



NMP Online – User Update 12 – 15/08/2018

Outside the Box

NMP Users/Advisors have requested that NMP online needs to be able to meet two pressing advisory needs. These are

- How to advise farmers to import manures (cattle slurry and pig slurry mostly)
- How to do a quick calculation of N and P allowances similar to the simple excel fertiliser planner

The good news is that NMP On-line is already capable of handling these computations – It a matter of knowing how to complete the fertiliser plan. The process is outlined in this bulletin. Any excel calculators that were in use prior to the new Nitrates Action Plan are now out of date and cannot be used to give advice for compliance for DAFM inspections.

While the instructions seem quite involved the process itself is relatively straightforward. However, care is needed to ensure that advice is accurate; and these steps are to provide approximate advice for the 2 bullet points above. DAFM will control/inspect on a full NMP so this bulletin is only for advice and users are advised to leave a 10% safety margin.

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1. Slurry Imports - Introduction

While ideally farmers should plan the importation of slurry and manure as part of an integrated proactive nutrient management plan the reality is that advisers are facing questions in the third quarter of the year about the capacity of the farmer to import manures and want a fast way to compute the amount that a farmer can import. This computation is not simple, hence the need for a support tool.

DAFM have expressed concerns about the number of farms importing manures who have exceeded allowed limits and being subjected to fines when audits are carried out

A number of scenarios that are arising for advisers are dealt with in this document and are listed below:-

Scenarios	
Number	Description
1	No NMP in Place – No Soil Samples on the farm. Farmers proposing to import organic manure
2	GLAS NMP in Place with soil samples for the entire holding. Farmers proposing to import organic manure
3	Farmer requesting quick indication of the Max N and P for the farm (with and without samples). (Similar exercise to Simple NMP Planner)

2. No NMP in Place – No Soil Samples on the farm

Step 1 – Find or Setup Client.

1. For non-Teagasc agents/agencies select “add-client” if the client is not on the system.
2. For Teagasc advisers clients are already on the system and users can search under agency clients. For non-Teagasc agents/agencies than “add-client” if the client is not on the system.
 - Change the Clients option to Agency Clients
 - Search for farmer name or farmer herd number.
 - Select the farmer from the list returned (If list is too long refine search) – click on row of the farmers data

Clients Agency Clients **Plan Types** All Plan Types Search: farmer Low

Name	Herd Number	Address	County	Mobile	Client Number
Carlow Farmer's Market		Potatoe Market, , Carlow, , ,			000232510
Mr Farmer Dairy	C12345	Oakpark	Carlow		
Mr Farmer Drystock	C123456	Oakpark	Carlow		
Mr Farmer High	C1234567	Oakpark	Carlow		
Mr Farmer Low	C12345	Oakpark	Carlow		
Mr Farmer Medium	C123456	Oakpark	Carlow		
Mr Farmer Tillage	C12345678	Oakpark	Carlow		

Step 2 – Create plan for the farmer

Click on Create Plan

Complete Mandatory settings as below (these can be edited once the plan is created in settings).

Mandatory Settings Next >

Year	2018
Herd Number	C12345
County	Carlow
Plan Safety	No
Plan Type	Non-Derogation/ Non-GLAS
Mapping	No

Complete Optional settings as below (these can be edited once the plan is created in settings).

Complete Units Entry (these can be edited once the plan is created in settings).

NB – to change settings click on the Settings symbol (Cog wheel as shown)

The plan is now created

Step 3 – Enter Land Details on Land Setup Page

In a simple scenario for an all grassland farm with no soil samples (assuming index 3) all of the land can be entered as a single block. If tillage crops present they can be added as single blocks per crop. If crops are getting additional allowances such as reseeding these need to be separated.

Name	Townland	Gross Area (Ha)	Ref. Area (Ha)	Mapped Area (Ha)	Soil Samples Ids	First Crop	Crop 2	Options
All Land		34.5	34.5			Grazing		

Step 4 – Enter Livestock Details

You can enter livestock details on the farm (Alternatively you can leave this blank and enter the stocking rate at a later stage when the records plan is created).

Average Stock Numbers for the Year - Grazing Livestock

Animal	No. Animals	N/head	N Total	P/head	P Total
Suckler cow	20	65.0	1,300.0	10.0	200.0
Cattle (0-1 year old)	15	24.0	360.0	3.0	45.0
Lowland ewe & lambs	100	13.0	1,300.0	2.0	200.0

