

Nutrient Management 2020

Geofolia v. 7.00

CONTENTS

1. NUTRIENT PLANNING MODULE.....	3
1.1 <i>Entering Nutrient Management Plans.....</i>	3
1.1.1 <i>New Feature.....</i>	3
1.1.1 <i>Entering Crop Requirements.....</i>	3
1.1.2 <i>Entering Planned Applications.....</i>	4
1.2 <i>Grouped Records in the Nutrient Management Plan.....</i>	5
1.3 <i>Fertiliser Maximums.....</i>	5
1.4 <i>Nutrient Management Plan Reports.....</i>	6
1.4.1 <i>Nutrient Management Plans.....</i>	6
1.4.2 <i>Planned Applications.....</i>	6
1.4.3 <i>General Nitrogen Balance Reports.....</i>	7
1.4.4 <i>Fertilisers Summary Report.....</i>	8
1.5 <i>Monitoring Completed Fertiliser Activities.....</i>	8
1.5.1 <i>Fertiliser Summary – Effective Applications.....</i>	8

1. NUTRIENT PLANNING MODULE

1.1 Entering Nutrient Management Plans

1.1.1 New Feature

In **Geofolia**, it's now possible to enter **Nutrient Management Plans** for every field.



This feature can be accessed from the **Nutrient Plans** ribbon, **Nutrient Management Plan Records** (1). It enables the user to define the **N, P, K, Ca, Mg** and **S** requirements for each field.

This enables the user to create a projected fertiliser plan to be implemented in order to provide the right amount of fertiliser and thereby meet the plants' nutritional requirements.

Fertiliser applications can be recorded throughout the cropping period, making it possible to quickly assess the status of the nutrient plan.

1.1.1 Entering Crop Requirements

The first time the fertiliser plan is opened, most of the information is retrieved from the **Crop Rotation: Crop, History, Soil Type, Soil Analysis**.

The **N, P, K, Ca, Mg** and **S Requirements** must be entered in the **Fixed Rate** field for each element (2). For faster data input, the **Fixed Rates** tab in the bottom pane can be used to enter all the requirements for each element in one screen (3).

	Result (kg/Ha)		Requirements (kg/ha)							
	REQUIREMENTS	Fixed Rate	N	P ₂ O ₅	K ₂ O	CaO	MgO	SO ₃	Donc	
N	170	170	0	0	0	0	0	0	0	
P	0	0	0	0	0	0	0	0	0	
K	170	170	0	0	0	0	0	0	0	
Ca	0	0	0	0	0	0	0	0	0	
Mg	0	0	0	0	0	0	0	0	0	
S	170	170	0	0	0	0	0	0	0	

Once the requirements have been entered, the side panel (**Result (kg/Ha)**) (2) makes it possible to monitor the planned applications and the **Remainder to Apply**, based on planned applications and planned irrigation.

Irrigation estimates must be entered in the **Description** tab of the bottom pane (4).

1.1.2 Entering Planned Applications

Entering planned fertiliser applications is done in the **Activities** tab (5). Click on the **+** button in the bottom pane or on the **Nutrient Management Plan Activity** button in the ribbon (6).

To retrieve **Completed** application activities or recommendations from the previous year, click on the **Retrieve the Activities** button in the ribbon (7).

The screenshot shows the Geofolia 2020 software interface. The top ribbon contains several buttons: 'Retrieve the Activities' (7), 'Nutrient Management Plan Activity' (6), and 'Activities' (5). The left side panel displays 'Result (kg/Ha)' for various nutrients (N, P, K, Ca, Mg, S) with requirements and applications. The main area displays a table of field records with columns for Field Name, Type, Area (Ha), Sector, Crop, and Requirements (kg/ha). Below this is an 'Effective Applications (kg/ha)' table. A green circle (8) highlights the 'Activities' tab in the bottom pane.

Field Name	Type	Area (Ha)	Sector	Crop	N	P ₂ O ₅	K ₂ O	CaO	MgO	SO ₃	Done
Oat Ash Row		4.10	South	Oats Winter	0	0	0	0	0	0	
Rough Banks		4.02	North	Permanent Pasture	0	0	0	0	0	0	
Sandy West		11.29	West	Oats Winter	0	0	0	0	0	0	
Sandy West Headland		0.71	West	Oats Winter	170	0	0	0	0	0	
Spring Turkey		5.04	West	Barley Winter	0	0	0	0	0	0	
- Selection /Total : 1 / 29		0.71	134.52								

Comment: All **Activity** functions (**Add, Delete, Edit, Duplicate**, etc.) are accessible at the left of the bottom pane in the **Activities** tab (8).

