Nutrients Action Programme (NAP) Derogation Guidance Booklet 2019-2022

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

Sustainability *at the heart of a living, working, active landscape valued by everyone.*

Department of Agriculture, Environment and Rural Affairs
www.daera-ni.gov.uk

NIEA Northern Ireland Environment Agency
www.daera-ni.gov.uk

INVESTORS IN PEOPLE

This document may be made available in alternative formats; please contact us to discuss your requirements:

CAFRE
Greenmount Campus
45 Tirgracy Road,
Antrim
BT41 4PS

Telephone: 0300 200 7842
Email: enquiries@cafre.ac.uk

DAERA Northern Ireland Environment Agency
Water Management Unit
17 Antrim Road
Tonagh
Lisburn
BT28 3AL

Telephone: 028 9262 3280
Email: derogation@daera-ni.gov.uk

You can download this guidance booklet from our website:
Follow these links: www.daera-ni.gov.uk/nutrientsactionprogramme2019-2022
www.daera-ni.gov.uk/articles/nitrates-directive

Contents

Introduction

In Northern Ireland the EU Nitrates Directive is currently implemented through the Nutrient Action Programme Regulations (Northern Ireland) 2019 (NAP Regulations). The Regulations include a limit on the amount of nitrogen (N) from livestock manure that can be applied to land of 170 kg N per ha per year on all farms (the livestock manure nitrogen loading limit). The NAP 2019-2022 Guidance Booklet gives general guidance on the measures set out in the NAP Regulations and how to comply with them and is available at:

www.daera-ni.gov.uk/nutrientsactionprogramme2019-2022

In 2019 Northern Ireland was successful in applying to the European Commission to renew a Derogation from the Nitrates Directive (Commission Decision 2019/1325/EU) permitting the land application of up to 250 kg N per ha per year from grazing livestock manure under certain conditions. This Derogation, for the period 2019 to 2022, is implemented through the NAP Regulations. It is underpinned by scientific justification showing that this fertilisation amount will not compromise the achievement of protecting and improving water quality.

This Derogation Guidance Booklet provides details of what you are required to do under Derogation. It is only applicable if you have been successful in applying to the Northern Ireland Environment Agency (NIEA) to operate under an individual Derogation, otherwise the livestock manure loading limit of 170 kg N per ha per year under the NAP Regulations applies.

Please note that the NAP and Phosphorus Regulations Guidance Booklets and the Derogation Guidance Booklets issued from 2007-2010, 2011-2014 and 2015-2018 are only applicable for those years.

Legal Requirements and Cross-Compliance

The rules set out in the NAP Regulations apply to all farm businesses in Northern Ireland. If you are undertaking any of the activities covered by the Regulations you have a legal obligation to comply with the rules; **regardless of whether or not you are claiming any Area-Based Scheme payments**. Failure to comply may lead to legal action being taken against your business by NIEA.

The Nitrates Directive also underpins one of the Cross-Compliance Statutory Management Requirements (SMR 1: Protection of Water against Nitrate Pollution). Therefore, for farm businesses claiming payments under Area-Based Schemes (including the *Basic Payment Scheme* (BPS)), non-compliance with the NAP Regulations, ***including non-compliance with the terms of any Derogation granted to your farm***, is also a breach of Cross-Compliance conditions and may lead to a reduction in payments.

Table 1 summarises the measures set out in the NAP Regulations and groups them into the verifiable standards that must be adhered to under Cross-Compliance.

Summary of measures required to comply with the Nutrients Action Programme and Nutrients Action Programme Derogation

Table 1 - Summary of measures required to comply with the NAP and NAP Derogation

(Measures in **green** show changes from the 2015-2018 NAP and 2006 Phosphorus Regulations).

Verifiable Standards	Key Measures	
	Nutrients Action Programme - Requirements for **ALL** farmers	**Additional action required on derogated farms**
Closed spreading periods	• Chemical nitrogen and phosphate fertiliser must not be applied to grassland from midnight 15 September to midnight 31 January. • All types of chemical fertiliser must not be applied to crops other than grass from midnight 15 September to midnight 31 January, unless there is a demonstrable crop requirement. • Organic manures, including slurry, poultry litter, digestate, sewage sludge, anaerobic digestate and abattoir waste, must not be applied to any land from midnight 15 October to midnight 31 January. • Farmyard manure (FYM) must not be applied to any land from midnight 31 October to midnight 31 January. • There is no closed spreading period for dirty water.	• Where the fertilisation plan indicates a proposal to disturb soil as part of grass cultivation, for example ploughing, there must be no application to that parcel of land of any organic manures, including FYM and dirty water, from midnight 1 September in any year to midnight 31 January of the following year.
Land application restrictions	• All fertilisers, chemical and organic and including dirty water, must not be applied: - on waterlogged soils, flooded land or land liable to flood; - on frozen ground or snow covered ground; - if heavy rain is falling or forecast in the next 48 hours; - on steep slopes (with an average incline of 20% or more on grassland or 15% or more on all other land) where other significant risks of water pollution exist. The risk factors to be considered include the proximity to waterways/lakes, type and amount of fertiliser to be applied, the soil conditions, weather forecast and time to incorporation if applied to arable land. The risk assessment for steeply sloping land is detailed in the NAP Guidance;	• At least 50% of the slurry produced on the holding must be applied on or before the 15 June of each year. • Low Emission Slurry Spreading Equipment (LESSE) must be used for any slurry applications after 15 June each year.

Verifiable Standards	Key Measures	
	Nutrients Action Programme - Requirements for **ALL** farmers	**Additional action required on derogated farms**
	- on other land (with an average incline of less than 20% for grassland or less than 15% for all other land), where significant risks of water pollution exist. The risk factors to be considered include the proximity to waterways/lakes, amount to be applied, soil conditions, weather forecast and time to incorporation if applied to arable land. The risk assessment for land, other that steeply sloping, is detailed in the NAP Guidance. • Prevent entry of fertilisers to waters and ensure application is accurate, uniform and not in a location or manner likely to cause entry to waters. • All types of chemical fertiliser must not be applied within 2m of any waterway. • Organic manures including dirty water must not be applied within: - 20m of lakes; - 50m of a borehole, spring or well; - 250m of a borehole used for a public water supply; - 15m of exposed cavernous or karstified limestone features; - 10m of a waterway other than lakes; this distance may be reduced to 3m where slope is less than 10% towards the waterway and where organic manures are spread by bandspreaders, trailing shoe, trailing hose or soil injection or where adjoining area is less than 1 ha in size or not more than 50m in width. • Application rates: - No more than 50m^3 per ha (4,500 gal per ac) or 50 tonnes per ha (20 t per ac) of organic manures to be applied at one time, with a minimum of three weeks between applications; - No more than 50m^3 per ha (4,500 gal per ac) of dirty water to be applied at one time with a minimum of two weeks between applications.	

Verifiable Standards	Key Measures	
	Nutrients Action Programme - Requirements for **ALL** farmers	**Additional action required on derogated farms**
	• From midnight 30 September - 15 October and during February; - the buffer zones for spreading slurry are increased: - from 10m to 15m of any waterway - from 20m to 30m for lakes - the maximum slurry application rate is reduced from 50m^3 (4500 gal/ac) to 30m^3 (2700 gal/ac). Remember to follow the appropriate risk assessment as detailed in the NAP Guidance. • Slurry can only be spread by inverted splashplate, bandspreaders, trailing shoe, trailing hose or soil injection. • Dirty water to be spread by same methods as slurry and by irrigation. • Sludgigators must not be used. Low Emission Slurry Spreading Equipment (LESSE) includes bandspreading, dribble bar, trailing hose, trailing shoe, soil incorporation or soil injection methods. LESSE must be used: • From 1 February 2020 for spreading anaerobic digestate. • From 1 February 2021 by slurry contractors. • From 1 February 2022 on cattle farms with 200 or more cattle livestock units and pig farms with a total annual livestock manure nitrogen production of 20,000 kg or more from pigs. • Where it is not practical to spread on a field using LESSE due to slope, slurry can be spread using an inverted splash plate on that field. A record of the field number and the reason for spreading using a splash plate must be kept for inspection.	

Summary of measures required to comply with the Nutrients Action Programme and Nutrients Action Programme Derogation - continued

Verifiable Standards	Key Measures	
	Nutrients Action Programme - Requirements for **ALL** farmers	**Additional action required on derogated farms**
Livestock Manure Nitrogen Loading	• 170 kg nitrogen per ha per year farm limit.	• 250 kg N per ha per year limit from grazing livestock manure (cattle (excluding veal calves), sheep, deer, goats and horses). • 170 kg N per ha per year limit from all other livestock manure.
Nitrogen and Phosphorus Excretion Rates	• From 11 April 2019 revised nitrogen and phosphorus excretion rates for poultry production systems will be used. • From 1 January 2020 revised nitrogen and phosphorus excretion rates for cattle must be used.	
Overall Nitrogen Fertiliser Limits	• Maximum kg nitrogen per ha on grassland (apart from nitrogen in livestock manure): - Dairy farms* 272 (8¼ bags** per ac) - Other farms 222 (6¾ bags** per ac) (When applying chemical nitrogen fertiliser, nitrogen from organic manures (other than livestock manure and anaerobic digestate containing digested livestock manure) must be subtracted.) • For non-grassland crops, maximum nitrogen applied (from all types of fertiliser, including livestock manure) must not exceed crop requirement and, for certain arable crops, an N-Max limit applies to the total crop area. **More than 50% of nitrogen in livestock manure comes from dairy cattle.* ***Approximate number of 50 kg bags of a 27% nitrogen type fertiliser.*	• Derogated farms must not exceed maximum fertiliser application limits when applying nitrogen.

Verifiable Standards	Key Measures	
	Nutrients Action Programme - Requirements for **ALL** farmers	**Additional action required on derogated farms**
Restrictions on Phosphate Application	• Organic manure with more than 0.25 kg of total phosphorus per 1 kg of total nitrogen (e.g. some poultry litter, pig FYM and anaerobic digestate) can only be applied where soil analysis shows there is a crop requirement for phosphorus. • From 1 January 2020 new maximum phosphate fertiliser application rates (kg P_2O_5 per ha) for extensively managed grassland (receiving under 60 kg chemical N/ha/year or under 120 kg manure N/ha/year loading) will apply.	
Phosphorus balance	Not applicable.	• Derogated holding must not exceed a surplus of 10 kg P per ha per year.
Livestock Manure, Silage and Silage Effluent Storage Requirements	• 26 weeks livestock manure storage capacity for pig and poultry enterprises. • 22 weeks for other enterprises. • When certain criteria are met there are allowances for out-wintering, animals in bedded accommodation, separated cattle slurry, renting additional tanks, poultry litter stored in a midden or field heap and exporting manure to approved outlets. • Livestock manure and silage effluent storage must be maintained and managed to prevent seepage or run-off. • Silage and slurry stores constructed or substantially modified after 1 December 2003 must comply with certain construction standards (set out in the NAP Regulations) and be notified to NIEA at least 28 days before they are brought into use. • Silage bales must be stored at least 10m from any waterway and stored and managed in such a way as to prevent seepage into the waterway. • FYM and poultry litter and anaerobic digestate fibre: - May be stored in middens with adequate effluent collection facilities.	

Verifiable Standards	Key Measures	
	Nutrients Action Programme - Requirements for **ALL** farmers	**Additional action required on derogated farms**
	- May be stored in a field heap where they are to be applied for a maximum of 120 days. - Field storage of poultry litter and anaerobic digestate must be notified to NIEA prior to placement in the field. • FYM and poultry litter and anaerobic digestate fibre field heaps must not be stored: - In the same location of the field year after year; - Within 50m of a borehole, spring or well; - Within 250m of a borehole used for a public water supply; - Within 50m of exposed cavernous or karstified limestone features; - On land that is waterlogged, flooded or likely to flood. • FYM field heaps must not be stored within 20m of any waterway and 50m of lakes. • Poultry litter and anaerobic digestate fibre must not be stored within 100m of lakes and 40m of a waterway. • Poultry litter and anaerobic digestate fibre field heaps must be covered with an impermeable membrane as soon as possible and within 24 hours of placement in the field. • Provide storage for dirty water during periods when conditions for land application are unsuitable. • From 1 January 2020 new above ground slurry stores must be at least 50m from any waterway and all new stores (excluding lagoons) must be fitted with a cover.	

Summary of measures required to comply with the Nutrients Action Programme and Nutrients Action Programme Derogation - continued

Verifiable Standards	Key Measures	
	Nutrients Action Programme - Requirements for **ALL** farmers	**Additional action required on derogated farms**
Land Management	• From harvest of all crops until 15 January of the following year, the land must be managed to ensure minimum soil cover and to minimise soil erosion and nutrient run off. • Residues of crops harvested must be left undisturbed until just before sowing the following year. • From 1 January 2020 supplementary feeding sites must be a minimum of 20m from any waterway where there could be a significant risk of pollution occurring from their use. • From 1 January 2022 supplementary livestock drinking points must be a minimum of 10m from any waterway where there could be a significant risk of pollution occurring from their use.	• At least 80% of controlled agricultural area must be grassland. • Soil testing for phosphorus must be carried out across the holding at least every four years. • Temporary grassland must only be ploughed in spring. • Ploughed grass must be followed immediately by a crop with a high N demand. • Crop rotation must not include leguminous or other plants fixing N except for grassland with less than 50% clover and legumes undersown with grass.
Record Keeping	• Records relating to the export of organic manure to be submitted annually to NIEA by 31 January of the following year. • Eligible agricultural area, field size and location. • Cropping regimes and areas, Soil Nitrogen Supply (SNS) index for crops other than grassland. • Livestock numbers, type, species and time kept. • Organic and chemical fertiliser details including imports and exports.	• Application for Derogation must be made to NIEA on or before 1 March in the year for which the Derogation is being sought. • Prepare and keep a fertilisation plan on farm and have it ready for inspection

Verifiable Standards	Key Measures	
	Nutrients Action Programme - Requirements for **ALL** farmers	**Additional action required on derogated farms**
	• From 1 January 2017 - evidence of a crop phosphate requirement from soil analysis if organic manure with over 0.25 kg total P per 1 kg total N is applied (P-rich manure). • From 1 January 2020 a fertilisation plan must be prepared and kept up to date by all grassland farms using chemical phosphorus fertiliser, and all farms using phosphorus rich manure e.g. some poultry manures, pig FYMs and anaerobic digestate. A soil analysis is required. • From 1 January 2020 farms importing anaerobic digestate will require a nutrient content analysis. • Storage capacity, and where applicable, details of rental agreements, authorisation to store poultry litter and anaerobic digestate fibre in field heaps and associated evidence to support allowances to reduce capacity. • Evidence of control over the eligible agricultural area and the right to graze common land. *(Many of these records already exist on farms, for example, BPS forms, farm maps, herd and flock records and fertiliser receipts, Nitrogen and phosphate requirements for grassland are set out in the NAP Regulations. N and P requirements for other crops should be determined using the latest edition of the AHDB Nutrient Management Guide (RB209.)* • Records to be ready by 30 June each year for the period 1 January to 31 December of previous year. • Records to be available for inspection from previous five calendar years.	by 1 March for that calendar year. • When available, soil analysis results must be kept with the fertilisation plan. • Prepare and submit a fertilisation account to NIEA each year on or before 1 March for the previous calendar year. • Records relating to the export of organic manure to be submitted annually with your Derogation Account to NIEA by 1 March of the following year.
Compliance with a Notice	Enforcement Notices issued under the NAP Regulations must be complied with.	
Cross-Compliance	The measures controlling the application of chemical phosphorus fertiliser to land are now a Cross-Compliance requirement.	

Key Definitions Under a Derogation

Some frequently used terms in this guidance booklet are defined below. For definitions of other terms, please refer to the key definitions and glossary in the NAP 2019-2022 Guidance Booklet.

Autumn - the months of September, October and November.

Controller - the person charged with management of a holding for the calendar year in question and will be taken to be:

> The person claiming direct agricultural aid payments for the eligible agricultural area or, where direct agricultural aid payments are not being claimed, the person who enjoys the decision making power, benefits and financial risks in relation to the agricultural activity carried out on the land.

Grass - permanent grassland or temporary grassland (temporary implying leys of less than four years).

Grassland farms - holdings where 80% or more of the agricultural area available for manure application is grass.

Grazing livestock - cattle (with the exclusion of veal calves), sheep, deer, goats and horses.

Livestock manure nitrogen loading - the amount of total nitrogen in livestock manures applied to the eligible land under your control, both by land application and directly by excretion by livestock.

The following farm scenario is used throughout this booklet:

64 ha eligible agricultural area

56.78 ha of eligible grassland area

4.22 ha winter wheat

3.00 ha forage maize

100 dairy cows (10,000kg N)

5 cattle over 2 years (225 kg N)

30 cattle 1-2 year olds (1,170 kg N)

30 cattle under 1 year (570 kg N)

1 broiler house finishing 132,000 birds per annum (5,280 kg N)

Exports 141 tonnes of broiler litter off-farm (4,653 kg N)

Produces 650,000 litres of milk

Why would I need to apply for a Derogation?

The Nitrates Directive sets out a livestock manure nitrogen loading limit of **170 kg N per ha per year**. Unless you have an approved Derogation, exceeding this limit is a breach of the NAP Regulations. In Northern Ireland approximately 90% of farm businesses are working under the 170 kg N limit. Only intensive dairy, beef, pig and poultry farms tend to exceed it, however, it is strongly advisable that all farm businesses calculate their nitrogen loading so that you know your position in relation to the limit. The livestock manure nitrogen loading for your farm can be calculated using the guidance set out in **Section 5** of the NAP 2019-2022 Guidance Booklet.

If your nitrogen loading is above 170 kg N per ha per year, your options are to:

- apply for a NAP Derogation to operate above the limit; or
- reduce your loading by taking more eligible land, exporting livestock manure and/or reducing livestock numbers (see the NAP 2019-2022 Guidance Booklet for further information).

The best option for your farm business will depend on your individual circumstances and business model and it may be helpful to discuss the alternatives with a farm business adviser.

If you decide that applying for a NAP Derogation is the best option for your business, you must be able to meet and/or comply with the following criteria:

- Maintain 80% or more of the agricultural area available for manure application in grassland;
- Make an online application for Derogation to NIEA on or before 1 March each year;
- Prepare a fertilisation plan on the holding by 1 March each year and keep it updated during the year;
- Prepare and submit a fertilisation account for the previous calendar year to NIEA on or before 1 March each year;
- Maintain a nitrogen balance for the calendar/crop year ensuring that fertiliser application rates do not exceed the maximum N application limits for grassland and other arable crops.
- Have a farm phosphorus balance that does not exceed 10 kg P per ha per year;
- Undertake soil analysis;
- Comply with some additional restrictions on crop rotation and soil management; and
- Apply at least 50% of the slurry produced on the holding by 15 June of each year and use Low Emission Slurry Spreading Equipment (LESSE) for any slurry applications after 15 June of each year.

Note: Where it is established that in any year, the conditions as summarised above and detailed in Schedule 8 of The Nutrient Action Programme regulations (NI) 2019 (as amended) are not fulfilled the controller shall NOT be eligible for an authorisation the following year.

Farmers who successfully apply for a Derogation must also meet all the standard NAP Regulations requirements (including closed periods for fertiliser application and limits on how much nitrogen can be applied to grassland and other crops). These are summarised on **pages 2-9** of this booklet and detailed in the NAP 2019-2022 Guidance Booklet. The additional controls for derogated farms are explained in further detail in the following sections.

What must I do to comply with the Derogation rules?

1. Maintain 80% or more of the eligible agricultural area available for manure application in grassland.

Compliance with this measure will be verified at application stage and again during any inspection. SAF form declarations will be used for verification where appropriate.

2. Make an online application for Derogation to NIEA on or before 1 March each year.

See **Pages 17-23** for further detail on making an application.

3. Prepare a fertilisation plan on the holding by 1 March each year and keep updated during the year.

What is a fertilisation plan?

A fertilisation plan is a document detailing your proposed farming plans for the coming calendar year as regards cropping and fertilisation, projected stock numbers and manure production, housing and manure storage capacity. As it details your ***proposed*** plans it should be updated whenever these change.

The fertilisation plan must be prepared for each calendar year and kept up to date over the year. The plan is not submitted to NIEA but is kept on the farm. It must be available for inspection on farm by 1 March of the calendar year it refers to.

What must a fertilisation plan include?

The fertilisation plan must include the following:

(1) planned average stock numbers for the year;
(2) description of housing and storage system;
(3) volume of livestock manure storage;
(4) planned livestock manure Nitrogen (N) and Phosphorus (P) to be produced on the farm;
(5) planned areas of grass and other crops to be grown and area noted on farm map;
(6) N and P requirements of grass and other crops to be grown, in accordance with the latest edition of the AHDB Nutrient Management Guide (RB 209) (guidance provided in detail in the NAP 2019-2022 Guidance Booklet);
(7) soil analysis results when available;
(8) amount and type of organic manure to be imported or exported;
(9) planned N and P applications from livestock manure over each uniform area of soil type and crop; and
(10) planned N and P to be applied from chemical and other organic manures over each uniform area of soil type and crop.

An example of a fertilisation plan can be found in **Annex A**.

What if my management differs from my plan?

Plans must be revised no later than seven days following any changes in agricultural practices to ensure consistency between plans and actual agricultural practices. NIEA do not need to be contacted if changes are made but always ensure that any change in management does not cause a breach of the NAP Regulations, including the Derogation controls.

If you do not intend to make significant changes to your farm practice the records for the previous year may form the basis of the current year's plan.

4. Prepare and submit an online fertilisation account for the previous calendar year to NIEA on or before 1 March each year.

What is a fertilisation account?

The fertilisation account is primarily a summary of the fertiliser (chemical and organic) applied in the previous calendar year as detailed in the fertilisation plan. The provision of information required is to allow calculation of the N balance for grassland and crops and the farm's P balance.

A fertilisation account must be prepared for each calendar year and submitted using www.daera-ni.gov.uk/onlineservice on or before 1 March of the following year.

Failure to submit an account on time will result in BPS penalties being applied and may invalidate any application for Derogation in the year of submission.

The following information must be included to allow NIEA to assess compliance with the various limits set for the derogated farm:

- N requirement of crops grown;
- N organic manure and chemical fertiliser usage;
- type and number of livestock;
- quantity and type of organic manure imported and exported;
- the amount of P in agricultural products entering and leaving the farm; and
- a description of how dirty water is managed.

An example of a fertilisation account may be found in **Annex B**.

5. Maintain a nitrogen balance for the calendar/crop year ensuring that fertiliser application rates do not exceed the maximum N application limits for grassland and other arable crops.

What are the maximum N application limits?

The maximum N fertiliser application limit, for grassland **(272 kg/ha/year dairy, 222 kg/ha/year other farms)**, refers to the maximum amounts of available nitrogen from chemical fertiliser and organic manures (other than livestock manure) that can be applied to the whole grassland area of your farm. (Examples of other organic manures include spent mushroom compost, sewage sludge, abattoir waste and anaerobic digestate not containing any livestock manure). For assistance in calculating your farms use of nitrogen on grassland use the N-Max for Grassland Calculator at www.daera-ni.gov.uk/onlineservices.

For arable, forage and horticultural crops the maximum amount of nitrogen fertilisers (including organic manures) that can be applied per hectare must be in accordance with crop nitrogen requirement which can be calculated using the latest edition of the AHDB Nutrient Management Guide (RB209). Where N Max cereal crops (winter and spring crops of wheat, barley and oats) are grown an additional 20 kg N/ha is permitted for every tonne that the expected yield exceeds the standard yield. The maximum crop nitrogen requirements for the most common arable and forage crops are found in **Annex C** and a full example is worked in **Annex D**. For assistance in calculating nitrogen requirements for your crops use the Crop Nutrient Calculator at www.daera-ni.gov.uk/onlineservices.

For further detail on maximum N application limits for grassland and other crops refer to NAP 2019-2022 Guidance booklet **Section 6**.

6. Have a farm phosphorus balance that does not exceed 10 kg P per ha per year.

What is a phosphorus (P) balance and how do I calculate it?

A P balance is the difference between the amount of P entering and leaving the farm expressed over the eligible agricultural area controlled. Derogated farms must not exceed a P balance of **10 kg P per ha per year**.

The balance includes all P inputs and outputs from all enterprises on the farm. It is calculated by subtracting the kilogrammes of P leaving the farm in product (for example, milk, eggs, cull cows, calves, pigs, broilers) from the kilogrammes of P entering the farm in inputs (for example, concentrates, fertiliser, imported forage or livestock manures) then dividing the difference by the eligible agricultural area in hectares.

The standard P content of common inputs and outputs are found in **Annex E** and a full example is worked in **Annex F**. If the amount of P in the inputs and outputs deviates from the standard figures, documentary evidence must be provided. For further assistance in calculating a P balance for your farm see https://www.daera-ni.gov.uk/onlineservices

7. Undertake soil analysis.

Is soil sampling required?

Farmers operating under a Derogation must carry out soil sampling for phosphorus (P) analysis at least once between 2019 and 2022 for each uniform area of the farm, with regard to crop rotation and soil characteristics. At least one analysis per 4 ha of farmland is required. More information on how to carry out soil sampling and use the results for nutrient management planning can be found in **Section 7** of the NAP 2019-2022 Guidance Booklet.

Taking a soil sample for laboratory testing for nitrogen (N) is not required as the fertiliser application limits for grassland take into consideration the amount of nitrogen in the soil. Similarly in the case of crops the Soil Nitrogen Supply (SNS) indicates the amount of N in soil. (Refer to **Annexes G and H** in the NAP 2019-2022 Guidance Booklet).