Add Livestock

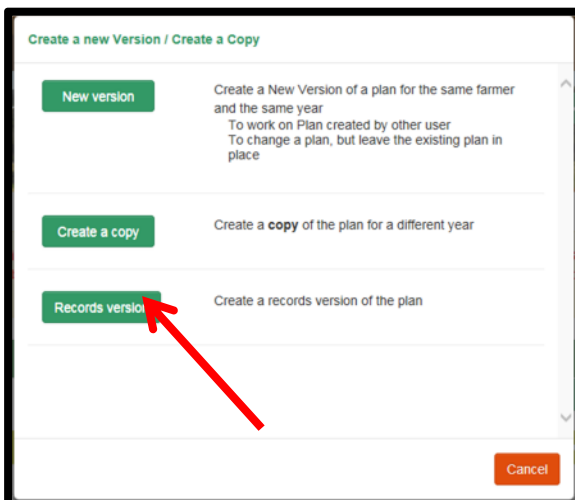
If the plan is purely for the purposes of estimating the capacity to import slurry there is no need to enter the winter storage information

Step 5 – Enter Concentrate Feeds Details

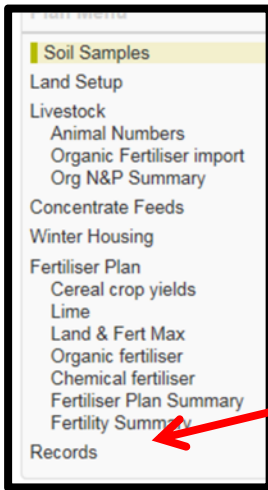
- Enter Concentrate Feed consumed in the year prior to the plan
- Enter Last Year's total organic N. Total N produced from grazing livestock in the previous year – not the NpH.

Step 6 – Create a records version of the plan

Create a records version of the plan so that the fertiliser usage in the current year can be entered quickly.



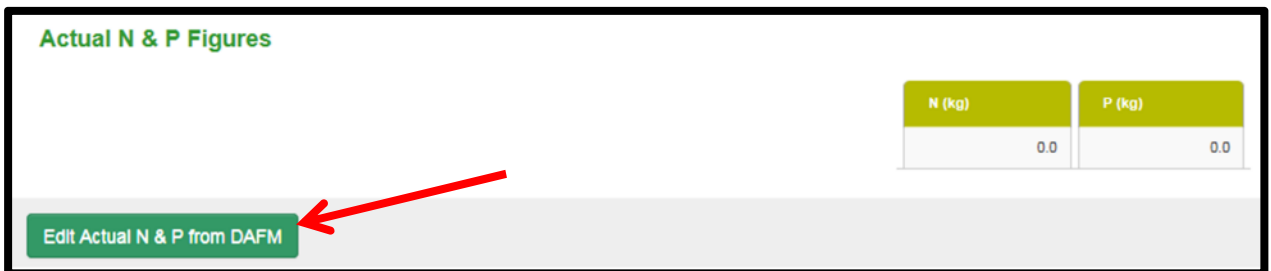
When you create a records version of the plan you will be automatically directed to that version of the plan. (There will now be two versions). In the records version there is an extra menu item in the menu bar



Click on the records menu item

Step 7 – Enter Records

If you have not entered the animals on the farm you have the option to enter the total N stocking rate for the year. (If you have entered animals you can use those figures or overwrite with total N for the year). Also enter the previous year’s GSR in the optional settings.



Enter Fertiliser Records

Fertiliser records comprise 4 elements. You can bulk together individual purchases by fertiliser type for this purpose to save time rather than detailing them as below

- Opening Stocks
- Purchases during the year
- Sales during the year
- Closing Stock

Fertilizer Purchases

Date	Type	Supplier	Invoice	Tonne	N (kg)	P (kg)
	CAN(27%N)			0	0.0	0.0
	18-6-12			2.5	450.0	150.0
	24-2.5-10			3	720.0	75.0
					1,170.0	225.0

At the bottom of the page a fertiliser balance will be computed

	N (kg)	P (kg)
Total Chemical Fertiliser Usage	1,170.0	225.0
Max Chemical Allowed	7,107.0	345.0
Balance	5,937.0	120.0

Below this you will see the stocking rate on the farm

Plan Summary	
Grassland Stocking Rate:	86 Kg/Ha
Whole Farm Stocking Rate:	86 Kg/Ha
Farm Area:	34.5 Ha
Grass Land Area:	34.5 Ha
Non Grass %:	0

Step 8 – Doing the Maths for Cattle Slurry and FYM

NMP online will do the calculations automatically and the amount of slurry/FYM that the farm user will be allowed to import will depend on which of the 3 following limits are hit first

- Whole farm stocking rate of 170Kg / Ha (If plan type is GLAS or non-Derogation plan type NMP online will lock down the reports and this warning will appear **Warning!** 170 kg N/ha whole farm stocking rate exceeded and Organic Manure Imports in plan. Reduce/Remove Imports to 170 kg N/ha whole farm stocking rate **or**
- Exceeding the Chemical N allowed **or**
- Exceeding the chemical P allowed NMP online will lock down the reports and this warning will appear **Warning!** Max P Exceeded, Reduce/Remove Organic Imports or Increase Exports of manures to resolve issue

The following table can be used as a ready reckoner for cattle slurry and farm yard manure

