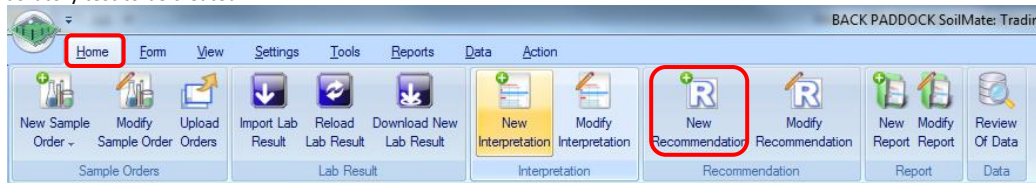
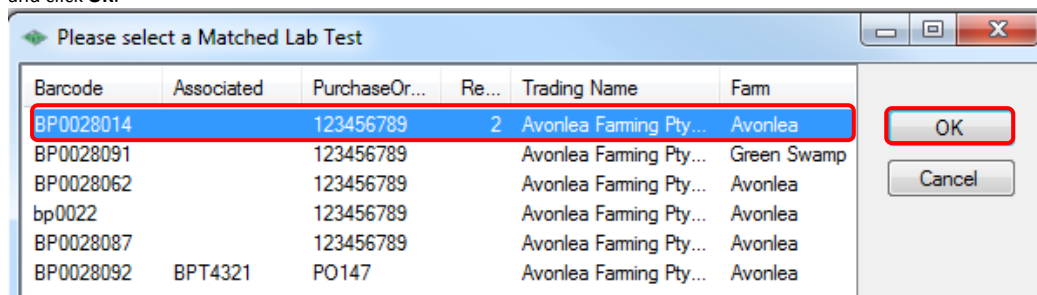


New Recommendation

This button can be found in the **Recommendation** section of the **Home tab** of the main toolbar. It allows a recommendation of the laboratory test to be created.



12. Click **New Recommendation** and a screen of all the **Matched Lab Tests** appears. Select the required **Matched Lab Test** and click **OK**.



13. Give the Recommendation a name. The remainder of the details will be auto-populated. Click **Next**

The screenshot shows the 'SoilMate Evaluation Wizard' dialog box. The title is 'Welcome to the SoilMate Evaluation Wizard'. Below the title, it says 'Enter the name of the Recommendation'. The 'Recommendation Name' field contains 'Test Recommendation' and is highlighted with a red box. Other fields include 'Pre-logged Description' (Test), 'Barcode' (BP0028014), and 'Farm/Paddock Details' (Trading Name: Avonlea Farming Pty Ltd, Farm: Avonlea, Paddock: A 01, Growing Season: 2012 Summer, Paddock Section: All of A 01, Soil Texture: [dropdown]). At the bottom, there are buttons for '< Back', 'Next >' (highlighted with a red box), 'Finish', 'Cancel', and 'Help'.

14. Click **Select** to select the relevant Evaluation table (below). If not a grain - Click **Finish** to move on to **Evaluation Table** (Step 7).

Note: If evaluation is for a grain – tick the **Run GrainNPlan Model**

The screenshot shows the second step of the 'SoilMate Evaluation Wizard'. The title is 'Welcome to the SoilMate Evaluation Wizard'. Below the title, it says 'Selection and evaluation for the recommendation and verify the evaluation parameters have been selected'. The 'Evaluation' field contains 'Wheat Raingrown Central Tablelands NSW' and is highlighted with a red box. To its right is a 'Select' button. Below the 'Evaluation' field, there is a checkbox labeled 'Run GrainN Plan Model' which is checked and also highlighted with a red box. At the bottom, there are buttons for '< Back', 'Next >' (highlighted with a red box), 'Cancel', and 'Help'.

15. Check the **sample date**, the **planting date** and **harvest date** – make adjustments if necessary

Check the Target Yield and Target Protein (low, expected and high values) – alternatively tick Yield Variance and enter a percentage in the box

Welcome to the SoilMate Evaluation Wizard
Enter Grain sample details to be used in evaluation model

Sample Details

Sample Date: 15/03/2012 Planting Date: / / Harvest Date: / /

Target Yield: Low 3.50, Expected 3.50, High 3.50
Target Protein: Low 10.50, Expected 10.50, High 10.50

☐ Yield Variance (%)

☐ In-Crop N ? (Use Harvest Index and Uptake Efficiency below?)

Growth Stage:
Harvest Index (%): 69.00
Uptake Efficiency (%): 48

Surface Sample Profile Details

Barcode	Depth From	Depth To	Bulk Density	DepthWt	Product	Evaluation
BP0028091	0	10		1	IP-SSB-01	Wheat Raingrown Central Tablelands

Associated Sample Profile Details

Barcode	Depth From	Depth To	Bulk Density	DepthWt	Product	Evaluation
---------	------------	----------	--------------	---------	---------	------------

< Back Next > Cancel Help

16. If utilising the option of **In-Crop N** – tick **In-Crop N**; click on the drop down box of **Growth Stage** and amend **Harvest Index %** and **Uptake Efficiency %** as necessary. Click **Next** at bottom of page

Sample Details

Sample Date: 15/03/2012 Planting Date: / / Harvest Date: / /

Target Yield: Low 3.50, Expected 3.50, High 3.50
Target Protein: Low 10.50, Expected 10.50, High 10.50

☐ Yield Variance (%)

☒ In-Crop N ? (Use Harvest Index and Uptake Efficiency below?)

Growth Stage:
Harvest Index (%): 45
Uptake Efficiency (%): 48

Surface Sample Profile Details

Barcode	Depth From	Depth To	Bulk Density	DepthWt	Product	Evaluation
BP0028091	0	10		1	IP-SSB-01	Wheat Raingrown Central Tablelands

Associated Sample Profile Details

Barcode	Depth From	Depth To	Bulk Density	DepthWt	Product	Evaluation
---------	------------	----------	--------------	---------	---------	------------

< Back Next > Cancel Help

17. On the next screen of the **SoilMate Evaluation Wizard** you can enter **Paddock history** and **Manure history** details by clicking on the drop-down boxes. (If you are unsure of these details just leave them blank). Click **Finish** to go to the **Evaluation Table**.

Welcome to the SoilMate Evaluation Wizard
Enter Paddock history details to be used in the evaluation model

Past Paddock Crop History

Last year:
2 years ago:
3 years ago:

Manure History

	Manure Type	Manure Application	Rate (t/ha)
Last year			
2 years ago			
3 years ago			
4 years ago			

< Back Finish Cancel Help

18. Evaluation Table – Evaluation Tab

You may enter in extra information about the crop and paddock at the top of the screen, such as: Area in hectares (by completing this assists in calculating tonnages etc.)

To check which information that can be updated click in the data areas, then click the “...” button and enter data. Use the slide button to move through to additional data

Scroll up and down the information in the evaluation with the sliders.