8. Comply with some additional restrictions on crop rotation and soil management.

Can I apply manure in the autumn before ploughing grass?

Ploughing grass swards after a manure application can lead to poor nutrient uptake from the resulting reseed. To minimise the loss of nutrients, manure should be applied after ploughing only. This means that on a derogated holding, where the fertilisation plan indicates a proposal to disturb soil as part of grass cultivation (for example, ploughing), there must be no application to that parcel of land of any organic manures, **including farmyard manure and dirty water**, between 1 September in any year and 31 January of the following year.

Can I plough grassland at any time of the year?

No. To minimise the potential for nitrogen leaching, grass swards less than four years old can only be ploughed in spring (March, April & May).

What can I grow after ploughing grassland?

Ploughed grass on all soil types must be followed immediately by a crop with a high N requirement. This prohibits crops such as peas or beans which have no N requirement.

Can I grow leguminous plants or other plants fixing atmospheric N?

Growing N fixing plants, for example, clovers, peas, beans and lucerne may result in an excessive amount of N being available to grass or crops. Therefore, in most situations, these plants must not be grown on derogated holdings. However, grassland with less than 50% clover is allowed, as are other legumes undersown with grass.

9. Apply at least 50% of the slurry produced on the holding by 15 June of each year and use Low Emission Slurry Spreading Equipment (LESSE) for any slurry applications after 15 June of each year.

Nutrient uptake by grass and other crops is more efficient early in the growing season. Applying 50% of slurry produced on the farm before 15 June will help to maximise uptake and reduce risk of nutrient run-off.

Using Low Emission Slurry Spreading Equipment (LESSE) is recognised as a more efficient method of slurry application, leading to improved manure nutrient efficiency and reduced odour and ammonia emissions.

When must I apply for a Derogation?

Farmers who want to benefit from a Derogation must submit an online application for that year and a fertilisation account (if operating under a Derogation in the previous year) to NIEA each year on or before **1 March** at www.daera-ni.gov.uk/online-services.

Late applications will not be accepted.

When can I expect a decision on my application?

NIEA must make a decision within 28 days of the closing date for applications. If your application has been refused you will receive a letter within 28 days of the closing date, with an explanation of the reason for refusal. Applications received after the specified application date or incomplete applications, cannot be accepted.

What can I do if my application is refused or was received after 1 March deadline?

You must adjust your management of your farm to comply with the 170 kg N per ha per year livestock manure limit.

Under certain circumstances, you have the right to appeal against an NIEA decision to refuse your application for Derogation. You can do this by contacting the Water Appeals Commission within 28 days of the refusal.

The Water Appeals Commission has powers to overturn the refusal or dismiss the appeal.

The Water Appeals Commission can be contacted at:

Park House
87-91 Great Victoria Street
Belfast
BT2 7AG

Tel: 028 9024 4710
Fax: 028 9031 2536
e-mail: info@pacni.gov.uk

You may wish to consider taking legal advice before making an appeal. Legal advice would be sought at your own expense.

Any queries on the legal interpretation of the Regulations and on their enforcement should be made to NIEA.

What if I find out that I no longer need a Derogation?

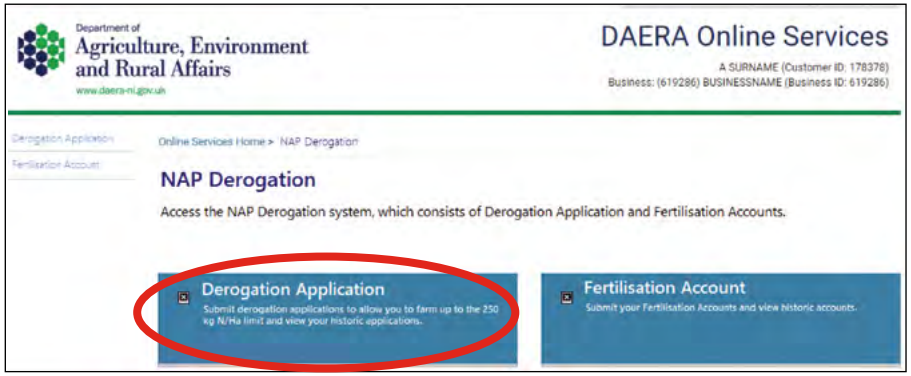
If at any stage your circumstances change so that you are operating below 170 kg N per ha per year livestock manure limit you must inform NIEA **as soon as possible and before 31 December of that year.**

Should you withdraw from the Derogation you must provide written evidence to show that you can operate below this livestock manure limit and you will, therefore, need to provide details of livestock manure production, livestock manure imports and exports and area of land controlled.

Please email derogation@daera-ni.gov.uk to request a withdrawal along with the evidence requested.

Completing the Online Application

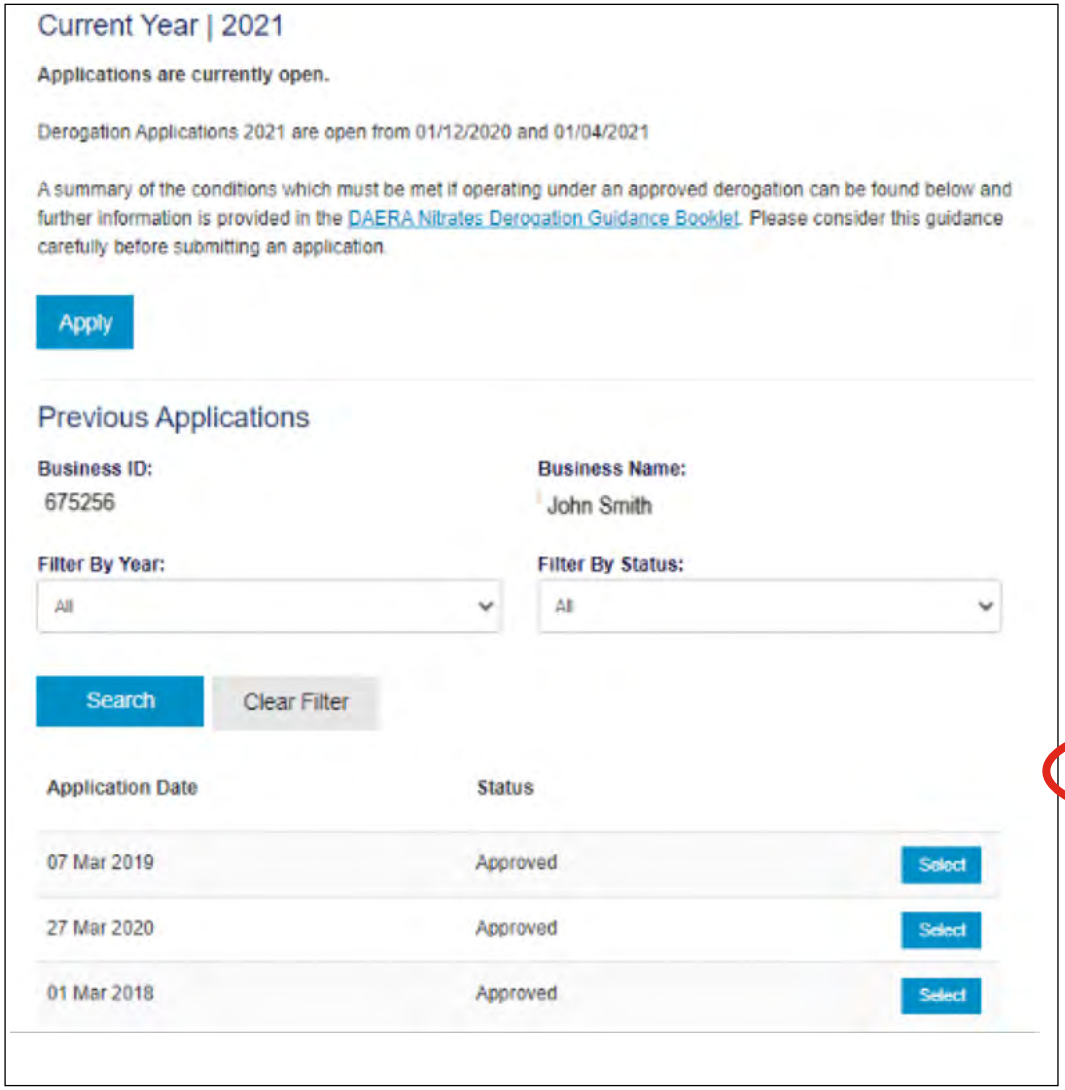
To complete the online application, you will need to log on to www.daera-ni.gov.uk/onlineservices using either NI Direct or Government Gateway ID. If you do not have a Government Gateway ID, you can register to create a new one.

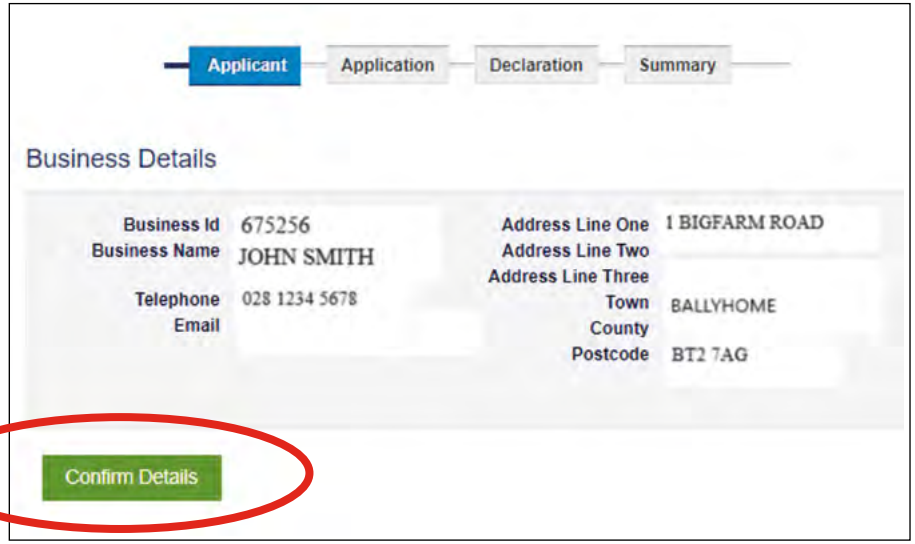


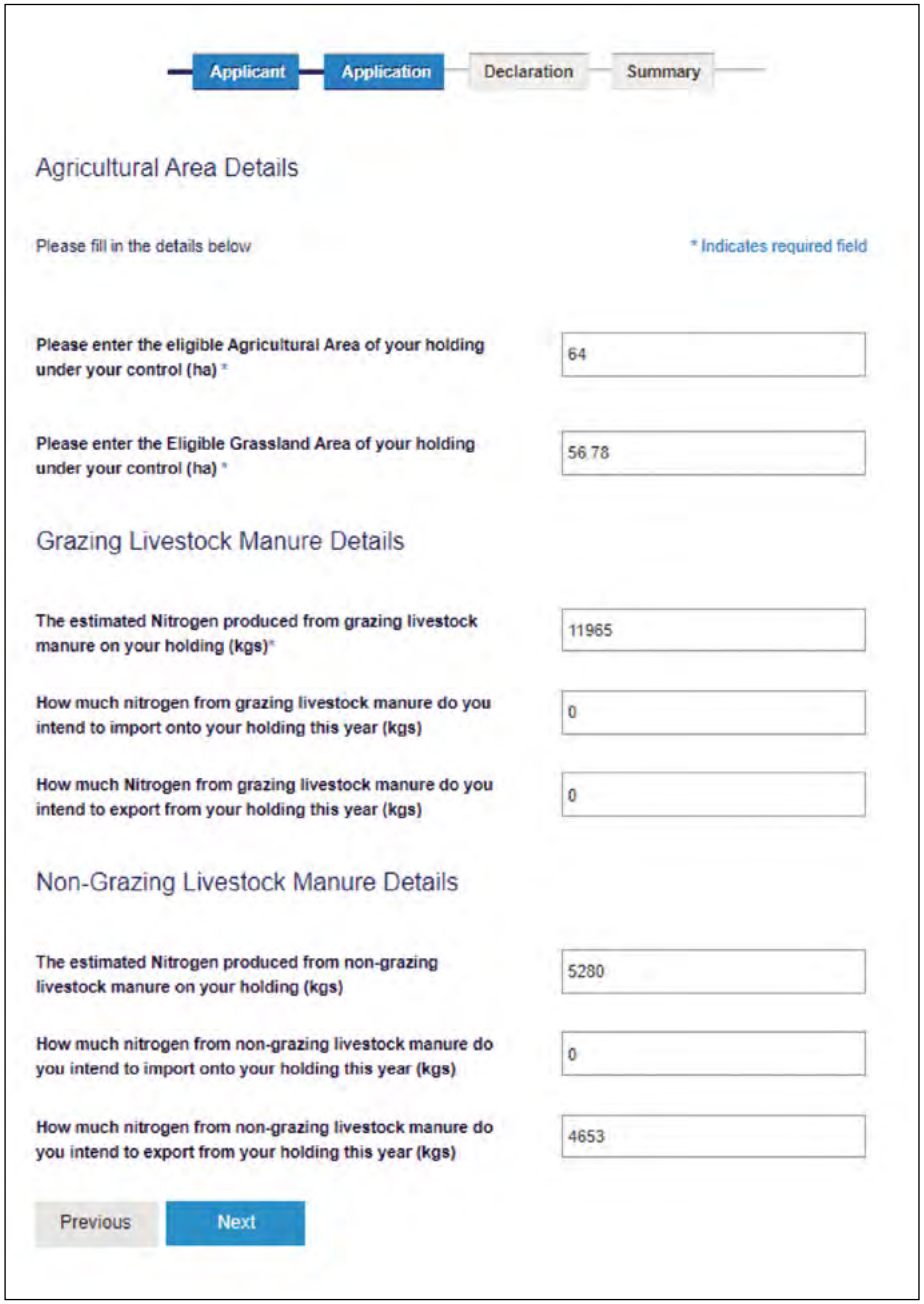
Once you have logged onto DAERA Online Services, you need to choose ‘NAP Derogation’ and then select ‘Derogation Application’.

Completing the Online Application - continued

Once in the Derogation Application system you will be able to view your historic applications. To proceed with a new application click “Apply”. A screen will appear listing the current rules of Derogation, once you have read these click close. **The Applicant Details section** will be prepopulated. After checking that your details are correct select “Confirm Details”.







Agricultural Area Details

To be eligible for Derogation, 80% or more of the agricultural area of your holding under your control must be grassland. From 2015:

- **If you are claiming direct agricultural aid payments, only agricultural land that you have claimed and is eligible for payment is assumed to be under your control.**
- **If you are not claiming direct agricultural aid payments, only agricultural land for which you have decision making power, benefits and financial risks in relation to the agricultural activity carried out on it is assumed to be under your control.**

For more information see **Section 1.3** of the NAP 2019-2022 Guidance Booklet.

Eligible agricultural area of your holding under your control (ha):

State the eligible agricultural area of your holding as declared and claimed on your SAF application form under your control this year in hectares (see **page 11**).

Eligible grassland area of your holding under your control (ha):

State the area in hectares of grassland under your control this year. Grassland is defined as any land on which the vegetation consists predominantly of grass species. This area will be determined based on the crop grown for the majority of the year.

Grazing Livestock Manure Details

You cannot apply more than 250 kg N per ha per year from grazing livestock manure to land. This includes application by the animal itself. Grazing livestock means cattle (with the exception of veal calves), sheep, deer, goats and horses. You may apply for Derogation in respect of grazing livestock only, so this figure should not include N produced from non-grazing livestock such as pigs or poultry. If your grazing livestock stocking rate is greater than 250 kg N per ha per year, you will have to make alternative arrangements to deal with the surplus. (Method to calculate your livestock manure N loading can be found in the NAP 2019-22 Workbook, the online calculator available at www.daera-ni.gov.uk/onlineservices and at CAFRE training programmes. More information can be found on-line at www.cafre.ac.uk)

Estimated nitrogen produced from grazing livestock manure on your holding this year (kgs):
State the N (in kgs) that you predict will be produced from grazing livestock only on your holding this year. Use the amount recorded in the previous year unless you anticipate any substantial change in stocking levels this year.

How much nitrogen from grazing livestock manure do you intend to import onto your holding this year (kgs)?
State any N (in kgs) from grazing livestock manure that you predict will be imported onto your holding this year. Remember all farmers in Northern Ireland must keep records of imported manures (**Section 10.5-10.6 and Annex N** of the NAP 2019-2022 Guidance Booklet). If you do not intend to import any grazing livestock manure onto your holding this year **enter zero**.

How much nitrogen from grazing livestock manure do you intend to export from your holding this year (kgs)?
You may choose to export surplus grazing livestock manure in which case state any surplus of N (in kgs) to be exported this year. Remember all farmers in Northern Ireland must keep records of exported manures (**Section 10.5-10.6 and Annex N** of the NAP 2019-2022 Guidance Booklet) and must submit them to NIEA using www.daera-ni.gov.uk/onlineservices by:

- **31 January the following year for non-derogated farms.**
- **1 March the following year for derogated farms.**

If you do not intend to export any grazing livestock manure from your holding this year **enter zero**.

Non-grazing livestock manure details

You cannot apply more than 170 kg N per ha per year from non-grazing livestock manure to land. This includes application by the animal itself. Grazing livestock means cattle (with the exception of veal calves), sheep, deer, goats and horses. Non-grazing livestock should include all other livestock such as pigs and poultry. You must have sufficient land to meet both these limits. If your non-grazing livestock stocking rate is greater than 170 kg N per ha per year, you will have to make alternative arrangements to deal with the surplus. (Method to calculate your livestock manure N loading can be found in the NAP Guidance Workbook, the online calculator available at www.daera-ni.gov.uk/onlineservices and at CAFRE training programmes. More information about NAP training courses can be found on-line at www.cafre.ac.uk). However, it should be noted that all of the farm will be subject to all of the conditions of the Derogation.

Estimated nitrogen produced from non-grazing livestock manure on your holding this year (kgs):
State the N (kg) that you predict will be produced from non-grazing livestock only on your holding this year. Use the amount recorded in the previous year unless you anticipate any substantial change in stocking levels this year. If you do not have non-grazing livestock **enter zero**.

How much nitrogen from non-grazing livestock manure do you intend to import onto your holding this year (kgs)?
State any N (kg) from non-grazing livestock manure that you predict will be imported onto your holding this year. Remember all farmers in Northern Ireland must keep records of imported manures (**Section 10.5-10.6 and Annex N** of the NAP 2019-2022 Guidance Booklet). If you do not intend to import any non-grazing livestock manure onto your holding this year **enter zero**.

How much nitrogen from non-grazing livestock manure do you intend to export from your holding this year (kgs)?
You may choose to export surplus non-grazing livestock manure in which case state any surplus of N (kg) to be exported this year. Remember all farmers in Northern Ireland must keep records of exported manures (**Section 10.4-10.5 and Annex N** of the NAP 2019-2022 Guidance Booklet) and must notify NIEA using www.daera-ni.gov.uk/onlineservices by:

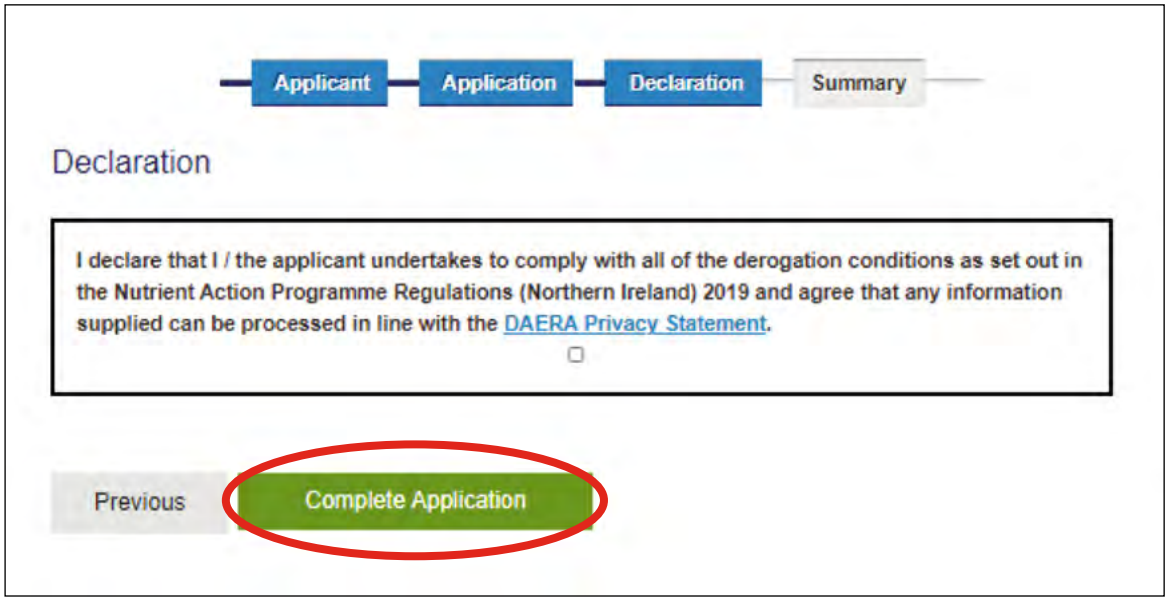
- **31 January the following year for non-derogated farms.**
- **1 March the following year for derogated farms.**

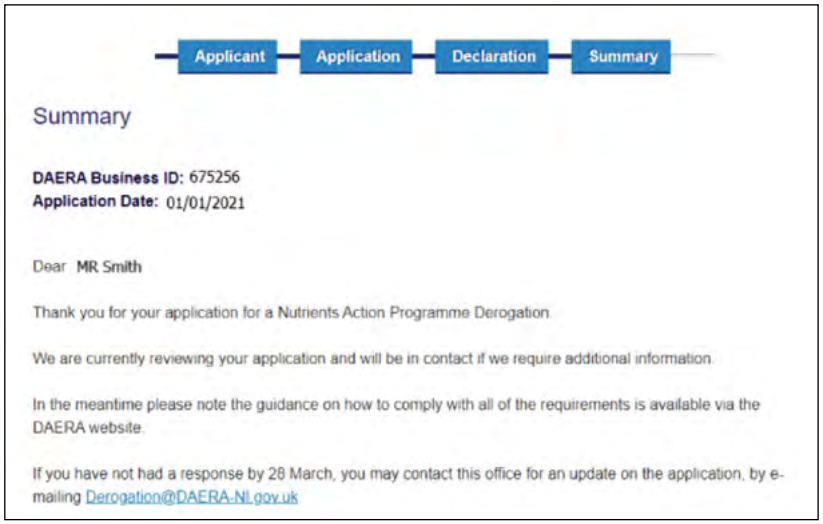
If you do not intend to export any non-grazing livestock manure from your holding this year **enter zero**.

Declaration

On the declaration screen, you will have to tick the box to confirm you understand the Derogation conditions. Once you press “Complete Application” on the declaration screen, you will be shown a confirmation message. A confirmation e-mail will also be sent. You should read the leaflet on terms and conditions carefully before signing the declaration/undertaking.

By accepting this declaration and submitting your application to NIEA, you are accepting that you have understood the conditions attached to the granting of a Derogation, that you are eligible to obtain a Derogation and that you will meet the terms and conditions relating to the Derogation this year.





Do you have enough land to meet the livestock manure nitrogen loading limits?

You must ensure that N from grazing and non-grazing livestock manure does not exceed the 250 kg N per ha per year and 170 kg N per ha per year limits.

An example of how to check this is set out below using the farm scenario outlined on **page 10** with 100 dairy cows and followers, and a 20,000 broiler unit selling 132,000 birds per annum and exporting 141 tonnes of litter off the farm. Agricultural area is 64 ha.

Land requirements for grazing livestock manure: Figures shown relate to Grazing Livestock Manure Details**, page 20.**

Land requirements for non-grazing livestock manure: Figures shown relate to Non-grazing Livestock Manure Details, **page 21.**

Eligible agricultural area of the example farm is 64 ha and, therefore, complies with the limits
If the land area requirement is greater than the actual eligible agricultural area of the farm then steps must be taken to reduce the livestock manure N.

What happens if the figures in my application change? Do I have to notify NIEA?
No. However, you must ensure that you continue to comply with the terms of the Derogation including having 80% grassland and operating below 250 kg N per ha per year grazing livestock manure N and below 170 kg N per ha per year non-grazing livestock manure.

Estimated N produced from grazing livestock manure	11,965 kg N
+ Imported N from grazing livestock	0
- Exported N from grazing livestock	0
Total N	11,965 kg N
Divided by 250 kg N per ha per year (11,965 + 0 - 0 divided by 250 kg N per ha per year)	
Land requirement	**= 47.9 ha**

Estimated N produced from non-grazing livestock manure	5,280 kg N
+ Imported N from non-grazing livestock	0
- Exported N from non-grazing livestock	4,653 kg N
Total N	627 kg N
Divided by 170 kg N per ha per year (5,280 + 0 - 4,653 divided by 170 kg N per ha per year)	
Land requirement	**= 3.69 ha**

47.9 + 3.69 = 51.59 ha - the farm can comply with the land requirement limits.

