CONTOUR RHIZA

Nutrient Planning

September 2023

Introduction

Contour Nutrient Planner has been designed to help advisors and farmers quickly and easily calculate nutrient requirements, plan fertiliser applications, and check NVZ compliance (England & Wales).

For both wholefield and precision planning, the tool enables you to create a complete crop nutrition plan for the whole farm in one simple flow that offers precision, flexibility, and control.

We'd love to hear your feedback – please send your thoughts and ideas to info@digital.originenterprises.com

Notes: Recommendation Calculations

- *Nutrient recommendations are calculated in accordance with the latest edition of RB209.*

- *Nitrogen recommendations are calculated using the field assessment method of crop, previous crop, soil type and rainfall.*

- *Rainfall data is an annual average value calculated from the centre of the farm's field boundaries.*

- *Soil type is taken from Cranfield and James Hutton soil data if not entered manually.*

- *Soil analysis results are decimalised to provide more accurate P&K recommendations than the standard recommendations in RB209.*

Notes: Organic Applications
Organic applications use soil type, cropping, application date, and application method to calculate nutrient availability values in accordance with RB209 availability. Please note that for NVZ calculations, total and available nitrogen values differ from RB209 (see NVZ guidelines for values). For products not in the NVZ guidelines, RB209 values are used.

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The Nutrient Planner Homepage

The Nutrient Planner homepage is your central hub for accessing and managing all nutrient plans, and is accessed through the Planning tab and ⚗ icon in Contour.

Applying Filters

The filters located in the top right-hand menu select specific farm and harvest year, and only plans for that farm and year are displayed, allowing you to easily locate and manage the relevant plans.

Plan Management

From the homepage, you're equipped with all the tools you need to effectively manage your plans. This includes creating new plans, editing existing ones, deleting plans, or downloading reports and GPS files.

Viewing a Plan

To view a nutrient plan, click on its name from the Nutrient Planner homepage, or to edit it, use the three dots.

Plan Fields

The **Plan Fields** page displays all the fields in the nutrient plan, both in a list and on the map.

Wholefield nutrient recommendations for the selected nutrient are displayed in the field list and on the map labels, providing an overview of field nutrient requirements. The nutrient shown can be switched between N, P2O5, K2O, MgO and SO3.

Nutrients planned from applications are displayed in the field list alongside recommendations to provide a quick comparison between recommended and planned nutrient values.
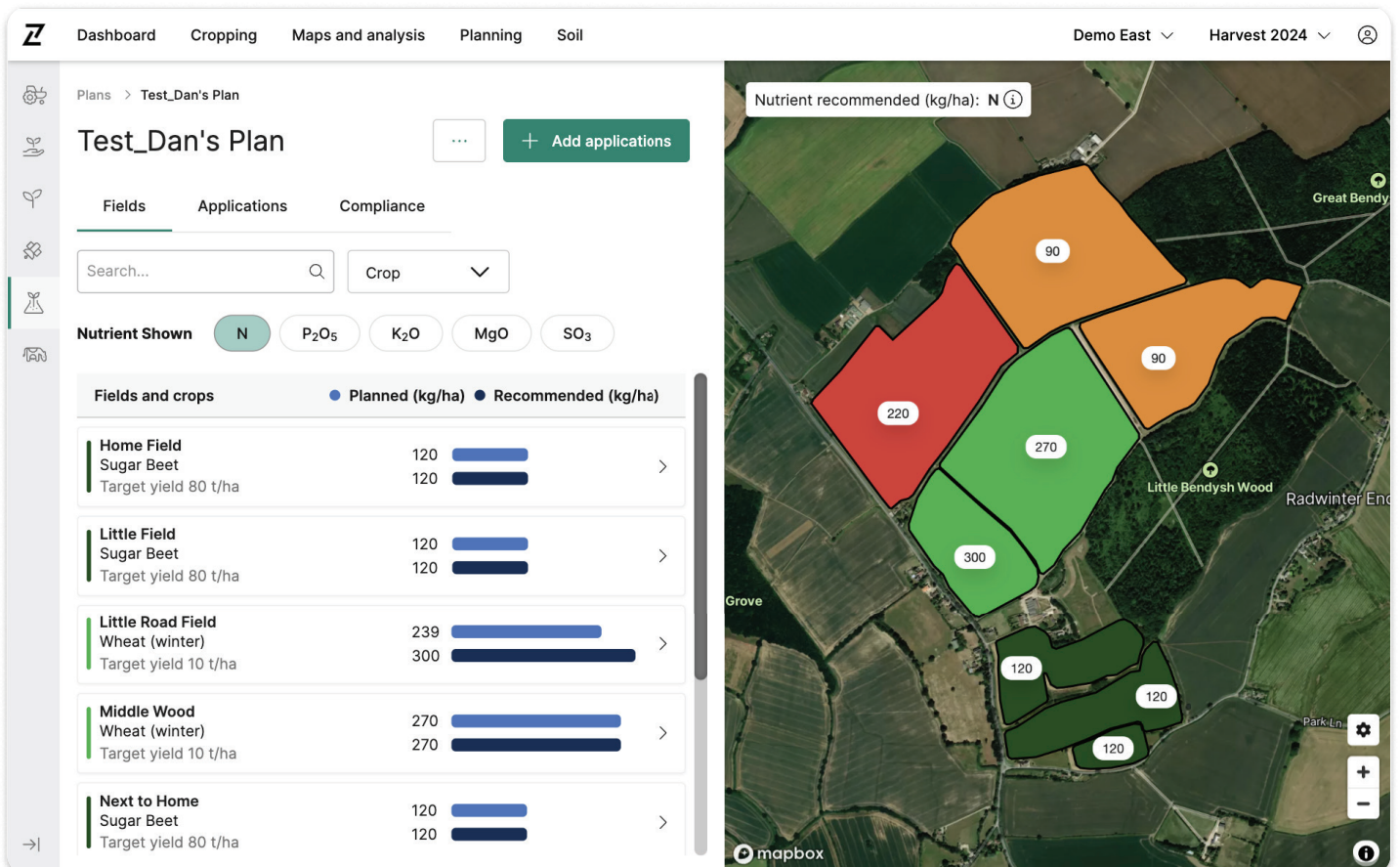
Plan Applications

