

Fertilisation Plan

Year: _____

For Northern Ireland farmers on the requirements of the Nitrates Directive Derogation from the livestock manure limit of 170kg Nitrogen per hectare per year.



Department of
**Agriculture and
Rural Development**

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**Northern Ireland
Environment
Agency**

www.ni-environment.gov.uk

This is an example format of a fertilisation plan. However a farmer can present the information in other formats if preferred.

The fertilisation plan must be prepared and available, for inspection on-farm, by 1 March each calendar year.

To assist in the completion of the fertilisation plan please refer to the Derogation Guidance Booklet pages 25 to 47.

1 Planned average stock numbers and livestock manure N and P produced on-farm

Livestock manure N and P to be produced by dairy cattle per year.

Only complete this table if you keep these livestock.

Refer to page 26 of the Nitrates Derogation Guidance Booklet.

1. Multiply the planned number of livestock in column (A) by the N produced / head / year column (B). Enter total in column (C).
2. Multiply the planned number of livestock in column (A) by the P produced / head / year column (D). Enter total in column (E).
3. Total the N produced/year in column (C).
4. Total the P produced/year in column (E).

Livestock type	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Dairy cattle	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
Dairy Cow		91		16.6	
Dairy heifer (over 2 years)		54		10.1	
Dairy heifer (1-2 years)		47		7.9	
Breeding bull		54		10.1	
Heifer calves 6-12 months		12		3.0	
Heifer calves 0-6 months		7		1.7	
		Total N produced from dairy cattle	=	Total P produced from dairy cattle	=

Livestock manure N and P to be produced by beef cattle per year.

Only complete this table if you keep these livestock.

Refer to page 27 of the Nitrates Derogation Guidance Booklet.

1. Multiply the planned number of livestock in column (A) by the N produced / head / year column (B). Enter total in column (C).
2. Multiply the planned number of livestock in column (A) by the P produced / head / year column (D). Enter total in column (E).
3. Total the N produced/year in column (C).
4. Total the P produced/year in column (E).

Livestock type	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Beef cattle	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
Suckler cows		54		10.1	
Cattle (over 2 years)		54		10.1	
Cattle (1-2 years)		47		7.9	
Breeding bull		54		10.1	
Bull beef (6-13 months)		23		5.8	
Cattle (6-12 months)		12		3.0	
Cattle (0-6 months)		7		1.7	
		Total N produced from beef cattle	=	Total P produced from beef cattle	=

Note: This list is not exhaustive - refer to Regulations for other categories of livestock type

Livestock manure N and P to be produced by sheep per year.

Only complete this table if you keep these livestock.

Refer to page 28 of the Nitrates Derogation Guidance Booklet.

1. Multiply the planned number of livestock in column (A) by the N produced / head column (B) enter total in column (C).
2. Multiply the planned number of livestock in column (A) by the P produced / head column (D) enter total in column (E).
3. Total the N produced in column (C).
4. Total the P produced in column (E).

Livestock type	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Sheep	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
Ewe (over 1 year)		9		1.0	
Ram (over 1 year)		9		1.0	
Lamb (6-12 months)		3.2		0.3	
Lambs (0-6 months)		1.2		0.3	
		Total N produced from sheep	=	Total P produced from sheep	=

Livestock manure N and P to be produced by deer/goats or other grazing livestock per year.

Only complete this table if you keep these livestock.

Refer to page 29 of the Nitrates Derogation Guidance Booklet.

1. Multiply the planned number of livestock in column (A) by the N produced / head / year column (B). Enter total in column (C)
2. Multiply the planned number of livestock in column (A) by the P produced / head / year column (D). Enter total in column (E)
3. Total the N produced/year in column (C).
4. Total the P produced/year in column (E).

Livestock type	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Deer	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
Deer (red) over 2 years		25		4	
Deer (red) 6 months – 2 years		13		2	
Deer (fallow) over 2 years		13		2	
Deer (fallow) 6 months – 2 years		7		1	
Deer (sika) over 2 years		10		2	
Deer (sika) 6 months – 2 years		6		1	
Goats					
Goats		9		1	
Other livestock					
		Total N produced from deer/goats or other grazing livestock	=	Total P produced from deer/goats or other grazing livestock	=

Note: This list is not exhaustive - refer to Regulations for other categories of livestock type

Livestock manure N and P to be produced by horses per year.

Only complete this table if you keep these livestock.

Refer to page 30 of the Nitrates Derogation Guidance Booklet.

