



# **Planning Land Application of Nutrients for Efficiency and the EnvironmenT**

## **What's new in version 3.3?**

**PLANET version 3.3 (August 2014)  
(England and Wales)**

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# Introduction

The NVZ Action Programme rules in England and Wales were updated in 2013. PLANET has been updated to take account of these rules changes. The new version 3.3 also includes a number of additional improvements to the software. This document includes full details of the NVZ updates and other changes to PLANET.

## ***Upgrading to version 3.3***

Existing PLANET farm files can be upgraded to v3.3. Before installing the new PLANET v3.3 you must first uninstall any old versions of PLANET from your computer. Your farm files are stored separately to the PLANET programme and will not be affected by uninstalling the PLANET programme from your computer.

Users are advised to regularly save back-up copies of their PLANET farm files in case of any problems. PLANET farm files (.mdb files) are saved by default in the Documents\PLANET\DATA directory. You can save a copy of your farm files to memory stick, CD or other back-up device.

**Within the new version 3.3, the long term (30 year) average rainfall database has been upgraded to postcode based data, which is more detailed than the previous telephone STD code based rainfall database.**

When you first open an existing farm file in v.3.3 you will be prompted to enter your postcode in the Farm and field details tab and you will be asked whether you wish to update the farm average rainfall value.

### **Important**

The information supplied in the PLANET software is for guidance purposes only and is not intended to fully substitute for professional agricultural advice. The specific statutory elements concerning water and nitrates are set out in the relevant national legislation and you should refer to this legislation to find out exactly what you must do. The nutrient recommendations provided by PLANET are in line with national industry standard guidance. If in doubt, farmers should seek help from a qualified adviser.

The user is responsible for ensuring the accuracy and completeness of all data entered and used by PLANET, and for any commercial decisions taken based on any of the PLANET recommendations or other outputs of this software. Use of the PLANET software is subject to the terms and conditions of the PLANET User Licence.

PLANET v3 has been developed by ADAS and SRUC with funding and support from Defra and the Scottish Government. For further information, visit [www.planet4farmers.co.uk](http://www.planet4farmers.co.uk) or ring the PLANET Helpline on 08453 451302 (PLANET England and Wales) or 08456 023864 (PLANET Scotland).

# NVZ changes

The NVZ Action Programme rules in England and Wales were updated in 2013. Updated NVZ Guidance can be found in the PLANET library.

As part of the NVZ revisions some areas have been de-designated (i.e. no longer in an NVZ) and other areas have been designated as within an NVZ for the first time in 2013. The 'Farm and Field Details' tab has been updated to allow you to select when each field was designated in a NVZ (designated 2009 or earlier/designated 2013).

## Changes to N max calculations

The revised NVZ Action Programme rules include a number of changes to the rules for calculating compliance with N max. PLANET has a facility that assesses compliance with N max for each crop type/group with a specified N max limit. The new PLANET v3.3 includes all the updates to the N max calculations (outlined below) and users can use PLANET to demonstrate compliance with the N max rules.

## Increase in minimum livestock manure N efficiency values

The minimum livestock manure N efficiency values that must be used when calculating the supply of crop available N in the N max calculations have increased by 5% for cattle slurry and pig slurry (see Table 1). PLANET will automatically use the correct minimum livestock manure N efficiency value for applications of livestock manures depending on application date.

Table 1. Minimum livestock manure N efficiency values

Type of livestock manure	Minimum manure N efficiency factors <i>Up to 31<sup>st</sup> December 2013</i>	Minimum manure N efficiency factors <i>From 1<sup>st</sup> January 2014</i>
Cattle slurry	35%	40%
Pig slurry	45%	50%
Poultry manure or litter	30%	30%
Other solid livestock manures	10%	10%

## Inclusion of all organic materials in N max calculations

From 1<sup>st</sup> January 2014, when calculating compliance with N max you will need to include crop available nitrogen from applications of **all organic manures** (not just livestock manures). There are no minimum manure N efficiency values for non-livestock manures and PLANET will use the estimate of crop available N from organic manures in the N max calculation.