	Value	Rate
pH (1:5 CaCl2)	7.4	
pH (1:5 H2O)	7.7	
EC (1:5 H2O) dS/m	0.42	
EC (se) (dS/m)	4.5	
EC (se) (dS/m) (Clad)	2.9	
Chloride (1:5 H2O) mg/kg	150	
Electrochemical Stability Index	0.100	
Organic carbon (Walkley Black) %	1.70	
NITROGEN		80
Nitrate nitrogen (KCl) mg/kg	20	
PHOSPHORUS		25
Phosphorus (Colwell) mg/kg	28	
Phosphorus Buffer Index (PBI)	41.0	
POTASSIUM		
Potassium (Amm-acet.) meq/100g	0.80	
SULFUR		
Sulfate-S (KCl40) mg/kg	130.0	
LIME		
Calcium (Amm-acet.) meq/100g	13.0	
CALCIUM		
Calcium:magnesium ratio	6.2	

On the far right of the screen you will notice sections that allow additional tools and actions such as:

- **Actions** – Save, Save as an alternate name, Close and Save & Close your recommendation.
- **Evaluation Models** – Nutrient BalanceLink; GrainPlan or CotNPlan (dependant on selected Evaluation Table)
- **Evaluation** – Statuses and Comments
- **Fertilizer** – Tools for fertilizer choice
- **Misc** – Tools to quickly copy your Fertilizer product recommendation in the Detail & Reports tab to your implemented program tab.

2. Analytes, Values and Rate

Note: the main part of the screen is split into Analyte Value on the left with corresponding colour indicating status and NPK etc, rate on the right

By default, red and pink colours indicate low or moderate levels of an analyte.

	Value	Rate
pH (1:5 CaCl2)	7.1	
pH (1:5 H2O)	7.7	
EC (1:5 H2O) (dS)	0.168	
Organic carbon (V	1.63	
NITROGEN		0
Nitrate nitrogen (N)	33	
Ammonium nitroge	5	
PHOSPHORUS		15
Phosphorus (Colw	38	

Note: You may need to maximize the window for easier viewing this can be done by clicking the middle windows control tool. See below.

If you slowly run your cursor down the analyte values the status of these values will be displayed.

NITROGEN		0
Nitrate nitrogen (N)	33	
Ammonium nitroge	5	
PHOSPHORUS		15
Phosphorus (Colw	38	
Phosphorus Ruffe	83	

The Evaluation / Statuses on the right hand side of screen can be opened to get more information on the statuses of each analyte and measurement. The values such as 23 or 4 above are a rating and refer to the length of the line in the status graph and therefore the colour range the analyte falls into. This rating scale is given below.

Note: If you wish to change the standard status, place your cursor on one of the coloured lines and left-click with your mouse. Click on the box with the 3 dots, which appears and shows status and rate.

%H2O (Soil)	Value	Rate
pH (1:5 CaCl2)	13.0	
pH (1:5 H2O)	7.7	
EC (1:5 H2O) (dS)	0.15	
EC (se) (dS/m)		
EC (se) (dS/m)		
Electrochemical		
NITROGEN	Actual Status 23 Satisfactory	0
Nitrate nitrogen	Adjusted Status 33 Satisfactory	60
Ammonium nitro	Actual Rate	
PHOSPHORUS	Adjusted Rate	
POTASSIUM		

You can adjust the status at this point if required. The adjusted status will show up with a coloured line reflecting the status chosen.

Rate column

To change a rate click on the rate to be changed and then the box that appears on that line. The rate of nutrient applied can be changed in the Adjusted Rate box. Any adjusted rate will appear on a yellow line to indicate a change has taken place.

COPPER		
ZINC		3
Zinc (DTPA) (mg/kg)	0.27	

Note: The nutrient rate can only be changed by amending the rate opposite those areas in the Rate column that are coloured white or pale yellow.

19. Evaluation Tab - Evaluation

SoilMate has a number of ways to add to the **Evaluation** which appear on the right of the **Evaluation** screen.

- Statuses
- Comments

6. Statuses

Click on **Statuses** to get a graphical status report of the lab result. Click the **Cross** at top right of computer screen to close down report.



7. Comments

The Evaluation Comments area contains important information for interpreters about assumptions behind the rates suggested, and may provide information about product, placement and timing options.

Evaluation		
Recommendation	Details & Reports	
Colour	Brown	
Crop	Wheat SE Aust.	
Variety		
Target Production	5	
Growing Season	2012 Summer	
Sampling Date	08 Mar 2012	
Lab test No.	396725	
	Value	Rate
Calcium (Amm-acet.) meq/100g	2.3	
CALCIUM		
Calcium:magnesium ratio	6.8	
Magnesium (Amm-acet.) meq/100g	0.3	
MAGNESIUM		30
Sodium (Amm-acet.) meq/100g	0.2	
Aluminium (KCl) meq/100g	0.11	
eCEC meq/100g	3.2	
Aluminium % Saturation (Group)	3.5	
Calcium % of CEC	72.8	

Actions: Save, Save As, Close, Save & Close

Evaluation mod...: Nutrient balance link, GrainPlan, SoilAmendments

Evaluation: Statuses, **Comments**

Fertilizer

To view *evaluation comments*, highlight the analyte you are interested in. Click **Comments** in **Evaluation Box**

Note: Comments are available to be viewed as well as copied (highlight selected comment, press Control + C) and pasted (place cursor in Comments section at bottom of page and press Control + V).

Evaluation Comments for Nitrate nitrogen (KCl) (mg/kg)

Evaluation Comments | **Evaluation Table Analyte Ranges** | Evaluation Table Analyte Eval Models | Evaluation Table Non Tested

Paddock Section: All of FRONT KIRKWRIGHTS 33 High

Interpretation – Nitrate-N in the upper part of this range may indicate contamination of the soil sample or sampling of a fertiliser band. If the concentration is genuine review fertiliser management strategy and ensure crops planted are able to consume large quantities of N to avoid potential leaching losses and its possible effect on soil acidification.

Wheat Wimmera Medium Rainfall

Comment

INTERPRETATION

Interpretation – Nitrate-N in the upper part of this range may indicate contamination of the soil sample or sampling of a fertiliser band. If the concentration is genuine review fertiliser management strategy and ensure crops planted are able to consume large quantities of

Evaluation Table Analyte Ranges

provides you with a full view of the rates suggested across the full range of the evaluation criteria.

20. Evaluation Tab - Evaluation Models

SoilMate has a number of **evaluation models** which appear on the right of the **Evaluation screen**.

- Nutrient balancelink
- GrainNPlan
- SoilAmendments

These models have been designed to calculate the recommendations. The calculations have been built into the program and the purpose of the models is to be able to see how the recommendations were created. The models also allow the Advisor to change the recommendation by being able to add local knowledge into the model.

	Value	Rate
Calcium (Amm-acet.) meq/100g	2.3	
CALCIUM		
Calcium:magnesium ratio	6.8	
Magnesium (Amm-acet.) meq/100g	0.3	
MAGNESIUM		30
Sodium (Amm-acet.) meq/100g	0.2	
Aluminium (KCl) meq/100g	0.11	
eCEC meq/100g	3.2	
Aluminium % Saturation (Group)	3.5	
Calcium % of CEC	72.8	

8. *Nutrient balancelink*

This model allows the user to see the amount of nutrients that have been removed. The fertiliser recommendation desired can also be entered to see if the nutrients that have been removed have been replaced.