When entering a new activity, the **Status** of the window (9) indicates that the activity is a **Nutrient Management Plan** activity.

To enter the **Efficiency Coefficient** of the organic fertiliser, click on the **Efficiency Coefficient** button (10). For completed activities, it can also be entered in the **Activities Log**, in the **Input** tab.

The remainder to apply (**Requirements (kg/ha)**) is displayed to the right of the **Effective Applications**. To balance the requirements after the last application, click on the **Balance the requirements** button (11).

New "Nutrient Management Plan" Activity

Activity: Fertiliser spreading Date: 13/12/2019 Status: NPK Comment:

Field: Input Summary

Input	Rate / Ha	Quantity	Stock	Unit	Efficiency Coefficient	Effective Applications (kg/ha)						Requirements (kg/ha)					
						N	P2O5	K2O	CaO	MgO	SO3	N	P2O5	K2O	CaO	MgO	SO3
10-15-21	23.65	16.84		kg		2	4	5				168	46	55	30	25	0

OK Cancel Duplicate

These **Nutrient Plan** activities are also displayed in the **Activities Log** and display the **NPK** status.

1.2 Grouped Records in the Nutrient Management Plan

As in the **Crop Rotation**, most **Nutrient Management** records can be entered for multiple fields at the same time (1). In order to enter **Grouped** records, all fields must be assigned the same crop.

Geofolia 2020

Home Farm Farm Layout Inputs Nutrient Plans Harvest Economics Settings Options Nutrient Management Plan Records 2019

Farm(s): Home Farm Crop Year: 2019 Filter

Manure/Organic Inputs Stocks (1) NPK Grouped Records Retrieve the Activities Nutrient Management Plan Activity (2) Fertiliser Maximums Reports Preferences

Filter Application Checks Reports Settings

1.3 Fertiliser Maximums

Fertiliser Maximums (2), which are available in the **Crop Rotation**, are also accessible in the **Nutrient Management Plan Records**. This makes it possible to control the fertiliser maximums as defined in the **Specifications** (entered in the **Environment** tab for the fields in the crop rotation) and displays **Alerts Fertiliser Compliance Issues** if the fertiliser maximum is exceeded.

Reminder: **Specifications** are created in the **Settings** ribbon, **Specifications**.

1.4 Nutrient Management Plan Reports

Nutrient Management Plan reports can be accessed from the **Nutrient Plans** ribbon, **Reports, Nutrient Management Plan**, as well as the **Nutrient Management Plan Records, Reports, Nutrient Management Plan**.

1.4.1 Nutrient Management Plans

The **Detailed N NMP** and **Detailed NPK NMP** reports provide all the information regarding the planned fertiliser applications for each field. They display the **Field** descriptions, the fertiliser **Requirements** and **Planned Applications**.

Sandy West Headland - Oats Winter (0.71 Ha)

Sector	West	Crop	Oats Winter	Crop Y-1 Residues	Oats Winter	Prev. Intermediate Planting
Soil Type	Sandy Clay Loam	Variety	Mascani	Harvest	25/08/2018	Destruction
Total Area	0.71 Ha	Target Yield		Planting	25/09/2018	Next Intermediate Planting
PSA Manure	0.71 Ha	Harvest	16/08/2019			
PSA Slurry	0.71 Ha					
PSA Other	0.71 Ha					

Comment:

N Rate Calculation

Fixed Requirements Entered by User

Total Requirements	170	—	Total Nutrients	0	=	Rate before Applic	170
Fixed Requirements	170		Irrigation	0			

Nutrient Management Plan Activities

Period	Fertiliser	Cult. Area (Ha)	Rate / Ha	Total N Content	Total N Applied (kg/ha)	Efficiency Coef.	Effective Nitrogen	
Mid Dec	10-15-21	0.71	78.00 kg	10.00 %	8	1.00	8	
Mid Dec	Nitram	0.71	60.00 kg	34.50 %	21	1.00	21	
Total Applied					29	Effective	29	
					Organic	0	Organic	0
					Mineral	29	Mineral	29

1.4.2 Planned Applications

The **Planned Applications** reports provide a summary of the planned applications for each field for each type of fertiliser.