Cattle Slurry Ready Reckoner - Minimum of		
Criteria	Calculation	Volume Cattle Slurry
Whole farm stocking rate	$(170 - \text{WFSR}) * \text{Farm Area} / 5 *$ * (Total N/m ³ of cattle Slurry)	579.6m ³
Chemical N allowed	N Balance / 2 [†] [†] (Available N/m ³ of cattle Slurry)	2969m ³
Chemical P allowed	P Balance / 0.8 ^{††} ^{††} (Available P/m ³ of cattle slurry).	150 m ³
	Chemical P is the limiting factor in this example	

In this case it looks as if a max of 150 M3 of cattle slurry can be imported. A safety margin should be built in to cater for the possibility of error. In the plan enter 120 M3 of cattle slurry.

FYM Ready Reckoner - Minimum of		
Criteria	Calculation	Tonnes FYM
Whole farm stocking rate	$(170-WFSR) * \text{Farm Area} / 4.5^*$ * (Total N/m ³ of cattle Slurry)	644 T
Chemical N allowed	N Balance / 1.35 [†] † (Available N/m ³ of cattle Slurry)	4397 T
Chemical P allowed	P Balance / 1.2 [‡] ‡ (Available P/m ³ of cattle slurry).	100 T
Chemical P is the limiting factor in this example		

In this case it looks as if a max of 100 Tonne of FYM can be imported. A safety margin should be built in to cater for the possibility of error. In the plan enter 80 tonne FYM import.

Once the import is entered it is important to check that all 3 limits are being met.

	N (kg)	P (kg)
Total Chemical Fertiliser Usage	1,170.0	225.0
Max Chemical Allowed	6,867.0	248.0
Balance	5,697.0	24.0

If either of these are negative or the WFSR exceeds 170 then limits have been exceeded and imports must be reduced.

Plan Summary

Grassland Stocking Rate: 66 Kg/Ha

Whole Farm Stocking Rate: 103 Kg/Ha

Farm Area: 34.5 Ha

Grass Land Area: 34.5 Ha

Non Grass %: 0

If plan type is GLAS or non-Derogation plan type NMP online will lock down the reports and this warning will appear **Warning! 170 kg N/ha whole farm stocking rate exceeded and Organic Manure Imports in plan. Reduce/Remove Imports to 170 kg N/ha whole farm stocking rate**

Step 9 – Doing the Maths for Pig Slurry

Because of the transitional arrangement there is a different procedure for dealing with pig slurry imports.

Pig Slurry Ready Reckoner 2018 - Minimum of		
Criteria	Calculation	M3 Pig Slurry
Whole farm stocking rate	$(170-WFSR) * \text{Farm Area} / 4.2$	690
Chemical N allowed	N Balance / 2.1	2827
Chemical P allowed	$(\text{P Balance} + 3 * \text{Farm Area ha's}) / .8^{\dagger}$	279

[†] 3kg's/ha in 2018 Reduces to 2 and 1 in 2019 and 2020 respectively

Notes

- There are no soil samples on the farm in this sample so none of the manure can be allocated to Index 1 or 2 soils.

P allowance	(Kgs)
Maximum total available P	345.0
- Total P in Manures produced on holding (0 from Grazing from 2018)	0.0
+ Manure P not available (Applied to index 1 & 2)	0.0
- Total P in manures Imported	222.0
+ Additional P allowance for use of Pig Manure (Transitional Rule)	103.5
+ Total P in manures Exported (Max 137.0)	0.0
Total P in Concentrate Feeds Used	0.0
Discounted P in feeds (up to 300kg)	0.0
- Net P in concentrate feeds used	0.0
Maximum Chemical P fertiliser allowed	226.5
Maximum Volume of Pig Slurry which can be imported to fully replace all chemical P on farm (m3)	410.7

Transition Rule Explained

A transitional arrangement to support the importation of Pig Manure is in place and is set out in Article 34 and Table 22 of S.I. No. 605 of 2017. This transitional rule allows the exceedance of the p limit by

- 3kg/ha in 2017
- 3kg/ha in 2018
- 2kg/ha in 2019
- 1kg/ha in 2020
- 0kg/ha in 2021

The transitional rule allows the user to increase the P allowance by the lesser of

- 3 kg per ha in 2018
- The amount of utilisable P in imported pig manure

In the example above 278 Tonnes of Pig Manure is entered for importation. The transitional rule allows an increase in the P allowance of the lesser of

- 3 kg per ha $34.5 \times .3 = 103.5$ kg (See figure above)
- The amount of utilisable P in imported pig manure. $278 \times .8 = 222.4$ kg

