

**2006 No. 488**

**ENVIRONMENTAL PROTECTION**

**Phosphorus (Use in Agriculture) Regulations (Northern Ireland)  
2006**

*Made* - - - - - *1st December 2006*

*Coming into operation*- - - - - *1st January 2007*

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SCHEDULE 1 — SOIL TEST FOR PHOSPHORUS

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The Department of the Environment, in exercise of the powers conferred on it by Articles 32, 44 and 74 of the Water and Contaminated Land (Northern Ireland) Order 1997<sup>(a)</sup> and of all other powers enabling it in that behalf, makes the following Regulations:

## PART 1

### PRELIMINARY

#### **Citation, commencement and interpretation**

1.—(1) These Regulations may be cited as the Phosphorus (Use in Agriculture) Regulations (Northern Ireland) 2006 and shall come into operation on 1st January 2007.

(2) The Interpretation Act (Northern Ireland) 1954<sup>(b)</sup> shall apply to these Regulations as it applies to an Act of the Assembly.

(3) In these Regulations—

“agricultural land” has the same meaning as in the Agriculture Act (Northern Ireland) 1949<sup>(c)</sup>;

“authorised person” means a person authorised by the Department under Article 72 of the Order in respect of fulfilling its functions;

“available phosphorus content” means the amount of phosphorous available for uptake by the crop;

“chemical fertiliser” means any fertiliser containing a phosphorus compound or phosphorus compounds which is manufactured or blended by an industrial process;

“controller” means in relation to a holding, the person charged with the management of the holding for the calendar year in question and in the absence of written agreement to the contrary, the owner of the agricultural area will be taken to be charged with its management;

“crop requirement” means the amount of phosphorus fertiliser which is reasonable to apply to land in any year for the purpose of promoting the growth of the crop having regard to the foreseeable phosphorus supply to the crop based on the phosphorus index of the soil and from other sources, including any previous applications of livestock and other organic manure estimated as described in the fertiliser technical standards;

“Department” means Department of the Environment;

“Directive” means Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources<sup>(d)</sup>;

“fertiliser technical standards” means the ‘DEFRA Fertiliser Recommendations for Agricultural and Horticultural Crops (RB209) 2000 7th edition’ (as may from time to time be re-issued) and any supplementary guidance and any other DEFRA publication substituting the standards set out in RB209 and any supplementary guidance;

“holding” in relation to a controller means all the agricultural area managed by that controller;

“land application” means the addition of materials to agricultural land whether by spreading on the surface of the land, injection into the land, placing below the surface of the land or mixing with the surface layers of the land but does not include the direct deposition of manure onto land by animals;

“livestock” means any animal kept for use or profit;

“livestock manure” means waste products excreted by livestock or a mixture of litter and waste products excreted by livestock, even in processed form;

“notice” means notice in writing;

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(a) S.I. 1997/2778 (N.I. 19)

(b) 1954 c.33 (N.I.)

(c) 1949 c.2 (N.I.)

(d) O.J. L. 375, 31/12/1991 P. 0001- 0008

“organic manure” means

- (a) livestock manure; and
- (b) phosphorus fertiliser not being livestock manure or chemical fertiliser, that is derived from organic matter, and includes sewage sludge, residues from fish farms and other organic wastes.

“phosphorus fertiliser” means any substance, including chemical fertiliser, containing a phosphorus compound or phosphorus compounds utilised on land to enhance growth of vegetation;

“phosphorus index” in relation to soil means the index number (0 to 4) assigned to the soil in accordance with Schedule 1 to indicate the amount of phosphorus available from the soil to the crop;

“soil fertility status” means the soil reserves of phosphorus available for uptake by the next crop estimated as described in the fertiliser technical standards;

“soil test” means the chemical analysis of phosphorus in a soil sample taken and analysed in accordance with Schedule 1 and from any supplementary guidance;

“steeply sloping ground” means land which has an average incline of 20% or more;

“the Order” means The Waste and Contaminated Land (Northern Ireland) Order 1997;

“underground strata” has the same meaning as in Article 2(2) of the Water (Northern Ireland) Order 1999(a);

“water pollution” means the discharge, directly or indirectly, of chemical fertiliser from agricultural sources into the aquatic environment, the results of which are such as to cause hazards to human health, harm to living resources and to aquatic ecosystems, damage to amenities or interference with other legitimate uses of water;

“waterlogged” means soil where water appears on the surface of the land when pressure is added;

“waterway” has the same meaning as in Article 2(2) of the Water (Northern Ireland) Order, 1999.