1. Multiply the planned number of livestock in column (A) by the N produced / head / year column (B). Enter total in column (C)
2. Multiply the planned number of livestock in column (A) by the P produced / head / year column (D). Enter total in column (E)
3. Total the N produced / year in column (C).
4. Total the P produced / year in column (E).

Livestock type	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Horses	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
Horse > 3 years old		50		9	
Horse 2-3 years old		44		8	
Horse 1-2 years old		36		6	
Horse foal < 1 year old		25		3	
Donkey / small pony		30		5	
		Total N produced from horses	=	Total P produced from horses	=

Planned livestock numbers and livestock manure N and P to be produced by pigs per year.

Only complete if you keep these livestock.

Refer to page 31 of the Nitrates Derogation Guidance Booklet.

1. Select from either Breeding and rearing; or growing and finishing, depending on the system on your farm.
2. Enter the planned number of pigs on the farm for the year in column A, and calculate the total number of pigs planned to be sold in column F.
3. Calculate the total number of pigs planned to be sold per year and select the N and P figure for your rearing system.
4. Multiply the planned average number per year by the N and P produced per head.
5. Total the N produced/year in column (C). Total the P produced/year in column (E).

Livestock type	Breeding and rearing farms ONLY						
	Planned average per year		N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)	
Pigs	(A)		(B)	(C) (A)x(B)	(D)	(E) (A)x(D)	
Boars ²			16		4.2		
Maiden Gilts ²			13		5.7		
Breeding sows ² (and piglets to weaning)			19.5		8.7		
			Total N		Total P		
	Use the table below to calculate total number of pigs sold per year and calculate the N and P produced from these pigs.						
Pigs sold per year	Average no. sows	Planned average no. pigs sold per sow/year (F)	Planned total no. pigs sold per year	N produced/ head (kg N) * Select	Total N produced per year (kg N)	P produced/ head/year (kg P)	Total N produced (kg P/year)
				Total N		Total P	

Add the total N and total P from breeding and pigs sold together.

(continued)

Notes: ² Average number on the unit at any one time and not the total number entering the herd.

* Select the Nitrogen figure depending on the weaning age and sale weight of pigs on your unit.

	Sale weight	N produced/head (kg N)	P produced /head (kg P)
Weaned at 3- 4 weeks	18kg (7½ weeks)	0.26	0.08
	35kg (11 weeks)	0.71	0.23
	105kg (23 weeks)	3.40	1.09
Weaned at 7 weeks	35kg (11 weeks)	0.46	0.15
	105kg (23 weeks)	3.15	1.00

Example:

Select 3.40 (kg N) and 1.09 (kg P) if the weaning age is four weeks and sale weight approximately 105kg.

Growing and finishing farms only – select the weight range for your finishing system

Livestock type	Growing and finishing farms ONLY				
	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Pigs					
18kg-35kg		0.46		0.15	
18kg – 105kg		3.15		1.00	
35kg – 105kg		2.69		0.85	
		Total N from growing and finishing pig farms		Total P from growing and finishing pig farms	

Livestock manure N and P to be produced by poultry per year.

Only complete this table if you keep these livestock.

Refer to page 33 of the Nitrates Derogation Guidance Booklet

1. Depending on the poultry type, enter either the number on your farm throughout the calendar year or the capacity of the unit in column A.
2. Multiply the number of birds by the N and P produced per 1000 birds.
3. Total the N produced / year in the appropriate column.
4. Total the P produced / year in the appropriate column.

Livestock type	Planned no. of birds produced per year '000s	N produced/ 1000 birds (kg N)	Total N produced (kg/year)	P produced/ 1000 birds (kg P)	Total P produced (kg/year)
Poultry	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
Broilers (1000s) ³		38.6		28.7	
Male turkeys (1000s) ⁴		611		254	
Female turkeys (1000s) ⁵		363		104	
Fattening ducks (1000s) ⁶		139		65	
		Total N kg from poultry	=	Total P kg from poultry	=

(continued)

Notes

³ Broilers (1000), data based on 255kg N/year, output per 6.6 crops/year, 40 day cycle (73% occupancy).

⁴ Male turkeys (1000), data based on 1284kg N/year, output per 2.1 crops/year, 140 day cycle (80% occupancy).

⁵ Female turkeys (1000), data based on 871kg N/year, output per 2.4 crops/year, 120 day cycle (80% occupancy).

⁶ Fattening ducks (1000), data based on 834kg N/year, output per 6 crops, 50 day cycle (85% occupancy).

