)

Risk assessment for fertiliser application to steeply sloping land

1. If an application of organic manure (including livestock manure) or chemical fertiliser to steeply sloping land is proposed, a risk assessment must be undertaken in addition to meeting all relevant requirements of these Regulations. The factors set out in Table 1 shall be considered in making this risk assessment. Table 2 shall be consulted to ascertain whether fertiliser application is permitted.

Table 1

Fertiliser application to steeply sloping ground – risk assessment factors

<i>Factor</i>	<i>Risk</i>	<i>Liquid organic manures</i>	<i>Solid organic manures</i>	<i>Chemical nitrogen fertiliser</i>
Distance from spreading area to waterway other than lake	High	less than 20 metres	less than 20 metres	less than 5 metres
	Medium	20 – 30 metres	20 – 30 metres	5 – 10 metres
	Low	greater than 30 metres	greater than 30 metres	greater than 10 metres
Distance from spreading area to lake	High	less than 30 metres	less than 30 metres	less than 5 metres
	Medium	30 – 40 metres	30 – 40 metres	5 – 10 metres

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<i>Factor</i>	<i>Risk</i>	<i>Liquid organic manures</i>	<i>Solid organic manures</i>	<i>Chemical nitrogen fertiliser</i>
	Low	greater than 40 metres	greater than 40 metres	greater than 10 metres
Level of fertiliser applied	High	more than 25m ³ /ha	more than 25 tonnes/ha	greater than 120 kg/N/ha
	Medium	15 – 25m ³ /ha	15 – 25 tonnes/ha	80 – 120 kg/N/ha
	Low	less than 15m ³ /ha	less than 15 tonnes/ha	less than 80 kg/N/ha
Soil conditions	High	very wet, compacted soil	very wet, compacted soil	very wet, compacted soil
	Medium	wet, poached soil	wet, poached soil	wet, poached soil
	Low	dry, firm trafficable soil	dry, firm trafficable soil	dry, firm trafficable soil
Forecast weather conditions for next 48 hours	High	heavy rainfall (more than 4 mm per hour)	heavy rainfall (more than 4 mm per hour)	heavy rainfall (more than 4 mm per hour)
	Medium	moderate rainfall (0.5 – 4 mm per hour)	moderate rainfall (0.5 – 4 mm per hour)	moderate rainfall (0.5 – 4 mm per hour)
	Low	low rainfall (less than 0.5 mm per hour)	low rainfall (less than 0.5 mm per hour)	low rainfall (less than 0.5mm per hour)
Arable land only – time to incorporation	High	more than 48 hours	more than 5 days	n/a
	Medium	12 – 48 hours	3 – 5 days	n/a
	Low	less than 12 hours	less than 3 days	n/a

Table 2

Risk assessment determination

<i>Risk level</i>	<i>Number of factors applicable</i>	<i>Is the land application of fertiliser permitted</i>
High Risk	One or more factors	No
Medium Risk	Two or more factors	No
	One factor	Yes

<i>Risk level</i>	<i>Number of factors applicable</i>	<i>Is the land application of fertiliser permitted</i>
Low Risk	One or more factors	Yes

SCHEDULE 5

Regulations 12 and 13

Soil test for Phosphorus

1. Reference to the results of a soil test is a reference to the results of an analysis of a soil sample carried out by a soil testing laboratory competent to analyse soils for phosphorus. Each analysis, provided by the competent laboratory, will require a UKAS accreditation or (National equivalent) statement.

2. The taking of soil samples and the analysis for phosphorus shall be carried out in accordance with the procedures below.

Soil sampling procedure

3. Area to sample: The size of the area from which one sample can be taken varies but shall not be more than four hectares. Generally one sample shall be collected from each field. Within one field, areas which are not uniform for crop growth and areas which have been cropped or fertilised differently shall be sampled separately.

4. Time of sampling: Sampling every fourth year shall be satisfactory as a basis for phosphorus fertiliser recommendations. A field shall not be sampled for phosphorus until at least three months after the last application of any fertiliser (organic or chemical) containing this nutrient.

5. Depth of sampling: Grassland shall be sampled to a depth of 75 millimetres and arable land to a depth of 150 millimetres.