The **Plan Applications** page displays all the planned applications in the nutrient plan, and their cumulative product totals.

Selecting an application updates the map to show application rates, and zooming in will display these on a label.
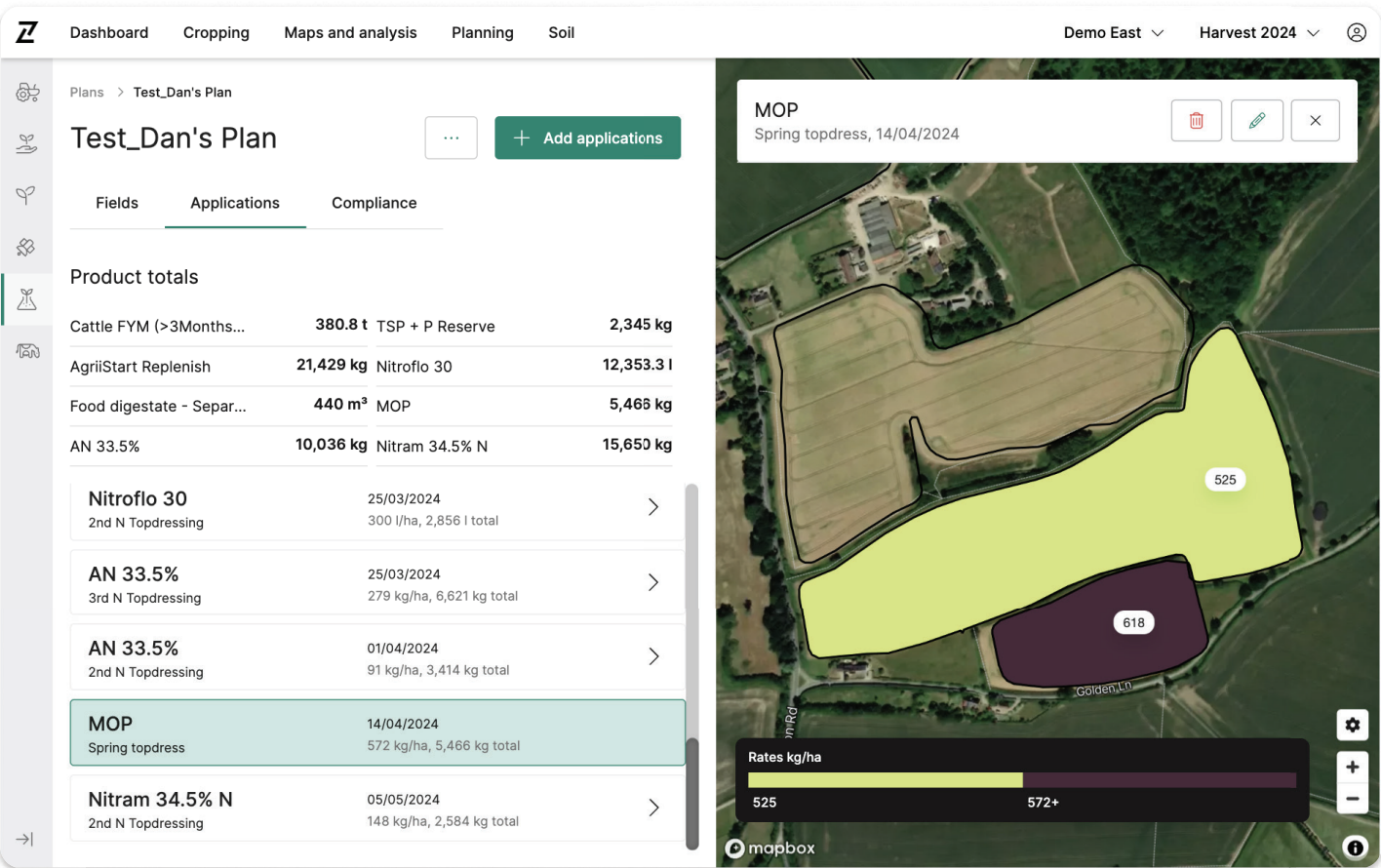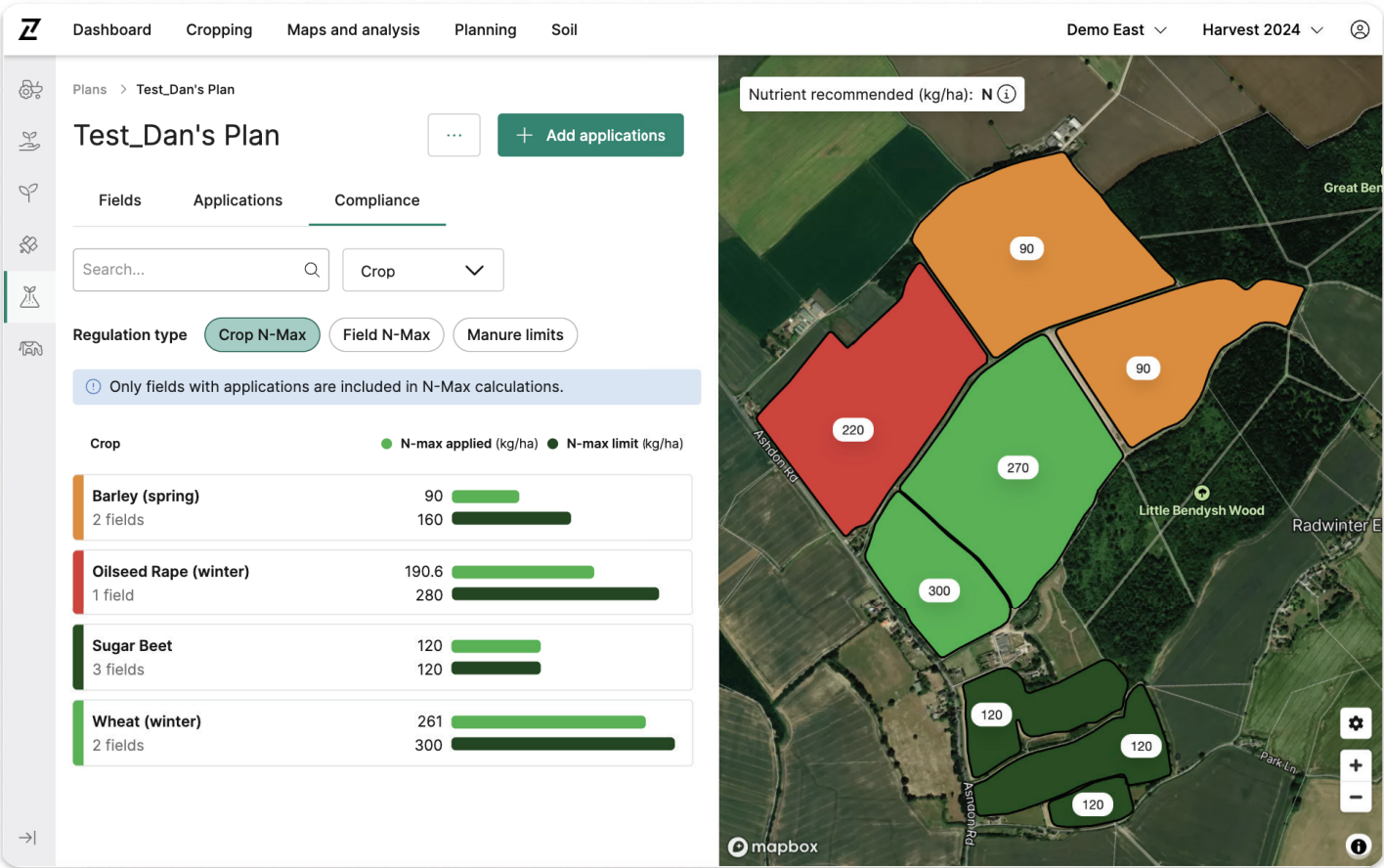
Plan Compliance

The **Plan Compliance** page displays NVZ compliance information for N-Max and Field Manure Limits.