NMP online will carry out the calculations within the “Land and Fert Max” page

3. GLAS NMP in Place – Soil Samples on the farm

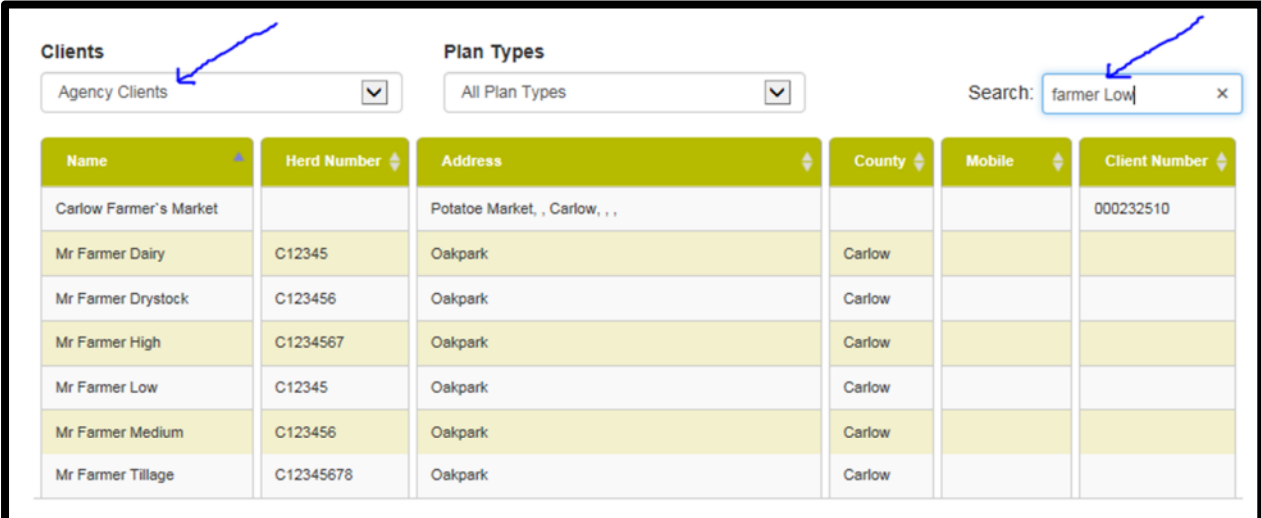
Where an existing plan exists for a client and you wish to calculate the potential to import slurry a number of steps need to be carried out.

- Step 1 Find the client
- Step 2 Make a copy of the plan if the plan is not for the current year
- Step 3 Make a records version of the plan
- Step 4 Make sure all soil samples are up to date
- Step 5 Make sure that the land area and crops shown are correct
- Step 6 Update the meal feeding records as appropriate for previous year
- Step 7 Update animal information for current year
- Step 8 Update allocation of Organic Manure as appropriate
- Step 9 Enter previous years GSR in general settings
- Step 10 Enter Fertiliser Records Information
- Step 11 Estimate Organic Manure Import Capacity

Step 1 – Find Client.

The client already has a plan on the system. If you did not prepare the plan you will need to search.

- Change the Clients option to Agency Clients
- Search for farmer name or farmer herd number.
- Select the farmer from the list returned (If list is too long refine search)



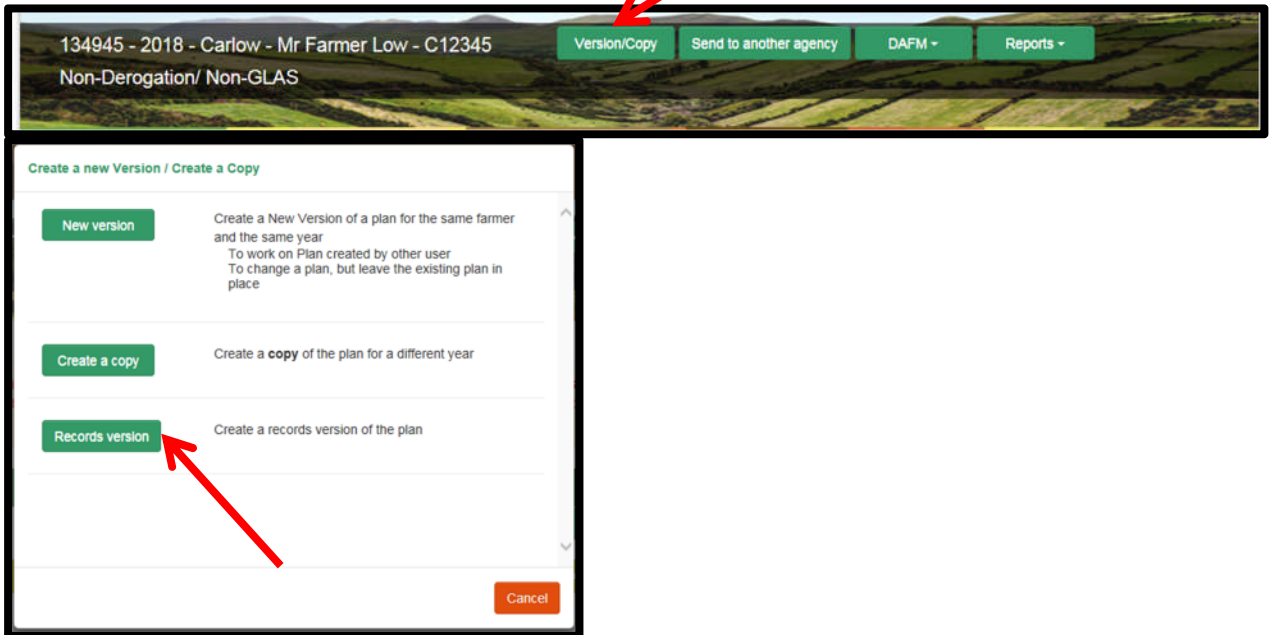
The screenshot shows a software interface with a search function. At the top left, there is a 'Clients' dropdown menu set to 'Agency Clients'. To its right is a 'Plan Types' dropdown menu set to 'All Plan Types'. Further right is a search bar containing the text 'farmer Low'. Below these elements is a table with the following columns: Name, Herd Number, Address, County, Mobile, and Client Number. The table contains seven rows of client data.