6. Method of sampling: A soil sample shall be made up by bulking at least 25 sub-samples taken from the area to be sampled. The sub-sampling points shall be selected systematically to give an even distribution over the whole sampling area. This distribution shall be achieved by following the pattern of a letter “W” and taking sub-samples at regularly spaced intervals. Taking sub-samples from headland, dung and urine patches, areas where stock gather or other unusual features shall be avoided. Each sub-sample shall be taken using a soil auger which takes an even core of soil throughout the sampling depth. The soil sample shall be stored in a clean, labelled plastic bag.

Soil analysis for phosphorus

7. The soil test for phosphorus shall be carried out after the soil sample has been air-dried and ground.

8. Air-drying and grinding soil: The entire soil sample shall be dried to constant weight in an oven with a current of air at a temperature not exceeding 30 °C. Then the whole of the air-dried sample, excluding stones and fibrous material from roots, shall be ground to pass a two millimetre sieve.

9. Soil analysis for Olsen extractable phosphorus: The measure of phosphorus which is available for crop growth shall be given by the amount extracted from soil at 20 ± 1 °C with a sodium bicarbonate solution of pH 8.5. Details of the analytical procedure are given in The Analysis of Agricultural Materials, Third Edition, pp183-185, Ministry of Agriculture, Fisheries and Food reference Book 427, 1986. Olsen extractable phosphorus results are expressed as milligrammes phosphorus per litre (mg P/l) of soil, rounded to the nearest whole number.

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10. Classification of soil analysis results into indices: The Olsen extractable phosphorus concentration in soil is classified into an index according to the following scale.

<i>Soil phosphorus index</i>	<i>Olsen extractable phosphorus (P) (mg P/l)</i>
0	0 – 9
1	10 – 15
2-	16 – 20
2+	21 – 25
3	26 – 45
4	46 – 70

SCHEDULE 6

Regulation 19(1)

Requirement for slurry storage systems

1. The requirements which have to be satisfied in relation to a slurry storage system are as follows.
2. The base of the slurry storage tank, the base and walls of any effluent tank, channels and reception pit and the walls of any pipes shall be impermeable.
3. The base and walls of the slurry storage tank, any effluent tank, channels and reception pit and the walls of any pipes shall be protected against corrosion in accordance with paragraph 7.2 of the Code of Practice on Building and Structures for Agriculture published by the British Standards Institution and numbered BS 5502-50:1993+A2:2010(2).
4. The base and walls of the slurry storage tank and any reception pit shall be capable of withstanding characteristic loads calculated on the assumptions and in the manner indicated by paragraph 5 of that Code of Practice.
- 5.—(1) Any facilities used for the temporary storage of slurry before it is transferred to a slurry storage tank shall have adequate capacity to store the maximum quantity of slurry which (disregarding any slurry which will be transferred directly into a slurry storage tank) is likely to be produced on the premises in any two day period or such smaller capacity as the Department may agree in writing is adequate to avoid any significant risk of pollution of a waterway.
- (2) Where slurry flows into a channel before discharging into a reception pit and the flow of slurry out of the channel is controlled by means of a sluice, the capacity of the reception pit shall be adequate to store the maximum quantity of slurry which can be released by opening the sluice.
- 6.—(1) Subject to sub-paragraph (2), the capacity of storage facilities for slurry of a holding shall be sufficient and adequate to provide for the storage of all the slurry which is likely to require storage on the holding for such period as may be necessary to ensure compliance with these Regulations.
- (2) The matters to which regard is to be had under sub-paragraph (1) are—
 - (a) the likely quantities of rainfall (including any fall of snow, hail or sleet) which may fall or drain into the slurry storage tank during the likely maximum storage period;
 - (b) the need to make provision for not less than 750 millimetres of freeboard in the case of a tank with walls made of earth and 300 millimetres of freeboard in all other cases; and

(c) soil quality in the vicinity of the slurry storage tank.

7.—(1) Subject to paragraphs (2) and (3), no part of the slurry storage tank or any effluent tank, channel or reception pit shall be situated within 10 metres of any waterway into which slurry could enter if it were to escape, unless paragraph (3) is satisfied.

(2) Where the construction of an above ground slurry tank is commenced after 31 December 2019, paragraph (1) shall apply as if for 10 metres there were substituted 50 metres.

(3) This paragraph is satisfied if the Department agrees in writing that adequate precautions to avoid a significant risk of pollution are taken.