PLANET estimates crop available N from applications of organic manures using MANNER-NPK which takes into account the readily available N content of the organic manure, mineralisation of organic N and any losses of N following application (gaseous or leaching). This figure is shown in the 'Recommendations' tab under the 'Supply from manures'.

*Note* – If you applied organic manures in the previous harvest year, the N 'supply from manures' shown in the 'Recommendations' tab for the current harvest year will include both crop available N from organic manures applied to the current crop, and some crop available N from mineralisation of organic manure applied to the previous crop. The N max calculations only include crop available N from organic manure applications to the current crop.

## N max limits for horticultural crops

N max rules now include limits for most horticultural crops (see Table 2). Horticultural crops have been divided into three groups, and the N max limit is applied across the area of land on the farm growing all crops in that group.

Table 2. N max limits for horticultural crops

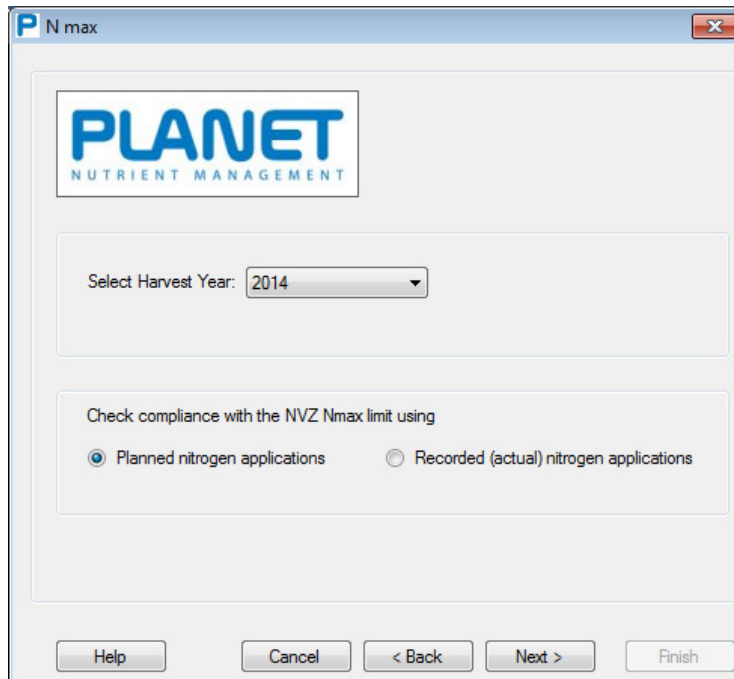
	N max limit (kg N/ha)
<b>Group 1</b> Asparagus, carrots, radishes, swedes	180
<b>Group 2</b> Celery, courgettes, dwarf beans, lettuce, onions, parsnips, runner beans, sweetcorn, turnips	280
<b>Group 3</b> Beetroot, brussels sprouts, cabbage, calabrese, cauliflower, leeks	370

You can calculate compliance with N max for horticultural crops using the N max wizard in the same way as for other crop types with an existing N max limit:

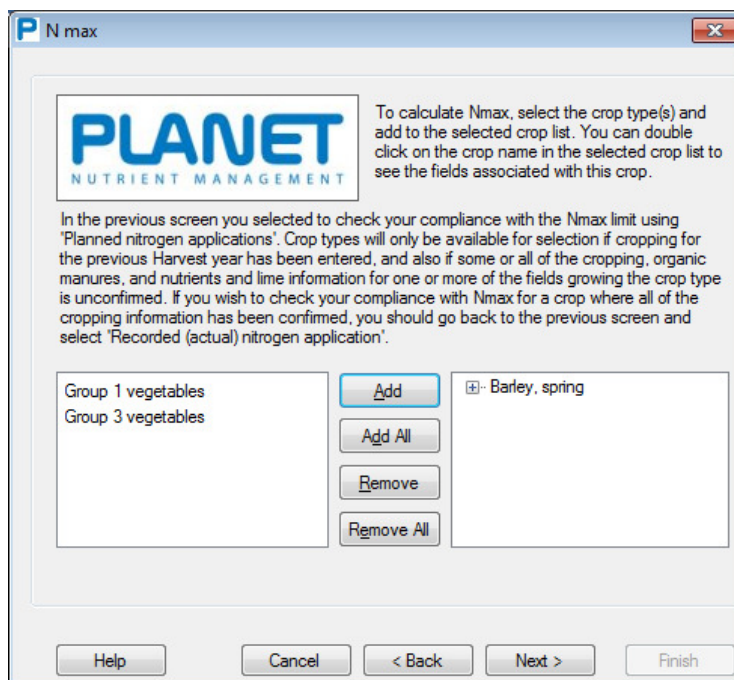
Step 1. Select the Nmax icon from the task bar at the top of the tab. The N max wizard will appear.