Name	Herd Number	Address	County	Mobile	Client Number
Carlow Farmer's Market		Potatoe Market, , Carlow, , ,			000232510
Mr Farmer Dairy	C12345	Oakpark	Carlow		
Mr Farmer Drystock	C123456	Oakpark	Carlow		
Mr Farmer High	C1234567	Oakpark	Carlow		
Mr Farmer Low	C12345	Oakpark	Carlow		
Mr Farmer Medium	C123456	Oakpark	Carlow		
Mr Farmer Tillage	C12345678	Oakpark	Carlow		

When you find the client select the most recent plan in the list for the client and open it. If you did not create this plan originally you will not be permitted to make any changes without creating a version of this plan first.

Step 2 Make a copy of the plan if the plan is not for the current year

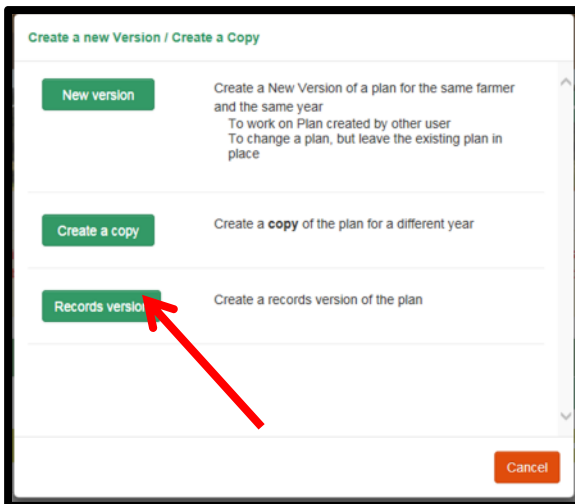
Where the version of the plan is not the current year (2018) you will need to create a copy of the plan for 2018 and then make a Records version of the Plan.



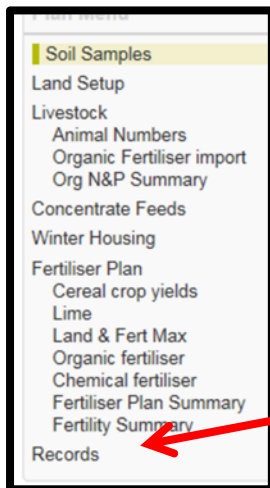
You will be brought to the new copy of the plan

Step 3 – Create a new records version of the plan.

Create a records version of the plan



When you create a records version of the plan you will be automatically directed to that version of the plan. (There will now be two versions). In the records version there is an extra menu item in the menu bar.



Step 4 Make sure all soil samples are up to date

The flag indicators are designed to indicate if soil samples are within date. For example, if a plan was in date for a 2016 plan but copied forward it is possible that some soil samples might be out of date for a 2018 plan. If a sample is out of date and has an area attached to a plot the soil sample will need to be removed from the crop details (and preferably replaced with an up to date sample).

	Sample Id	Sample Date	Sampled Area (ha)	pH	Lime Req	P Value	K Value	Soil Type	Mg	Cu	ER Mn	Zn	B
🚩	ZAU/1202-(1)	19/01/2015	3.7	5.6	8.0	2.5	134.0	Loam					
🚩	ZAU/1203-(1)	19/01/2015	4.8	5.6	6.0	2.4	200.0	Loam					
🚩	ZAU/1204-(1)	19/01/2015	5.5	5.7	7.5	5.3	69.6	Loam					
🚩	ZAU/1198-(1)	19/01/2015	1.9	5.8	6.0	1.6	127.0	Loam					

Step 5 Make sure that the land area and crops shown are correct

Ensure that the land farmed is consistent with the BPS/LPIS information submitted by the farmer

Step 6 Update the meal feeding records as appropriate for previous year

For a copied plan meal feeding information will be out of date. Replace with records for the year prior to the plan year.