Note: Any nutrient amount that has not been replaced will show up in red.

1.7. Click **Nutrient balancelink**

Fertilizer	Rate	Units

1.8. Select crop from the drop box under **Commodity** and enter **Quantity removed (kg/ha)**.

1.9. If straw has been removed tick **Straw removed?** box. Enter amount removed in the **Quantity removed (kg/ha)**.

Note: All quantities removed must be in kg/ha.

1.10. Once entered Click in the green area and the removal rates will appear towards the bottom of the box.

Note: Any figures in red indicate the amount the nutrient is deficient.

	N	P	K	S	Ca	Mg	Na	Cu	Zn	Mn	Fe	B	Cl	Mo
Barley (2000)	42.7	5.8	8.5	3.5	0.8	3.3	0.7	0.01	0.03	0.05	0.13		3.9	
Balance:	-42.69	-5.80	-8.49	-3.49	-0.80	-3.32	-0.66	-0.01	-0.03	-0.05	-0.13		-3.90	

1.11. Add a Fertiliser

Under the **Fertiliser** menu - Click **Add**

The screenshot shows the 'Nutrient balance link' window. The 'Commodity' is set to 'Barley' and 'Quantity removed (kg/ha)' is 2000. The 'Fertilizers applied' table is empty. The 'Fertilizer' menu on the right has 'Add' highlighted with a red box.

	N	P	K	S	Ca	Mg	Na	Cu	Zn	Mn	Fe	B	Cl	Mo
Barley (2000)	42.7	5.8	8.5	3.5	0.8	3.3	0.7	0.01	0.03	0.05	0.13		3.9	
Balance:	-42.69	-5.80	-8.49	-3.49	-0.80	-3.32	-0.66	-0.01	-0.03	-0.05	-0.13		-3.90	

Note: click the options to display the fertilisers in a specific way – Choose **Favourites** to display only the fertilisers you have saved to your favourites

Click on the fertiliser name to select.

Note: the analysis of the fertiliser will appear in the nutrient box at the bottom left. Click **OK**.

The screenshot shows the 'Fertilizer Selection' window. The 'Product Selection' tab is active, showing a list of fertilizers. The 'Nutrient Analysis' box at the bottom left shows the analysis for 'Complete Mix 6 (Incitec Pivot)'.

NutrientName	Percent
Nitrogen	28.60
Phosphorus	2.00
Potassium	12.50

In the **Fertilisers Applied** box enter the **Rate** to be applied. Click in the green area for **Nutrient balancelink** to calculate nutrients added by this fertiliser.

Note: When the balance is in red the nutrients have not been replaced. To **Add** other fertilisers and rates repeat the steps above.

The screenshot shows the 'Nutrient balance link' window. The 'Fertilizers applied' table now contains two entries: 'Complete Mix 6 (Incitec Pivot)' and 'BigN (Incitec Pivot)'. The 'Fertilizer' menu on the right has 'Add' highlighted with a red box.

	N	P	K	S	Ca	Mg	Na	Cu	Zn	Mn	Fe	B	Cl	Mo
Barley (2000)	42.7	5.8	8.5	3.5	0.8	3.3	0.7	0.01	0.03	0.05	0.13		3.9	
Fertilizers:														
Complete Mix 6 (Incitec)	7.70	9.60	9.10	8.70	5.10									
BigN (Incitec Pivot) (50)	41.00													
	48.70	9.60	9.10	8.70	5.10									
Balance:	6.01	3.80	0.61	5.21	4.30	-3.32	-0.66	-0.01	-0.03	-0.05	-0.13		-3.90	

Note: To Delete a fertiliser and rate – Highlight relevant fertilizer. Click **Delete**. Click **Yes**

Nutrient balance link

Commodity: Barley Quantity removed (kg/ha): 2000

Straw removed? ☐ Quantity removed (kg/ha): 0

Fertilizers applied

Fertilizer	Rate	Units
Complete Mix 6 (Incitec Pivot)	100	kg/ha
BigN (Incitec Pivot)	50	kg/ha

SoilMate

Are you sure you wish to delete selected the Fertilizer?
Product: BigN (Incitec Pivot)

Yes No

Actions

- New
- Open
- Save
- Close
- Save & Close

Fertilizer

- Add
- Last Used
- Delete
- Move Up
- Move Down

Report Printing

- Preview
- Print

	N	P	K	S	Ca	Mg
Barley (2000)	42.7	5.8	8.5	3.5	0.8	3.3
Fertilizers:						
Complete Mix 6 (Incitec)	7.70	9.60	9.10	8.70	5.10	
BigN (Incitec Pivot) (50)	41.00					
	48.70	9.60	9.10	8.70	5.10	
Balance:	6.01	3.80	0.61	5.21	4.30	-3.32

1.12. Last Used Fertiliser

The **Last Used** fertiliser and rate can be used to make the process faster. Click **Last Used** and a box with the last used fertiliser recommendations comes up.

Click to highlight the required Recommendation.

Note: the application comment, timing comment, Application type and rate for the highlighted recommendation appear in the bottom section of the box.

Last Recommended Fertilizers

Name	Status	Organisation	Farm	Paddock	Adviser	Versic
Plant Test Sample	Current Prog...	Back Paddock Test	Test Fam 1	Paddock A	Else, Ch...	2
test recommendation	Draft Program	Back Paddock Test	Test Fam 1	Paddock A	Else, Ch...	2

OK Cancel

☐ Favourites Only

Favourites

Product Name	Application Comment	Timing Comment	Application Type	Rate	Crop
Big N (Incitec Pivot)	Airseeded / seeding	As soon as possible	Solid (Dry)	110	

Click **OK** and fertilizer from selected recommendation is added to the model. Enter the **Fertiliser rate** as above. Click in the green area to calculate.

In **Report Printing** section. Click on **Preview** or **Print** to create a copy of the Nutrient Balance.

Nutrient Balance Report

Page 1 of 1

Trading Name	Avonlea Farming Pty Ltd	Accredited Adviser	Cheryl Else
Account Number		Phone	
Farm Name	Green Swamp	Mobile	
Contact	Hannah & Lachlan Green	Fax	
Paddock Name	Church	Email	celse@backpaddock.com.au
Area (ha)		Description	test recommendation
Date	11 Sep 2012	Crop	Wheat SE Aust.
Laboratory sample number		Evaluation Table	Wheat Raingrown Central Tablelands NSW
Sampling Date	08 Mar 2012	Sample Depth (cm)	
Received Date	14 Mar 2012	Laboratory	Nutrient Advantage Laboratory Services
Analysis Date	21 Mar 2012	Sample barcode	
Recommendation	test recommendation		

Commodity Barley
Quantity removed 2000 (kg/ha)

	N	P	K	S	Ca	Mg	Na	Cu	Zn	Mn	Fe	B	Cl	Mo
Barley (2000)	42.7	5.8	8.5	3.5	0.8	3.3	0.7	0.01	0.03	0.05	0.13		3.9	
Fertilizers:														
Complete Mix 6 (Incitec Pivot) (100.0kg/ha)	7.70	9.60	9.10	8.70	5.10									
BigN (Incitec Pivot) (50.0kg/ha)	41.00													
Big N (Incitec Pivot) (0.0kg/ha)														
	48.70	9.60	9.10	8.70	5.10									
Balance:	6.01	3.80	0.61	5.21	4.30	-3.32	-0.66	-0.01	-0.03	-0.05	-0.13		-3.90	

9. Soil Amendment Model

The Soil Amendment Model is used to query how the rates of lime, gypsum and a mixture of the two is determined.