Step 2. Select the 'Harvest year'.

Select whether you wish to calculate compliance with N max based on 'Planned nitrogen applications' or 'Recorded (actual) nitrogen applications.'



Step 3. Select the crop types. These are the crop types being grown that have an N max limit. The 'Available crops' will be shown in the left hand column.



Step 4. Select 'Finish' to close the wizard and the N max report will show. The N max report can be saved or printed.

*Note – in order to calculate N max you must have entered details of cropping for all fields for the previous harvest year. In order to calculate N max based on 'Recorded (actual) nitrogen applications', you must have entered details of fertiliser applications to all fields. If you did not apply any fertiliser to a field you should still enter details of a fertiliser application, but leave the nutrient application rates as zeros.*

## **N max limit for Grass for protein**

From 2013, the N max limit for grass grown for production of chlorophyll or high protein fodder (protein content of at least 16% of the dried product) has been increased to 500 kg N/ha (or 700 kg N/ha if irrigated). A new crop type 'Grass for protein' has been added to the crop group 'Arable, other'. PLANET will not give fertiliser recommendations for this crop type, but users can plan and record their fertiliser and organic manure applications. An N max report can be produced specifically for 'Grass for protein'.

## ***NVZ warning messages***

Within PLANET if you have fields located in an NVZ and you enter details of a fertiliser or organic manure application that may breach one of the NVZ Action Programme rules, a message will show warning you of this possible breach. A red 'warning flag' will show next to the fertiliser or organic manure application details.

The NVZ warning messages in PLANET have been updated to reflect the following changes to the NVZ rules:


1. The closed spreading period when high readily available N organic manures may not be spread on medium and heavy soils (i.e. soils that are not sandy or shallow) has been extended by 2 weeks to 31<sup>st</sup> January.
2. The amount of high readily available N liquid organic manures that you can apply in a single application between the end of the closed spreading period and the end of February has been reduced to 30 m<sup>3</sup>/ha (previously 50 m<sup>3</sup>/ha).
3. The field application limit (250 kg N/ha in organic manures) has been increased for applications of PAS 100 certified compost – up to 500 kg N/ha every 2 years, or up to 1000 kg N/ha every 4 years if applied as a mulch to orchard land.