Step 7 Update animal information for current year

There are two possible ways to update the animal information. The animal numbers can be modified in the 'Animal Numbers' screen or the overall N load for the farm can be entered in the 'Records' screen.

Step 8 Update allocation of Organic Manure as appropriate

Check the allocation of organic manures to ensure the reality is reflected

Step 9 Enter Fertiliser Records Information

Fertiliser records comprise 4 elements. You can bulk together individual purchases by fertiliser type for this purpose

- Opening Stocks
- Purchases during the year
- Sales during the year
- Closing Stock

Fertilizer Purchases						
Date	Type	Supplier	Invoice	Tonne	N (kg)	P (kg)
	Urea(46%N)			4	1,840.0	0.0
	18-6-12			6	1,080.0	360.0
	CAN(27%N)			7.5	2,025.0	0.0
					4,945.0	360.0

At the bottom of the page a fertiliser balance will be computed

	N (kg)	P (kg)
Total Chemical Fertiliser Usage	4,945.0	360.0
Max Chemical Allowed	10,467.0	903.0
Balance	5,522.0	543.0

Below this you will see the stocking rate on the farm

Plan Summary	
Grassland Stocking Rate:	100 Kg/Ha
Whole Farm Stocking Rate:	139 Kg/Ha
Farm Area:	50.6 Ha
Grass Land Area:	50.6 Ha
Non Grass %:	0

Step 10 Estimate Organic Manure Import Capacity

The amount of slurry that the user will be allowed to import will depend on which of the following limits are hit first

- Whole farm stocking rate of 170Kg / Ha
- Exceeding the Chemical N allowed
- Exceeding the chemical P allowed

The following table can be used as a ready reckoner for cattle slurry and farm yard manure

Cattle Slurry Ready Reckoner - Minimum of		
Criteria	Calculation	Volume Cattle Slurry
Whole farm stocking rate	$(170-WFSR) * \text{Farm Area} / 5$	313
Chemical N allowed	$N \text{ Balance} / 2$	2561
Chemical P allowed	$P \text{ Balance} / 0.8$	678

FYM Ready Reckoner - Minimum of		
Criteria	Calculation	Tonnes FYM
Whole farm stocking rate	$(170-WFSR) * \text{Farm Area} / 4.5$	355
Chemical N allowed	$N \text{ Balance} / 1.35$	4090
Chemical P allowed	$P \text{ Balance} / 1.2$	452

In this case it looks as if a max of 313 M3 of cattle slurry can be imported. A safety margin should be built in to cater for the possibility of error. In the plan enter 270 M3 of cattle slurry.

Once the import is entered it is important to check that all 3 limits are being met.

Step 11 Allocation of Imported Slurry to Index 1 & 2 Soils or avail of Transitional rules for the importation of Pig Slurry

Where slurry allocated to plots which are index 3 or 4 the above calculation will suffice. However if the slurry is to be applied to index 1 and 2 plots the % utilisation of P is considered to go to 50% and this could increase the capacity to import where P allowance is the limiting factor.

To get credit for the allocation of slurry to index 1 & 2 plots

- Go to the organic Fertiliser page
- Allocate imported organic manures where they will be applied
- Review the outcomes of the records page and reassess the capability to import

WARNING: Advice on importation of animal manures need to be computed carefully and reflect the reality of what is happening on the farm. Over importation has led to penalties at farm level.

4. Doing a quick calculation of N and P allowances

A quick calculation of the N and P limits on a farm is possible within NMP Online. Please note this does not constitute a nutrient management plan for any compliance purposes.

Step 1 – Find or Setup Client.

For Teagasc advisers clients are already on the system. If a client has not got an existing NMP prepared you will need to search the “Agency clients”.

- Change the Clients option to Agency Clients
- Search for farmer name or farmer herd number.
- Select the farmer from the list returned (If list is too long refine search)

Name	Herd Number	Address	County	Mobile	Client Number
Carlow Farmer's Market		Potatoe Market, , Carlow, , ,			000232510
Mr Farmer Dairy	C12345	Oakpark	Carlow		
Mr Farmer Drystock	C123456	Oakpark	Carlow		
Mr Farmer High	C1234567	Oakpark	Carlow		
Mr Farmer Low	C12345	Oakpark	Carlow		
Mr Farmer Medium	C123456	Oakpark	Carlow		
Mr Farmer Tillage	C12345678	Oakpark	Carlow		

Step 2 – Create plan for the farmer

Mr Farmer Low - [Create Plan](#)

Home Admin

Pat Murphy

Plans Client Details Alerts Reports

Select year: [v] Search: []

Year	Plan Id	Client Name	Agent Name	AgencyCode	Plan Submitted	Record Submitted
No data available in table						