The model has two sub models:

- a) LimeMate
- b) SodiCalc

The Soil Amendment Model has been developed for acid and sodic dispersive soils.

For an **acidic soil** a rate of lime will appear in the recommendation section of SoilMate:

Evaluation	Recommendation	Details & Reports
Wheat Raingrown South West Slopes (North-Temora) NSW		
Paddock	Paddock 1	
Paddock Section	All of Paddock 1	
Area	100	
Profile Sampled	0-10	
Texture	Loamy Sand	
Colour		
	Value	Rate
NITROGEN		146
Nitrate nitrogen (KCl) (mg/kg)		80
Ammonium nitrogen (KCl) (mg/kg)	2	
PHOSPHORUS		25
Phosphorus (Colwell) (mg/kg)	1	
Phosphorus Buffer Index (PBI)	55.0	
POTASSIUM		10
SULFUR		
Sulfur (KCl-40) (mg/kg)	8.0	
LIME		2198
Exch. Ca (BaCl ₂ /NH ₄ Cl) (meq/100g)	5.00	

For a **sodic dispersive soil** the rate of Gypsum will appear in the recommendation section of SoilMate.

Evaluation	Recommendation	Details & Reports
Wheat SA Upper SE (Bordertown) Heavy clay/loam		
Paddock	Paddock 1	
Paddock Section	All of Paddock 1	
Area	100	
Profile Sampled	0-10	
Texture	Heavy Clay	
Colour		
	Value	Rate
Exch. Mg (BaCl ₂ /NH ₄ Cl) (meq/100g)	17.00	
MAGNESIUM		
Exch. K (BaCl ₂ /NH ₄ Cl) (meq/100g)	1.00	
Exch. Na (BaCl ₂ /NH ₄ Cl) (meq/100g)	4.00	
Aluminium (KCl) meq/100g	0.0	
ECEC (meq/100g)	52.0	
Exch. magnesium %	32.7	
Exch. sodium %	7.7	
Dispersion Index (Loveday/Pyle)	10.0	
GYPSPUM		2393
Copper (DTPA) (mg/kg)	6.0	

2.6. Evaluation Model : Soil Amendments - Tab : Soil Inputs

This model has several default values and if changed the changed values then become the default values.

Default Values

1. pH 5.5 CaCl₂
2. Depth 10 cm
3. Neutralising value 85%

Products

Although there is Gypsum and Lime in the product database it is strongly recommended that the Lime and Gypsum that is used locally be added to the product list. (see Add Other Products).

Organic Carbon

The model needs to have the organic carbon added to operate. If OC has not been measured then it can be added by:

1. Click on Soil Amendments Tab
2. Add OC% to Non Tested OC%

The screenshot shows the 'Evaluation Model: SoilAmendments' window. The 'Soil Inputs' tab is selected. The 'Sample Details' section contains the following fields: 'Depth From/To (cm)' with values 0.00 and 10.00, 'Soil pH (target)' with value 5.5, and 'Select Soil pH (measured) Analyte' with radio buttons for 'Select pH (CaCl₂)' (selected) and 'Select pH (H₂O)'. The 'Soil pH difference (CaCl₂/H₂O)' field shows 0.50. The 'Overrides' section includes 'NonTested OC %' and 'Soil Texture' (Loamy Sand). The 'Lime Product Details for LimeMate and SodiCalc' section shows 'NV of Preferred Product' as 85.00. The 'Soil Amendment Model' dropdown is set to 'LimeMate'. On the right, there are 'Actions' (Close, Defaults, Calculate) and 'Report Printing' (Preview, Print, Export, Email) buttons.

2.7. Evaluation Model : Soil Amendments - Tab : LimeMate

The **LimeMate** tab shows all the parameters that have been used to calculate the rate of lime.

A report of the results of LimeMate can be produced. Click **Report Printing**. Click **Preview**

Note the selected product will be highlighted.

PRODUCT COMPARISON	SELECTED PRODUCT					
	Product 1			Product 2		
Particle Size (mm)	% of Product	Neutralising Value (%)	Effective NV	% of Product	Neutralising Value (%)	Effective NV
0.000-0.125	0.00	0.00	0.00	0.00	0.00	0.00
0.125-0.250	0.00	0.00	0.00	0.00	0.00	0.00
0.250-0.500	0.00	0.00	0.00	0.00	0.00	0.00
0.500-1.000	0.00	0.00	0.00	0.00	0.00	0.00
above 1.000	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00		0.00	0.00		0.00
Lime Product Cost (\$/t)	50			50		
Lime Delivery Cost (\$/t)	30			30		
Lime Spread Cost (\$/t)	10			10		
Relative Lime Cost (\$/t)	0.00			0.00		

2.8. Evaluation Model : Soil Amendments - Tab : SodicCalc

The **SodicCalc** tab allows comparison of lime, gypsum or a mixture of the two.

Note: The product selected in the dropdown box will be highlighted and will appear in reports.

A report of the results of SodicCalc can be produced. Click **Report Printing** Click **Preview**.

Note: the selected product will be highlighted.

SoilMate SodicCalc Report		Back Paddock Company - Monday, 14 December 2009 - Paddock 1	
Page 1 of 1			
Grower Details:		Inputs:	
Grower Name:	Back Paddock Company	Depth to be treated:	10.00 cm
Paddock Name:	Paddock 1	Soil pH (CaCl2):	7.9
Address:	PO Box 823 CLEVELAND 4163	Soil pH (H2O):	8.6
Phone:		EC (1:5 H2O):	0.20 dS/m
Interpretation Date:	Monday, 14 December 2009	Exchangeable Ca:	30.00 meq/100g
Interpreter Name:	Gardiner, Stephen	Exchangeable Mg:	17.00 meq/100g
Interpreter Phone:		Exchangeable K:	1.00 meq/100g
Other:		Exchangeable Na:	4.00 meq/100g
Organic Carbon %:	1.10 %	Exchangeable Al:	0.00 meq/100g
Soil Texture:	Heavy Clay	Effective Cation Exchange Capacity:	52.00 meq/100g
Clay % (from Soil texture):	70 %	Current Soil Sodium % of CEC	7.69 %
Electrochemical Stability Index:	0.021	Target Sodium % of CEC	6.00 %
Dispersion Index	10	Current Soil Magnesium % of CEC	32.69 %
Comments:		Target Magnesium % of CEC	30.00 %