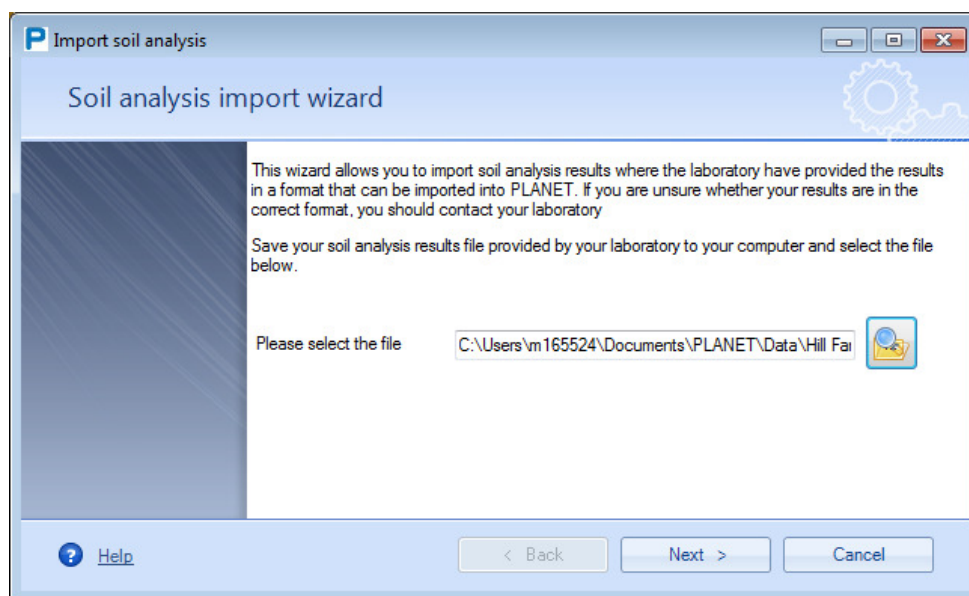
# New features and improvements

The new PLANET version 3.3 includes some additional features to improve usability and functionality of the software.

## ***Importing soil analysis***

PLANET version 3.3 has the facility to directly import soil analysis data where the laboratory provide the data in a specified format. If you are unsure if your results are in the correct format you should check with your laboratory.

- Step 1. Save your soil analysis results file to your computer.
- Step 2. Open the 'Soil analysis import wizard' by clicking on the conical flask  icon from the top task bar.
- Step 3. Locate the saved soil analysis file, then click 'Next'.



- Step 4. The wizard displays the soil analysis data. Match up the 'Lab analysis field' with the 'PLANET field name' by selecting from the drop down list of available fields (these are the 'Field names' entered in the 'Farm and Field Details' tab). You can edit the 'Date of sample' here.




Date of sample	Harvest year	Lab analysis field	PLANET field name	pH	P	K	Mg
29/01/2014	2014	Pond field 2	Pond field 2	5.3	10.2	175	114
29/01/2014	2014	Pond field 1	Pond field 1	6	13.8	143	118
29/01/2014	2014	Short acre	Short acre	5.6	11.4	121	129
29/01/2014	2014	High barns		5.8	10.2	93	79
29/01/2014	2014	10 acres	Long field	5.9	14.4	102	113
29/01/2014	2014	Back	Back field	5.6	12.6	85	85
29/01/2014	2014	Long	10 acres	6	18.2	105	130

Step 5. Select 'Next' and then 'Finish' to complete the import process and the data is displayed in the 'Soil analysis' tab (you can edit the data if you need).

### Data entry wizard for fertiliser applications

This wizard is a new feature in PLANET v3.3 and allows quick and easy entry of a manufactured fertiliser application made to multiple fields.

Step 1. Open the 'Fertiliser application wizard' by clicking on the blue hat icon  from the top task bar.

Step 2. Select the fertiliser application date and enter details of the fertiliser application.

This wizard allows you to enter details of a fertiliser application made to multiple fields. If you know the nutrient application rate, you can enter this directly (step 4 below). Alternatively, enter the nutrient content (%) of the fertiliser product application rate (step 2 and 3 below) and the nutrient application rate will be automatically calculated.