Client Details

Herd Number: C12345

Address: Oakpark

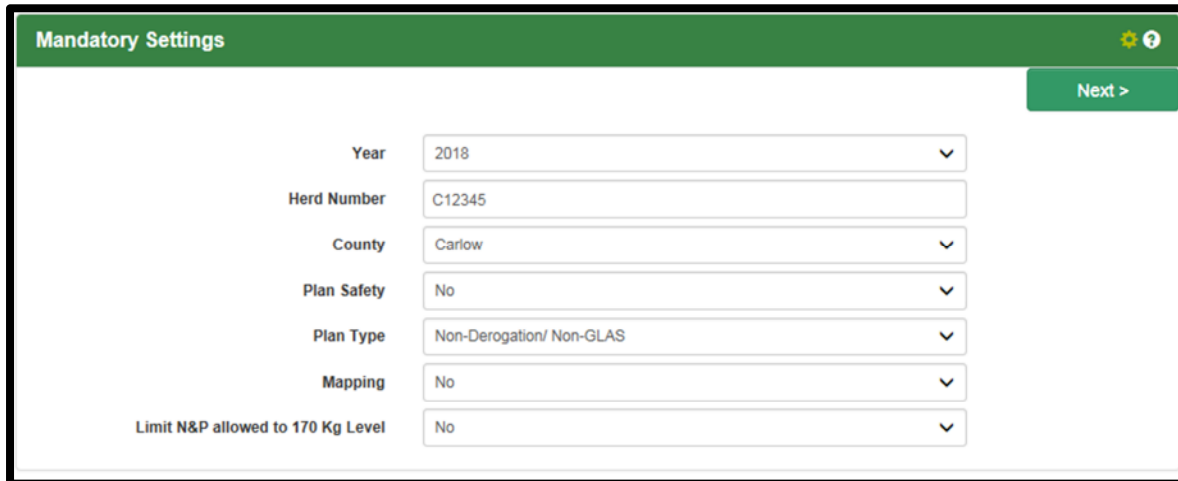
Click on Create Plan

[Create Plan](#) Click here to start the plan wizard

[Import From Excel](#) Use this to create a plan from a Microsoft Excel file

[Create from Existing Plan](#) To clone from an existing plan, please return to the [plan list](#), open the plan and click the 'Create Copy' button there.

Complete Mandatory settings as below

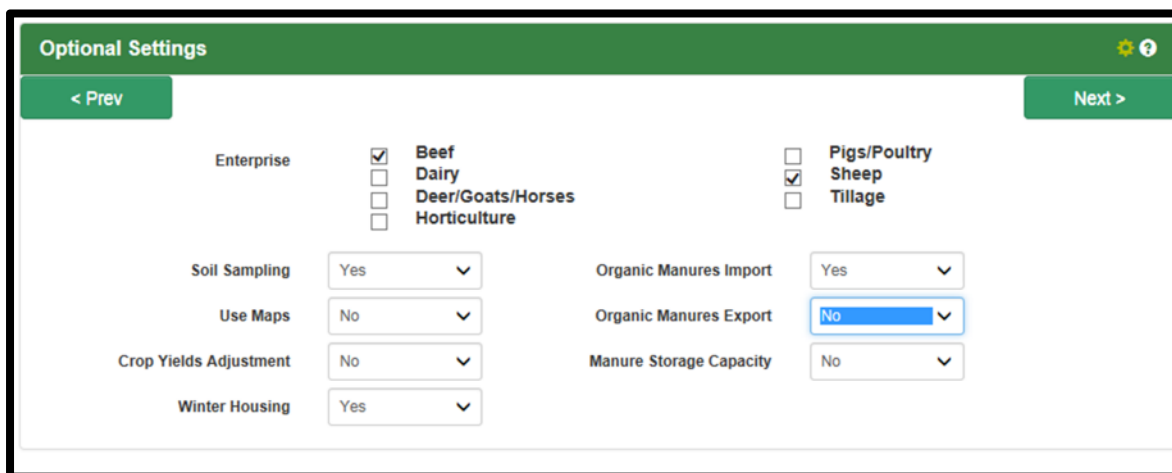


The screenshot shows the 'Mandatory Settings' form with the following fields:

Year	2018
Herd Number	C12345
County	Carlow
Plan Safety	No
Plan Type	Non-Derogation/ Non-GLAS
Mapping	No
Limit N&P allowed to 170 Kg Level	No

A 'Next >' button is located in the top right corner.