Planned Nitrogen Applications of the Nutrient Management Plan 2019

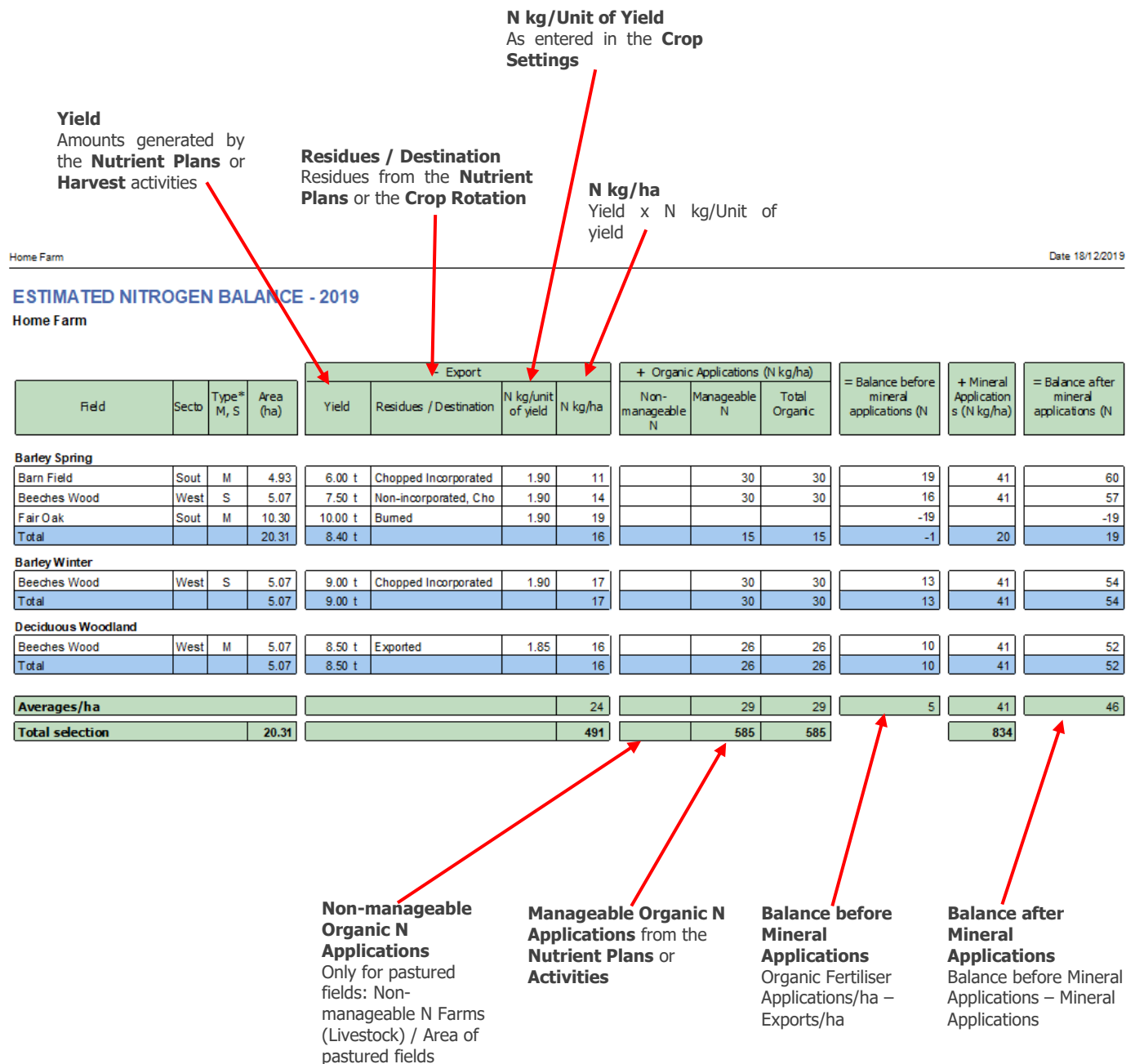
Home Farm

Field (Sector - Name) Crop (Target Year(s)) Variety (Rate) (ha)	Nutrient Management Plan Activity				N Content	Total Nitrogen Application (kg/ha UAA)	Efficiency Coefficient	Effective Nitrogen Application (kg/ha UAA)
	Period	Fertiliser - Incorporation	Cult. Area (ha)	Rate / ha				
West - Sandy West Headland	Mid Dec	Nitram	0.71	60.00 kg	34.5 %	21	1.00	21
Oats Winter (U)	Mid Dec	10-15-21	0.71	78.00 kg	10.0 %	8	1.00	8
Variety Mascani								
UAA: 0.71								
PSA Manure: 0.71								
PSA Slurry: 0.71								
PSA Other: 0.71								
Nitrogen rate to apply: 170 kgN/ha UAA					Total Applied	29	Effect. Applic.	29
					Organic	0	Organic	0
					Mineral	29	Mineral	29