1. Enter the application date  
01 March 2014

2. Enter the fertiliser analysis (% nutrient content)

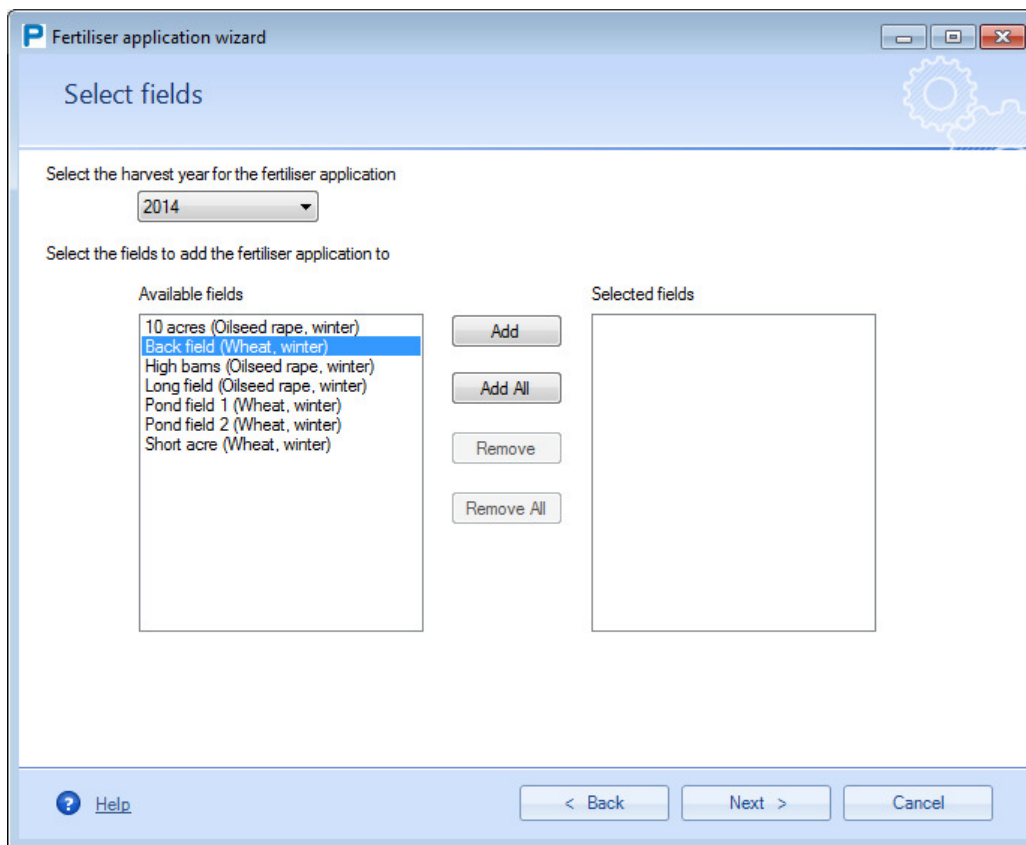
N	P2O5	K2O	MgO	SO3	Na2O
4.5					

3. Enter the fertiliser application rate (kg/ha)  
120.0

4. Enter the nutrient application rate (kg/ha)  
*this will be auto-calculated if you have entered fertiliser product analysis and rate*

N	P2O5	K2O	MgO	SO3	Na2O
41.4	0.0	0.0	0.0	0.0	0.0

Step 3. Select the 'Harvest year' for the fertiliser application from the drop down list, and select the fields to add the fertiliser application to.



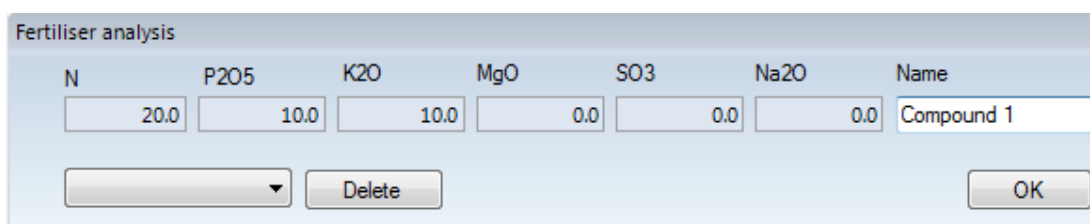
Step 4. Select 'Next' and then 'Finish'. The fertiliser application details are displayed in the 'Nutrients and lime' tab.

The fertiliser application wizard will not over-write existing data. You can use the wizard to enter details of multiple fertiliser applications to groups of fields. The new 'Fertiliser application wizard' is in addition to the existing 'Data entry wizard' which can be used to copy cropping, organic manures, nutrients and lime information between fields (for further information on the 'Data entry wizard' see the 'Field level planning and record keeping' help file available from the 'Help' menu).

### ***New facility to set default nutrient ratios for fertiliser types***

In PLANET you can enter details of fertiliser applications in the 'Nutrients and Lime' tab directly as kg/ha nutrient or by double clicking on the 'Fertiliser analysis' cell and entering the nutrient percentages in the fertiliser product and enter the 'Rate of application' of the fertiliser product. The nutrient application rate will be auto-calculated.


In PLANET v3.3 when you double click on the 'Fertiliser analysis' cell, you now have the option to 'Name' the fertiliser type. The name and nutrient ratios will be saved and be available for selection for future use from the drop down menu.