Complete Optional settings as below

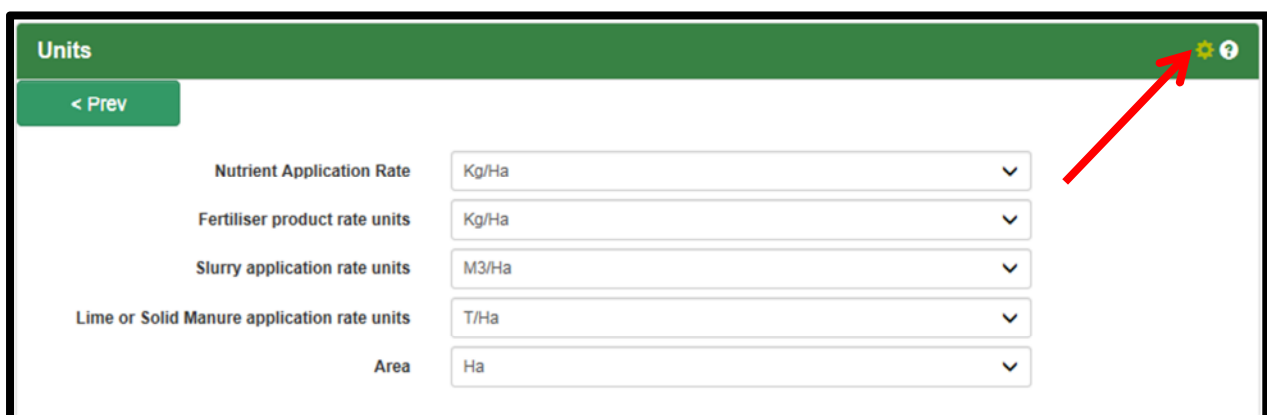


The screenshot shows the 'Optional Settings' form with the following fields:

Enterprise	<input checked="" type="checkbox"/> Beef <input type="checkbox"/> Dairy <input type="checkbox"/> Deer/Goats/Horses <input type="checkbox"/> Horticulture	<input type="checkbox"/> Pigs/Poultry <input checked="" type="checkbox"/> Sheep <input type="checkbox"/> Tillage	
Soil Sampling	Yes	Organic Manures Import	Yes
Use Maps	No	Organic Manures Export	No
Crop Yields Adjustment	No	Manure Storage Capacity	No
Winter Housing	Yes		

Navigation buttons '< Prev' and 'Next >' are present.

Complete Units Entry



The screenshot shows the 'Units' form with the following fields:

Nutrient Application Rate	Kg/Ha
Fertiliser product rate units	Kg/Ha
Slurry application rate units	M3/Ha
Lime or Solid Manure application rate units	T/Ha
Area	Ha

A red arrow points to the settings icon (cog wheel) in the top right corner.

NB – All optional and Units settings can be changed subsequently by clicking on the Settings symbol (Cog wheel as shown)

The plan is now created

Step 3 Enter Soil Analysis Details

There are a number of scenarios

- Where no soil samples exist the system will assume index 3 for P and K
- Where soil samples exist
 - Tillage Crop areas will need to be individually as the P index system is different for Tillage and Grassland
 - Grassland areas can be grouped into four Soil Samples
 - It is essential to use the naming Dummy so that soil samples can be excluded from consideration as real soil analysis results

Sample ID	Sample Date	Soil Texture	P	K	Remaining Cells
Dummy 1	1/1/2018	Loam	2	125	Blank
Dummy 2	1/1/2018	Loam	4	125	Blank
Dummy 3	1/1/2018	Loam	6	125	Blank
Dummy 4	1/1/2018	Loam	9	125	Blank

Step 4 – Enter Land Details

- Enter Plots
 - Enter tillage plots as normal
 - Group grassland plots by P index. For example when grouped if the following is the profile. Index 1 – 10 ha, Index 2 – 12 Ha, Index 3 - 9 Ha, Index 4 – 5ha
 - Enter Grassland plots as follows

Plot	Gross Area	Reference Area	Crop 1	Sample	Remaining Cells
Grass 1	10	10	Grazing	Dummy 1	Blank
Grass 2	12	12	Grazing	Dummy 2	Blank
Grass 3	9	9	Grazing	Dummy 3	Blank
Grass 4	5	5	Grazing	Dummy 4	Blank

Step 5 – Enter Livestock Details

- Enter Animal Information
 - Enter Planned animal information
 - Winter information is not necessary unless you wish to benefit from the allocation to index 1 and 2 areas

Step 6 – Enter Concentrate Details

- Enter Concentrate Feed for the previous year

Step 7 – N & P Limits

The Land and Fert Max page will give the maximum Chemical N and P allowed

NB – Where Soil analysis exists it is best to complete a full nutrient plan and provide fertiliser advice to farmers

N allowance		(Kgs)	P allowance		(Kgs)
Maximum total available N		11,444.6	Maximum total available P		1,439.8
- Available N produced on holding		977.0	- Total P in Manures produced on holding		361.0
- Available N in manures Imported		0.0	+ Manure P not available (Applied to index 1 & 2)		0.0
+ Available N in manures Exported		0.0	- Total P in manures Imported		0.0
Maximum Chemical N fertiliser allowed		10,467.6	+ Total P in manures Exported		0.0
			Total P in Concentrate Feeds Used		300.0
			Discounted P in feeds (up to 300kg)		124.5
			- Net P in concentrate feeds used		175.5
			Maximum Chemical P fertiliser allowed		903.4