SELECTED PRODUCT					
GYPSUM (pH(CaCl2)>6.5)		LIME (pH(CaCl2)<5.0)		LIME+GYPSUM (pH(CaCl2)5.0-6.5)	
Commercial Gypsum	2393 kg/ha	Lime Rate	43219 kg/ha	Lime % Mix	0.00 %
Gypsum Purity	80 %	Effective Neutralising Value	85 %	Gypsum % Mix	100.00 %
Product Cost	50 \$/t	Product Cost	50 \$/t	Lime Rate	- kg/ha
Delivery Cost	30 \$/t	Delivery Cost	30 \$/t	Gypsum Rate	2393 kg/ha
Spread Cost	10 \$/t	Spread Cost	10 \$/t	Combined Product Rate	2393 kg/ha
Blend Cost	0 \$/t	Total Cost	90 \$/t		
Total Cost	90 \$/t	Est Lime Efficiency	3 %		
Cost \$/ha: 215.35		Cost \$/ha: 3889.73		Cost \$/ha: 215.35	

2.9. Evaluation Model : Soil Amendments - Tab : LimeMate Inputs

The **LimeMate Input** tab allows % of particle size and cost to be entered for different lime products for comparison.

The screenshot shows the 'LimeMate Inputs' tab within the 'Evaluation Model: SoilAmendments' application. The interface is divided into two main sections: 'Product 1' and 'Product 2'. Each section contains a table with columns for 'Particle Size (mm)', '% of Product', 'Neutralising Value (%)', and 'Effective NV'. Below these tables are input fields for 'Lime Product Cost (\$/t)', 'Lime Delivery Cost (\$/t)', 'Lime Spread Cost (\$/t)', and 'Relative Lime Cost (\$/t)'. The right sidebar contains 'Actions' (Close, Defaults, Calculate) and 'Report Printing' (Preview, Print, Export, Email) buttons.

Product 1				Product 2			
Particle Size (mm)	% of Product	Neutralising Value (%)	Effective NV	Particle Size (mm)	% of Product	Neutralising Value (%)	Effective NV
0.000-0.125			0.00				0.00
0.125-0.250			0.00				0.00
0.250-0.500			0.00				0.00
0.500-1.000			0.00				0.00
above 1.000			0.00				0.00
Total	0.00		0.00	0.00			0.00
Lime Product Cost (\$/t)	50			50			
Lime Delivery Cost (\$/t)	30			30			
Lime Spread Cost (\$/t)	10			10			
Relative Lime Cost (\$/t)	0.00			0.00			

2.10. Evaluation Model : Soil Amendments - Tab : SodiCalc Inputs

The **SodiCalc Inputs** tab allows for the inputs that calculate for Gypsum to be adjusted

This model has several default values and if changed the changed values become the default values.

Default Values

1. 6% for Na cations
2. 25% for Mg cations
3. Depth 10cm
4. 85% purity Gypsum

The screenshot shows the 'SodiCalc Inputs' tab within the 'Evaluation Model: SoilAmendments' application. The interface is divided into two main sections: 'SodiCalc Parameters' and 'Gypsum Costs'. The 'SodiCalc Parameters' section includes input fields for 'Bulk Density' (1.40 t/m3), 'Target Sodium % of Cations' (6), 'Target Magnesium % of Cations' (25), 'Gypsum Purity %' (85), and 'S% in Gypsum' (15.81). The 'Gypsum Costs' section includes input fields for 'Gypsum Product Cost' (\$/t), 'Gypsum Delivery Cost' (\$/t), 'Gypsum Spread Cost' (\$/t), and 'Gypsum Blend Cost' (\$/t). The right sidebar contains 'Actions' (Close, Defaults, Calculate) and 'Report Printing' (Preview, Print, Export, Email) buttons.

SodiCalc Parameters	
Bulk Density	1.40 t/m3
Target Sodium % of Cations	6
Target Magnesium % of Cations	25
Gypsum Purity %	85
S% in Gypsum	15.81

Gypsum Costs	
Gypsum Product Cost	50 \$/t
Gypsum Delivery Cost	30 \$/t
Gypsum Spread Cost	10 \$/t
Gypsum Blend Cost	0 \$/t

10. GrainNPlan / CotNPlan

The GrainNPlan details how the N requirement for a crop is worked out and allows for adjustments to be made based on area knowledge.

3.6. Click **GrainNPlan**

The **Sample Date**, **Harvest Date**, **Planting Date**, **Depth** and **Bulk Density** are automatically filled from the data entered when the test was ordered.

The model shows a **Low**, **Expected** and **High target yield** which is automatically filled from the information entered when ordering the test.

The Override NTE% (Nitrogen Transfer Efficiency) is populated automatically but can be changed manually.

Note: Changes can be made manually. To accept changes Click **Calculate**

Sample Details

Sample Date	15/03/2012	Planting Date	12/04/2012
Harvest Date	26/09/2012		
Depth From	0.00		
Depth To	10.00		
Bulk Density	1.30		
Depth Weighting	1.00		

Overrides

Non Tested OC	
Soil Texture	

In-Crop N

☐ In-Crop N?

Harvest Index Avg (%) 45.00

Growth Stage

Associated Sample Profile Details

Barcode	Depth From	Depth To	Bulk Density	Depth/wt
---------	------------	----------	--------------	----------

Note: Changes to the Target Yields can be made by Ticking the box to the left of Yield Variance% and entering the percentage required.

3.7. **In-Crop N** tests

If this test has been done allowances for this can be made by ticking the **In-Crop N**. Select the Growth Stage from the drop down box.

The Harvest Index Avg % appears automatically

Note: Changes can be made manually. To accept changes Click **Calculate**

Sample Details

Sample Date	15/03/2012	Planting Date	12/04/2012
Harvest Date	26/09/2012		
Depth From	0.00		
Depth To	10.00		
Bulk Density	1.30		
Depth Weighting	1.00		

Overrides

Non Tested OC	
Soil Texture	

In-Crop N

☒ In-Crop N?

Harvest Index Avg (%) 45

Growth Stage


1st node

Associated Sample Profile Details

Barcode	Depth From	Depth To	Bulk Density	Depth/wt
---------	------------	----------	--------------	----------

- 3.8. A Report for the Grain N Plan can be previewed, printed, exported as a pdf or emailed by choosing from the Report Printing section.

