NITRATES DEROGATION

P Balance Worksheet

This worksheet will assist you to comply with the P Balance limit of 10kg P/ha/year. You do not have to complete this worksheet. However if you do this worksheet can be submitted with the rest of the Fertilisation Account and you do not have to complete the P Balance section of the Fertilisation Account on pages 9-16.

Alternatively you can access the P Balance Calculator at www.ruralni.gov.uk. If using the P Balance Calculator you can print the “Detailed Balance Summary”. Again this can be submitted with the rest of your Fertilisation Account and you do not have to complete the P Balance section of the Fertilisation Account.

Calculating P Balance

Step 1 - P Inputs

INPUTS - Chemical fertilisers

1. Enter the fertiliser type and the amount purchased per year.
2. Multiply the amount purchased per year by the P_2O_5 % and then by 4.36.
3. Total the P content of fertilisers purchased and insert in **Box A**.

NB multiply P_2O_5 level of fertiliser bag by 4.36 to convert to kg P in 1 tonne.

Example

Fertiliser type			**Amount Purchased or imported (t)**		**% P_2O_5**			**Quantity of Phosphorus (kg)**
N	**P (P_2O_5)**	**K**						
27	6	12	1.9	X	6	X 4.36	=	49.70
Total P content of chemical fertilisers (kg P/year)							**=**	**49.70**

Fertiliser type			**Amount Purchased or imported (t)**		**% P_2O_5**			**Quantity of Phosphorus (kg)**
N	**P (P_2O_5)**	**K**						
				X		X 4.36	=	
				X		X 4.36	=	
				X		X 4.36	=	
				X		X 4.36	=	
				X		X 4.36	=	
				X		X 4.36	=	
				X		X 4.36	=	
				X		X 4.36	=	
				X		X 4.36	=	
				X		X 4.36	=	
				X		X 4.36	=	
Total P content of chemical fertilisers (kg P/year)								**A**

INPUTS - Imported organic manures

1. Select the organic manure type and enter the amount imported per year.
2. Multiply the amount imported per year by the P content.
3. Total the P content of imported organic manures and insert in **Box B**.

Organic manure type	**Amount imported (m^3 or t)**		**P content (kg/t)**		**Quantity of Phosphorus (kg)**
Cattle slurry 6%		X	0.52	=	
Pig slurry 4%		X	0.87	=	
Cattle FYM		X	1.53	=	
Sheep FYM		X	0.87	=	
Pig FYM		X	3.05	=	
Broiler litter		X	10.91	=	
Layer manure		X	5.67	=	
Duck manure		X	2.40	=	
Other		X	P content from analysis	=	
Total P content of imported organic manures (kg/year)					**B**

INPUTS - Purchased feedstuffs which includes concentrates / straights / silage / straw / hay (Do not include home grown feedstuffs)

1. Enter the feedstuff type and amount purchased per year.
2. Multiply the amount purchased per year by the P content of 5.8kg /t (or use the actual declared P content figure if known). If you purchased a concentrate with a lower P content you must supply documentation to demonstrate the P content. Evidence must include a letter / invoice from the feed supplier containing your name, address, the P content in the meal and dated. In the absence of a letterhead the note should be signed by the supplier together with their contact details.
3. Total the P content of feedstuffs used and insert in **Box C**.

Example

Feedstuff type	**Amount purchased per year (t)**		**P content (kg/t)**		**Quantity of Phosphorus (kg)**
Dairy cow winter meal	120	X	4.5	=	540
Dairy cow grazing meal	100	X	5.0	=	500
Heifer concentrates	30	X	5.8	=	174
Broiler concentrates	460	X	5.8	=	2668
Total P content of feedstuffs purchased / imported (kg P/year)				**=**	**3882**

Feedstuff type	**Amount purchased per year (t)**		**P content (kg/t)**		**Quantity of Phosphorus (kg)**
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
Total P content of feedstuffs purchased / imported (kg P/year)					**C**

INPUTS - Livestock bought in

1. Enter the number of livestock purchased and total liveweight of these livestock.
2. Multiply the total liveweight by the P content.
3. Total the P content of all livestock bought in and insert in **Box D.**

Note: Poultry numbers are not required here as P inputs are accounted for in livestock produce in P outputs.

Example

Livestock type	Number bought in per year	Total liveweight (kg)		P content (kg/unit)		Quantity of Phosphorus (kg)
Cattle	5	3250	X	0.0066	=	21.45
Total P content of livestock purchased/imported in kg P / year					**=**	**21.45**

Livestock type	Number bought in year	Total liveweight (kg)	X	P content (kg/unit)	=	Quantity of Phosphorus (kg)
Dropped calves (50kg)			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Sheep/lambs			X	0.0054	=	
Sheep/lambs			X	0.0054	=	
Sheep/lambs			X	0.0054	=	
Sheep/lambs			X	0.0054	=	
Sheep/lambs			X	0.0054	=	
Sheep/lambs			X	0.0054	=	
Pigs			X	0.0050	=	
Pigs			X	0.0050	=	
Pigs			X	0.0050	=	
Pigs			X	0.0050	=	
Other please specify			X		=	
Total P content of livestock purchased / imported (kg P/year)						**D**

Step 2 - P OUTPUTS

OUPUTS – Crop Produce

1. Select the crop produce type and enter the amount sold off the farm per year.
2. Multiply the amount sold per year by the P content.
3. Total the P content of crop produce sold and insert in **Box E**.