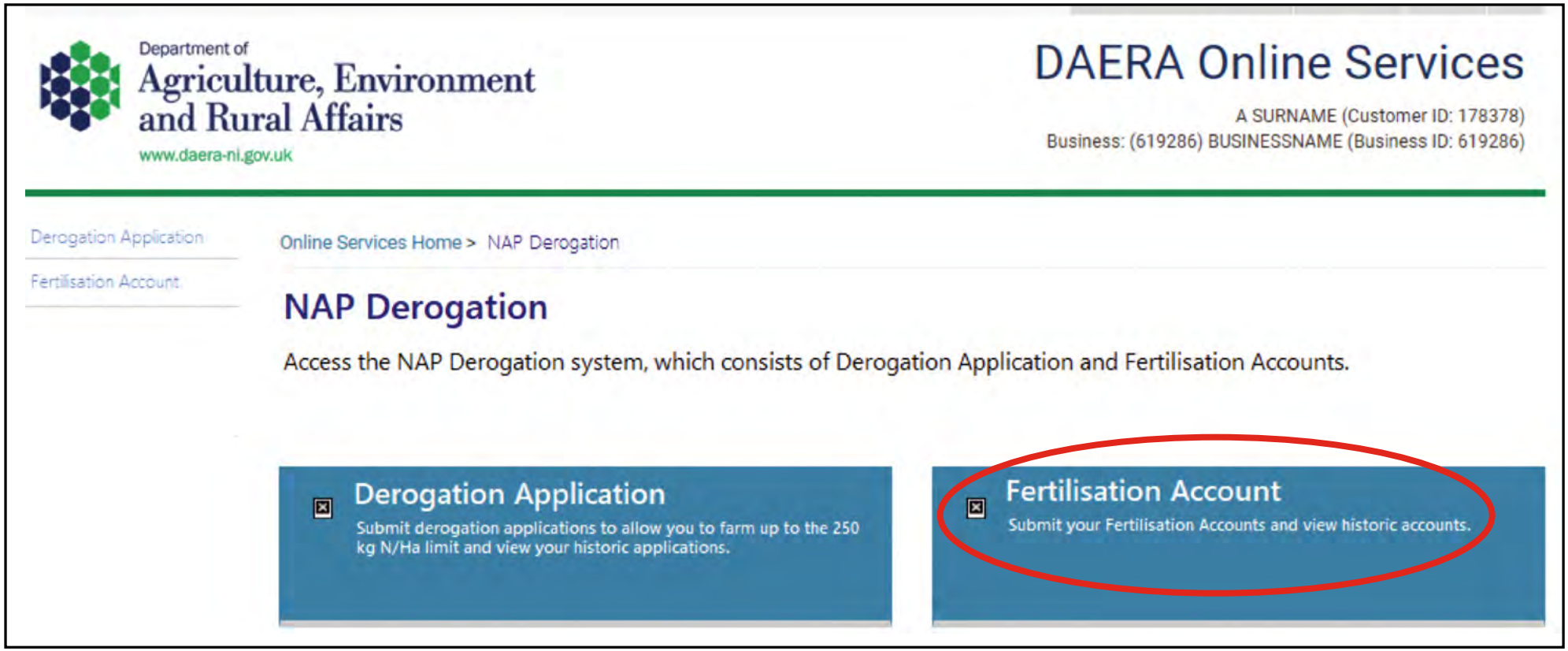
Completing the Online Fertilisation Account

Guidance on how to complete the online Fertilisation Account is set out on the following pages.

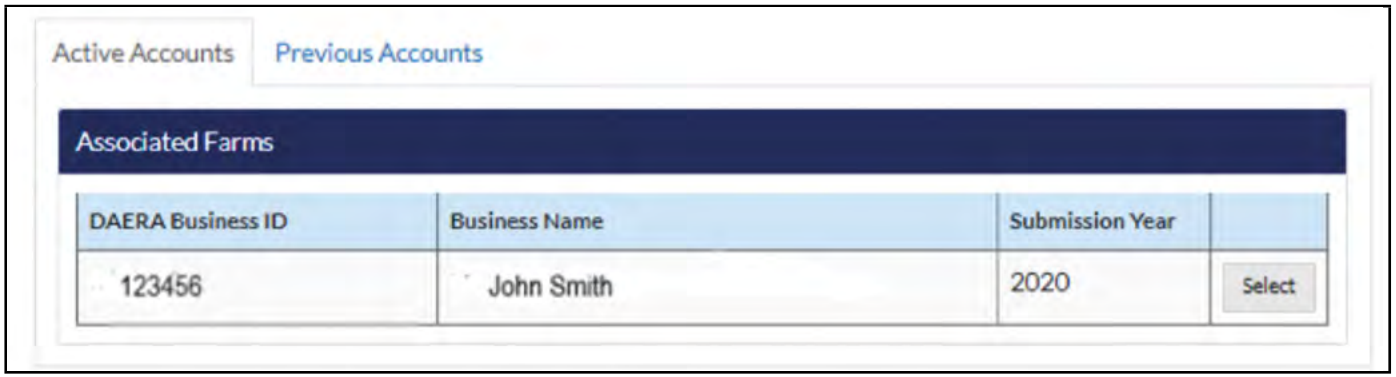
Once your Derogation is approved, a valid account will be created by DAERA, linked to that application year.

To complete your Fertilisation Account log into DAERA Online Services www.daera-ni.gov.uk/onlineservices using either your NI Direct or Government Gateway ID.

On the DAERA Online Services screen select **"NAP Derogation"**, then on the NAP Derogation screen select **"Fertilisation Account"**.



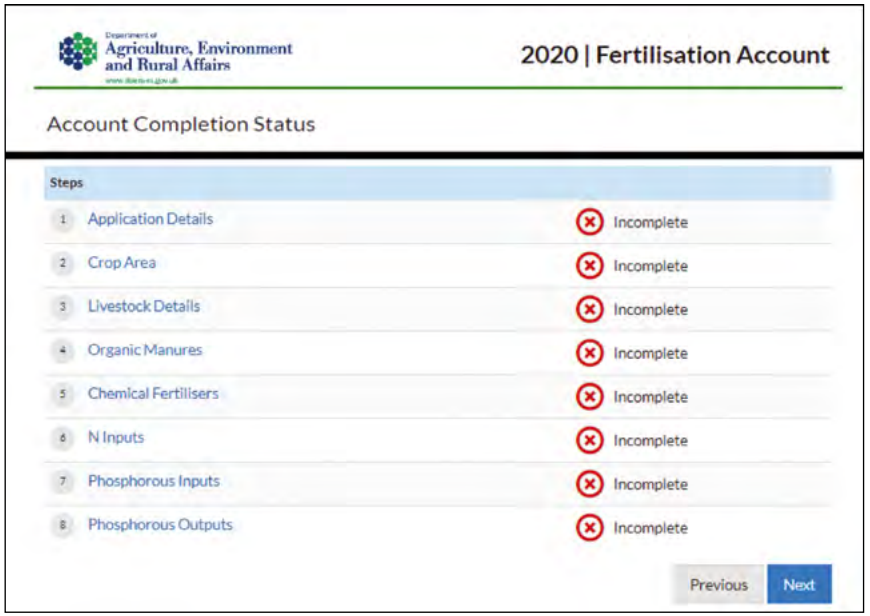
On this screen, you will see the available applications relating to both your "**Active Applications**" and "**Previous Submissions**". To view previously submitted applications, click "**Previous Submissions**". Click "Select" on one of the applications in the "**Previous Submissions**" tab to go into that application. You will be shown a summary view of that application, which you can either scroll through or print. You are not able to edit any data in the accounts in "Previous Submissions", however, they can be used as a reference when completing the current year accounts.



In the "**Active Accounts**" tab select the current application by pressing "Select".

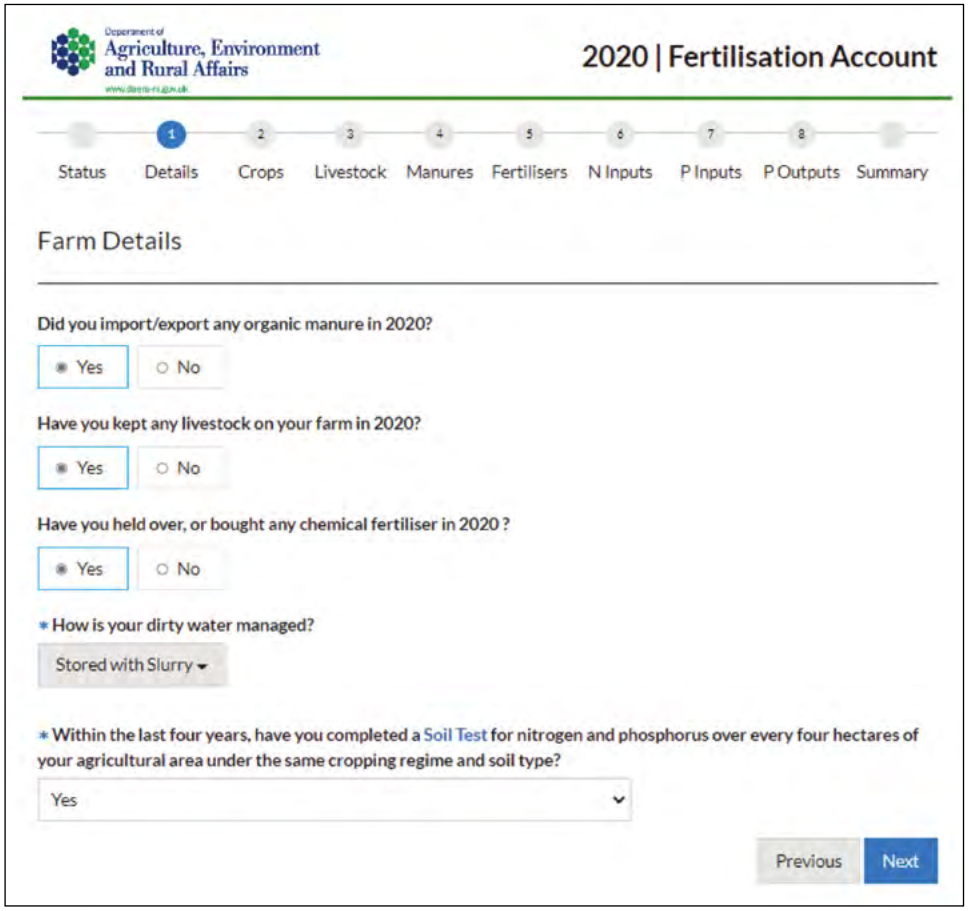
This will take you to the "**Account Completion Status**" screen showing your progress so far. You will need to complete the "**Application Details**" step before you can proceed to any other step. Only when all steps are competed can you submit your fertilisation account. You can save your details and return at any point to update or amend the information until you submit your fertilisation account.

Select next to proceed to the next tab "**Application Details**".



Farm Details

You must complete the "**Farm Details**" section before you can proceed with the rest of the account. If you select "Yes" to the following questions "Did you import/export any organic manure in 20XX?", "Have you kept any livestock on your farm in 20XX?" and "Have you held over or bought any chemical fertiliser in 20XX?" these tabs will become active for your account.

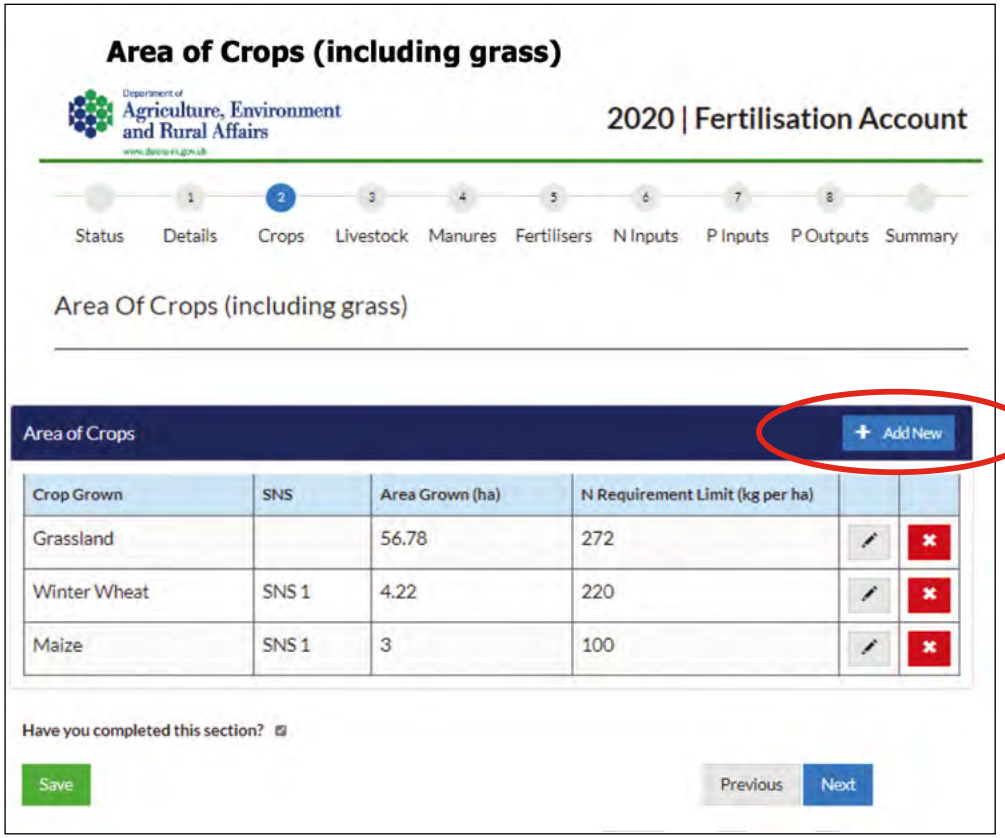


To progress through the account use the "Next" and "Previous" buttons or select the appropriate numbered tab situated along the top of the page.

For each section, when you are happy with the data you have input, tick the "Have you completed this section?" box and click "Save" to finalise that section. This will mark that section as complete. If you return to a page which has been finalised and you wish to make a change, untick the "Have you completed this section?" box and click "Save" to make changes or allow additional data input.

Comments boxes are included throughout the account to allow you to add any additional relevant information.

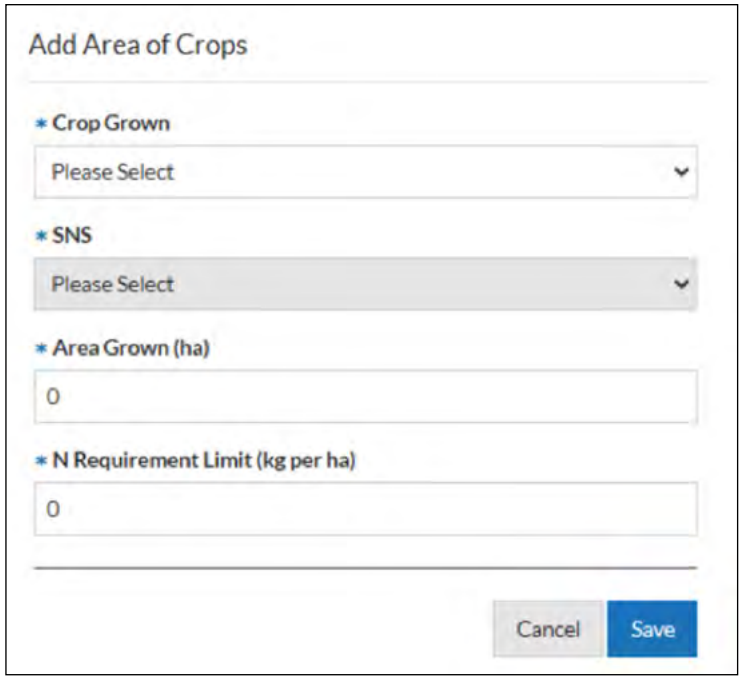
Click "Next" to proceed to the next tab.



Area of Crops (including grass)

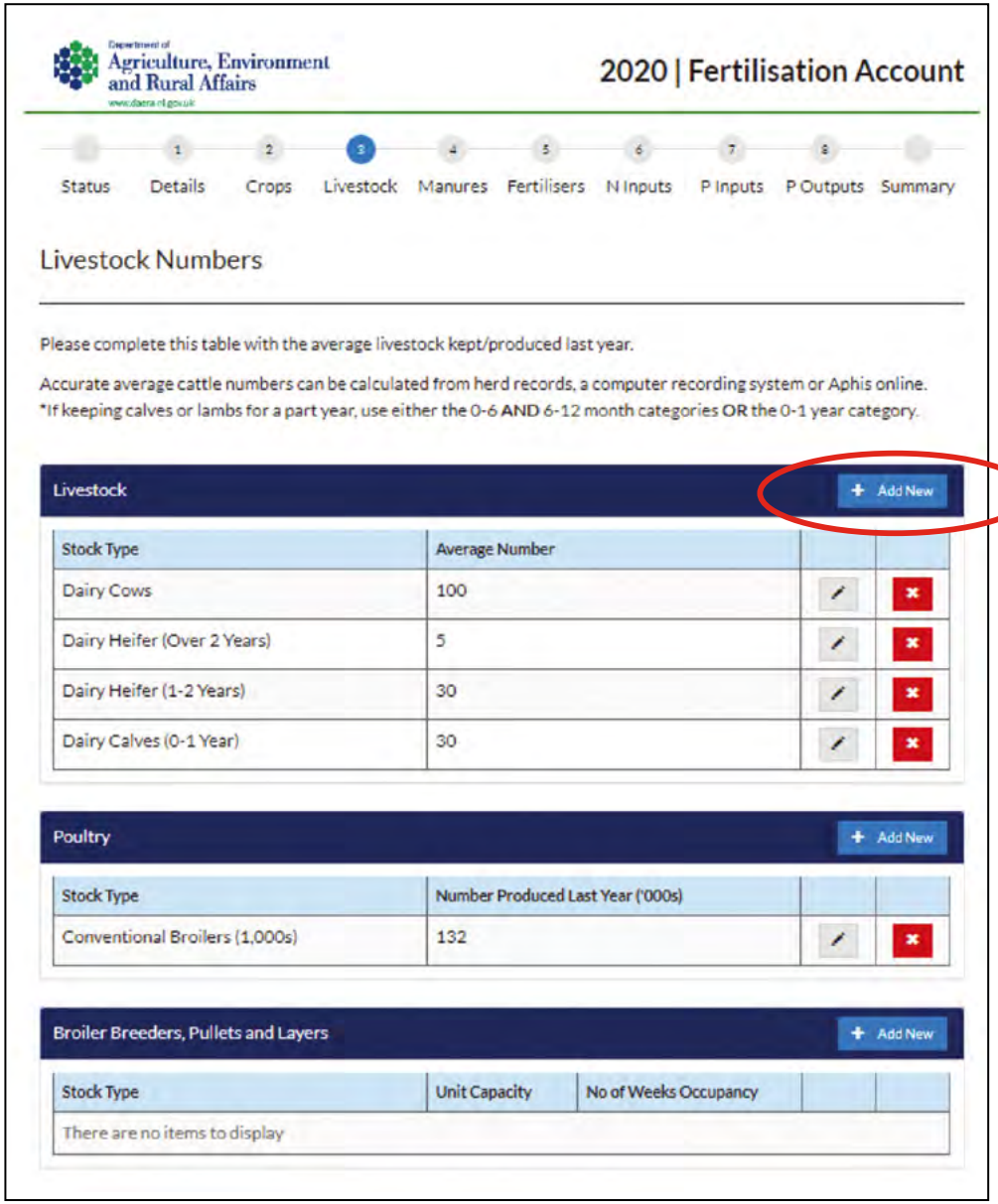
Use the "Add New" button for each crop grown (including grass), select the crop grown from the drop down menu. For grass enter the total area of grass grown (ha). If you are a dairy farmer use the N Requirement Limit of 272 kg N/ha/year otherwise enter 222 kg N/ha/year. For all other crops enter the appropriate SNS, area grown and the N Requirement Limit (kg N/ha/year). Refer to NAP 2019-2022 Guidance Booklet, **Annex H** - Fertiliser standards for nitrogen applications for arable and forage crops and **Annex I - N** Max limits for cereals, for details of SNS and N Requirement limits for individual crops.

Repeat for each crop grown.



When complete click "Save" and when all crops have been entered select "Next" to proceed to the next tab.

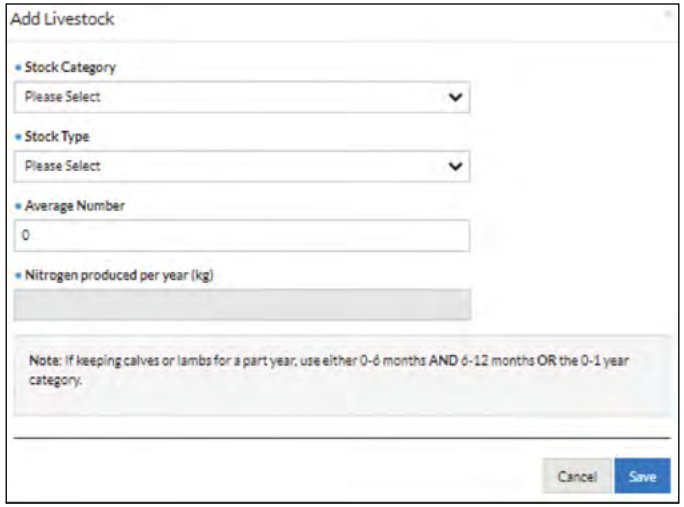
Livestock Numbers



This section will only be accessible if you have selected "Yes" to the question "Have you kept any livestock on your farm in 20XX?" on the "**Farm Details**" tab.

For each livestock type select the "Add New" button. Select the Stock Category and Stock Type from the drop down menus and enter the average number of livestock kept/produced in 20XX. N produced per year (kg) will automatically appear for your chosen livestock. Accurate average cattle numbers can be calculated from herd records, a computer recording system or Aphis online

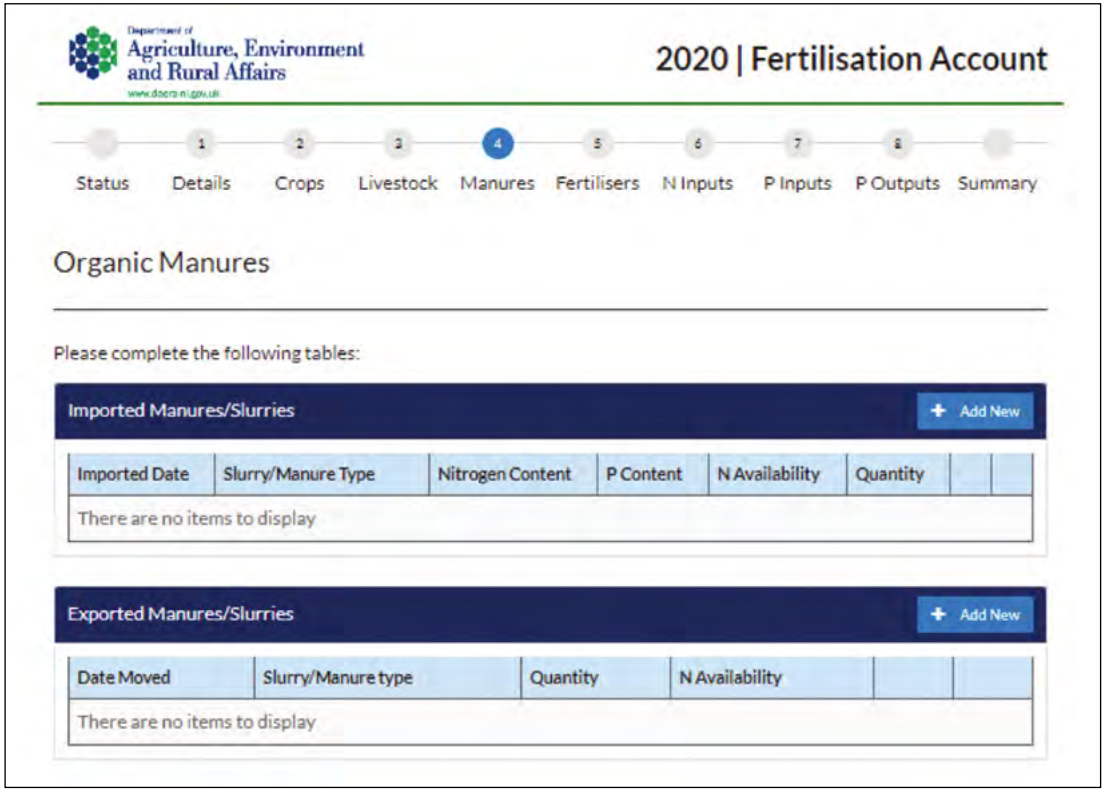
For poultry enterprises enter the number of thousand birds produced in 20XX for all broilers, turkeys and ducks. N produced per year (kg) will automatically appear for the chosen poultry type. For broiler breeders, pullets and layers enter the unit capacity and the number of weeks occupancy of the unit. N produced per week (kg) will automatically appear for the chosen poultry type.