Comment:

1.4.3 General Nitrogen Balance Reports

The **Nitrogen Balance** reports are accessible in the **Nutrient Plans** ribbon, **Reports > Planned Nitrogen Balance**, then change from the drop down for **Actual**. They compare the amount of nitrogen exported by the crops to the amount of nitrogen provided by the fertilisers or grazing refunds. Depending on the location of the fields and farms, these reports may be required by various regulating bodies.



1.4.4 Fertilisers Summary Report

The **Fertilisers Summary Reports** are accessible from the **Nutrient Plans** ribbon, **Reports, Fertilisers Summary**, as well as from the **Nutrient Management Plan Records, Reports, Fertilisers Summary**, both for *planned* and *completed* applications. The reports summarise expected quantities for each input as well as the number of units applied, in total and per hectare. These reports make it possible to plan the fertiliser purchases.

Home Farm

NUTRIENT MANAGEMENT PLAN FERTILISERS SUMMARY - 2019

Home Farm

Selection : 3 Field(s)

Total area of the selection : 18.04 Ha

Name	Content			Content Unit	Quantity	Unit	Total Applied (Kg)		
	N	P ₂ O ₅	K ₂ O				N	P ₂ O ₅	K ₂ O
Mineral Fertilisers									
0-24-24		24	24	%	724.76	kg		174	174
10-15-21	10	15	21	%	1,410.09	kg	141	212	296
40-0-0-14	40			%	1,298.10	kg	519		
Calci fert				%	564.39	kg			
Efficient-N-28	28			%	451.51	L	126		
Gro Phite		25	10	%	24.92	L		6	2
Korn Kali			40	%	395.08	kg			158
N-cover	12			%	1,811.91	L	217		
Nitram	34.5			%	42.73	kg	15		
Raps Mix				%	677.27	L			
Total Mineral Fertilisers							1,019	392	631
Total /ha							56	22	35
Total Organic + Mineral							1,019	392	631
Total /ha							56	22	35

1.5 Monitoring Completed Fertiliser Activities

1.5.1 Fertiliser Notepads – Effective Applications

As mentioned previously, the fertiliser efficiency coefficients can now be entered for each application activity. New reports are available to track effective nutrient applications. They are the **Fertiliser Summary** reports, accessible from the **Nutrient Plans** ribbon, **Reports**.

- **Effective N and NPK Fertiliser Notepads**
- **Completed N, P, K, Mg, Ca, S Applications**

COMPLETED FERTILISERS SUMMARY - 2018

Home Farm

Selection : 2 field(s)