Livestock type	Unit capacity (no. of birds) '000s	Planned no. weeks occupancy per year	N produced/ 1000 birds per week (kg N)	Total N produced (kg/year)	P produced 1000 birds per week (kg P)	Total P produced (kg year)
Poultry	(A)	(B)	(C)	(D) (A)x(B)x(C)	(E)	(F) (A)x(B)x(E)
Broiler breeders ⁷ (1000s) 0-18 wks			5.9		2.1	
Broiler breeders ⁸ (1000s) 18-60 wks			20.8		7.6	
Broiler breeders ⁹ (1000s) 0-60 wks			18.6		6.8	
Pullets (1000s) ¹⁰			5.7		2.1	
Layers (1000s) ¹¹			11.7		4.6	
			Total N from poultry		Total P from poultry	

Notes

⁷ Broiler breeders (1000), 0 – 18 weeks data based on 142kg N/year, output per 18 week cycle (46% occupancy).

⁸ Broiler breeders (1000), 18 – 60 weeks data based on 945 N/year, output per 42 week cycle (87.5% occupancy).

⁹ Broiler breeders (1000), 0 – 60 weeks data based on 878kg N/year, output per 60 week cycle (91% occupancy).

¹⁰ Pullets (1000), data based on 113kg N/year, output per 17 week cycle (38% occupancy).

¹¹ Layers (1000), data based on 607kg N/year, 98% occupancy.

N and P produced from livestock manure.

Refer to page 35 of the Nitrates Derogation Guidance Booklet

Transferring the answers from the relevant pages enter the amount of livestock manure N and P from each of the enterprises on your farm.

	N produced (kg/year)	P produced (kg/year)
Dairy cattle livestock manure (total from page 2)		
Beef cattle livestock manure (total from page 3)	+	+
Sheep livestock manure (total from page 4)	+	+
Deer and goat livestock manure (total from page 5)	+	+
Horse livestock manure (total from page 6)	+	+
Pig livestock manure (total from page 7 and 8)	+	+
Poultry livestock manure (total from page 9 and 10)	+	+
	=	=
Total for all enterprises	(Total N produced kg/year)	(Total P produced kg/year)

2 Organic manure planned to be imported and exported

Refer to page 36 of the Nitrates Derogation Guidance Booklet

1. Only complete this part if manure is to be imported/exported to or from your farm.
2. Select the type of slurry/manure and dry matter (DM) and insert the volume. Typical DM is 6% for cattle slurry and 4% for pig slurry.

Slurry type	Imported volume (m ³)	Exported volume (m ³)
Beef cattle slurry – 2%DM		
Beef cattle slurry – 6%DM		
Beef cattle slurry – 10%DM		
Dairy cattle slurry – 2%DM		
Dairy cattle slurry – 6%DM		
Dairy cattle slurry – 10%DM		
Pig slurry – 2%DM		
Pig slurry – 4%DM		
Pig slurry – 6%DM		
Separated slurry		
Other		

Manure type	Imported quantity (tonnes)	Exported quantity (tonnes)
Broiler/turkey manure – 60%DM		
Cattle FYM – 25% DM		
Duck manure – 25% DM		
Layer manure – 30% DM		
Pig FYM – 25% DM		
Other		

1m³= 220 gallons

3 Map of farm

Refer to page 37 of the Nitrates Derogation Guidance Booklet

Provide a farm map which shows the following:

- the field areas;
- crops grown in each field;
- Previous crop grown for crops other than grass;
- SNS level for crops other than grass (Refer to the Nitrates Action Programme Guidance Booklet page 65-66).

or alternatively a table as below could be completed along with the farm map.

Farm Survey Number	Field Number	Field Area (ha)	Previous crop (arable fields only)	Soil Nitrogen Status	Crop grown

(continued)

Map of farm (continued)

Farm Survey Number	Field Number	Field Area (ha)	Previous crop (arable fields only)	Soil Nitrogen Status	Crop grown

(continued)

Map of farm (continued)

Farm Survey Number	Field Number	Field Area (ha)	Previous crop (arable fields only)	Soil Nitrogen Status	Crop grown

Map of farm (continued)

Farm Survey Number	Field Number	Field Area (ha)	Previous crop (arable fields only)	Soil Nitrogen Status	Crop grown