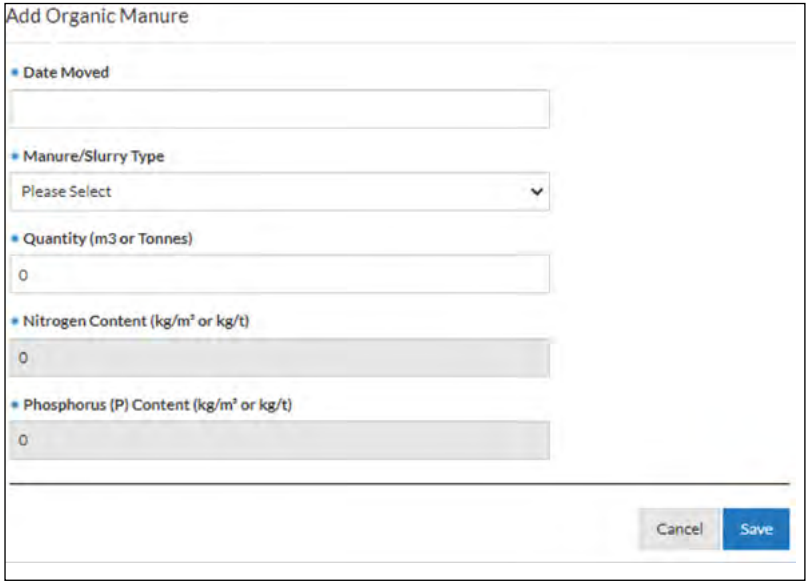


When complete click "Save" and then select "Next" to proceed to the next tab.

Organic manures

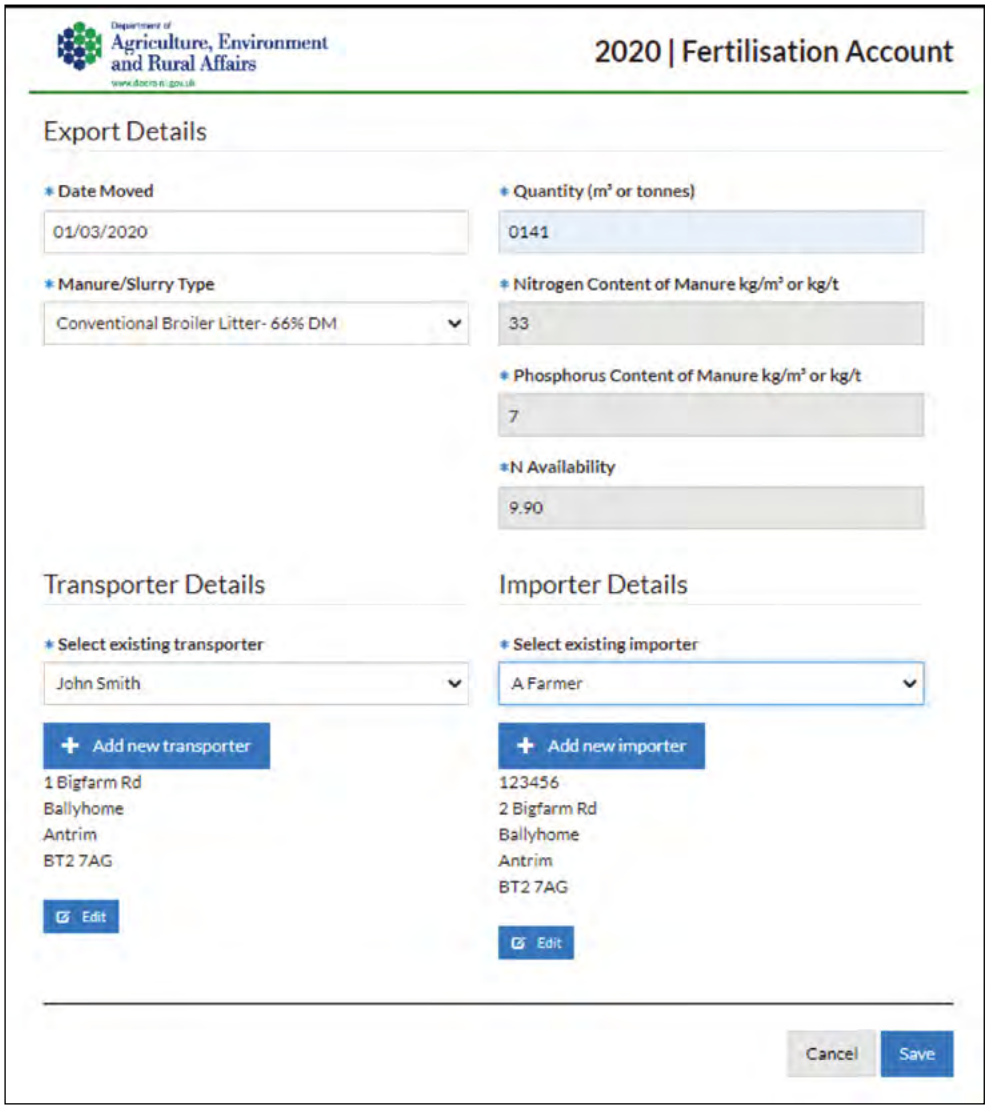
This section will only be accessible if you have selected Yes to the question “Did you import/export any organic manure in 20XX?” on the “**Farm Details**” tab.





Imported Manures/Slurries

Select the “Add New” button to enter manures/slurries imported on to the farm during 20XX. Enter the date and select the Slurry/Manure Type from the drop down menu. Enter the quantity of slurry/manure imported in m^3 or tonne. The N and P Content and N Availability will automatically appear for the given slurry/manure type.



Exported Manures/Slurries

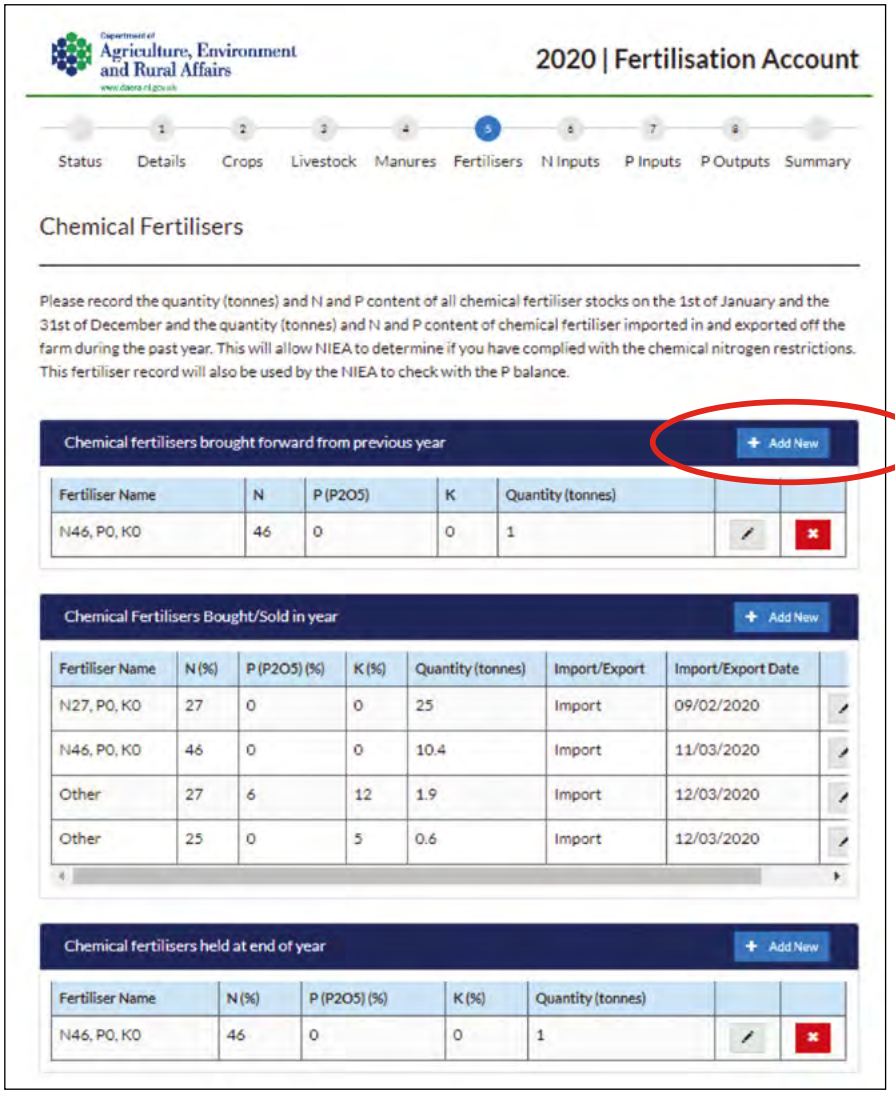
Select the "Add New" button to enter manures/slurries exported off the farm during 20XX. Enter the date and select the Slurry/Manure Type from the drop down menu. Enter the quantity of slurry/manure exported in m^3 or tonne. The N and P Content and N Availability will automatically appear for the given slurry/manure type. For manure exports also enter details of the "**Transporter**" (name and address) and details of the "**Importer**" (name, address and business ID).

When complete click "Save" and then select "Next" to proceed to the next tab.

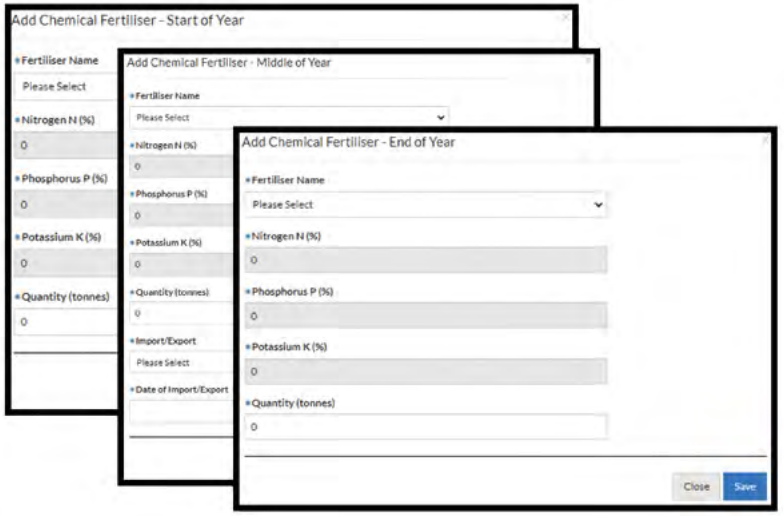
Note: The information provided in the "Crops", "Livestock" and "Manure" tabs will be used by the NIEA to calculate the livestock nitrogen loading for your farm for 20XX. You can check compliance with the limit of 250 kg N per ha per year by using the Livestock Manure Loading Calculator which is available at www.daera-ni.gov.uk/onlineservices or you can use the worksheet in the NAP 2019-2022 Workbook.

Chemical Fertilisers

This section will only be accessible if you have selected Yes to the question “Have you held over or bought any chemical fertiliser in 20XX?” on the “**Farm Details**” tab.



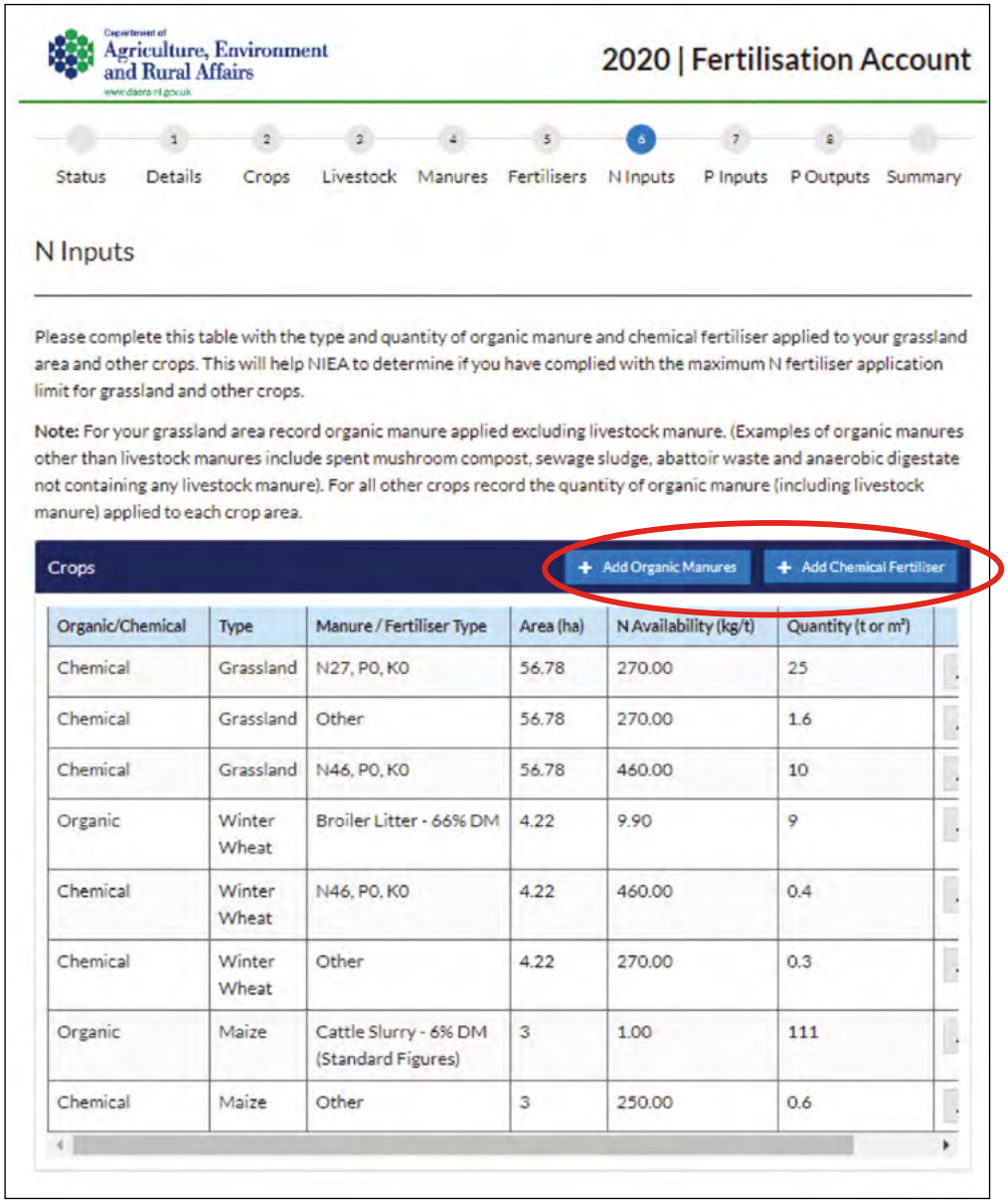
Select the “Add New” button to enter the quantity of chemical fertiliser stocks on farm on 1 January and the 31 December and the quantity of chemical fertiliser brought on to and exported off the farm during the 20XX. Select the appropriate chemical fertiliser from the drop down menu, the N and P content will automatically appear. Where the chemical fertiliser type is not shown select other and manually enter the N and P content. Enter the quantity of fertiliser in tonnes.



When complete click “Save” and then select “Next” to proceed to the next tab.

Note: Completing the “Fertilisers” tab will allow the NIEA to determine if you have complied with the chemical nitrogen restrictions. You can check compliance with this limit by using the N Max for Grassland Calculator for grass and the Crop Nutrient Calculator for crops other than grass which is available at www.daera-ni.gov.uk. Alternatively you can check the limits in the NAP 2019-2022 Guidance Booklet Section 6 for grassland and crops and use the worksheets in the NAP 2019-2022 Workbook.

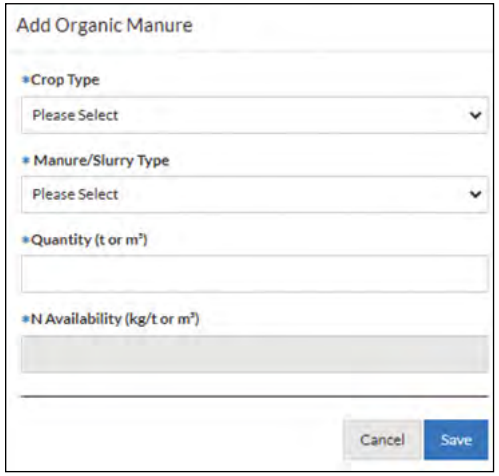
Nitrogen Inputs

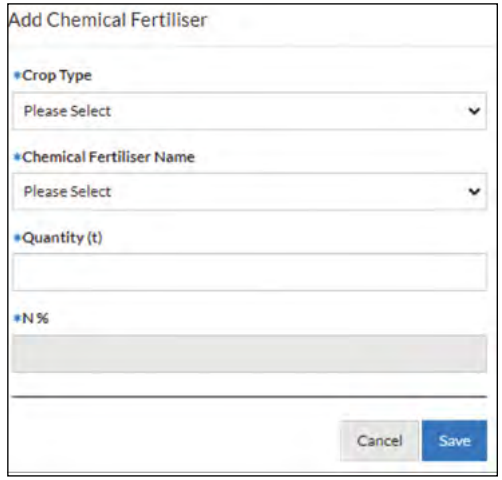


Organic/Chemical	Type	Manure / Fertiliser Type	Area (ha)	N Availability (kg/t)	Quantity (t or m³)
Chemical	Grassland	N27, P0, K0	56.78	270.00	25
Chemical	Grassland	Other	56.78	270.00	1.6
Chemical	Grassland	N46, P0, K0	56.78	460.00	10
Organic	Winter Wheat	Broiler Litter - 66% DM	4.22	9.90	9
Chemical	Winter Wheat	N46, P0, K0	4.22	460.00	0.4
Chemical	Winter Wheat	Other	4.22	270.00	0.3
Organic	Maize	Cattle Slurry - 6% DM (Standard Figures)	3	1.00	111
Chemical	Maize	Other	3	250.00	0.6

The "**Nitrogen Inputs**" tab is new and will be part of the Fertilisation Account from 2020 onwards.

Enter details of organic manure or chemical fertiliser applied to your grassland area and crops during 20XX. Select the "Add Organic Manures" button to enter the type and quantity of organic manure applied and the "Add Chemical Fertiliser" button to enter the type and quantity of chemical fertiliser to grassland and each crop area.





The crop types entered in the "**Crops**" tab will appear in the "**Crop Type**" drop down menu. For grassland the N limit for grassland is 272 kg N per ha per year for dairy and 222 kg N per ha per year for beef.

Grassland

Select the type of organic manure (excluding livestock manure) and enter the quantity of organic manure applied similarly for chemical fertiliser select the type and enter the quantity applied to your grassland area. This will help NIEA to determine if you have complied with the maximum N fertiliser application limit for grassland.

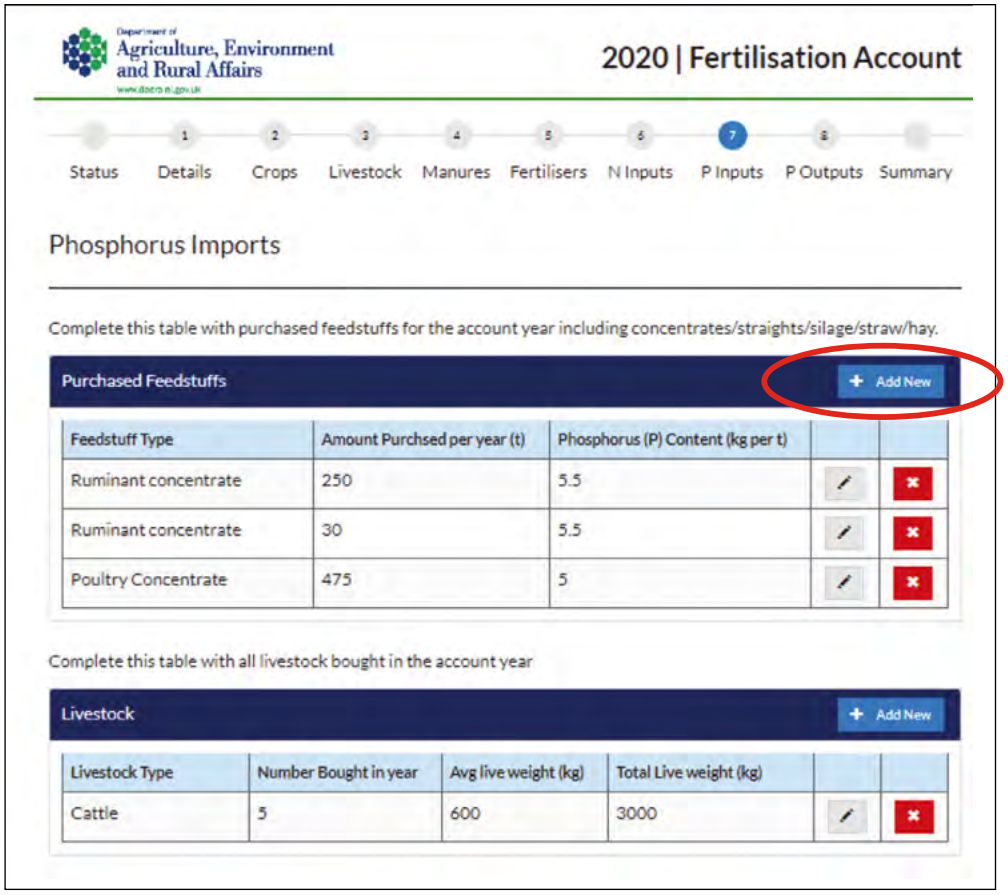
Arable crops

Select the type of organic manure (including livestock manure) and enter the quantity applied, similarly for chemical fertiliser select the type and enter the quantity applied to each crop area. This will help NIEA to determine if you have complied with the maximum N fertiliser application limit for other crops.

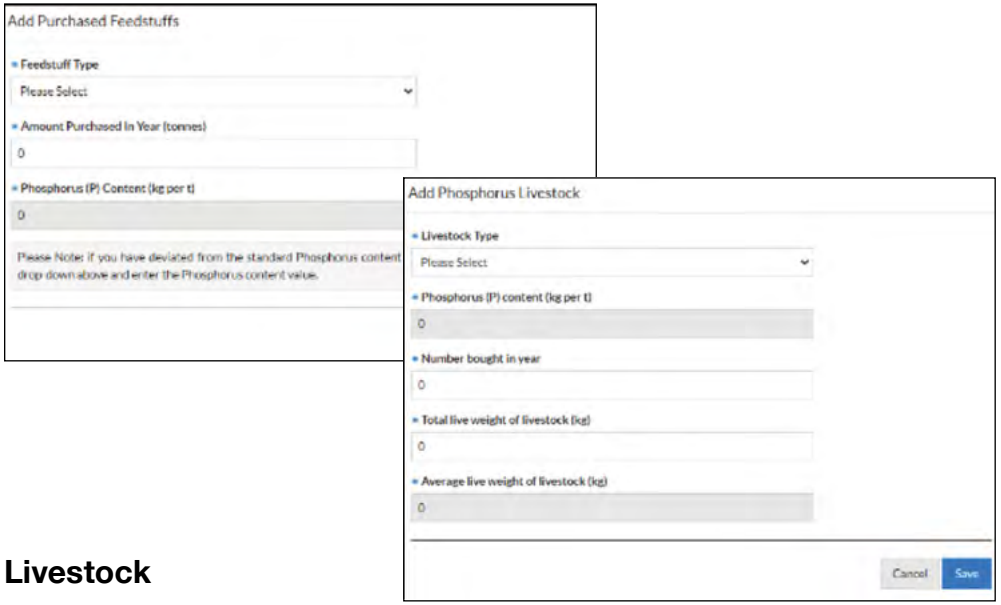
Note: Completing the "Fertilisers" and "N Inputs" tabs will allow the NIEA to calculate the N Balance for your holding for 20XX and determine if you have complied with the nitrogen application limits. You can check compliance with this limit by completing the N Balance worksheet at Annex D of this booklet, by using the N Max for Grassland Calculator for grass and the Crop Nutrient Calculator for crops other than grass which is available at www.daera-ni.gov.uk/onlineservices. Alternatively you can check the limits in the NAP 2019-2022 Guidance Booklet Section 6 for grassland and crops and use the worksheets in the NAP 2019-2022 Workbook.

Phosphorus Inputs

Purchased Feedstuff



Use the “Add New” button for each purchased feedstuff brought on to the farm, select the feedstuff type from the drop down menu. Enter the amount purchased (tonnes) and the P content (kg per t) will automatically appear for the chosen feedstuff. Where the feedstuff purchased is not shown select other and manually enter the P content value. If you deviate from the standard P content or select a feedstuff type not listed on the drop down menu you must upload documents showing evidence of the phosphorus content value.