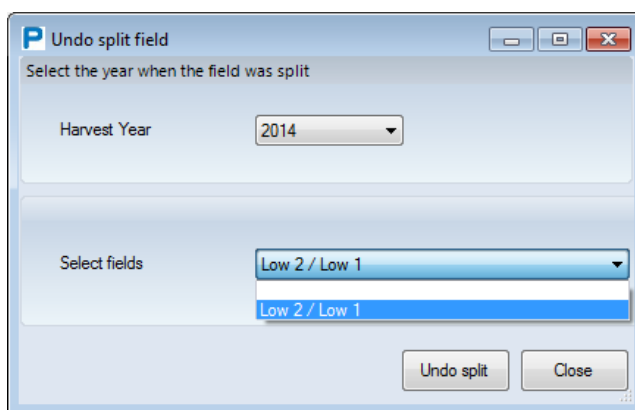



## Changes to splitting & merging

PLANET already allows the splitting and merging of fields. Any existing field can be split into two or more fields that are to be managed separately in a specific harvest year. In addition, two or more existing fields can be merged where it is intended to manage them as a single field in a specific harvest year. Further details on the existing facility to split/merge fields can be found in the 'Field level planning and record keeping' help file available from the 'Help' menu.

PLANET v3.3 now allows you 'undo' a split or merge provided that no cropping details exist against the 'new' field. To undo a split field:

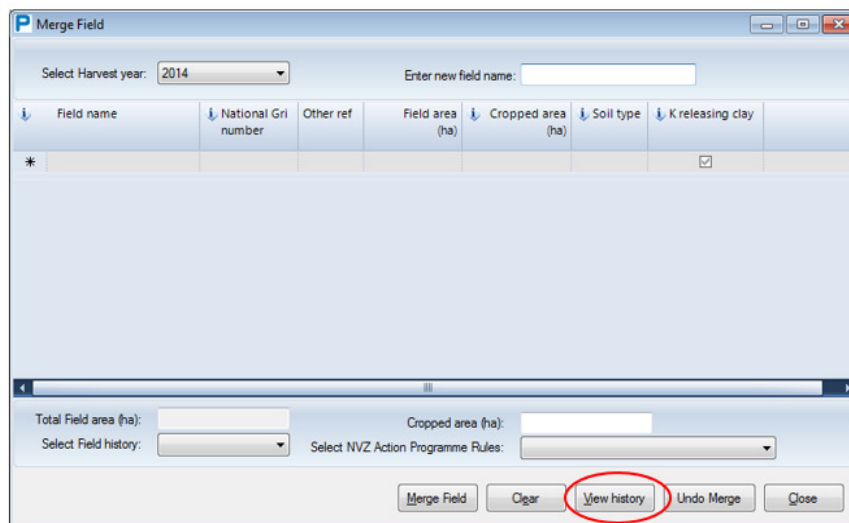
- Step 1. Select the split field icon  from the task bar in the 'Farm and field details' tab.
- Step 2. Select 'Undo split'
- Step 3. Select the harvest year when the field was split, then select the split fields and select 'Undo split'



To undo a merge, follow the same steps as above but using the merge field  option.

*Note* – this option to 'undo' a split or merge should only be used if you split or merge field(s) either unintentionally or subsequently decide not to manage the fields as either split/merged fields.

In addition, you can now view the history of split/merged fields, allowing you to see which fields have been split or merged and in which harvest year. To view a split/merge field history report, select 'View history' from either the split or merge field screens.



## ***New manure types***

Three new organic manure types have been added to the list of available types:

- Digestate (whole), food based
- Digestate (whole), cattle slurry based
- Digestate (whole), pig slurry based

## ***Update fertiliser prices***

The default nutrient prices used in the Nutrient and Crop prices module, and Manures Inventory have been updated to 90 p/kg N (£311/t ammonium nitrate), 80 p/kg P<sub>2</sub>O<sub>5</sub> (£368/t triple superphosphate) and 60 p/kg K<sub>2</sub>O (£360/t muriate of potash).

## **Sources of help**

There are a number of help files available from the 'Help' menu within PLANET which can be saved and printed. In addition a range of audio-visual tutorials can be found under the 'Tutorials' menu.

Further help is available by contacting the PLANET helpline on 08453 451302, but this helpline is specific to the use of PLANET and will not give technical advice on manure or fertiliser use for individual farm or field crops.