Crop produce type	Amount sold per year (t)		P content (kg/t)		Quantity of Phosphorus (kg)
Silage		X	0.6	=	
Hay		X	3.0	=	
Straw		X	1.0	=	
Barley		X	3.4	=	
Potatoes		X	0.41	=	
Wheat		X	2.8	=	
Oats		X	2.9	=	
		X		=	
Other please specify		X		=	
		X		=	
		X		=	
Total P content of crop produce sold (kg P/year)					**E**

OUTPUT - Exported organic manures

1. Select the organic manure type and enter the amount exported per year. If other also enter the P content from the lab report.
2. Multiply the amount imported per year by the P content.
3. Total the P content of exported organic manures and insert in **Box F**.

Example

Organic manure type	Amount exported (m^3 or t)		P content (kg P/ m^3 or t)		Quantity of Phosphorus (kg)
Broiler litter	100	X	10.91	=	1091
Total P content of exported organic manures (kg/year)				**=**	**1091**

Organic manure type	Amount exported (m^3 or t)		P content (kg P/ m^3 or t)		Quantity of Phosphorus (kg)
Cattle slurry 2%		X	0.26	=	
Cattle slurry 6%		X	0.52	=	
Cattle slurry 10%		X	0.87	=	
Pig slurry 2%		X	0.44	=	
Pig slurry 4%		X	0.87	=	
Pig slurry 6%		X	1.31	=	
Cattle FYM		X	1.53	=	
Sheep FYM		X	0.87	=	
Pig FYM		X	3.05	=	
Broiler litter		X	10.91	=	
Layer manure		X	5.67	=	
Duck manure		X	2.40	=	
Other		X		=	
Total P content of exported organic manures (kg/year)					**F**

OUTPUT - Livestock produce sold / exported off farm

1. Select the livestock produce and enter the amount/number sold per year.
2. Multiply the amount/number sold per year by the P content.
3. Total the P content of livestock produce sold and insert in **Box G**.

Example

Livestock produce type	Amount / number sold		P content (kg/unit year)		Quantity of Phosphorus (kg)
Milk (l)	660,000	X	0.001	=	660
1000 Broilers	132	X	12	=	1584
Total P content of livestock produce sold (kg P/year)				**=**	**2244**

Livestock produce type	Amount / number sold		P content (kg/unit year)		Quantity of Phosphorus (kg)
Milk (litres)		X	0.001	=	
Wool (tonnes)		X	0.4	=	
1000 Broilers		X	12	=	
1000 Broiler breeders 0-18 weeks		X	11.4	=	
1000 Broiler breeders 18-60 weeks (including eggs)		X	33.5	=	
1000 Broiler breeders 0-60 weeks (including eggs)		X	44.9	=	
1000 Layers (including eggs)		X	42.5	=	
1000 Pullets		X	7.9	=	
1000 Turkeys male		X	34.6	=	
1000 Turkeys female		X	31.7	=	
1000 Ducks		X	11.4	=	
Other		X		=	
Total P content of livestock produce sold (kg P/year)					**G**

OUTPUT - Livestock leaving the farm

1. Select the livestock type and enter the number leaving the farm and the total liveweight of the animals.
2. Multiply the total weight by the P content.
3. Total the P content of all livestock moved off the farm and insert in **Box H.**

Note: The P outputs for poultry are already accounted for in animal produce P outputs.

Example

Livestock type	Number sold	Total liveweight (kg)		P content (kg/unit)		Quantity of Phosphorus (kg)
Dropped calves	50	2500	X	0.0066		16.5
Cattle	30	16500	X	0.0066	=	108.90
Total P content of livestock sold / exported in (kg P/year)					**=**	**125.4**

Livestock type	Number sold	Total liveweight (kg)	X	P content (kg/unit)	=	Quantity of Phosphorus (kg)
Dropped calves (50kg)			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Cattle			X	0.0066	=	
Sheep/lambs			X	0.0054	=	
Sheep/lambs			X	0.0054	=	
Sheep/lambs			X	0.0054	=	
Sheep/lambs			X	0.0054	=	
Sheep/lambs			X	0.0054	=	
Sheep/lambs			X	0.0054	=	
Pigs			X	0.0050	=	
Pigs			X	0.0050	=	
Pigs			X	0.0050	=	
Pigs			X	0.0050	=	
Other please specify			X		=	
Total P content of livestock sold / exported in (kg P/year)						**H**

Remember to include fallen animals

Step 3 - Total P inputs and out puts

Transfer the answers from the relevant sections and enter the amount of P inputs and P outputs on your farm.

P Inputs		P Outputs	
Chemical Fertilisers (**A** from page 1)		Crop produce (**E** from page 5)	
add	**+**	**add**	**+**
Imported organic manures (**B** from page 2)		Exported organic manures (**F** from page 6)	
add	**+**	**add**	**+**
Purchased Feedstuffs (**C** from page 3)		Livestock produce (**G** from page 7)	
add	**+**	**add**	**+**
Livestock bought in (**D** from page 4)		Livestock moved off farm (**H** from page 8)	
equals	**=**	**equals**	**=**
Total P Inputs (I)		**Total P Outputs (J)**	

Step 4 - Land area controlled

Calculate the total land area (ha) which you control. Exclude non-agricultural areas, including farm roads, paths, buildings, woodland, river, ponds and quarries.

Land owned	**K**	
	Add	+
Land taken	**L**	
	Minus	-
Land let out	**M**	
	equals	=
Total area (ha)	**N**	

Step 5 - P Balance

Calculate the P balance by subtracting the P output from the P input and dividing it by the land area controlled.

Total P input	**I**	
	Minus	-
Total P output	**J**	
	Divide by	÷
Total area	**N**	
	equals	=
P balance	**O**	

P balance should be below 10 kg/ha/year to be compliant with this aspect of the derogation.