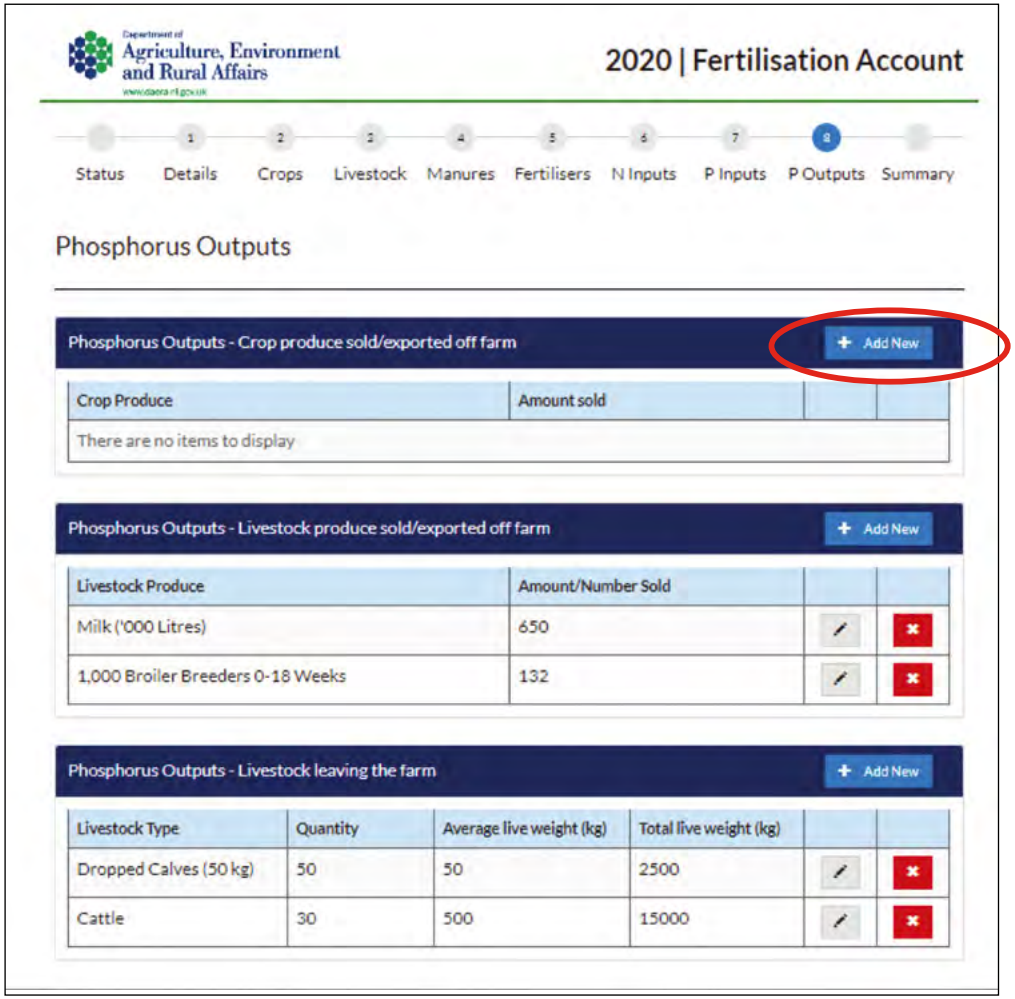


Livestock

Similarly for each livestock type brought on to the farm use the “Add New” button, select the livestock type from the drop down menu. Enter the number purchased and the total liveweight of the livestock (kg). The P content and average liveweight of the livestock will automatically appear.

When complete click “Save” and then select “Next” to proceed to the next tab.

Phosphorus Outputs

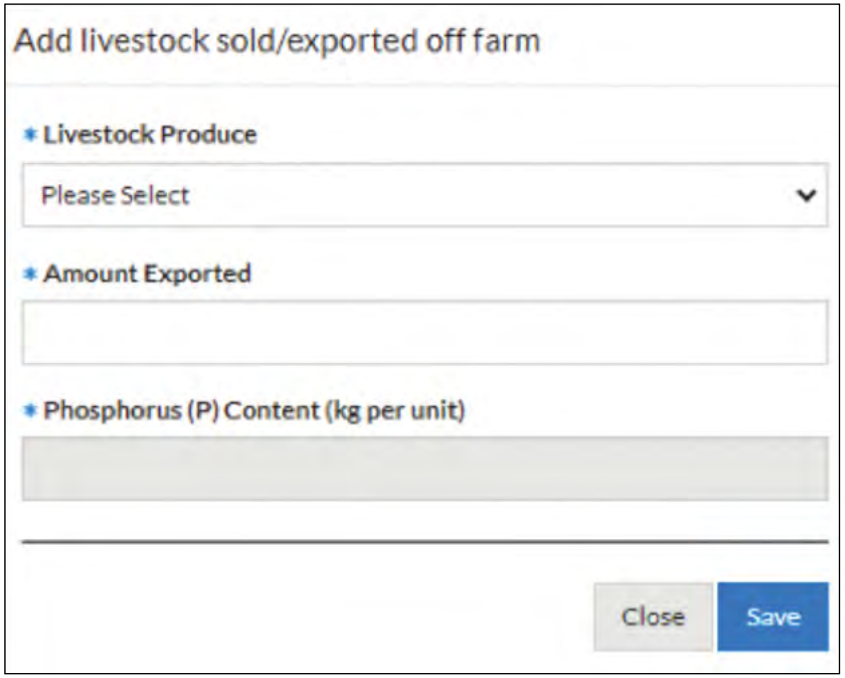


Crop produce sold/exported off farm

Use the “Add New” button for each crop product moving off the farm, select the crop produce type from the drop down menu. Enter the amount exported (tonnes) and the P content (kg per t) will automatically appear for the chosen crop product. Where the crop product is not shown select other and manually enter the P content value.

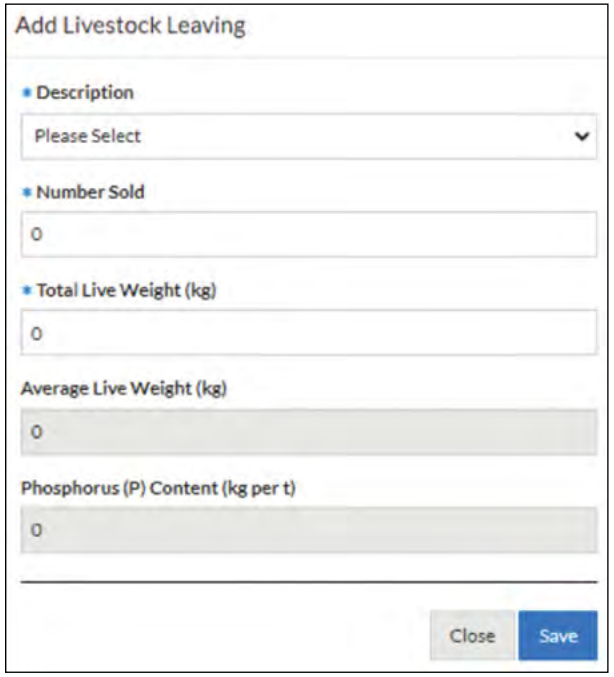
Livestock produce sold/exported off farm

For each livestock product moving off the farm use the “Add New” button, select the livestock produce type from the drop down menu. Enter the amount leaving the farm. The P content of the livestock product will automatically appear.



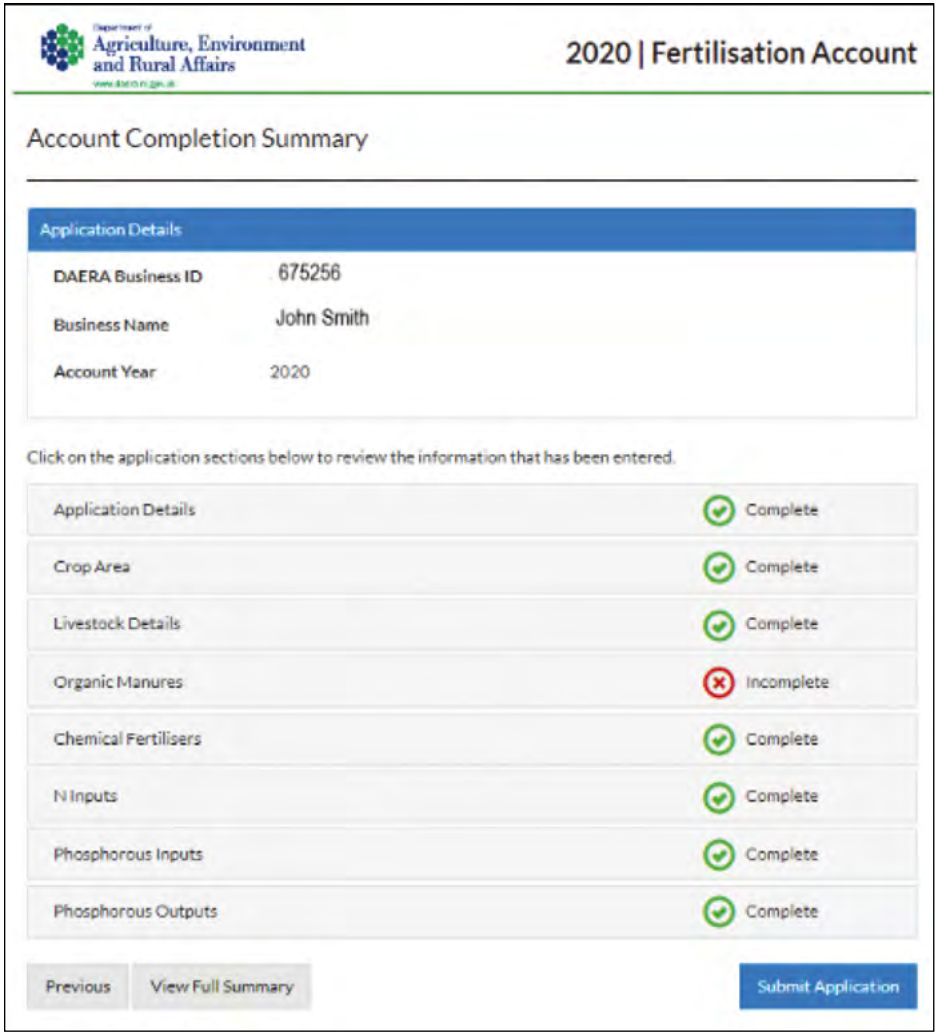
Livestock leaving the farm

For each livestock type moving off the farm use the “Add New” button, select the livestock type from the drop down menu. Enter the number leaving the farm. The P content of the livestock will automatically appear.



When complete click “Save” and then select “Next” to proceed to the next tab.

Note: Completing the “P Inputs” and “P Outputs” tabs will allow the NIEA to calculate the P Balance for your holding and check if you have complied with the 10 kg P per ha per year limit for 20XX. To ensure that you have complied with the limit, you can complete the P Balance worksheet at Annex F of this booklet, alternatively, you can use the P Balance Calculator available at www.daera-ni.gov.uk/onlineservices.



Fertilisation Account Completion Summary

Once all sections are complete move to the "**Application Summary**" section, a green tick mark will confirm all sections are complete.

Each section can be reviewed and amended using the previous button and unticking the "Have you completed this section?" box.

There is an option to view a list of all sections using the "View Full Summary" button.

When you are content that all sections are complete click "**Submit Application**" to submit. This will mark the application as "Submitted". Once submitted, you cannot make further changes. If you need to make changes you may request for the application to be re-opened, by contacting NIEA using email: derogation@daera-ni.gov.uk.

Online Farm Nutrient Calculators

If you need help with the NAP measures on nutrient limits, storage requirements and record keeping, you can log onto www.daera-ni.gov.uk/onlineservices and use the Farm Nutrient Calculators which are designed to help you meet the requirements of the NAP 2019-2022.

There are five Farm Nutrient Calculators which are free, easy to use, available 24 hours per day, secure and confidential:

- **Nitrogen loading calculator:** Helps you to calculate the nitrogen loading for your farm and check if you are below the 170 kg N per ha per year limit or, if operating under a Derogation, below the 250 kg N per ha per year limit.
- **Manure storage calculator:** Helps you to calculate the weekly slurry, dirty water, manure production and current storage capacity for your farm and check if you have the required 22 or 26 weeks' storage or how much additional storage is needed.

  (Livestock numbers are required for the above two calculators. An accurate record of cattle type and numbers kept each year since 2007 can be obtained using the 'Nitrate Animal Count' function on APHIS Online.)

- **Crop nutrient calculator:** This programme will help you to comply with nutrient limit requirements, check that you do not exceed the N Balance for arable and draw up a nutrient management plan (NMP) for your farm:
  - determine the N, P_2O_5 and K_2O required by crops;
  - calculate the amount of nutrients supplied by organic manures;
  - select the correct chemical fertiliser and application rate; and
  - retain information required for record keeping.

  (Although not a requirement of the Regulations, this calculator also provides information in relation to potash requirements. When this calculator is used for all three main nutrients (N, P_2O_5 and K_2O) it will help to improve soil fertility, optimise application rates, increase crop yields and help to reduce chemical fertiliser costs.)

- **Phosphorus balance calculator:** If operating under a Derogation, helps you calculate the phosphorus balance for your farm and check that the limit of 10 kg P per ha per year has not been exceeded. For all farms it helps you manage phosphorus inputs and outputs to use phosphorus efficiently.
- **N-max for grassland calculator:** Helps you to check that nitrogen applications to the whole grassland area on the farm do not exceed the NAP limits and check that you do not exceed the N Balance for grassland.

Where can I find the farm nutrient calculators?

Step 1: Go to www.daera-ni.gov.uk/onlineservices.

Step 2: Click Online Services and then the Login button.

Step 3: If you have not yet registered, click 'I need a Government Gateway Account' and follow the on-screen instructions. (Remember to select APHIS Online if you wish to use this service).

Step 4: Once registered, log in and select Farm Nutrient Calculators.

Step 5: Select the Farm Nutrient Calculator you wish to use.

Training

CAFRE offers the following training courses to help farmers understand the requirements of these Regulations:

- **Nutrients Action Programme Information Training** - general information on NAP and record keeping.
- **Nutrients Action Programme Derogation Training** - information on how to meet the additional requirements of the NAP Derogation.
- **Nutrient Management Planning** - a further detailed course on matching nutrient inputs to crop requirement for economic crop production, the long term fertility of the soil and to comply with the NAP Regulations.

To register your interest for any of these courses please contact CAFRE by calling 028 9442 6770 or e-mail: developmentservice.admin@daera-ni.gov.uk.

Information

DAERA publishes the Farm Advisory System (FAS) Newsletter in February and September each year and posts it to all farm businesses registered with DAERA. The newsletter aims to bring farmers up to date with news and developments in topics including:

- Cross-Compliance.
- Basic Payment Scheme Greening Regulations and the maintenance of agricultural area.
- Rural Development Programmes (RDP) aiming at farm modernisation and competitiveness building.
- Water Framework Directive (WFD).
- Sustainable Use of Pesticides Directive.

As the NAP is part of Cross-Compliance, the FAS Newsletter will contain information relating to NAP designed to help farmers manage their businesses in compliance with these Regulations.

Who will be responsible for inspection and enforcement?

Inspection and enforcement of the NAP (including the Derogation) is carried out by NIEA, an agency within the Department of Agriculture, Environment and Rural Affairs (DAERA). Further information on inspections and enforcement can be found in **Section 12** of the NAP 2019-2022 Guidance Booklet.

Which farms will be inspected?

It is a requirement of the rules of the Derogation (as specified by the European Commission) that all farms operating under a Derogation will be subject to administrative control.

This administrative control will be carried out by NIEA through checks on the applications and fertilisation accounts submitted to them by every farm business operating under a Derogation.

It is also a requirement that at least 5% of farm businesses who have been granted a Derogation undergo an on-farm Cross-Compliance inspection each year to check for compliance with the NAP Regulations, including the Derogation measures. NIEA will carry out an environmental risk assessment to identify a list of farmers who will be inspected under Cross-Compliance Notice is normally given of an inspection (see **Section 12** of the NAP 2019-2022 Guidance Booklet).

What happens if my farm is non-compliant?

NIEA will seek to work co-operatively with farmers to secure improved practice on the farm. Unfortunately enforcement action will need to be taken in some cases to ensure compliance. Any enforcement action will be in accordance with the Environment, Marine and Fisheries Group Enforcement Policy which can be found on https://www.daera-ni.gov.uk/publications/environment-marine-and-fisheries-group-enforcement-policy or you can contact NIEA. See **Annex E**.

Additionally, as non-compliance with the NAP Regulations, including the terms of any Derogation granted to your farm, is also a breach of Cross-Compliance conditions, it may lead to a reduction in payments under Area-Based Schemes (including BPS).

Annex A

Example format of a fertilisation plan

The following pages are an example format of a **fertilisation plan** based on the farm scenario outlined on **page 10**.

The information can be presented in other formats if preferred, for example a print out from the CAFRE farm nutrient calculators, available at www.daera-ni.gov.uk/onlineservices

The fertilisation plan is kept on farm and should be presented if selected for an NIEA inspection.

Annex A 1 Planned average stock numbers and livestock manure nitrogen and phosphorus produced on-farm

Table 1: Livestock manure nitrogen (N) and phosphorus (P) to be produced by dairy cattle per year.
Only complete this table if you keep these livestock.

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

Livestock type	**Average number per year**	**N produced per head per year (kg N)**	**N produced (kg per year)**	**P produced per head per year (kg P)**	**P produced (kg per year)**
Dairy cattle	**(A)**	**(B)**	**(C)** (A)x(B)	**(D)**	**(E)** (A)x(D)
Dairy cow	100	100	10,000	19	1,900
Dairy heifer (over 2 years)	5	45	225	8.3	41.5
Dairy heifer (1-2 years)	30	39	1,170	7.2	216
Breeding bull		52		9.6	
Dairy calves: to prevent the same animal being counted twice use either "0 to 1 year" **OR** "0-6 months" and/or "6-12 months" categories					
0-1 year	30	19	570	4.7	141
OR					
6-12 months		12		3.0	
0-6 months		7		1.7	
		Total N produced from dairy cattle	**= 11,965**	**Total P produced from dairy cattle**	**= 2,299**

Planned average stock numbers and livestock manure nitrogen and phosphorus produced on-farm - continued

Table 2: Livestock manure nitrogen (N) and phosphorus (P) to be produced by beef cattle per year.
Only complete this table if you keep these livestock.

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

Livestock type	**Average number per year**	**N produced per head per year (kg N)**	**N produced (kg per year)**	**P produced per head per year (kg P)**	**P produced (kg per year)**
Beef cattle	**(A)**	**(B)**	**(C)** (A)x(B)	**(D)**	**(E)** (A)x(D)
Suckler cows		52		9.6	
Cattle (over 2 years)		45		8.3	
Cattle (1-2 years)		39		7.2	
Breeding bull		52		9.6	
Beef calves: to prevent the same animal being counted twice use either "0 to 1 year" **OR** "0-6 months" and/or "6 months to 1 year" categories					
0-1 year		19		4.7	
OR					
6-12 months		12		3.0	
0-6 months		7		1.7	
Bull Beef calves: to prevent the same animal being counted twice use either "0 - 13.5 months" **OR** "0-6 months" and/or "6 to 13 months" categories					
0-13 months		30		7.5	
OR					
6-13 months		23		5.8	
0-6 months		7		1.7	
		Total N produced from beef cattle	**=**	**Total P produced from beef cattle**	**=**

Planned average stock numbers and livestock manure nitrogen and phosphorus produced on-farm - continued

Table 3: Livestock manure nitrogen (N) and phosphorus (P) to be produced by sheep per year.
Only complete this table if you keep these livestock.

1. Multiply the planned number of livestock in column (A) by the N produced per head per year column (B) enter total in column (C).
2. Multiply the planned number of livestock in column (A) by the P produced per head per year 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	**Average number per year**	**N produced per head per year (kg N)**	**N produced (kg per year)**	**P produced per head per year (kg P)**	**P produced (kg per 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	
Lambs: to prevent the same animal being counted twice use either "0 to 1 year" **OR** "0-6 months" and/or "6-12 months" categories					
0-1 year		4.4		0.6	
OR					
6-12 months		3.2		0.3	
0-6 months		1.2		0.3	
		Total N produced from sheep	**=**	**Total P produced from sheep**	**=**

Planned average stock numbers and livestock manure nitrogen and phosphorus produced on-farm - continued

Table 4: Livestock manure nitrogen (N) and phosphorus (P) to be produced by deer and goats per year.
Only complete this table if you keep these livestock.

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

Livestock type	Average number per year	N produced per head per year (kg N)	N produced (kg per year)	P produced per head per year (kg P)	P produced (kg per year)
Deer	**(A)**	**(B)**	**(C)** (A)x(B)	**(D)**	**(E)** (A)x(D)
Deer (red) over 2 years		15		4	
Deer (red) 6 months-2 years		12		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	**(A)**	**(B)**	**(C)** (A)x(B)	**(D)**	**(E)** (A)x(D)
Milking goats		15		1.7	
Non milking goats		9		1.0	
Kids: to prevent the same animal being counted twice use either "0 to 1 year" **OR** "0-6 months" and/or "6-12 months" categories					
0-1 year		4.4		0.6	
OR					
6-12 months		3.2		0.3	
0-6 months		1.2		0.3	
		Total N produced from deer/goats	**=**	**Total P produced from deer/goats**	**=**

Planned average stock numbers and livestock manure nitrogen and phosphorus produced on-farm - continued

Table 5: Livestock manure nitrogen (N) and phosphorus (P) to be produced by horses per year.
Only complete this table if you keep these livestock.

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

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

Planned average stock numbers and livestock manure nitrogen and phosphorus produced on-farm - continued

Table 6 and 7: Planned livestock numbers and livestock manure nitrogen (N) and phosphorus (P) to be produced by pigs per year

Only complete if you keep these livestock.
Select from either “Units with breeding stock only” **or** “Units with growing/finishing pigs only”, depending on your production system.

Table 6: Planned livestock numbers and livestock manure nitrogen (N) and phosphorus (P) to be produced by units with breeding stock only per year

1. Only complete the table on the next page if you keep the pig types shown. This includes sows, gilts, boars and pigs from weaning to sale/transfer or slaughter.
2. Enter the planned average number of pigs on the unit at any one time in column (A).
3. Enter the planned total number of pigs to be sold/transferred off the unit in the year for each weight range in Column (F). You can select more than one weight.
4. Multiply the planned number per year by the N and P produced per year.
5. Total the N produced per year in column (C).
6. Total the P produced per year in column (E).

Planned average stock numbers and livestock manure nitrogen and phosphorus produced on-farm - continued

Table 6: Planned livestock numbers and livestock manure nitrogen (N) and phosphorus (P) to be produced by units with breeding stock only per year (continued).

Livestock type	Breeding and rearing units only				
	Number on unit per year[1]	**N produced per head per year (kg N)**	**Total N produced (kg N per year)**	**P produced per head per year (kg P)**	**Total P produced (kg P per year)**
Pigs	**(A)**	**(B)**	**(C)** (A)x(B)	**(D)**	**(E)** (A)x(D)
Boars[1]		18		4.2	
Maiden gilts[1]		11		5.7	
Lactating sows[2], dry sows, served gilts[1]		16		8.7	
Sale/transfer weight of pigs (kg)	**Number sold/ transferred per year**	**N produced per head per year (kg N)**	**Total N produced (kg N per year)**	**P produced per head per year (kg P)**	**Total P produced (kg P per year)**
	(A)	**(B)**	**(C)** (A)x(B)	**(D)**	**(E)** (A)x(D)
18		0.09		0.08	
35		0.38		0.23	
105		2.38		1.09	
		Total N produced from pig breeding stock	**=**	**Total P produced from pig breeding stock**	**=**

[1]Average number on the unit at any one time and not the total entering the herd.

[2]Lactating sow figure includes suckling pigs to weaning.

Planned average stock numbers and livestock manure nitrogen and phosphorus produced on-farm - continued

Table 7: Planned livestock numbers and livestock manure nitrogen (N) and phosphorus (P) to be produced by units with <u>growing/finishing pigs</u> only per year.

1. Only complete the table below if you just finish pigs and **do not** have breeding stock.
2. Enter the planned number of pigs to be sold or sent to slaughter in the year in Column (A).
3. Multiply the planned number per year by the N and P produced per year.

Livestock type	Growing and finishing farms only				
	Number sold or sent to slaughter per year	N produced per head per year (kg N)	Total N produced (kg per year)	P produced per head per year (kg P)	Total P produced (kg per year)
Weight type	**(A)**	**(B)**	**(C)** (A)x(B)	**(D)**	**(E)** (A)x(D)
7 kg-18 kg		0.09		0.08	
7 kg-35 kg		0.38		0.23	
7 kg-105 kg		2.38		1.09	
18 kg-35 kg		0.29		0.15	
18 kg-105 kg		2.30		1.00	
35 kg- 105 kg		2.00		0.85	
		Total N produced from growing/finishing pig units	**=**	**Total P produced from growing/finishing pig units**	**=**

Planned average stock numbers and livestock manure nitrogen and phosphorus produced on-farm - continued

Tables 8 and 9: Livestock manure nitrogen (N) and phosphorus (P) to be produced by poultry per year.
Only complete this table if you keep these livestock.

1. Select either Table 8 or Table 9 depending on your production system.
2. Enter either the number of birds produced on your farm per year in column (A), Table 8 or the unit capacity in column (C), Table 9.
3. If using Table 9 enter the number of weeks occupancy in column (B) and multiply this by the unit capacity (A) to give the planned number of birds produced per year (C).
4. Multiply the number of birds by the N and P produced per 1,000 birds.
5. Total the N produced per year in the appropriate column and total the P produced per year in the appropriate column.

Table 8: Livestock manure nitrogen (N) and phosphorus (P) to be produced by poultry per year

Livestock type	**Number of birds produced per year**	**N produced per 1,000 birds (kg N)**	**N produced (kg N per year)**	**P produced per 1,000 birds (kg P)**	**P produced (kg P per year)**
Poultry	**(A)**	**(B)**	**(C)** (A)x(B)	**(D)**	**(E)** (A)x(D)
Broilers conventional (1,000's)	132	40	5,280	8.4	1,109
Broilers hot water heating (1,000's)		33.8		7.0	
Free range broilers (1,000's)		44.9		11.4	
Turkeys (0-kill) (1,000's)		229		55	
Turkeys (6 weeks-kill) (1,000's)		305		73.8	
Turkeys (0-kill) (1,000's)		534		129	
Fattening ducks (1,000's)		139		65	
		Total N produced from poultry	**= 5,280**	**Total P produced from poultry**	**= 1,109**

Planned average stock numbers and livestock manure nitrogen and phosphorus produced on-farm - continued

Table 9: Livestock manure nitrogen (N) and phosphorus (P) to be produced by poultry per year (continued).