SoilMate GrainNPlan Report
 Avonlea Farming Pty Ltd - Tuesday, 11
 Page 1 of 1


 BACK PADDOCK
 COMPANY

Grower Details:

Grower Name:	Avonlea Farming Pty Ltd	Interpretation Date:	Wednesday, 16 May 2012
Paddock Name:	Church	Interpreter Name:	Elsie, Cheryl
Address:	"Avonlea" Latitude: 33°22'S Longitude: 146°24' E	Interpreter Phone:	
Phone:	02 69 642XXX	Evaluation Parameters:	

Sample Details:

Sample Date:	Thursday, 15 March 2012	District:	Wangaratta VIC
Forecast Plant Date:	12-Apr-2012	Description:	Test Evaluation
Forecast Harvest Date:	26-Sep-2012	Crop:	Wheat SE Aust.
Test Date:	Wednesday, 21 March 2012	Soil Type:	
		Growth Stage:	1st Node

	YIELD		
	Low	Expected	High
Output Summary - DEMAND:			
Target Yield (t/ha):	3.5	3.50	3.5
Target Protein (%):	10.5	10.50	10.5
Grain Removal:	64 kg/ha	64 kg/ha	64 kg/ha
Estimated Nitrogen Transfer Efficiency %:	60%	60%	60%
Estimated Crop N Demand (kg/ha):	107 kg/ha	107 kg/ha	107 kg/ha
Estimated N in Crop (kg/ha):	0.00	0.00	0.00
N Required For Rest of The Crop (kg/ha)	107	107	107

Output Summary - SUPPLY:

Sample Profile Details:

Barcode	Depth From (cm)	Depth To (cm)	Bulk Density (t/m3)	Nitrate N (mg/kg)	Ammonium N (mg/kg)	Depth Weighting	Mineral N (kg/ha)	Organic Carbon (%)
BP0028091	0.00	10.00	1.30	51		1.00	66	1.6

Soil Mineral N:	66 kg/ha	66 kg/ha	66 kg/ha
Rotation Credits:	0 kg/ha	0 kg/ha	0 kg/ha
Soil Mineralisation Credits:	0 kg/ha	0 kg/ha	0 kg/ha
Manure Credits:	0 kg/ha	0 kg/ha	0 kg/ha
Estimated Total Available N:	66 kg/ha	66 kg/ha	66 kg/ha
Recommended Nitrogen Rate:	41 kg/ha	41 kg/ha	41 kg/ha

Comments:

3.9. Output summary

Show how the results were determined. Click **Output summary** tab at the top of the model box.

Note: This can also be previewed, printed, exported as a pdf or emailed by choosing from the Report Printing section.

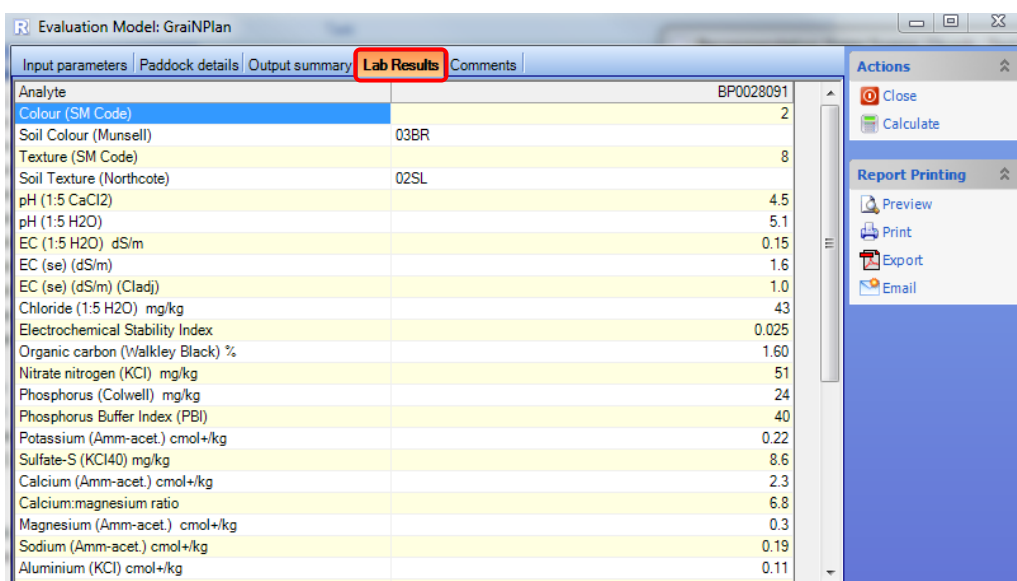
R Evaluation Model: GrainNPlan				
<div> <input type="button" value="Input parameters"/> <input type="button" value="Paddock details"/> <input checked="" type="button" value="Output summary"/> <input type="button" value="Lab Results"/> <input type="button" value="Comments"/> </div>				
Property	Low	Expected	High	Units
Target Yield	3.5	3.5	3.5	t/ha
Target Protein	10.5	10.5	10.5	%
Crop N Recommendation	-20	-20	-20	kg/ha
Estimated N% in Whole Tops	3.4	3.4	3.4	%
Estimated % of Total DM	23.00	23.00	23.00	%
Estimated Aboveground DM	1.79	1.79	1.79	t/ha
Estimated N in Tops	60.82	60.82	60.82	kg/ha
Soil N required @NuptEff	101	101	101	kg/ha
Grain N Demand/Removal	64.47	64.47	64.47	kg/ha
Crop N Demand	107.46	107.46	107.46	kg/ha
Soil Mineral N	66.3	66.3	66.3	kg/ha
Rotation Credits	0	0	0	kg/ha
Soil Mineralisation Credits	0	0	0	kg/ha
Manure Credits	0	0	0	kg/ha
Lab Results and Soil Parameters				
Estimated NTE	60	60	60	%
NO3-N 0.00-10.00cm	0	51	0	mg/kg
NH4-N 0.00-10.00cm	0	0	0	mg/kg
BD 0.00-10.00cm	0	1.30	0	
Starting OC	0	1.6	0	%
C/N Ratio	0	0	0	

Actions

Report Printing

3.10. Lab Results

Click **Lab Results** tab at the top of the model box.



Evaluation Model: GrainPlan		BP0028091
<input type="button" value="Input parameters"/> <input type="button" value="Paddock details"/> <input type="button" value="Output summary"/> <input type="button" value="Lab Results"/> <input type="button" value="Comments"/>		
Analyte		
Colour (SM Code)		2
Soil Colour (Munsell)	03BR	
Texture (SM Code)		8
Soil Texture (Northcote)	02SL	
pH (1:5 CaCl2)		4.5
pH (1:5 H2O)		5.1
EC (1:5 H2O) dS/m		0.15
EC (se) (dS/m)		1.6
EC (se) (dS/m) (Cladj)		1.0
Chloride (1:5 H2O) mg/kg		43
Electrochemical Stability Index		0.025
Organic carbon (Walkley Black) %		1.60
Nitrate nitrogen (KCl) mg/kg		51
Phosphorus (Colwell) mg/kg		24
Phosphorus Buffer Index (PBI)		40
Potassium (Amm-acet.) cmol+/kg		0.22
Sulfate-S (KCl40) mg/kg		8.6
Calcium (Amm-acet.) cmol+/kg		2.3
Calcium:magnesium ratio		6.8
Magnesium (Amm-acet.) cmol+/kg		0.3
Sodium (Amm-acet.) cmol+/kg		0.19
Aluminium (KCl) cmol+/kg		0.11

Note: Any comments created can also be seen by Clicking on the Comments tab at the top of the model box.