## PART 2

### MEASURES RELATING TO THE LAND APPLICATION OF FERTILISERS

#### **Measures governing limits on the land application of chemical fertiliser**

**2.**—(1) Chemical fertiliser shall not be applied to land unless the controller of a holding can demonstrate in accordance with the provisions of Schedule 1 that the amount is not in excess of crop requirement taking into consideration soil fertility status, the recommended phosphorus index of the soil for the crop and the supply of phosphorus available from the application of organic manures.

(2) For the purposes of 2(1) the available phosphorus content of livestock manures is as defined in Schedule 2 Table 1.

(3) The available phosphorous content per tonne of other organic manures, excluding livestock manure, shall be equivalent to the total phosphorous content per tonne of those manures as declared in accordance with the Waste Management Licensing Regulations (Northern Ireland) 2003(b)

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(a) S.I. 1999/662 (N.I. 6)

(b) S.R. 2003 No. 493

### **Duty of the controller to prevent water pollution**

3. Subject to regulation 2, the controller of a holding shall not knowingly or otherwise cause directly or indirectly the entry of chemical fertiliser into any waterway or water contained in any underground strata.

### **Requirements as to the manner of land application of chemical fertiliser**

4.—(1) Chemical fertiliser shall be applied to land in an accurate and uniform manner and in accordance with paragraphs (2) to (4).

(2) The land application of chemical fertiliser shall not be permitted when: -

- (a) the soil is waterlogged; or
- (b) the land is flooded or likely to flood; or
- (c) the land is snow-covered; or
- (d) the soil has been frozen for 12 hours or longer in the preceding 24 hours; or
- (e) heavy rain is forecast within 48 hours; or
- (f) the land is steeply sloping land where, taking into account factors such as proximity to waterways, soil condition, ground cover and rainfall there is a significant risk of causing water pollution.

(3) Chemical fertiliser shall not be applied to any land in a location or manner which would make it likely that chemical fertiliser will directly enter a waterway or water contained in any underground strata.

(4) The land application of chemical fertiliser shall not be permitted within 1.5 metres of any waterway.

## **PART 3**

### **GENERAL**

#### **General duty of owner and/or controller**

5. In complying with any duty under these Regulations the owner and/or the controller of a holding shall have regard to any guidance which may be issued from time to time by the Department and/or by the Department of Agriculture and Rural Development for the purposes of these Regulations and, in accordance with Article 4 of the Directive the Code of Good Agricultural Practice as may be amended from time to time.

#### **Duty of controller to provide information**

6.—(1) With effect from the operative date of these Regulations, the Department may by notice served on the controller of a holding applying chemical fertiliser to any agricultural land, require the controller to furnish the Department, as required, the following information on an annual basis:

- (a) the identity of the controller of the land for the calendar year in question;
- (b) the size and location of each field in the holding to which chemical fertiliser was applied;
- (c) the results of any soil tests carried out to satisfy compliance with Schedule 1;
- (d) a statement of the foreseeable phosphorous requirements of the crops;
- (e) the quantity of each type of phosphorus fertiliser applied, the certified phosphorous content of the chemical fertiliser, the total phosphorus content per tonne of other organic manures as declared in accordance with regulation 2(3) and the date of application of any phosphorous fertiliser; and
- (f) the type and date of any crop sown.

(2) For the purposes of the discharge of its functions under paragraph (1), the controller of a holding shall prepare the information for each calendar year by 30 June of the following year and shall retain such information for a period of 5 years from that date.

(3) A controller shall not compile information, which is false or misleading to a material extent or furnish any such information in any notice or other document for the purposes of these Regulations.

## PART 4 ENFORCEMENT

### **Monitoring and inspections**

7. A person authorised under Article 72 of the Order may exercise any of the functions under that Article to determine or ensure compliance with these Regulations.

### **Offences**

8.—(1) It shall be an offence to fail to comply with regulations 2(1), 3, 4 or 5 of these Regulations.

(2) It shall be an offence for a controller to fail without reasonable cause to comply with the conditions of a notice issued under regulation 6 and/or to provide information as required under that regulation.