Livestock type	Unit capacity (1,000s)	Number weeks occupancy	Number of birds produced	N produced per 1,000 birds per week (kg N)	N produced (kg N per year)	P produced per 1,000 birds per week (kg P)	P produced (kg P per year)
Poultry	**(A)**	**(B)**	**(C)** (A)x(B)	**(D)**	**(E)** (C)x(D)	**(F)**	**(G)** (C)x(F)
Broiler breeders (1,000s) 0-18 weeks				2.9		2.0	
Broiler breeders (1,000s) 18-60 weeks				7.2		3.9	
Broiler breeders (1,000s) 0-60 weeks				5.9		3.3	
Pullets (1,000s)				4.7		1.7	
Layers (1,000s)				12		4.6	
Free range laying hens (1,000's)				5.4		2.2	
				Total N produced from poultry	**=**	**Total P produced from poultry**	**=**

Planned average stock numbers and livestock manure nitrogen and phosphorus produced on-farm - continued

Table 10: Nitrogen (N) and phosphorus (P) produced from livestock manure.

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 per year)	P produced (kg per year)
Dairy cattle livestock manure (total from page 42)	**11,965**	**2,299**
Beef cattle livestock manure (total from page 43)	**+**	**+**
Sheep livestock manure (total from page 44)	**+**	**+**
Deer and goat livestock manure (total from page 45)	**+**	**+**
Horse livestock manure (total from page 46)	**+**	**+**
Pig livestock manure (total from page 48-49)	**+**	**+**
Poultry livestock manure (total from page 50-51)	**+ 5,280**	**+ 1,109**
	= 17,245	**= 3,408**
Total for all enterprises	**(Total N produced kg per year)**	**(Total P produced kg per year)**

Remember you can use the CAFRE farm nutrient calculators, available at www.daera-ni.gov.uk/onlineservices to do these calculations.

Annex A 2 Organic manure planned to be imported and exported

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 or tonnage. Typical DM is 6% for cattle slurry and 4% for pig slurry.

Slurry type	Nitrogen (N) content	Imported volume (m^3)	Exported volume (m^3)
Cattle slurry - 2% DM	1.6		
Cattle slurry - 6% DM	2.6		
Cattle slurry - 10% DM	3.6		
Pig slurry - 2% DM	3.0		
Pig slurry - 4% DM	3.6		
Pig slurry - 6% DM	4.4		
Separated cattle slurry (liquid portion)			
- Strainer box	1.5		
- Weeping wall	2.0		
- Mechanical separator	3.0		
Separated pig slurry (liquid portion)	3.6		
Other e.g. digestate			

$1m^3$= 220 gallons

Organic manure planned to be imported and exported - continued

Manure type	Nitrogen (N) content	Imported quantity (tonnes)	Exported quantity (tonnes)
Cattle FYM - 25% DM	6.0		
Sheep manure FYM - 25% DM	7.0		
Pig manure FYM - 25% DM	7.0		
Broiler litter - conventional - 66% DM	33		141 t
Broiler litter - hot water heating - 72% DM	33.8		
Free range broilers - 57% DM	26.4		
Broiler breeders 0-18 weeks - 55% DM	17.5		
Broiler breeders 18-60 weeks - 60% DM	20.7		
Broiler breeders 0-60 weeks - 59% DM	20.2		
Turkeys 0-6 weeks - 58% DM	24.8		
Turkeys 6 weeks - kill - 58% DM	24.8		
Turkeys 0-kill - 58% DM	24.8		
Pullets - 72% DM	32.7		
Layer manure - 30% DM	16		
Free range laying hens - 46% DM	18.8		
Duck manure - 25% DM	6.5		
Horse manure FYM - 25% DM	5.0		
Goat manure FYM - 40% DM	9.5		
Spent mushroom compost	8.0		
Separated cattle slurry (solid portion)	4.0		
Separated pig slurry (solid portion)	5.0		
Other			

Annex A 3 Map of farm

Provide a farm map which shows the following:

- the field areas;
- crops grown in each field;
- crop grown last year if this year's crop is arable;
- Soil Nitrogen Status (SNS) index for arable crops (refer to the NAP 2019-2022 Guidance Booklet **Annex H**) or alternatively a table as below could be completed along with the farm map.

Farm survey number	Field number	Field area (ha)	Crop grown this year	Previous crop	SNS index (arable fields only except N-max crops*)
7/1/526	1	3.06	Grass	Grass	
7/1/526	2	4.00	Grass	Grass	
7/1/526	3	2.89	Grass	Grass	
7/1/526	4	2.68	Grass	Grass	
7/1/526	5	3.80	Grass	Grass	
7/1/526	6	2.61	Grass	Grass	
7/1/526	7	2.50	Grass	Grass	
7/1/526	8	2.90	Grass	Grass	
7/1/526	9	2.96	Grass	Maize	
7/1/526	10	3.82	Grass	Barley	

*N-max crops refer to winter/spring wheat, barley and oats. N-max is an upper limit for high yielding crops. For further information refer to **Section 5** below and the NAP 2019-2022 Guidance Booklet, **Annex I**.

Map of farm - continued

Farm survey number	Field number	Field area (ha)	Crop grown this year	Previous crop	SNS index (arable fields only except N-max crops*)
7/1/526	11	4.10	Grass	Grass	
7/1/526	13	3.22	Grass	Winter Wheat	
7/1/526	14	6.53	Grass	Grass	
7/1/526	15	3.56	Grass	Grass	
7/1/526	16	3.15	Grass	Grass	
7/1/526	17	4.22	Winter Wheat	Grass	
7/1/526	18	2.3	Grass	Grass	
7/1/526	19	2.7	Grass	Grass	
7/1/526	20	3.0	Forage maize	Forage maize	1

*N-max crops refer to winter/spring wheat, barley and oats. N-max is an upper limit for high yielding crops. For further information refer to **Section 5** below and the NAP 2019-2022 Guidance Booklet, **Annex I**.

Annex A 4 Planning the amount of nitrogen (N) to be applied to grassland

This will estimate the amount of nitrogen (N) you are likely to apply to the grassland area over the year. If in practice this changes, plans should be amended within seven days.

Column (A)	Enter the total area of grassland.
Column (B)	Enter the maximum N requirement for your grassland area.
Column (C)	Enter the type(s) of organic manure, **not including livestock manure**, to be applied.
Column (D)	Enter in the amount of this organic manure to be applied to the grassland area.
Column (E)	Enter the available N content of these organic manures (per m^3 or tonne of manure) by calculating 40% of the total N content (i.e. multiplying by 0.4) (**Annex G** of the NAP 2019-2022 Guidance Booklet; total N content should be provided by producer or waste transfer note/copy of exemption from waste management licensing). For example, sewage sludge with a total N content of 3 kg N per m^3 has 1.2 kg available N per m^3.
Column (F)	Multiply columns (D) and (E) to give total amount of available N to be applied in organic manures.
Column (G)	Enter the type(s) of chemical fertiliser to be applied on grassland during the year.
Column (H)	Enter the total amount of chemical fertiliser product to be applied for each fertiliser type(s).
Column (I)	Calculate the amount of N to be applied for all type(s) of chemical fertiliser. For example if 25,000 kg of 27:0:0 is to be applied, kg of N to be applied = 27 x 25,000 ÷ 100 = 6,750 kg of N.
Column (J)	Add column (F) and (I) to give total N to be applied.
Column (K)	Divide total in (J) by whole area of grassland (A). Application to be less than requirement in column (B).

Planning the amount of nitrogen (N) to be applied to grassland - continued

Nitrogen (N) planning sheet for grassland										
Crop details		Organic manure excluding livestock manures (for example sewage sludge)				Chemical N fertiliser			Organic and Chemical N fertiliser	
Area of grassland on the farm (ha)	N requirement of grassland (kg per ha) (As per page 5)	Type of manure	Total amount of manure to be applied to whole area of grass (m^3 or t)	Amount of available N (kg per m^3 or t) Annex G*	Total amount of available N to be applied to whole area of grass (kg) (D)x(E)	Type of N fertiliser to be applied	Total amount of fertiliser product to be applied to whole area (kg)	Total amount of N from fertiliser to be applied to whole area (kg)	Total amount of N to be applied to whole area (kg) (F)+(I)	Total N to be applied per ha (kg) Total (J) ÷ (A)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
56.78	272	None	None	None	None	27:0:0	25,000	6,750	6,750	
						27:6:12	1,600	432	432	
						46:0:0	10,000	4,600	4,600	
								Total	11,782	208

*refers to **Annex G** in the NAP 2019-2022 Guidance Booklet.

Annex A 5 Planning the amount of nitrogen to be applied on N-max crops (winter/spring wheat, barley and/or oats)

In contrast to grassland **all** organic manures must be taken into consideration including livestock manures. N-max is an upper limit of nitrogen (N) that can be applied to crops of winter/spring wheat, barley and oats.

Column (A)	Enter crop type - either winter/spring wheat, barley and/or oats.
Column (B)	Enter the total area for each crop type to be grown.
Column (C)	Enter the maximum N requirement for each crop area as per the N-max limit for crop requirement (**Annex I** of the NAP 2019-2022 Guidance Booklet) **including any adjustment for yield**.
Column (D)	Enter the type(s) of organic manure, **including livestock manure**, to be applied.
Column (E)	Enter in the amount of manure to be applied.
Column (F)	Enter the available N content (per m^3 or tonne of manure) of the manure to be applied (**Annex G** of the NAP 2019-2022 Guidance Booklet).
Column (G)	Multiply columns (E) and (F) to give total amount of available N to be applied in organic manures.
Column (H)	Enter the type(s) of chemical fertiliser to be applied.
Column (I)	Enter the total amount of chemical fertiliser product to be applied for each fertiliser type(s).
Column (J)	Total up the amount of N to be applied for all type(s) of chemical fertiliser applied. For example if 1,600 kg of 27:0:0 is to be applied, kg of N to be applied = 27 x 1,600 ÷ 100 = 432 kg of N.
Column (K)	Add column (G) and (J) to give total N to be applied to the area of each crop.
Column (L)	Divide total in (K) by area of crop (B). Application to be less than requirement in column (C).

Annex A 5

Planning the amount of nitrogen to be applied on N-max crops (winter/spring wheat, barley and/or oats) - continued

Nitrogen (N) planning sheet for N-max crops											
Crop details			**Organic manure including livestock manures**				**Chemical nitrogen (N) fertiliser**			**Organic and chemical N fertiliser**	**Total N to be applied per ha (kg)**
Crop	**Total area of crop (ha)**	**Crop N-max require-ment (kg per ha)**	**Type of manure**	**Total amount of manure to be applied to field(s) (m^3 or t)**	**Amount of available N (kg per m^3 or t)**	**Total amount of available N to be applied to field(s) (kg)**	**Type of N fertiliser to be applied**	**Total amount of fertiliser product to be applied to field(s) (kg)**	**Total amount of N from fertiliser to be applied to field(s) (kg)**	**Total amount of N to be applied to field(s) (kg)**	**Total (K) ÷ (B)**
		Annex I*			**Annex G***	**(E) x (F)**				**(G) + (J)**	
(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**	**(G)**	**(H)**	**(I)**	**(J)**	**(K)**	**(L)**
Winter Wheat	4.22	220 (N-max limit)	Broiler litter	9 t	9.9	89.1	46:0:0	400	184	273.1	
							27:6:12	300	81	81	
									Total	354.1	83.9

*refers to **Annexes I and G** in the NAP 2019-2022 Guidance Booklet.

Annex A 6 Planning the amount of nitrogen to be applied on other arable crops (excluding N-max crops and grass) - continued

In contrast to grassland **all** organic manures must be taken into consideration including livestock manures.

Column (A)	Enter crop type from **Annex H** of the NAP 2019-2022 Guidance Booklet.
Column (B)	For each crop area on the farm with the same cropping history enter the soil nitrogen supply (SNS) index as determined per **Annex H** of the NAP 2019-2022 Guidance Booklet.
Column (C)	Enter the area to be grown for each crop type with the same cropping history.
Column (D)	Enter the maximum N requirement for each crop area (**Annex H** of the NAP 2019-2022 Guidance Booklet) taking into consideration the SNS index stated in column B.
Column (E)	Enter the type(s) of organic manure, **including livestock manure**, to be applied.
Column (F)	Enter in the amount of manure to be applied.
Column (G)	Enter the available N content (per m^3 or tonne of manure) of the manure to be applied (**Annex G** of the NAP 2019-2022 Guidance Booklet).
Column (H)	Multiply columns (E) and (F) to give total amount of available N to be applied in organic manures.
Column (I)	Enter the type(s) of chemical fertiliser to be applied.
Column (J)	Enter the total amount of chemical fertiliser product to be applied for each fertiliser type(s).
Column (K)	Total up the amount of N to be applied for all types of chemical fertiliser applied. For example if 1,600 kg of 27:0:0 is to be applied, kg of N to be applied = 27 x 1,600 ÷ 100 = 432 kg of N.
Column (L)	Add column (H) and (K) to give total N to be applied to the crop area.
Column (M)	Divide total in (L) by area of crop (C). Application to be less than requirement in column (D).

Planning the amount of nitrogen to be applied on other arable crops (excluding N-max crops and grass) - continued

Nitrogen (N) planning sheet for other arable crops (excluding N-max crops and grass)												
Crop details				Organic manure including livestock manures				Chemical nitrogen (N) fertiliser			Organic and chemical N fertiliser	Total N to be applied per ha (kg) Total (L) ÷ (C)
Crop	SNS	Total area of crop (ha)	Crop N require-ment (kg per ha) Annex H*	Type of manure	Total amount of manure to be applied to field(s) (m^3 or t)	Amount of available N (kg per m^3 or t) Annex G*	Total amount of available N to be applied to field(s) (kg) (F) x (G)	Type of N fertiliser to be applied	Total amount of fertiliser product to be applied to field(s) (kg)	Total amount of N from fertiliser to be applied to field(s) (kg)	Total amount of N to be applied to field(s) (kg) (H) + (K)	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
Forage maize	1	3	100	Cattle slurry	111 m^3	1.0	111	25:0:5	600	150	261	
										Total	261	87

*refers to **Annexes H and G** in the NAP 2019-2022 Guidance Booklet.

Annex A 7 Planning the amount of phosphate (P_2O_5) to be applied to crops including grass

Where no chemical P_2O_5 fertiliser is to be applied, there is no legal obligation to demonstrate a crop requirement for P_2O_5 from application of livestock manures. You are only required to complete this table if you are planning to apply chemical phosphate (P_2O_5) fertiliser.

1. All organic manures, **including livestock manures**, must be taken into consideration.
2. The values for available P_2O_5 content of organic manures vary depending on soil phosphorus (P) index and crop type.
3. The P_2O_5 content of chemical fertilisers is taken to be 100% available.
4. When applying nutrients to grass or crops remember to consider all nutrients such as potash and sulphur.

Column (A)	Identify the crop to be grown. A list of the main crops and their requirements are listed in **Annex J** of the NAP 2019-2022 Guidance Booklet.
Column (B)	Enter area of field.
Column (C)	Enter Soil P index from soil analysis if available. (If not available then assume an index of 2+ for grass or 2 for all other crops).
Column (D)	According to the soil P index from soil analysis results enter the P_2O_5 requirement for the crop in kg per ha from **Annex J** of the NAP 2019-2022 Guidance Booklet.
Column (E)	Enter the type(s) of organic manure, **including livestock manure**, to be applied.
Column (F)	Enter in the amount of manure to be applied in m^3 or tonnes.
Column (G)	Enter the available P_2O_5 content (per m^3 or tonne of manure) of the manure to be applied (**Annex G** of the NAP 2019-2022 Guidance Booklet).
Column (H)	Multiply columns (F) and (G) to give total amount of available P_2O_5 to be applied in organic manures.
Column (I)	Enter the type of chemical fertiliser to be applied.
Column (J)	Enter the amount of chemical fertiliser to be applied per ha.
Column (K)	Enter the amount of chemical P_2O_5 to be applied. For example type of fertiliser to be applied was 27:6:12, this contains 6% P_2O_5. If 300 kg is to be applied per ha then the amount of P_2O_5 would be 6 x 300 ÷ 100 = 18 kg per ha.
Column (L)	Add column (H) and (K) to give total amount of available P_2O_5 to be applied per ha and divide by the area of the field (B) to calculate the application rate per ha.

Annex A 7

Planning the amount of phosphate (P_2O_5) to be applied to crops including grass - continued

Phosphate (P_2O_5) planning sheet												
Grass/crop details					Organic manure (including livestock manures)				Chemical (P_2O_5) fertiliser			
Field No.	Crop	Area of crop (ha)	Soil P index (from analysis)	P_2O_5 require-ment by crop according to soil P index (kg per ha) Annex J*	Type of organic manure to be applied Annex G*	Total amount of organic manure to be applied (m^3 or t)	Available P_2O_5 content of organic manure to be applied (kg per m^3 or t) Annex G*	Total amount of available P_2O_5 supplied to crop in organic manure (kg) (F) x (G)	Type of fertiliser product to be applied	Total amount of fertiliser product to be applied (kg)	Total amount of P_2O_5 from fertiliser to be applied (kg) (I) x (J)	Total P_2O_5 to be applied per ha (kg) ((H) + (K)) ÷ (B)
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
1, 3, 4, 5, 6, 7, 9, 18, 19	Grazing	20.5	2+	20	None	None	None	None	None	None	None	0
2	Grazing	4	1	50	Cow slurry	35m^3	0.6	21	None	None	None	5.3
8, 10, 11, 13, 14, 15, 16	1st Cut silage	27.28	2+	40	Cow slurry	800m^3	1.2	960	None	None	None	35.2
11, 14	Grass reseed	10.63	2-	65	Broiler litter	35t	16	560	None	None	None	52.7

1m^3 = 220 gallons 1 hectare = 2.47 acres

*refers to **Annexes J and G** in the NAP 2019-2022 Guidance Booklet.

Annex A 7

Planning the amount of phosphate (P_2O_5) to be applied to crops including grass - continued

Phosphate (P_2O_5) planning sheet												
Grass/crop details					Organic manure (including livestock manures)				Chemical (P_2O_5) fertiliser			
Field No.	Crop	Area of crop (ha)	Soil P index (from analysis)	P_2O_5 require-ment by crop according to soil P index (kg per ha) Annex J*	Type of organic manure to be applied Annex G*	Total amount of organic manure to be applied (m^3 or t)	Available P_2O_5 content of organic manure to be applied (kg per m^3 or t) Annex G*	Total amount of available P_2O_5 supplied to crop in organic manure (kg) (F) x (G)	Type of fertiliser product to be applied	Total amount of fertiliser product to be applied (kg)	Total amount of P_2O_5 from fertiliser to be applied (kg) (I) x (J)	Total P_2O_5 to be applied per ha (kg) ((H) + (K)) ÷ (B)
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
8, 10, 13, 15, 16	2nd Cut silage	16.65	2+	25	Cattle slurry	150 m^3	1.2	180	None	None	None	10.8
17	Winter wheat	4.22	2	60	Broiler litter	9 t	16	144	27:6:12	300	18	38
20	Forage maize	3	2	55	Cattle slurry	111 m^3	1.2	133.2	None	None	None	44.4

1m^3 = 220 gallons 1 hectare = 2.47 acres

*refers to **Annexes J and G** in the NAP 2019-2022 Guidance Booklet.

Note: Field 17 received chemical fertiliser but the total phosphate applied (38 kg per ha) was less than the crop requirement for phosphate and therefore complies with the Regulations.

Description of animal housing

What type of animal housing is on your farm?

Slurry based ☑

Straw bedded ☑

If other please specify: _____

_____

_____

_____

_____

_____

Annex A 9 Description and volume of manure storage

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	Main cow house	25	4	1.8	180
2	Feeding area	25	8	1.8	360
3	Heifer house	15	4	1.8	108
4	Silo tank	8	3	1.5	36
5	Farm yard	30	4	2.1	252
6	Midden	15	8	1.8	216
Total capacity of rectangular tanks and lagoons/ middens.					1,152 m^3

Tank	Description	Radius **rad** (m)	Adjusted height **h** (m) (Height - freeboard)[(i)]	Volume of facilities for slurry **= 3.14 x rad x rad x h** (m^3)
1	Yard	7	3	462
2				
Total capacity of above ground circular stores.				462 m^3

[(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 750 mm for earth bank lagoons and 300 mm for all other structures. Freeboard is not a legal requirement for structures which are exempt under the NAP 2019 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.

Annex B

The following pages are an example format of a **fertilisation account** based on the farm scenario outlined on **page 10**.

Fertilisation accounts must be submitted online to NIEA on or before 1 March of the following year. Failure to submit an account by that date will result in penalties being applied to Area-Based Scheme payments (including BPS) and will invalidate an application for Derogation in that year.

Annex B 1 Area of crops

Complete this table with the areas of crops (including grass grown in 20XX and their nitrogen (N) requirement.

Refer to farm map and list of fields in your fertilisation plan for 20XX noting crop areas.

Crop grown	Area grown (ha)	N requirement/Maximum N application limit* (kg per ha)
Grassland	56.78	272
Winter wheat	4.22	220
Forage maize	3.0	100

*Nitrogen requirement/Maximum N application limit can be found in **Annex C** and in the NAP 2019-2022 Guidance Booklet, see **Section 6** for grassland and crops.

Annex B 2 Livestock numbers

Complete this table with the average livestock kept/produced in 20XX.

Accurate average cattle numbers can be calculated from herd records, a computer recording system or Aphis online.
*If keeping calves or lambs for a part year use either the 0-6 and 6-12 months categories **OR** the 0-1 year category.

Stock type	Average number for 20XX
Dairy cows	100
Dairy heifer (over 2 years)	5
Dairy heifer (1-2 years)	30
Dairy breeding bull	
Dairy cattle (0-1 year) *	30
Heifer calves (6-12 months)*	
Heifer calves (0-6 months)*	
Suckler cows	
Beef breeding bull	
Bull beef (0-13 months)	
Beef cattle (0-1 year) *	
Bull beef (6-13 months)	
Calves (6-12 months) *	
Calves (0-6 months) *	
Ewe over 1 year	
Ram over 1 year	
Lamb (0-1 year)*	
Lamb (6-12 months)*	
Lamb (0-6 months)*	

Stock type	Average number for 20XX
For pig breeding farms only	
Boars	
Maiden gilts	
Lactating sows, dry sows,	
Served gilts	
Sale/transfer weight-18 kg	
Sale/transfer weight-35 kg	
Sale/transfer weight-105 kg	
For pig growing and finishing farms only	
Pigs (7-18 kg)	
Pigs (7-35 kg)	
Pigs (7-105 kg)	
Pigs (18-35 kg)	
Pigs (18-105 kg)	
Pigs (35-105 kg)	
Other	

Stock type	Number produced in 20XX	
Broilers conventional (1,000s)	132	
Broilers hot water heating (1,000's)		
Free range broilers (1,000's)		
Turkeys 0-6 weeks (1,000s)		
Turkeys 6 week - kill (1,000s)		
Turleys 0-kill (1,000's)		
Fattening ducks (1,000s)		
	Unit capacity	**No. of weeks occupancy**
Broiler breeders (0-18 wks)		
Broiler breeders (18-60 wks)		
Broiler breeders (0-60 wks)		
Pullets (1,000s)		
Layers (1,000s)		
Free range layers (1'000's)		

Annex B 3 Imported and exported organic manures (from fertilisation plan 20XX)

Only complete this table if you have imported or exported any organic manure during 20XX.

Remember that administrative details of manure exports must also be completed on **page 75**.

1 cubic metre (m^3) = 220 gallons.

Slurry type	Nitrogen (N) content	Phosphorus (P) content	Imported volume (m^3)	Exported volume (m^3)
Cattle slurry - 2% DM	1.6	0.26		
Cattle slurry - 6% DM	2.6	0.52		
Cattle slurry - 10% DM	3.6	0.79		
Pig slurry - 2% DM	3.0	0.36		
Pig slurry - 4% DM	3.6	0.65		
Pig slurry - 6% DM	4.4	0.96		
Separated cattle slurry (liquid portion):				
- Strainer box	1.5	0.13		
- Weeping wall	2.0	0.22		
- Mechanical separator	3.0	0.52		
Separated pig slurry (liquid portion)	3.6	0.48		
Other (e.g. digestate) (including N and P content)**				

**Manure type and N and P content of organic manures, excluding livestock manure, must also be provided in accordance with the Waste Management Licensing Regulations (NI) 2003.

Annex B 3 Imported and exported organic manures (from fertilisation plan 20XX)

Manure type	Nitrogen (N) content	Phosphorus (P) content	Imported quantity (tonnes)	Exported quantity (tonnes)
Cattle FYM - 25% DM	6.0	1.4		
Sheep manure FYM - 25% DM	7.0	1.4		
Pig FYM - 25% DM	7.0	2.6		
Broiler litter - 66% DM	33	7.0		141 t
Broiler litter hot water heating - 72% DM	33.8	7.0		
Free range broilers - 57% DM	26.4	6.7		
Broiler breeders 0-18 weeks - 55% DM	17.5	11.8		
Broiler breeders 18-60 weeks - 60% DM	20.7	11		
Broiler breeders 0-60 weeks - 59% DM	20.2	11.2		
Pullets - 72% DM	32.7	12		
Layer manure - 30% DM	16	5.7		
Free range layers - 46% DM	18.8	7.5		
Turkey litter 0-6 weeks, 6 weeks-kill, 0-kill - 58%	24.8	6.0		
Duck manure - 25% DM	6.5	2.4		
Horse manure FYM - 25% DM	5.0	2.2		
Goat manure FYM - 40% DM	9.5	2.0		
Spent mushroom compost	8.0	1.5		
Separated cattle slurry (solid portion)	4.0	0.87		
Separated pig slurry (solid portion)	5.0	1.6		
Other (including N and P content)**				

**Manure type and N and P content of organic manures, excluding livestock manure, must also be provided in accordance with the Waste Management Licensing Regulations (NI) 2003.