4 Planning the amount of nitrogen to be applied to grassland

Refer to page 39 of the Nitrates Derogation Guidance Booklet

Nitrogen planning sheet for grassland										
Crop details		Organic manure excluding livestock manures (for example sewage sludge)				Chemical N fertiliser			Organic and Chemical N fertiliser	Total N to be applied per ha (kg) (J) divided by (A)
Area of grassland on the farm (ha)	N requirement of grassland (kg/ha) (As per page 21)	Type of manure	Total amount of manure to be applied to <u>whole</u> area of grassland (m ³ or t)	Amount of available N per m ³ or t Annex E*	Total amount of N available to <u>whole</u> area of grass (kg) (D) x (E)	Type of N fertiliser to be applied	Total amount of fertiliser product to be applied to <u>whole</u> area (kg)	Total amount of N to be applied to <u>whole</u> area (kg)	Total amount of N to be applied over <u>whole</u> area (kg) (F) + (I)	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(L)
								Total		

* refers to Annex E in the Nitrates Action Programme Guidance Booklet page 61.

5 Planning the amount of nitrogen to be applied on crops other than grass

Refer to page 41 of the Nitrates Derogation Guidance Booklet

Nitrogen planning sheet for crops											
Crop details			Organic manure Including livestock manure				Chemical N fertiliser			Organic and Chemical N fertiliser	Total N to be applied per ha (kg) (K) divided by (B)
Crop	Total Area of crop (ha)	Crop N requirement (kg/ha) Annex I*	Type	Total amount of manure to be applied to <u>whole</u> area of crop (m ³ or t)	Amount of N available in m ³ or t Annex E*	Total amount of N available to <u>whole</u> area of crop (kg) (E) x (F)	Type of N fertiliser to be applied	Total amount of fertiliser product to be applied to <u>whole</u> area (kg)	Total amount of fertiliser N to be applied to <u>whole</u> area (kg)	Total amount of N to be applied over <u>whole</u> area (kg) (G) + (J)	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)

(continued)

Planning the amount of nitrogen to be applied on crops other than grass

* refers to Annexes I and E in the Nitrates Action Programme Guidance Booklet

6 Planning the amount of phosphorus to be applied

Refer to page 43 of the Nitrates Derogation Guidance Booklet

Planning phosphorus sheet												
Grass / Crop details					Organic manure (includes livestock manures)				Chemical P fertiliser			Total P (P ₂ O ₅) to be applied per ha (H)+(K) divided by (B)
Field No.	Crop	Area of crop (ha)	Soil index (from analysis)	P (P ₂ O ₅) requirement by crop kg/ha according to soil index Annex K*	Type of organic manure to be applied <u>after</u> soil sample taken Annex E*	Total amount of organic manure to be applied (m ³ or t)	P (P ₂ O ₅) content of organic manure to be applied (kg/m ³ or kg/t) Annex E*	Total amount of P (P ₂ O ₅) supplied to crop in organic manure (F) x (G)	Type of fertiliser product to be applied	Total amount of fertiliser product to be applied (kg)	Total amount of P (P ₂ O ₅) to be applied (I) x (J)	
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)

Planning the amount of phosphorus to be applied

m³ = 220 gallons
1 hectare=2.47 acres

* refers to Annexes K and E in the Nitrates Action Programme Guidance Booklet

NOTE:

Where no chemical P fertiliser has been applied, there is no legal requirement to demonstrate a crop requirement for phosphorus from livestock manures.

When applying nutrients to grass or crops remember to consider all nutrients such as potash and sulphur.

7 Description of animal housing

What type of animal housing is on your farm?

Slurry based

☐

Straw bedded

☐

If other please specify

8 Description and volume of manure storage

Storage capacity of rectangular tanks/lagoons/middens

Tank	Description	Length l (m)	Breadth b (m)	Adjusted Depth d (m) (Depth – freeboard) ⁽ⁱ⁾	Volume of facilities (l x b x d) (m ³)
1					
2					
3					
4					
5					
6					
Total capacity of rectangular tanks and lagoons/ middens					

Storage capacity of above ground stores

Tank	Description	Radius rad (m)	Adjusted height h (m) (Height – freeboard) ⁽ⁱ⁾	Volume of facilities for slurry $= 3.14 \times \text{rad} \times \text{rad} \times h \text{ (m}^3\text{)}$
1				
2				
Total capacity of above ground circular stores				

- ⁽ⁱ⁾ Freeboard is the term given to the unfilled depth (safety margin) at the top of a slurry or effluent tank or compound. Freeboard allowances are 750mm for earth bank lagoons and 300mm for all other structures. Freeboard is not a legal requirement for structures which are exempt under the Silage, Slurry and Agricultural Fuel Oil (SSAFO) Regulations (structures completed before 1 December 2003, unless substantially reconstructed). It is, however, considered best management practice to adhere to freeboard requirements in all structures.

Notes

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