21. Recommendation Tab

Paddock Section		All of Kurrangong		Total
Area	15.0			150.0
Target Production	5			650.0
Crop	Wheat SE Aust.			
Growing Season	2011 Winter			
	Req	Act		
NITROGEN	7.9			
PHOSPHORUS	40.0	39.9		
POTASSIUM	25.0	25.2		
SULFUR		12.1		
LIME				
CALCIUM				
MAGNESIUM				
GYPSUM	1,100	1,100		
COPPER				
ZINC				
MANGANESE				
IRON				
BORON				
MOLYBDENUM				
COBALT				
SELENIUM				
SILICON				

2. Fertiliser Panel

2.1. Add

The Add function is generally used when you wish to add particular fertilizers or adjust rates to match the requirement from the Evaluation tab.

Click **Add** in the Fertiliser Menu.

Note: click the options to display the fertilisers in a specific way – Choose **Favourites** to display only the fertilisers you have saved to your favourites

Click on the fertiliser name to select.

Note: the analysis of the fertiliser will appear in the nutrient box at the bottom left. Click **OK**.

Application Type: Solid (Dry)

Product Selection: ☒ All ☐ Favourites ☐ Others Supplier: Incitec Pivot Fertilisers

Product Code	Product Name	SupplierName
IPL55	CK 55 (S) (Incitec Pivot)	Incitec Pivot Fer...
IPLZN	CK 55 (Zn) (Incitec Pivot)	Incitec Pivot Fer...
IPLCK600	CK 600 S (Incitec Pivot)	Incitec Pivot Fer...
IPLCK66	CK 66 (Incitec Pivot)	Incitec Pivot Fer...
IPL66S	CK 66S (Incitec Pivot)	Incitec Pivot Fer...
IPL66S	CK 66S (Incitec Pivot)	Incitec Pivot Fer...
IPL66S	CK 66S (Incitec Pivot)	Incitec Pivot Fer...
IPL66S	CK 66S (Incitec Pivot)	Incitec Pivot Fer...
IPLCK7	CK 7 (Incitec Pivot)	Incitec Pivot Fer...
IPLCK700	CK 700 (Incitec Pivot)	Incitec Pivot Fer...
IPLCKZN	CK 700 (Zn) (Incitec Pivot)	Incitec Pivot Fer...

Nutrient Analysis

NutrientName	Percent
Nitrogen	17.90
Phosphorus	5.00
Sulfur	18.80

Application Comment: <select an item> **Select**

Timing Comment: <select an item> **Select**

Rate: All of A 01 All 0

OK **Cancel** **Favourites** **Details**

☒ Use Last Comments and Rates

Click **Select** for **Application Comment**. Click to highlight the required application comment. Click **OK**

ApplicationComment List Selection

70 items

Abbreviation	Name	Created	Modified
50D : 50B	50% drilled with seed: 50% ...	29/11/2011 8:2...	29/11/2011 8:2...
Airseeder	Airseeder / seeding	29/11/2011 8:2...	29/11/2011 8:2...
Airseed/pr	Airseeder/pre-plant fertiliser	29/11/2011 8:2...	29/11/2011 8:2...
Band 2 cmB	Band 2 cm below seed	29/11/2011 8:2...	29/11/2011 8:2...
Band 2 cmS	Band 2 cm to the side of se...	29/11/2011 8:2...	29/11/2011 8:2...
2 B x 2 S	Band 2cm below & 2cm to t...	29/11/2011 8:2...	29/11/2011 8:2...
BandPre<2X	Band apply presowing at n...	29/11/2011 8:2...	29/11/2011 8:2...
Broadcast	Broadcast	29/11/2011 8:2...	29/11/2011 8:2...
BroadHill	Broadcast and incorporate ...	29/11/2011 8:2...	29/11/2011 8:2...
B/Manure	Brown manure	29/11/2011 8:2...	29/11/2011 8:2...

OK Cancel Favourites Only Favourites

Click **Select** for **Timing Comment**. Click to highlight the required application comment. Click **OK**

TimingComment List Selection

278 items

Abbreviation	Name	Repor...	Created	Modified
March	March	1	29/11/2011 8:2...	29/11/2011 8:2...
1 Month BS	1 month before seeding	1	29/11/2011 8:2...	29/11/2011 8:2...
April	April	1	29/11/2011 8:2...	29/11/2011 8:2...
1 Week BS	1 week before seeding	1	29/11/2011 8:2...	29/11/2011 8:2...
1 Day BS	Day before seeding	1	29/11/2011 8:2...	29/11/2011 8:2...
Break	Break of season	1	29/11/2011 8:2...	29/11/2011 8:2...
Seeding	Seeding	1	29/11/2011 8:2...	29/11/2011 8:2...
4-5 leaf	4 - 5 leaf stage	1	29/11/2011 8:2...	29/11/2011 8:2...
50% flow	50% flowering	1	29/11/2011 8:2...	29/11/2011 8:2...
Flao leaf	Flao leaf emerged	1	29/11/2011 8:2...	29/11/2011 8:2...

OK Cancel Favourites Only Favourites

Double Click on **"0"** in the blue box for **Rate**. Enter Rate. Click **OK**

Fertilizer Selection

Application Type: Solid (Dry)

Product Selection: All Favourites Others Supplier: Incitec Pivot Fertil...

Product Code	Product Name	SupplierName
IPL55	CK 55 (S) (Incitec Pivot)	Incitec Pivot Fer...
IPLZN	CK 55 (Zn) (Incitec Pivot)	Incitec Pivot Fer...
IPLCK600	CK 600 S (Incitec Pivot)	Incitec Pivot Fer...
IPCK66	CK 66 (Incitec Pivot)	Incitec Pivot Fer...
IPL66S	CK 66S (Incitec Pivot)	Incitec Pivot Fer...
IPL66S	CK 66S (Incitec Pivot)	Incitec Pivot Fer...
IPL66S	CK 66S (Incitec Pivot)	Incitec Pivot Fer...
IPL66S	CK 66S (Incitec Pivot)	Incitec Pivot Fer...
IPL66S	CK 66S (Incitec Pivot)	Incitec Pivot Fer...
IPLCK7	CK 7 (Incitec Pivot)	Incitec Pivot Fer...
IPLCK700	CK 700 (Incitec Pivot)	Incitec Pivot Fer...
IPLCKZN	CK 700 (Zn) (Incitec Pivot)	Incitec Pivot Fer...

Nutrient Analysis

NutrientName	Percent
Nitrogen	17.90
Phosphorus	5.00
Sulfur	18.80

Application Comment: Broadcast Broadcast Select

Timing Comment: Break Break of season Select

Use Last Comments and Rates

Rate: 0

Note: If the paddock area is been entered under trading names the total will be automatically calculated. Double click on rate amount to adjust the rate as required.

Note: If paddock area not already entered – click to **Evaluation** tab. Double-click in Area. Amend area.

Note: To **Delete** a fertiliser and rate – Highlight relevant fertilizer. Click **Delete**. Click **Yes**

2.2. Wizard

The fertiliser wizard can be used to create a fertiliser recommendation when the user is not sure of what fertiliser to use. The wizard will look at all the fertilisers in the database and match a fertiliser to what is required.