The information provided in **pages 70-73** will be used by the NIEA to calculate the livestock nitrogen loading for your farm for 20XX. You can check compliance with the limit of 250 kg N per ha per year by using the Livestock Manure Nitrogen Loading Calculator which is available at www.daera-ni.gov.uk/onlineservices or you can use the worksheets in the NAP 2019-2022 Workbook.

Annex B 4 Exported organic manures - administrative record details

Only complete this table if you have exported any organic manure during 20XX.

Notes:

- For derogated farms, a record of all manure exports in a calendar year, must be submitted to NIEA annually using DAERA online services available at www.daera-ni.gov.uk/onlineservices by 1 March of the following year. (Non-derogated farms must submit records by 31 January for the previous calendar year). You will also need to keep a copy of the record on the farm as it may be required during an inspection.
- Under the NAP Regulations and Cross-Compliance it is an offence to provide false or misleading information and penalties can apply, i.e. a fine under NAP or reduced Area-Based Scheme payments under Cross-Compliance.
- Any total nitrogen (kg) exported should be subtracted from the total nitrogen excretion value for the livestock manure nitrogen loading calculation.
- For organic manures other than livestock manure (for example, anaerobic digestate), it is the producer's responsibility to provide the user with a nutrient analysis, so that they can calculate nutrient loadings. If you are exporting organic manures other than livestock manures or anaerobic digestate (for example, sewage sludge), contact NIEA to discuss the type of manure, the rules controlling its use and whether you are required to provide a nutrient analysis and at what frequency.

Example:

Exporter's name:	John Smith		**Exporter's Business ID:**	675256	
Required		**Optional**		**Required**	
Date moved	**Type of livestock manure**	**Quantity (tonnes or m^3)[1] (A)**	**Nitrogen content of manure kg/m^3 or kg/t (see Annex C) (B)**	**Total nitrogen kg[3] (AxB)**	**Transporter's name and address**	**Importer's name and Business ID[2]**
01/03/xx	Broiler litter	141 t	33	4,653	John Smith, 1 Bigfarm Road, Ballyhome, BT2 7AG	A Farmer, Bus ID 123456

Annex B 4 Exported organic manures - administrative record details - continued

Table for completion and to be kept on farm:

Exporter's name:				**Exporter's Business ID:**		
Required			**Optional**		**Required**	
Date moved	**Type of livestock manure**	**Quantity (tonnes or m^3)(1) (A)**	**Nitrogen content of manure kg/m^3 or kg/t (see Annex C) (B)**	**Total nitrogen kg(3) (AxB)**	**Transporter's name and address**	**Importer's name and Business ID(2)**

(1) ($1m^3$ = 220 gallons).

(2) For exports to RoI, importer's Herd No. should be included instead of Business ID.

(3) There is no requirement to make this calculation, but it may help you assess your nitrogen loading status.

Annex B 5 Chemical fertiliser stock details

Complete this table with details of chemical fertiliser stocks, purchases and sales for 20XX.

Record the tonnage and N and P content of all chemical fertiliser stocks on 1 January and 31 December and the tonnage and N and P content of chemical fertiliser imported in and exported off the farm during 20XX. This will allow NIEA to determine if you have complied with the chemical nitrogen restrictions. You can check compliance with this limit by using the N Max for Grassland Calculator for grass and the Crop Nutrient Recommendation Calculator for crops other than grass which are available at www.daera-ni.gov.uk/onlineservices. Alternatively you can check the limits in the NAP 2019-2022 Guidance Booklet **Section 6** for grassland and crops and use the worksheets in the NAP 2019-2022 Workbook.

This fertiliser record will also be used by the NIEA to check compliance with the P Balance.

Chemical fertilisers held on 1 January 20XX (held from previous year).

Fertiliser type for example 25:5:5			**Quantity (tonnes)**
N	**P (P_2O_5)**	**K**	
46	0	0	1.0

Chemical fertiliser stock details - continued

Chemical fertilisers (purchased/imported and sold/exported) in 1 January to 31 December 20XX.

Date	N	P (P_2O_5)	K	Amount purchased or imported on to farm (tonnes)	Amount sold or exported off farm (tonnes)
09/02/20XX	27	0	0	25.0	
11/03/20XX	46	0	0	10.4	
12/03/20XX	27	6	12	1.9	
12/03/20XX	25	0	5	0.6	

Chemical fertilisers held on 31 December 20XX (not used during year and held for following year).

Fertiliser type for example 25:5:5			Quantity (tonnes)
N	P (P_2O_5)	K	
46	0	0	1.0

Annex B 6 Dirty water management

Complete this page with details of how you manage and store dirty water.

How is your dirty water managed?

Stored with slurry ☑

Stored separately ☐

If other please specify: _____

_____

_____

_____

_____

_____

Annex B 7 Nitrogen requirement and Nitrogen applied to crops (including grass) - (N Balance)

Complete this section to calculate the N Balance for each crop area (including grass). **Total Nitrogen applied should not exceed maximum Nitrogen fertiliser application limits**.

A N Balance should be calculated to demonstrate compliance with the nitrogen limits. You can also check compliance with these limits using the N Balance worksheet at Annex D, alternatively, use the N Max for Grassland Calculator for grass and the Crop Nutrient Recommendation Calculator for crops other than grass which are available at www.daera-ni.gov.uk/onlineservices.

N Balance is the difference in kg per ha between the maximum Nitrogen fertiliser application limit and the Nitrogen applied to each crop area (including grass)

N Balance for all crops	=	Maximum Nitrogen fertiliser application limit - Nitrogen applied

Nitrogen requirement and Nitrogen applied to crops (including grass) - (N Balance) - continued

Step 1 - N APPLIED.

N Applied includes:

- Nitrogen in organic manures applied to grassland and crops. For grassland record the total organic manure (excluding livestock manure) (Examples of organic manures other than livestock manures include spent mushroom compost, sewage sludge, abattoir waste and anaerobic digestate not containing any livestock manure). For all other crops record the total organic manure (including livestock manure) applied to each crop area.

- Nitrogen in chemical fertilisers applied to grassland and crops (already entered in table at **page 76**).

Step 2 - Maximum N fertiliser application limits

N fertiliser application limits include:

- The maximum N fertiliser application limit for grassland is 272 kg per ha per year for dairy farms and 222 kg per ha per year for other livestock farms.

- The maximum N fertiliser application limit for other crops must be in compliance with crop nitrogen requirement (refer to **section 6** in the NAP 2019-2022 Guidance Booklet or **Annex C pages 95-99**).

Please note:

The maximum N fertiliser application limit for grassland refers to the maximum amounts of available nitrogen from organic manures (excluding livestock manures) and chemical fertiliser that can be applied to the whole grassland area. Livestock manure nitrogen has already been taken into consideration in the N fertiliser application limits for grassland.

Where N Max - cereal crops are grown an additional 20 kg N per ha is permitted for every tonne that the expected yield exceeds the standard yield.

Nitrogen requirement and Nitrogen applied to crops (including grass) - (N Balance) -continued

N APPLIED - Nitrogen application details grassland.

Complete these table with details of organic manure and chemical fertiliser applied to your grassland area and crops during 20XX.

Record the type and quantity of organic manure (excluding livestock manure) and chemical fertiliser applied to your grassland area. (Examples of organic manures other than livestock manures include spent mushroom compost, sewage sludge, abattoir waste and anaerobic digestate not containing any livestock manure). This will help NIEA to determine if you have complied with the maximum N fertiliser application limit for grassland.

	Nitrogen (N) application for all grassland			
Crop type	**Organic manure N (excluding livestock manure) applied**		**Chemical N fertiliser applied**	
	Type	**Quantity (tonnes or m^3)**	**Type**	**Quantity (kg)**
Grassland			27.0.0	25,000
			27.6.12	1,600
			46.0.0	10,000

Nitrogen requirement and Nitrogen applied to crops (including grass) - (N Balance) - continued

N APPLIED - Nitrogen application details arable crops.

Record the quantity of organic manure (including livestock manure) and chemical fertiliser applied to each crop area. This will help NIEA to determine if you have complied with the maximum N fertiliser application limit for other crops.

	Nitrogen (N) application for all arable crops (including N-max crops)			
Crop type	**Organic manure N (excluding livestock manure) applied**		**Chemical N fertiliser applied**	
	Type	**Quantity (tonnes or m^3)**	**Type**	**Quantity (kg)**
Winter wheat	Broiler litter	9 t	46.0.0	400
			27.6.12	300
Forage maize	Cattle slurry	111 m^3	25.0.5	600

Nitrogen requirement and Nitrogen applied to crops (including grass) - (N Balance) - continued

Recommended record sources of N applications.

Agricultural product	Recommended record source
Manure & fertiliser applications	Fertilisation plan
N content of non-livestock organic manures	N content from a lab report
Fertiliser analysis	Fertiliser invoices/fertiliser account.

Refer to **page 20-21** (column K), **23-24** (column L) & **26-27** (column M) of your fertilisation plan for total N applied per hectare; to grassland, N-max crops and other crops.

For further information on maximum N fertiliser application limits refer to NAP 2019-2022 Guidance Booklet, **Section 6** for grassland and other crops. A list of maximum fertiliser N application limits for crops and N content of organic manures can be found in **Annex C, pages 95-99**.

A N Balance does not have to be calculated but doing so will help you ensure you have complied with the limit. A worked example of how a N Balance is calculated is outlined on **page 84** and an example N Balance worksheet is included at **Annex D, page 100**.

In addition a N Max for Grassland and Crop Nutrient Calculator are available on the website www.daera-ni.gov.uk/onlineservices

Annex B 8 Example of a calculated N Balance (for a 64 ha, 100 cow dairy farm with 132,000 broilers per year)

This is a worked example of a N Balance calculations. To calculate the N Balance yourself you can complete the N Balance worksheet at **Annex C** or use the N Max for Grassland calculator and Crop Nutrient Calculator at www.daera-ni.gov.uk/onlineservices

Grassland area (ha)	**kg N applied**			
56.78	**Organic manure type**	**Amount applied (tonnes or m³)**	**N content**	**Quantity N (kg)**
	None			
	Chemical fertiliser type	**Amount applied (kg)**	**% N content**	
	Fertiliser 27.0.0	25,000	27%	25,000x27% = **6,750**
	27.6.12	1,600	27%	1,600x27% = **432**
	46.0.0	10,000	46%	10,000x46% = **4,600**
			Total N Applied	**11,782 kg N**
Maximum N fertiliser application limit	**272 kg N/ha(A)**	**-**	**N Applied per ha**	11,782/56.78 = **208 kg N/ha (B)**
	N Balance (A-B)			**64 kg N**

For grassland N applied is less than the maximum N fertiliser application limit, therefore, compliant with this aspect of the Derogation.

Annex B 8 Example of a calculated N Balance (for a 64 ha, 100 cow dairy farm with 132,000 broilers per year) - continued

Crop type & area (ha)	N applied			
Wheat 4.22 ha	**Organic manure type**	**Amount applied (tonnes or m³)**	**N content**	**Quantity N (kg)**
	Broiler litter	**9.1 t**	**9.9**	9x9.9 = **89.1**
	Chemical fertiliser type	**Amount applied (kg)**	**% N content**	**+**
	Fertiliser 46.0.0	**400**	**46%**	400x46% = **184**
	27.6.12	**300**	**27%**	300x27% = **81**
			Total N Applied	**354.1 kg N**
Maximum N fertiliser application limit	**220 N-Max limit (A)**	**-**	**N Applied per ha**	354.1/4.22 = **83.9 kg N/ha (B)**
	N Balance (A-B)			**136.4 kg N**

Crop type & area (ha)	N applied			
Forage maize 3 ha	**Organic manure type**	**Amount applied (tonnes or m³)**	**N content**	**Quantity N (kg)**
	Cattle slurry	**111 m³**	**1.0**	111x1.0 = **111**
	Chemical fertiliser type	**Amount applied (kg)**	**% N content**	**+**
	Fertiliser 25.0.5	**600**	**25%**	600x25% = **150**
			Total N Applied	**261 kg N**
Maximum N fertiliser application limit	**100 (A)**	**-**	**N Applied per ha**	261/3 = **87 kg N/ha (B)**
	N Balance (A-B)			**13 kg N**

For both crops N applied is less than the maximum N fertiliser application limit, therefore, compliant with this aspect of the Derogation.

Annex B 9

Agricultural products that contain phosphorus imported on (inputs) and exported off (outputs) the farm (P balance)

Complete this section to calculate the P Balance for your holding and check if you have complied with the **10 kg P per ha per year limit** for 20XX.

A P Balance should be calculated to demonstrate compliance with the 10 kg P per ha per year limit.

You can also check compliance with these limits using the P Balance worksheet at **Annex F**, Alternatively, you can use the P Balance Calculator available at www.daera-ni.gov.uk/onlineservices

P Balance is the difference in kg per ha in agricultural products containing phosphorus (P) that are purchased/imported onto the farm (inputs) and those sold/exported off the farm (outputs):

P Balance for the calendar year = $\frac{\text{Inputs - Outputs}}{\text{Eligible agricultural area controlled}}$

Agricultural products that contain phosphorus imported on (inputs) and exported off (outputs) the farm (P Balance) - continued

Step 1 - P INPUTS.

Inputs include:

- P in chemical fertiliser purchased/imported (quantity and P content) (already entered in table at **page 77**).
- P in any organic manure imported onto farm (quantity and P content) (already entered in table at **page 72**).
- P in feedstuffs (including concentrates/straights/silage/straw/hay) purchased/imported onto farm (quantity and P content) (enter into table on **page 88**).
- P in livestock bought in (enter into table on **page 90**).

Step 2 - P OUTPUTS

Outputs include:

- P exported in organic manures (quantity and P content) (already entered in table at **page 75**).
- P in produce sold/exported off the farm, e.g. meat, milk or crops (enter into table on **page 91**).
- P in livestock sold/exported off the farm (enter into table on **page 92**).

Please note:

Standard P contents of common agricultural feedstuffs and products are shown in **Annex E, pages 103-104**.

For concentrates, if you wish to use lower P contents than those shown you must submit documentation from your feed supplier with your fertilisation account showing the P content of the feeds used. Failure to submit will mean that the standard value will be used. Evidence should include a letter/invoice from the meal supplier containing:

- your name and address;
- the P content and tonnage of the feed;
- date supplied; and
- in the absence of a letterhead the note should be signed by the supplier together with their contact details. (See example note, **page 89**).

Agricultural products that contain phosphorus imported on (inputs) and exported off (outputs) the farm (P Balance) - continued

P INPUTS - Purchased feedstuffs including concentrates/straights/silage/straw/hay.

Complete this table with all feedstuffs purchased during 20XX (do not include home grown feedstuffs).

Feedstuff type*	Amount purchased per year (t)	Phosphorus (P) content** (kg per t)***
Dairy cow concentrates	250	5.5
Heifer concentrates	30	5.3
Broiler concentrates	475	4.7

*The P content of feedstuffs, including different types of concentrates are listed in **Annex E, pages 103-104**.

**If you purchased a concentrate with a lower P content you must submit documentation from your feed supplier with your fertilisation account to show the P content in the feed.

***To convert from % P to kg per t multiply the % by 10.

Agricultural products that contain phosphorus imported on (inputs) and exported off (outputs) the farm (P Balance) - continued

P INPUTS - An example of a note from a meal supplier if you are deviating from the standard phosphorus (P) figures per tonne of concentrates.

Inshalleen Mills
Ballymills
Co. Tyrone
BT2 9ZZ

4/1/2020

John Smith
1 Bigfarm Road
Ballyhome
BT2 7AG

Deliveries for the period 1 January 2020 to 31 December 2020

250 tonnes of supreme dairy mix feed with a P content of 0.55%

30 tonnes of heifer concentrates with a P content of 0.53%

475 tonnes of broiler concentrates with a P content of 0.47%

(To convert from % P to kg per t multiply the % by 10).

Agricultural products that contain phosphorus imported on (inputs) and exported off (outputs) the farm (P Balance) - continued

P INPUTS - Livestock bought in.

Complete this table with all livestock bought in during 20XX (all columns must be completed).

Livestock type	Number bought in year	Average live weight of livestock (kg)	Total live weight of livestock (kg)
Dropped calves (50 kg)		Weight not required	
Cattle	5	600	3,000
Cattle			
Cattle			
Cattle			
Cattle			
Cattle			
Cattle			
Sheep/lambs			
Sheep/lambs			
Sheep/lambs			
Sheep/lambs			
Sheep/lambs			
Pigs			
Pigs			
Pigs			
Other please specify			

Agricultural products that contain phosphorus imported on (inputs) and exported off (outputs) the farm (P Balance) - continued

P OUTPUTS - Crop produce sold/exported off farm.

Complete this table with all crop products sold/exported during 20XX.

Crop produce type	Amount sold per year (t)
Silage	
Hay	
Straw	
Barley	
Potatoes	
Wheat	
Oats	
Other - please specify	

P OUTPUTS - Livestock produce sold/exported off farm.

Complete this table with all livestock products sold/exported during 20XX.

Livestock produce type	Amount/number sold
Milk (litres)	650,000
Wool (tonnes)	
1,000 broilers - conventional	132
1,000 broilers - hot water heating	
1,000 free range broilers	
1,000 broiler breeders 0-18 weeks	
1,000 broiler breeders 18-60 weeks (including eggs)	
1,000 broiler breeders 0-60 weeks	
(including eggs)	
1,000 layers (including eggs)	
1,000 pullets	
1,000 free range layers (including eggs)	
1,000 turkeys 0-6 weeks	
1,000 turkeys 6 weeks - kill	
1,000 turkeys 0- kill	
1,000 ducks	
Other	

Agricultural products that contain phosphorus imported on (inputs) and exported off (outputs) the farm (P Balance) - continued

P OUTPUTS - Livestock leaving the farm.

Complete this table with all livestock sold/removed during 20XX (all columns must be completed).

Livestock type	Number sold in year	Average live weight of livestock (kg)	Total live weight of livestock (kg)
Dropped calves (50 kg)	50	Weight not required	
Cattle	30	500	15,000
Cattle			
Cattle			
Cattle			
Cattle			
Cattle			
Sheep/lambs			
Sheep/lambs			
Sheep/lambs			
Sheep/lambs			
Sheep/lambs			
Pigs			
Pigs			
Pigs			
Pigs			
Other please specify			

*Include fallen animals.

Agricultural products that contain phosphorus imported on (inputs) and exported off (outputs) the farm (P Balance) - continued

Recommended record sources of agricultural products.

Agricultural product	Recommended record source
Milk	Milk cheque details
Livestock cattle	Herd record details
Livestock sheep	Flock record details
Livestock pig	Herd register/management records
Livestock poultry	Industry flock records
Fertiliser	Fertiliser invoices/fertiliser account
Concentrates	Invoices. (Documentation showing phosphorus (P) content if deviating from standard figures must be submitted with your fertiliser account)
Imported/exported manures	Amounts and P content of manures imported and exported
Crop products such as hay, straw or potatoes	Invoices from seller or purchaser

A list of agricultural products and their P contents may be found in **Annex E, pages 103-104**.

A P Balance does not have to be calculated but doing so will help you ensure you have complied with the limit. A worked example of how a P Balance is calculated is outlined on **page 94** and a blank P Balance worksheet is included at **Annex F, page 105**.

In addition a Phosphorus Balance Calculator is available on the website www.daera-ni.gov.uk/onlineservices.

Annex B 10 Example of a calculated P Balance (for a 64 ha, 100 cow dairy farm with 132,000 broilers per year)

This is a worked example of a P Balance calculation. To calculate the P Balance yourself you can complete the P Balance worksheet at **Annex F,** or use the P Balance Calculator at www.daera-ni.gov.uk/onlineservices

	Amount	Phosphorus (P) content (kg per unit)	Kg P in (P bought or imported)	Kg P out (P sold or exported)
Chemical fertiliser type*				
Fertiliser 27:6*:12	**1.9 t**	(6 x 4.36) **26.16**	(1.9 x 26.16) **= 49.7 kg**	-
Concentrates**				
Concentrates dairy cow	**250 t**	**5.5**	(250 x 5.5) **= 1,375 kg**	-
Concentrates heifer	**30 t**	**5.3**	(30 x 5.3) **= 159 kg**	-
Concentrates broilers	**475 t**	**4.7**	(475 x 4.7) = **2,232.5 kg**	-
Other products				
Litres of milk sold	**650,000**	**0.001**	**-**	(650,000 x 0.001) **= 650 kg**
Dropped calves sold	**50**	**0.33**	**-**	(50 x 0.33) **= 16.5 kg**
Cattle sold	**15,000**	**0.0066**	**-**	**= 99 kg**
Cattle bought	**3,000**	**0.0066**	(3,000 x 0.0066) **= 19.8 kg**	**-**
Broilers (1,000)	**132**	**12**	**-**	(132 x 12) **= 1,584 kg**
Exported broiler litter	**141 t**	**7**	**-**	(141 x 7) **= 987 kg**
		Totals	**3,836 kg A**	**3,336.5 kg B**
		P Balance (A-B)	(3,836 kg - 3,336.5 kg) = **+ 499.5 kg**	
		P Balance/(eligible agricultural area)	(499.5 kg per 64 ha) = **+ 7.80 kg per ha**	

*(multiply P_2O_5 % level on fertiliser bag by 4.36 to convert to kg P in 1 tonne).

**(every 0.1% P in a ration equates to 1 kg P per t).

This is below the P Balance limit of + 10 kg per ha per year, therefore, compliant with this aspect of the Derogation.

Annex C Nitrogen (N) maximum fertiliser application limits

Maximum nitrogen fertiliser application limits (kg N per ha) for arable and forage crops.

Crop	Previous crop		
	Cereals; sugar beet; peas; beans; oilseed rape; potatoes; Low/Medium N vegetables; forage crops (cut); uncropped land; all leys with 2 or more cuts annually receiving little or no manure; 1-2 year leys, Low N; 1-2 year leys, 1 or more cuts; 3-5 year leys, Low N, 1 or more cuts.	High N vegetables; 1-2 year leys, High N, grazed; 3-5 year leys, low N, grazed; 3-5 year leys, High N, 1 cut then grazed.	3-5 year leys, High N, grazed
	SNS 1	**SNS 2**	**SNS 3**
Winter wheat, winter triticale*	220	190	160
Winter barley	170	140	110
Winter oats	160	130	100
Winter rye	120	90	60
Spring wheat	180	150	120
Spring barley	140	110	70
Spring oats, spring rye, spring triticale	110	70	40
Winter oilseed rape	190 (+30 seedbed)	160 (+30 seedbed)	120
Spring oilseed rape	120	80	50
Spring linseed	80	50	0-40
Forage maize	100	50	20
Peas (dried & vining) and beans	0	0	0
Sugar beet	120	100	80
Forage swedes and turnips (65 t per ha roots removed)	80	60	40
Fodder beet (85 t per ha roots removed)	120	110	90

Continued ...

Crop	Previous crop		
	Cereals; sugar beet; peas; beans; oilseed rape; potatoes; Low/Medium N vegetables; forage crops (cut); uncropped land; all leys with 2 or more cuts annually receiving little or no manure; 1-2 year leys, Low N; 1-2 year leys, 1 or more cuts; 3-5 year leys, Low N, 1 or more cuts.	High N vegetables; 1-2 year leys, High N, grazed; 3-5 year leys, low N, grazed; 3-5 year leys, High N, 1 cut then grazed.	3-5 year leys, High N, grazed
	SNS 1	**SNS 2**	**SNS 3**
Forage rape, swedes and stubble turnips (grazed)	80	60	40
Kale (grazed)	120	110	90

*Winter forage triticale is generally harvested earlier than winter triticale grown for grain. Nitrogen recommendations are therefore 50 kg N per ha lower than for winter triticale grown for grain.

Nitrogen requirements for all other wholecrop cereals are the same as those for cereals grown for grain.

N Max limits for cereal crops

Crop type	Maximum permitted N (kg N per ha)*	Standard yield (t per ha)**
Winter wheat	220	8.0
Spring wheat	180	6.0
Winter barley	170	6.5
Spring barley	140	5.5
Winter oats	140	6.0
Spring oats	110	6.0

*For all crops in the table, an additional 20 kg N per 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.

**Standard yield (t per ha) as per AHDB Nutrient Management Guide (Feb 2020 edition).

Nitrogen (N) maximum fertiliser application limits - continued

Maximum nitrogen fertiliser application limits (kg N per ha) for potatoes.