8. The slurry storage tank and any effluent tank, channels, pipes and reception pit shall be designed and constructed so that with proper maintenance they are likely to satisfy the requirements of paragraphs 2 to 4 for a period of at least 20 years.

9. Where the walls of the slurry tank are not impermeable, the base of the tank shall extend beyond its walls and shall be provided with channels designed and constructed so as to collect any slurry which may escape from the tank and adequate provision shall be made for the drainage of the slurry from the channels to an effluent tank through a channel or pipe.

10.—(1) Subject to sub-paragraph (2), where the slurry storage tank, any effluent tank or reception pit is fitted with a drainage pipe, there shall be two valves in series on the pipe and each valve shall be capable of stopping the flow of slurry through the pipe and shall be kept shut and locked in that position when not in use.

(2) Sub-paragraph (1) does not apply in relation to a slurry storage tank which drains through the pipe into another slurry storage tank of equal or greater capacity or where the tops of the tanks are at the same level.

11. In the case of a slurry storage tank with walls which are made of earth, the tank shall not be filled to a level which allows less than 750 millimetres of freeboard, and in all other cases the tank shall not be filled to a level which allows less than 300 millimetres of freeboard.

12. Any slurry storage tank constructed, substantially enlarged or substantially reconstructed after 31st December 2019, which is not contained within or underneath a roofed building, shall be covered in a manner which minimises emissions of odour and ammonia.

SCHEDULE 7

Regulation 24(1)(a)

Requirements for silos

1. The requirements which have to be satisfied in relation to a silo are that—

(a) it complies with paragraphs 2 to 9; or

(b) if it is designed and constructed, before 20th August 2013, in accordance with the standard on cylindrical forage tower silos published by the British Standards Institution and numbered BS 5061: 1974(3).

2. The base of the silo shall, where the silo has retaining walls made other than of earth, extend beyond those walls and shall in all cases be provided with channels so constructed as to collect any silage effluent which may escape from the silo and adequate provision shall be made for the drainage of that effluent from the channels to an effluent tank through a channel or pipe.

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- 3.—(1) Subject to sub-paragraph (2), the capacity of the effluent tank—
- (a) in the case of a silo with a capacity of less than 1500 cubic metres, shall be not less than 3 cubic metres for each 150 cubic metres or part thereof of silo capacity;
 - (b) in the case of a silo with a capacity of 1500 cubic metres or more, shall be not less than 30 cubic metres plus one cubic metre for each 150 cubic metres or part thereof of silo capacity in excess of 1500 cubic metres.
- (2) The effluent collection system associated with silos may, with the agreement of the Department, incorporate a system of pumps and sumps, together with detailed sizing, pumping and management requirements, designed to reduce the capacity of the effluent tank.
4. The base of the silo, the base and walls of its effluent tank and channels and the walls of any pipes shall be impermeable.
5. The base and any walls of the silo, its effluent tank and channels and the walls of any pipes shall, so far as reasonably practicable, be resistant to attack by silage effluent and, where the walls are made of earth, they shall be lined with an impermeable membrane.
6. No part of the silo, its effluent tank or channels or any associated pipes shall be situated within 10 metres of any waterway into which silage effluent could enter if it were to escape.
7. If the silo has retaining walls—
- (a) the retaining walls shall be capable of withstanding minimum wall loadings calculated on the assumptions and in the manner indicated by paragraph 15.6.1 to 15.6.3 of the Code of Practice on Buildings and Structures for Agriculture published by the British Standards Institution and numbered BS 5502-22:2003+A1:2013(4);
 - (b) the silo shall at no time be loaded to a depth exceeding the maximum depth consistent with the design assumption made in respect of the loadings of the retaining walls; and
 - (c) notices shall be displayed on the retaining walls in accordance with paragraph 18 of the Code of Practice referred to in sub-paragraph (a).
8. Subject to paragraph 9, the silo, its effluent tank and channels and any pipes shall be designed and constructed so that with proper maintenance they are likely to satisfy the requirements of paragraphs 2 to 5 and, if applicable, 7(a) for a period of at least 20 years.
9. Where any part of an effluent tank is installed below ground level, it shall be designed and constructed in accordance with the Code of Practice referred to in paragraph 7(a) so that with proper maintenance it is likely to satisfy the requirements of paragraphs 4 and 5 for a period of at least 20 years.