Click **Wizard**

Use drop down box on **Application Type** to choose Fertiliser type

Use drop down box on **Product Options** to select option.

Note: Choose a Fertiliser and Optimise Rate will give best option

Click **Next**

Click to highlight **fertilizer component** to be optimized. Click **Next**.

Click to highlight and select a recommended product to see Blend Analysis Nutrients listing. Once selected click **Next**

Click **Select** for **Application Comment**. Highlight to select. Click **OK**.

Click **Select** for **Timing Comment**. Highlight to select. Click **OK**.

Click **Finish**.

Wizard Fertilizer Selection

Fertilizer Selection Wizard
Select application and timing comments

Product Name: Cal-Gran Anchor (Incitec Pivot)

Application Comment: <select an item> [Select]

Timing Comment: <select an item> [Select]

Note: the amount of nutrient added by the amount of fertiliser recommended will appear in an **Actual** column.

Note: The total amount of fertiliser for the field will also appear if you have entered the paddock area under the paddock in **Trading Names**

Recommendation: Avonlea, A 01 - Test Recommendation

Paddock Section		All of A 01	Total
Area	0		0.0
Target Production	5		0.0
Crop	Wheat SE Aust.		
Growing Season	2012 Summer		
	Req	Act	
NITROGEN	80.0	80.0	
PHOSPHORUS	25.0	99.8	
POTASSIUM		74.1	
SULFUR		47.4	
LIME			
CALCIUM		79.0	
MAGNESIUM			
GYPSON			
COPPER	2.00		
ZINC			
MANGANESE			
IRON			
BORON			
MOLYBDENUM			
COBALT			
SELENIUM			
SILICON			

Timing	Product	Application	All of A 01	Total
Break of season	Cal-Gran Anchor	Broadcast	987.7	0.0t

Repeat the process to add another fertiliser.

2.3. Last Used Fertiliser

The **Last Used Fertiliser** and rate can be used to make the process faster.

Click **Last Used** and a box with the last used fertiliser recommendations selected are displayed.

Note: the application comment, timing comment, Application type and rate for the highlighted recommendation appear in the bottom section of the box.

Name	Status	Organisation	Fam	Paddock	Adviser	Versic
Test Recommendation	Draft Program	Avonlea Farming Pty...	Avonlea	A 01	Else, Ch...	2
Plant Test Sample	Current Prog...	Back Paddock Test	Test Fam 1	Paddock A	Else, Ch...	2
test recommendation	Draft Program	Back Paddock Test	Test Fam 1	Paddock A	Else, Ch...	2

Product Name	Application Comment	Timing Comment	Application Type	Rate	Crop
Cal-Gran Anchor (Incitec Pi...	Broadcast	Break of season	Solid (Dry)	987.7	

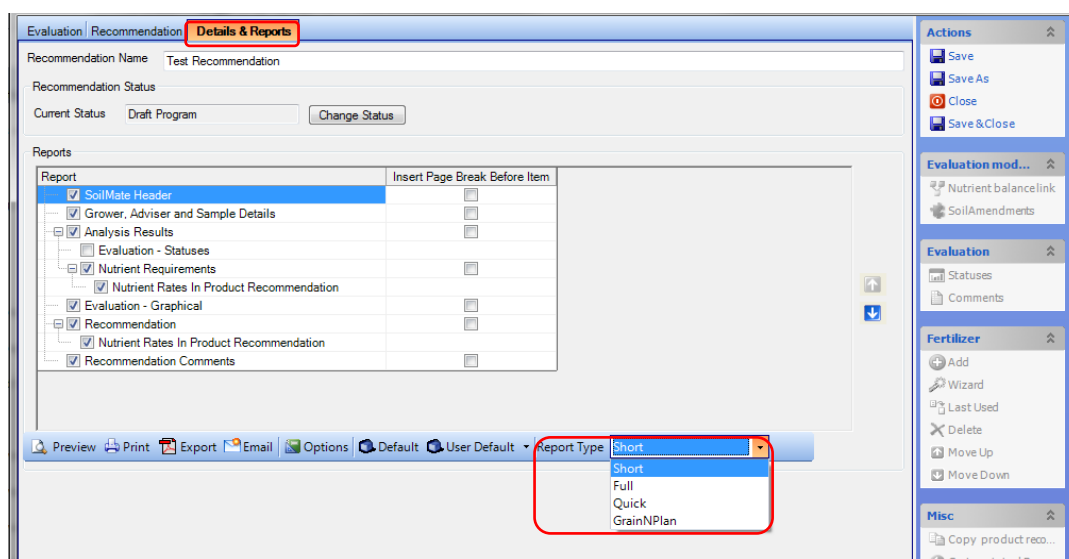
Click to highlight the required **Recommendation**.

Click **OK** and fertilizer from selected recommendation is added to the model. Double-click on Rate and change as required.

22. Details and Reports Tab

SoilMate provides a series of easy and flexible reports which can be customised.

Click **Details & Reports** tab.



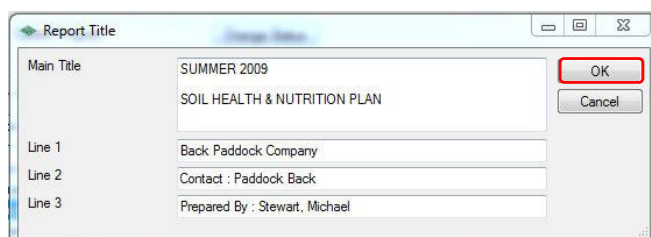
Select your **Report Type** from the dropdown box.

Note: **Interpreted report** only appears when a **horticulture** evaluation table is used.

GrainNPlan only appears when a **grain** evaluation table is used.

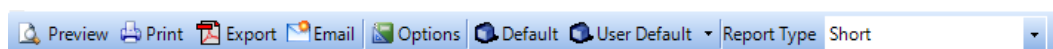
Note: Tick the relevant boxes in the Report box to customize the report. Ticking boxes allows parts of the report that are wanted to appear. **Page breaks** can also be inserted.

Click **preview** to preview the report. If the box next to SoilMate Header is ticked then a Report Title box appears. This allows the front page of the report to be changed and customised.



Click **OK** and a preview of the report appears.

Note: The report can be printed, emailed or exported as a pdf. Navigating the pages is done by clicking on the green arrows at the top of the screen.



- **Preview:** choose to preview the report
- **Print:** choose to print report
- **Export:** choose to create a PDF copy of the report ready for emailing
- **Options:** allows a printer and printer settings to be changed
- **Default:** revert report settings back to the default setting
- **User Default:** will save current report settings as the User default setting
- **Full Report:** To choose this report highlight **Full** in the **drop down box**. This report is a highly detailed report and runs to seven to eight pages. The report is ideal for the client that wants detail and understanding of the laboratory tests.
- **Short Report:** As the name of the report says, this is a short report which shows the status of the analytes measures. The report is usually 1-3 pages long.
- **Quick Report:** This report is ideal for the grower as it enables the grower to quickly and easily see what needs to be done.