### **Penalties**

9. A controller found guilty of an offence under regulation 8 shall be liable:

- (a) on summary conviction, to a fine not exceeding level 5 on the standard scale together with a fine of an amount equal to one-tenth of that level for each day upon which the offence continues after the conviction; or
- (b) on conviction on indictment to a fine or to imprisonment for a term not exceeding 2 years or both.

Sealed with the Official Seal of the Department of the Environment on 1st December 2006.



*Wesley Shannon*  
A senior officer of the Department of the Environment

## SOIL TEST FOR PHOSPHORUS

A soil test refers 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.

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

**Soil Sampling Procedure**

1. Area to sample: The size of the area from which one sample can be taken varies but shall not be more than 4 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.

2. 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 3 months after the last application of any fertiliser (organic or chemical) containing this nutrient.

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

4. 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 headlands, 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**

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

2. 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 2 mm sieve.

3. 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 mg P per litre of soil, rounded to the nearest whole number.

4. 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 P Index</i>	<i>Olsen extractable phosphorus (mg P/L)</i>
0	0-9
1	10-15

2	16-25
3	26-45
4	46-70

## SCHEDULE 2

Regulation 2(2)

### PHOSPHORUS CONTENT OF ORGANIC MANURES

**Table 1**

	<i>Dry Matter<sup>(1)</sup></i>	<i>Available Phosphate (kg P<sub>2</sub>O<sub>5</sub>/m<sup>3</sup>)<sup>(1)</sup></i>
Dairy slurry	2	0.6
	<b>6</b>	<b>1.2</b>
	10	2.0
Beef Cattle	2	0.6
	<b>6</b>	<b>1.2</b>
	10	2.0
Pig Slurry	2	1.0
	<b>4</b>	<b>2.0</b>
	6	3.0
Separated cattle slurries (liquid portion)		
Strainer box	1.5	0.3
Weeping wall	3	0.5
Mechanical separator	4	1.2
	%	(kg P <sub>2</sub> O <sub>5</sub> /t)
Cattle FYM	25	3.5
Pig FYM	25	7.0
Sheep FYM	25	2.0
Duck manure	25	5.5
Layer manure	30	13
Broiler/turkey	60	25

<sup>(1)</sup> Figures in bold are the most common values

## EXPLANATORY NOTE

*(This note is not part of the Regulations)*

These Regulations aim to prevent water pollution by limiting the amount of phosphorus applied to land.

Regulation 2 restricts the amount of chemical fertiliser applied to land to the crop requirement whilst taking into consideration the phosphorous already available from the soil and organic manures. These variables are to be calculated in accordance with the Schedules to these Regulations and the Waste Management Licensing Regulations (Northern Ireland) 2003.

Regulation 3 imposes a duty on the controller of a holding to prevent water pollution.

Regulation 4 prohibits the land application of chemical fertiliser in situations where there will be run off of water and pollution is likely to occur. This regulation also prescribes the manner in which chemical fertiliser shall be applied to land and prohibits its application within 1.5m of a waterway.

Regulation 5 imposes an obligation on the owner and/or controller of a holding when applying these Regulations to follow guidance issued for the purpose of these Regulations by the Department of the Environment and/or the Department of Agriculture and Rural Development and the Code of Good Agricultural Practice issued by the Department of Agriculture and Rural Development.

Regulation 6 imposes an obligation on the controller of a holding to keep detailed records sufficient to ascertain who the controller of the holding was for the calendar year, the total agricultural area of the holding, the crop regime for individual areas within the holding, the number of livestock on the holding, the livestock manure storage capacity and storage arrangements of the holding and the quantity of nitrogen fertiliser moved on and off the holding. These records must be ready for inspection, held for 5 years, be accurate and not misleading.

Regulation 7 prescribes monitoring and inspection functions under these Regulations.

Regulations 8 and 9 set out the offences under these Regulations and their corresponding penalties.

Copies of the Code of Good Agricultural Practice for the Prevention of Pollution of Water, Air and Soil, referred to in regulation 5, may be obtained from the Department of Agriculture and Rural Development's website at <http://www.dardni.gov.uk>.

Copies of the Fertiliser Recommendations for Agricultural and Horticultural Crops (RB209) may be obtained from the Department for Environment, Food and Rural Affairs website: <http://www.defra.gov.uk>

Copies of Council Directive 91/676/EEC may be obtained from the Stationery Office, 16 Arthur Street, Belfast, BT1 4GD.

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