Length of growing season (50% emergence to haulm death)	**Variety group***	**Previous crop**	
		Cereals; sugar beet; peas; beans; oilseed rape; potatoes; Low/Medium N vegetables; forage crops (cut); uncropped land; all leys with 2 or more cuts annually receiving little or no manure; 1-2 year leys, Low N; 1-2 year leys, 1 or more cuts; 3-5 year leys, Low N, 1 or more cuts	High N vegetables; 1-2 year leys, High N, grazed; 3-5 year leys, low N, grazed; 3-5 year leys, High N, 1 cut then grazed; 3-5 year leys, High N, grazed
		SNS 1	**SNS 2**
Less than 60 days	Variety group 1	140	110
	Variety group 2	120	80
	Variety group 3	100	70
60 - 90 days	Variety group 1	210	160
	Variety group 2	160	120
	Variety group 3	140	100
	Variety group 4	80	40
90 - 120 days	Variety group 1	270	220
	Variety group 2	220	160
	Variety group 3	180	100
	Variety group 4	140	60
More than 120 days	Variety group 2	250	180
	Variety group 3	210	140
	Variety group 4	180	80

***Examples of varieties in each variety group are as follows:**

Group 1	Short haulm longevity (Determinate varieties)	Accord, Annabelle, Anya, Colmo, Estima, Inovator, Maris Bard, Minerva, Premiere, Rocket, Vales Emerald and Winston.
Group 2	Medium haulm longevity (Partially determinate varieties)	Atlantic, Amanda, Arcade, Carlingford, Charlotte, Courage, Dundrod, Endeavour, Harmony, Juliette, Kestrel, Lady Claire, Lady Rosetta, Marfona, Maris Peer, Maritiema, Melody, Miranda, Mozart, Nadine, Nicola, Orchestra, Orlan, Osprey, Pentland Javelin, Rembrandt, Romano, Saxon, Shannon, Shepody, Vivaldi and Wilja
Group 3	Long haulm longevity (Indeterminate varieties)	Maincrop varieties such a Agria, Ambo, Amora, Cabaret, Ceasar, Cosmos, Cultra, Daisy, Desiree, Eos, Fambo, Fianna, Hermes, Kerr's Pinks, King Edward, Lady Christi, Lady Valora, Maris Piper, Morene, Navan, Pentland Dell, Pentland Squire, Picasso, Record, Rooster, Russet Burbank, Sante,Sassy,, Saturna, Slaney, Stemster, Valor and Victoria.
Group 4	Very long haulm longevity	Asterix, Cara, Lady Balfour, Markies, Royal, Vales Everest, Vales Sovereign.

Annex C Nitrogen (N) content and availability of organic manures

Nitrogen (N) content and availability values for organic manures (all on a fresh weight basis).

Slurry type	Nitrogen (N) content	Available N (kg per m^3)
Cattle slurry - 2% DM	1.6	0.64
Cattle slurry - 6% DM	2.6	1.0
Cattle slurry - 10% DM	3.6	1.4
Pig slurry - 2% DM	3.0	1.5
Pig slurry - 4% DM	3.6	1.8
Pig slurry - 6% DM	4.4	2.2
Separated cattle slurry (liquid portion)		
- Strainer box	**1.5**	**0.6**
- Weeping wall	**2.0**	**0.8**
- Mechanical separator	**3.0**	**1.2**
Separated pig slurry (liquid portion)	**3.6**	**1.8**
Other e.g. digestate		

Manure type	Nitrogen (N) content	Available N (kg per t)
Cattle FYM - 25% DM	6.0	1.8
Sheep manure FYM - 25% DM	7.0	2.1
Pig manure FYM - 25% DM	7.0	2.1
Broiler litter - conventional - 66% DM	33	9.9
Broiler litter - hot water heating - 72% DM	33.8	10.1
Free range broilers - 57% DM	26.4	7.9
Broiler Breeders 0-18 weeks - 55% DM	17.5	5.3
Broiler Breeders 18-60 weeks - 60% DM	20.7	6.2
Broiler Breeders 0-60 weeks - 59% DM	20.2	6.1
Turkeys 0-6 weeks - 58% DM	24.8	7.4
Turkeys 6 weeks - kill - 58% DM	24.8	7.4
Turkeys 0-kill - 58% DM	24.8	7.4
Pullets - 72% DM	32.7	9.8
Layer manure - 30% DM	16	4.8
Free range laying hens - 46% DM	18.8	5.6
Duck manure - 25% DM	6.5	2.0
Horse manure FYM - 25% DM	5.0	2.1
Goat manure FYM - 40% DM	9.5	2.9
Spent mushroom compost	8.0	1.6
Separated cattle slurry (solid portion)	4.0	1.2
Separated pig slurry (solid portion)	5.0	1.5
Other		

Annex D N Balance Worksheet

For 1st January 20XX to 31st December 20XX.

This worksheet will assist you to comply with the N Balance limit. Alternatively you can use the N Max for Grassland Calculator for grass and the Crop Nutrient Calculator for crops other than grass both are available at www.daera-ni.gov.uk/onlineservices.

Calculating N Balance - Step 1 - N APPLIED

N APPLIED - Grassland.

1. Enter the manure type (excluding livestock manure) and the amount applied to grassland. Multiply the amount applied by the available N content.
2. Enter the fertiliser type and the amount applied to each crop. Multiply the amount applied by the N % and divide by 100.
3. Total the quantity of N from organic manures and chemical fertilisers applied to each crop.
4. For each crop divide by the total area of crop grown.
5. Enter the quantity of nitrogen applied per ha.

Example:

	N applied* (kg)													
	Organic manure type			Amount applied (tonne or m³)	x	Available N content**	=		kg N	Total N applied (kg N)	÷	Crop area (ha)	=	Total N applied per ha (kg N/ha)
Grassland	None				x		=			11,782	÷	56.78	=	207.5 (A)
					x		=							
					x		=							
	Chemical fertiliser			Amount applied (kg)	x	% N content	÷ 100	=	+					
	N	P_2O_5	K											
	27	0	0	25,000kg	x	27%	÷ 100	=	6,750					
	27	6	12	1,600kg	x	27%	÷ 100	=	432					
	46	0	0	10,000kg	x	46%	÷ 100	=	4,600					

*For grassland record the total organic manure (excluding livestock manure) and chemical fertiliser N applied. (Examples of organic manures other than livestock manures include spent mushroom compost, sewage sludge, abattoir waste and anaerobic digestate not containing any livestock manure).

** For the Available N content of manures please see **Annex C page 99**

N INPUTS - Crops.

1. Enter the manure type (including livestock manure) and the amount applied to each crop. Multiply the amount applied by the available N content.
2. Enter the fertiliser type and the amount applied to each crop. Multiply the amount applied by the N % and divide by 100.
3. Total the quantity of N from organic manures and chemical fertilisers applied to each crop.
4. For each crop divide by the total area of crop grown.
5. Enter the quantity of N applied per ha.

	N applied* (kg)													
	Organic manure type			Amount applied (tonne or m^3)	x	Available N content**	=		kg N	Total N applied (kg N)	÷	Crop area (ha)	=	Total N applied per ha (kg N/ha)
Winter wheat	Broiler litter			9 t	x	9.9	=		89.1	354.1	÷	4.22	=	83.9 (B)
					x	=	=							
	Chemical fertiliser			Amount applied (kg)	x	% N content	÷ 100	=	+					
	N	P_2O_5	K											
	46	0	0	400 kg	x	46%	÷ 100	=	184					
	27	6	12	300 kg	x	27%	÷ 100	=	81					

	N applied* (kg)													
	Organic manure type			Amount applied (tonne or m^3)	x	Available N content**	=		kg N	Total N applied (kg N)	÷	Crop area (ha)	=	Total N applied per ha (kg N/ha)
Forage maize	Cattle slurry			111 m^3	x	1.0	=		111	261	÷	3	=	87 (C)
					x	=	=							
	Chemical fertiliser			Amount applied (kg)	x	% N content	÷ 100	=	+					
	N	P_2O_5	K											
	25	0	5	600 kg	x	25%	÷ 100	=	150					

*For all other crops record the total organic manure (including livestock manure) and chemical fertiliser N applied to each crop area.

** For the Available N content of manures please see **Annex C page 99**.

Step 2 - Maximum N fertiliser application limits - N Balance.

Enter the relevant maximum N fertiliser application limits for each crop and transfer the N inputs from the relevant sections. Calculate the N Balance by subtracting the N applied from the maximum N fertiliser application limit.

	Maximum N fertiliser application limit*	-	N Applied per ha	=	N Balance	Is N applied less than maximum N fertiliser application limit
Grassland	**272**	**-**	**207.5** (**A** from page 100)	**=**	**64.5**	**Y**
Winter wheat	**220** N-Max limit	**-**	**83.9** (**B** from page 101)	**=**	**136.1**	**Y**
Forage maize	**100**	**-**	**87** (**C** from page 101)	**=**	**13**	**Y**

N applied should be less than the maximum N fertiliser application limit to be compliant with this aspect of the Derogation.

*The maximum N fertiliser application limit (272 kg/ha/year dairy, 222 kg/ha/year other farms), refers to the maximum amounts of available nitrogen from organic manures (excluding livestock manures) and chemical fertiliser that can be applied to the whole grassland area. Livestock manure nitrogen has already been taken into consideration in the N fertiliser application limits for grassland. Where N Max- cereal crops are grown an additional 20 kg N/ha is permitted for every tonne that the expected yield exceeds the standard yield.

Annex E Phosphorus (P) content for common agricultural products and feedstuffs

Product	Phosphorus (P) content (kg per unit)
Concentrates	
1 t poultry concentrate (or use actual declared figures)	5
1 t pig concentrate (or use actual declared figures)	4.8
1 t ruminant concentrate (or use actual declared figures)	5.5
1 t other concentrates (or use actual declared figures)	5.8
Livestock	
Dropped calf (50 kg)	0.33
Cattle 1 kg	0.0066
Pigs/sows per 100 kg	0.5
Lambs/sheep per 100 kg	0.54
Kids/goats per 100 kg	0.54
*1,000 broilers - conventional	13.1
*1,000 broilers - hot water heating	13.1
*1,000 free range broilers	12.5
*1,000 broiler breeders 0-18 weeks	12.8
*1,000 broiler breeders 18-60 weeks (eggs included)	34
*1,000 broiler breeders 0-60 weeks (eggs Included)	31.7
*1,000 turkeys 0-6 weeks	11.1
*1,000 turkeys 6 weeks-kill	25.5
*1,000 turkey 0-kill	36.6
*1,000 ducks	11.4
*1,000 pullets	7.5
Produce from livestock	
Eggs from 1,000 layers (including eggs)	46.6
Eggs from 1,000 free range layers (including eggs)	43.2
1 litre milk	0.001
Wool per tonne	0.4
Crop products	
1 t straw	1.0
1 t silage	0.6
1 t hay	3.0
1 t potatoes	0.4
1 t oats	2.9
1 t barley	3.0
1 t wheat	2.6
1 t maize	2.5
1 t full fat soya	4.5
1 t linseed	8.1
1 t rape	11.0
1 t soya	6.8
1 t sunflower	9.3
1 t gluten	9.6

*Figures take into consideration the P in stock entering and leaving the farm.

Annex E

Phosphorus (P) content for common agricultural products and feedstuffs - continued

Product	Phosphorus (P) content (kg per unit)
Crop products continued	
1 t citrus	1.0
1 t wheat distillers	7.7
1 t corn distillers	7.7
1 t peas	4.4
1 t palm kernel	6.3
1 t pollard	10.0
1 t soya hulls	1.4
1 t sugar beet	1.0
1 t grass fresh	0.6
1 t whole crop wheat fresh	0.9
1 t whole crop wheat silage	0.9
1 t forage maize fresh	0.7
1 t forage maize silage	0.7
Slurries	
1 m^3 cattle slurry 2% DM	0.26
1 m^3 cattle slurry 6% DM (typical)	0.52
1 m^3 cattle slurry 10% DM	0.79
1 m^3 pig slurry 2% DM	0.36
1 m^3 pig slurry 4% DM (typical)	0.65
1 m^3 pig slurry 6% DM	0.96
Separated pig slurry (liquid portion)	0.48

Product	Phosphorus (P) content (kg per unit)
Separated cattle slurries (liquid portion)	
Strainer box	0.13
Weeping wall	0.22
Mechanical separator	0.52
Solid manures	
1 t broiler litter	7.0
1 t layer manure	5.7
1 t turkey litter	6.0
1 t duck manure	2.4
1 t cattle FYM	1.4
1 t sheep FYM	1.4
1 t goat manure	2.0
1 t pig FYM	2.6
1 t horse manure	2.2
Spent mushroom compost	1.5
Chemical fertiliser	
1 t fertiliser	Multiply the % P_2O_5 content by 4.36

Annex F P Balance Worksheet

For 1st January 20XX to 31st December 20XX.

This worksheet will assist you to comply with the P Balance limit of 10 kg P per ha per year.

Alternatively you can use the P Balance Calculator at www.daera-ni.gov.uk/onlineservices.

Calculating P Balance - Step 1 - P Inputs.

P 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 (to convert to kg P in 1 tonne).
3. Total the P content of fertilisers purchased and insert in **Box A**.

Example:

Fertiliser type			Amount purchased or imported (t)	x	% P_2O_5	X 4.36	=	Quantity of phosphorus (kg)
N	P P_2O_5	K						
27	**6**	**12**	**1.9**	**x**	**6**	**x 4.36**	**=**	**49.7**
				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)								**49.7 (A)**

P Balance Worksheet - continued

P INPUTS - Imported Organic Manures.

1. Select the organic manure type and enter the amount imported 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 imported organic manures and insert in **Box B**.

Example: -

Organic manure type	Amount imported (m^3 or t)	x	P content (kg P/m^3 or t)	=	Quantity of phosphorus (kg)
Cattle slurry - 2% DM		x	0.26	=	
Cattle slurry - 6% DM		x	0.52	=	
Cattle slurry - 10% DM		x	0.79	=	
Pig slurry - 2% DM		x	0.36	=	
Pig slurry - 4% DM		x	0.65	=	
Pig slurry - 6% DM		x	0.96	=	
Separated cattle slurry (liquid portion):					
- Strainer box		x	0.13	=	
- Weeping wall		x	0.22	=	
- Mechanical separator		x	0.52	=	
Separated pig slurry (liquid portion)		x	0.48	=	
Cattle FYM - 25% DM		x	1.4	=	
Sheep manure FYM - 25% DM		x	1.4	=	
Pig FYM - 25% DM		x	2.6	=	
Broiler litter - conventional - 66% DM		x	7.0	=	
Broiler - hot water heating - 72% DM		x	7.0	=	
Free range broilers - 57% DM		x	6.7	=	

Broiler breeders 0-6 weeks 55% DM		x	11.8	=	
Broiler breeders 6-18 weeks 60% DM		x	11.0	=	
Broiler breeders 0-60 weeks 59% DM		x	11.2	=	
Turkeys 0-6 weeks 58% DM		x	6.0	=	
Turkeys 6-18 weeks 58% DM		x	6.0	=	
Turkeys 0- kill 58% DM		x	6.0	=	
Pullets - 72% DM		x	12.0	=	
Layer manure - 30% DM		x	5.7	=	
Free range layers - 46% DM		x	7.5	=	
Duck manure - 25% DM		x	2.4	=	
Horse manure FYM - 30% DM		x	2.2	=	
Goat manure FYM - 25% DM		x	2.0	=	
Spent mushroom compost		x	1.5	=	
Separated cattle slurry (solid portion)		x	0.87	=	
Separated pig slurry (solid portion		x	2.0	=	
Other		x	P content from analysis	=	
Total P content of imported organic manures (kg/year)				**=**	**0 (B)**

P Balance Worksheet - continued

P INPUTS - Purchased feedstuffs including 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 the feed, (or use the actual declared P content figure if known). Standard P contents are:

   - Unspecified concentrates is taken as 5.8 kg per tonne or 0.58%.
   - Ruminant concentrates is taken as 5.5 kg per tonne or 0.55%.
   - Poultry concentrates is taken as 5.0 kg per tonne or 0.50%.
   - Pig concentrates is taken as 4.8 kg per tonne or 0.48%.

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 date. In the absence of a letterhead the note should be signed by the supplier together with their contact details. Failure to supply this documentation may have implications for your basic payment scheme.

3. Total the P content of feedstuffs used and insert in **Box C**.

Example:

Feedstuff type	Amount purchased per year (t)	x	P content (kg/t)	=	Quantity of phosphorus (kg)
Dairy cow concentrates	**250**	**x**	**5.5**	**=**	**1375**
Heifer concentrates	**30**	**x**	**5.3**	**=**	**159**
Broiler concentrates	**475**	**x**	**4.7**	**=**	**2,232.5**
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
Total P content of feedstuffs purchased/imported (kg P/year)				**=**	**3,766.5 (C)**

In this example the P content of the heifer and broiler concentrates are lower than the standard rates given at **Point 2** above. For an example of evidence to support these lower rates see **Page 91**.

For the P content of a range of feedstuffs please see **Annex E, pages 103-104**

P INPUTS - Livestock bought in.

1. Enter the number of livestock purchased and total live weight of these livestock.
2. Multiply the total live weight 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 brought in per year	x	Average live weight (kg)	x	P content (kg/unit)	=	Quantity of phosphorus (kg)
Dropped calves (50 kg)*				x	0.33	=	
Cattle	**5**	**x**	**600**	**x**	**0.0066**	**=**	**19.8**
Cattle		x		x	0.0066	=	
Cattle		x		x	0.0066	=	
Cattle		x		x	0.0066	=	
Cattle		x		x	0.0066	=	
Cattle		x		x	0.0066	=	
Sheep/lambs		x		x	0.0054	=	
Sheep/lambs		x		x	0.0054	=	
Sheep/lambs		x		x	0.0054	=	
Pigs		x		x	0.0050	=	
Pigs		x		x	0.0050	=	
Pigs		x		x	0.0050	=	
Other please specify		x		x		=	
Total P content of livestock purchased/imported in kg P/year						**=**	**19.8 (D)**

*For dropped calves the weight is not needed.

Step 2 - P Outputs.

P OUTPUTS - 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)	x	P content (kg/t)	=	Quantity of phosphorus (kg)
Silage		x	0.6	=	
Hay		x	3.0	=	
Straw		x	1.0	=	
Barley		x	3.0	=	
Potatoes		x	0.4	=	
Wheat		x	2.6	=	
Oats		x	2.9	=	
Other please specify		x		=	
Total P content of crop produce sold (kg P/year)				**=**	**0 (E)**

P OUTPUTS - 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)	x	P content (kg P/m^3 or t)	=	Quantity of phosphorus (kg)
Cattle slurry - 2% DM		x	0.26	=	
Cattle slurry - 6% DM		x	0.52	=	
Cattle slurry - 10% DM		x	0.79	=	
Pig slurry - 2% DM		x	0.36	=	
Pig slurry - 4% DM		x	0.65	=	
Pig slurry - 6% DM		x	0.96	=	
Separated cattle slurry (liquid portion):					
- Strainer box		x	0.13	=	
- Weeping wall		x	0.22	=	
- Mechanical separator		x	0.52	=	
Separated pig slurry (liquid portion)		x	0.48	=	
Cattle FYM - 25% DM		x	1.4	=	
Sheep manure FYM - 25% DM		x	1.4	=	
Pig FYM - 25% DM		x	2.6	=	
Broiler litter conventional - 66% DM	**141**	**x**	**7.0**	**=**	**987**
Broiler hot water heating - 72% DM		x	7.0	=	
Free range broilers - 57% DM		x	6.7	=	
Broiler breeders 0-6 weeks 55% DM		x	11.8	=	

P Balance Worksheet - continued

Broiler breeders 6-18 weeks 60% DM		x	11.0	=	
Broiler breeders 0-60 weeks 59% DM		x	11.2	=	
Turkeys 0-6 weeks 58% DM		x	6.0	=	
Turkeys 6-18 weeks 58% DM		x	6.0	=	
Turkeys 0- kill 58% DM		x	6.0	=	
Pullets - 72% DM		x	12.0	=	
Layer manure - 30% DM		x	5.7	=	
Free range layers - 46% DM		x	7.5	=	
Duck manure - 25% DM		x	2.4	=	
Horse manure FYM - 25% DM		x	2.2	=	
Goat manure FYM - 40% DM		x	2.0	=	
Spent mushroom compost		x	1.5	=	
Separated cattle slurry (solid portion)		x	0.87	=	
Separated pig slurry (solid portion		x	1.6	=	
Other		x	P content from analysis	=	
Total P content of imported organic manures (kg/year)				**=**	**987 (F)**

P OUTPUTS - 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	x	P content (kg/unit year)	=	Quantity of phosphorus (kg)
Milk (litres)	**650,000**	**x**	**0.001**	**=**	**650**
Wool (tonnes)		x	0.4	=	
1,000 Broilers - conventional	**132**	**x**	**12**	**=**	**1,584**
1,000 Broilers - hot water heating		x	7.0	=	
1,000 Free range broilers		x	6.7	=	
1,000 Broiler breeders 0-18 weeks		x	11.4	=	
1,000 Broiler breeders 18-60 weeks (including eggs)		x	33.5	=	
1,000 Broiler breeders 0-60 weeks (including eggs)		x	44.9	=	
1,000 Layers (including eggs)		x	42.5	=	
1,000 Pullets		x	7.9	=	
1,000 Free range layers (including eggs)		x	7.5	=	
1,000 Turkeys 0-6 weeks		x	6.0	=	
1,000 Turkeys 6 weeks-kill		x	6.0	=	
1,000 Turkeys 0-kill		x	6.0	=	
1,000 Ducks		x	11.4	=	
Other		x		=	
Total P content of livestock produce sold (kg P/year)				**=**	**2,234 (G)**

P OUTPUTS - Livestock Leaving the Farm.

1. Select the livestock type and enter the number leaving the farm and the total live weight 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	x	Average live weight (kg)	x	P content (kg/unit)	=	Quantity of phosphorus (kg)
Dropped calves (50 kg)*	**50**			x	0.33	=	**16.5**
Cattle	**30**	x	**500**	x	0.0066	=	**99**
Cattle		x		x	0.0066	=	
Cattle		x		x	0.0066	=	
Cattle		x		x	0.0066	=	
Cattle		x		x	0.0066	=	
Cattle		x		x	0.0066	=	
Sheep/lambs		x		x	0.0054	=	
Sheep/lambs		x		x	0.0054	=	
Sheep/lambs		x		x	0.0054	=	
Pigs		x		x	0.0050	=	
Pigs		x		x	0.0050	=	
Pigs		x		x	0.0050	=	
Other please specify		x		x		=	
Total P content of livestock sold/exported in kg P/year						**=**	**115.5 (H)**

*Remember to include fallen animals.

For dropped calves the weight is not needed.

Step 3 - Total P Inputs and Outputs.

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

P inputs		P outputs	
Chemical fertilisers (**A** from **page 105**)	**49.7**	Crop produce (**E** from **page 110**)	**0**
add	**+**	**add**	**+**
Imported organic manures (**B** from **page 107**)	**0**	Exported organic manures (**F** from **page 112**)	**987**
add	**+**	**add**	**+**
Purchased feedstuffs (**C** from **page 108**)	**3,766.5**	Livestock produce (**G** from **page 113**)	**2,234**
add	**+**	**add**	**+**
Livestock bought in (**D** from **page 109**)	**19.8**	Livestock moved off farm (**H** from **page 114**)	**115.5**
equals	**=**	**equals**	**=**
Total P inputs (I)	**3,836**	**Total P outputs (J)**	**3,336.5**

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.

Total eligible agricultural area (ha)	**N**	**64**

P Balance Worksheet - continued

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 inputs	I	**3,836**
	less	**-**
Total P outputs	**J**	**3,336.5**
	divided by	**÷**
Total eligible agricultural area	**N**	**64**
	equals	**=**
P Balance		**7.80**

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

Annex G Contact Details

Northern Ireland Environment Agency (NIEA).

Water Management Unit, 17 Antrim Road, Lisburn BT28 3AL - https://www.daera-ni.gov.uk/northern-ireland-environment-agency

Useful NIEA telephone numbers.

Agriculture Regulation Team: Nutrients Action Programme, Nutrients Action Programme Derogations, Field Storage of Poultry Litter and anaerobic digestate fibre.	**028 9262 3280**
Silage and Slurry issues: Contact NIEA before planning to substantially alter any existing storage facility or commission new silos or slurry tanks.	**028 9262 3280**
Ground Water Authorisations: Authorisation for disposal of spent sheep dip.	**028 9262 3279**
Applying Sewage Sludge to Land	**028 9263 3445**
Registration of Waste Carriers	**028 9056 9389**
Simple Waste Management Exemptions	**028 9056 9380**
Other Waste Management Exemptions	**028 9056 9380**
Hazardous Waste Queries	**028 9056 9710**
Pollution Prevention and Control (PPC) licensing	**028 9056 9299**
24 hr Pollution Hotline Number	**Freephone** **0800 80 70 60**

Contact Details - continued

Department of Agriculture, Environment and Rural Affairs (DAERA).

Useful DAERA telephone numbers (Note: DAERA 0300 numbers are charged at local rate).

Environment Awareness: Agri-environment scheme information. Countryside Management advice including Cross-Compliance, Nutrients Action Programme, Codes of Good Agriculture Practice, Farm Waste Management, Uncultivated Land Regulations and Field Boundary Removals.	**0300 200 7842**
Education and Training: The College of Agriculture, Food and Rural Enterprise offers training on topics including Cross-Compliance and Nutrient Management Planning. (www.cafre.ac.uk).	**0300 200 7841**
DAERA Corporate Services: Headquarters, Press Office, Information Services and Systems, Human Resources and Facilities Management.	**0300 200 7850**
DAERA Animal By-Products Section	**028 9052 5275**
Textphone: For people with hearing difficulties.	**dial 18007 + number**
Calls from non-UK numbers or networks/international calls	**+44 (0)28 9049 5780**
A list of DAERA contact numbers can be obtained by visiting the 'Contact Us' section of the DAERA Website **-** www.daera-ni.gov.uk/contact	

Department of
Agriculture, Environment
and Rural Affairs
www.daera-ni.gov.uk

NIEA
www.daera-ni.gov.uk
Northern Ireland
Environment
Agency

INVESTORS
IN PEOPLE

DMS 20.21.147