Total area selection : 10.05 Ha

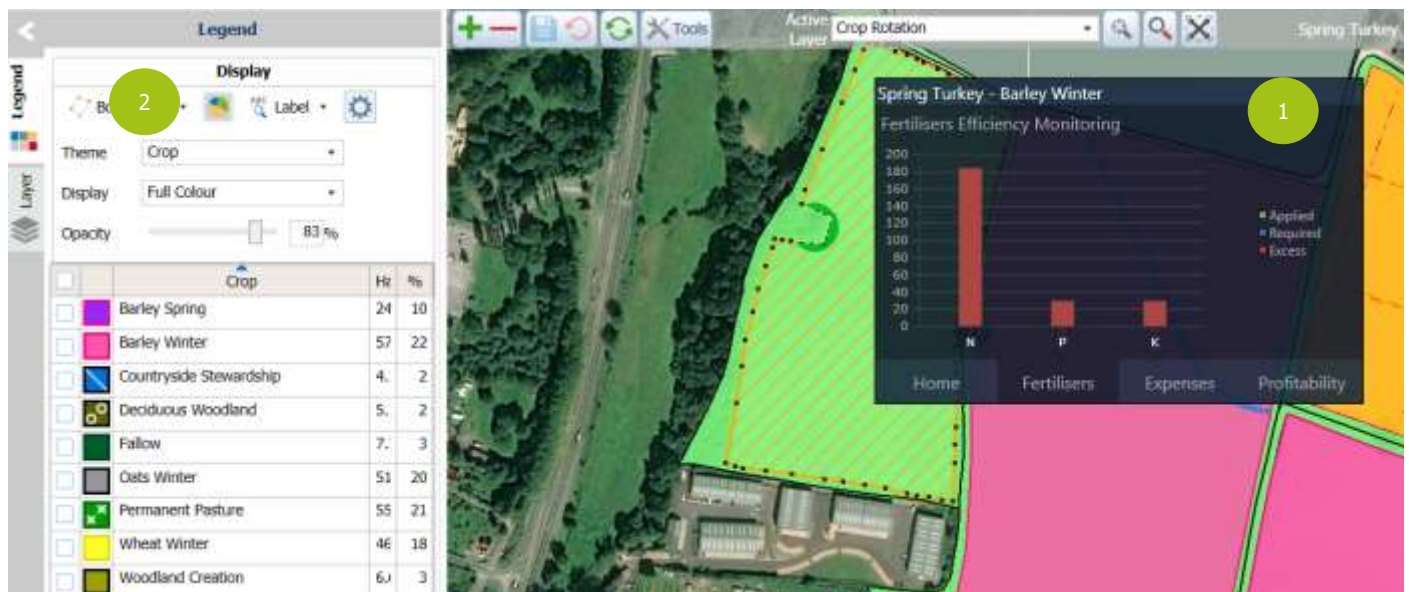
Name	Content			Content Unit	Quantity	Unit	Total Applied (Kg)		
	N	P ₂ O ₅	K ₂ O				N	P ₂ O ₅	K ₂ O
Mineral Fertilisers									
0-24-24		24.00	24.00	%	611.71	kg		147	147
40-0-0-14	40.00			%	1,911.55	kg	765		
Mancozin				%	4.99	L			
Total Mineral							765	147	147
Total /ha							76	15	15
Total Mineral + Organic							765	147	147
Total /ha							76	15	15


Planned NPK Applications of the Nutrient Management Plan 2019

Home Fam

Field (Sector No. - Name) Crop (Target Yield/ha) Variety Area(s) (ha)	Nutrient Management Plan Activity					Contents			Total Applied (kg/ha UAA)			Efficiency Coefficient			Effective Applications (kg/ha UAA)		
	Period	Fertiliser	Incorporation	Cult. Area (ha)	Rate /ha	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
West - Sandy West	Mid Dec	40-0-0-14		11.29	65.00 kg	40.0		%	26			1.00	1.00	1.00	26		
Oats Winter (t)	End Dec	10-15-21		11.29	120.00 kg	10.0	15.0	21.0	12	18	25	1.00	1.00	1.00	12	18	25
Variety: Mascani	End Dec	Kom Kali		11.29	35.00 kg			40.0			14	1.00	1.00	1.00			14
UAA: 11.29	End Dec	Efficient-N-28		11.29	40.00 L	28.0		%	11			1.00	1.00	1.00	11		
PSA Manure: 11.29	Beg. Jan	40-0-0-14		11.29	50.00 kg	40.0		%	20			1.00	1.00	1.00	20		
PSA Slurry: 11.29 PSA Other: 11.29																	
Requirements (in kg/ha UAA):									Total Applied			Effect. Applic.					
N : 170 P2O5 : 50 K2O : 50									Organic			Organic			69 18 39		
									Mineral			Mineral			69 18 39		
Comment:																	
West - Sandy West Headland	Mid Dec	Nitram		0.71	60.00 kg	34.5		%	21			1.00	1.00	1.00	21		
Oats Winter (t)	Mid Dec	10-15-21		0.71	78.00 kg	10.0	15.0	21.0	8	12	16	1.00	1.00	1.00	8	12	16
Variety: Mascani	Beg. Jan	Gro Phite		0.71	35.00 L		25.0	10.0		9	4	1.00	1.00	1.00		9	4
UAA: 0.71																	
PSA Manure: 0.71																	
PSA Slurry: 0.71 PSA Other: 0.71																	
Requirements (in kg/ha UAA):									Total Applied			Effect. Applic.					
N : 170 P2O5 : 50 K2O : 60									Organic			Organic			29 20 20		
									Mineral			Mineral			29 20 20		
Comment:																	

The **Crop Rotation Dashboard pop-ups** make it possible to quickly consult fields with remaining fertilisers to be applied and fields that are over-fertilised (1). The **Fertilisers** tab in these pop-ups display the **N, P** and **K** quantities already **Applied** and compare them to the quantities **Required** when hovering over the bar graphs with the mouse.



Reminder: Click on the  button to display the **Crop Rotation Dashboard pop-ups** (2).