N-Max is calculated per crop to demonstrate compliance with N-Max legislation, and is also calculated per field to identify any fields which may be contributing to a potential breach of the crop limit.

Note - NVZ limits are currently only calculated for fields in England and Wales.

Selecting a field on the **Plan Fields, Plan Applications,** or **Plan Compliance** page provides more detail on that field. The **Field Page** displays in-depth information about applications, nutrients, and soil analysis:

- Selecting an application shows a rate map, from which you can easily edit rates for each zone by selecting them on the map.
- Planned and recommended nutrient values for both field and zones are displayed for easy comparison.
- The **Soil Analysis** tab can be selected to view nutrient indices for P, K, Mg, and pH, enabling you to cross reference with planned and recommended nutrient values.

From the **Field page** you can directly navigate to other fields by selecting from the map.

Getting Started

To start, click 'Create new plan' on the Nutrient Planner homepage, give your plan a name and select the fields you want to include. To help you find only relevant products later when adding applications, you'll need to select a shortlist of the products that you'd like to be available in the plan, but you can always add to this list later.

The **Add applications** flow is an easy three-step process for creating fertiliser applications to use in your nutrient management plan. One or more applications can be added at a time to increase the speed at which you can plan your fertiliser applications and product requirements.

First, enter the desired timing, product, start date, type, rate, and method for the application(s). You can create custom timings and products* if desired, or use the existing catalogue. For ruleset applications, you can choose the primary nutrient used to calculate product application rates, and optionally set a minimum rate below which rates will be set to 0, and a maximum rate cap.

Note: New custom products can only be created in 'Edit Plan'.

Adding Applications

Next, choose the fields that you'd like to add the application(s) to. The field list can be filtered by name, crop, and variety, and cropping displayed can be switched between current and previous crop. Fields cannot be selected where it will create a duplicate application with the same product and timing.

Adding Applications

Finally, review the application summary, and select apply to add the application(s) to the selected fields. This will update the **Plan Applications** page with the new application(s).

Viewing, Updating, & Deleting Applications

Selecting an application on the **Plan Applications** page displays its rate map, and is also where you can update or delete it.

Note that when updating an application across multiple fields, the application rates will be recalculated (meaning that any previous bulk adjustments or updates to individual zone application rates will be lost).

Application Templates

You can save a set of fertiliser applications as a template to reuse across multiple accounts, farms, and years, speeding up the process of creating new nutrient plans.

Creating Application Templates

To create an application template, click '**Add applications**' in any nutrient plan. Create the application(s) for your template, then instead of pressing 'Next' to choose fields, press 'Templates' in the bottom left, and select 'Save as new'. Enter a name for your template, then hit 'Save template'.

If you'd like to apply your template to the plan you're in, you can then press 'Next' to choose fields and continue as normal. Otherwise, you can click 'Cancel' and discard changes to the plan – your template will already have been saved separately.

Note: Templates can only be created when adding new applications, not when editing existing ones.

Using Application Templates

To use a template, press 'Templates' during the **Add applications** flow, and click 'View all'. You can then select the template you wish to use, and it will populate in the flow, allowing you to make any tailored adjustments for the plan you're working on before clicking 'Next' to choose fields.

To update a template, instead of clicking 'Next' once you've made your updates, save your updated version as a new template.

Templates can be deleted from the View all templates screen.

To update an application for a single field without affecting the other fields in the application, go to the **Field page**, then select the application. From the panel at the top of the map, press the expand arrow and make adjustments as required. This panel also allows you to delete the application for a single field without affecting other fields in the application.

Updating Application Rates for Individual Zones

To tailor rates in individual zones without affecting other zones or fields in the application, go to the **Field Page**, and select the application you want to update. Click the zone you'd like to adjust, and either update the product rate, or input the nutrient value you want to apply.

*Note: The fastest way to update individual zones across multiple fields is to select an application on the **Plan Applications** page, then click the field where you want to update individual zones. The application will remain selected on the **Field Page**, so you can update zone rates straight away. To move to the next field, either click it on the map, or head back to the **Plan Applications** page - in either case the application will remain selected.*

Bulk adjustments enable you to update application rates by product, application, or field, using either a percentage change or to match a desired product total. In either case, all application rates will be adjusted by the same proportion.

To make a bulk adjustment, select the 3 dots next to **Add applications** on either the **Plan Fields**, **Plan Applications**, or **Plan Compliance** page.

Adjust by Product

Bulk adjust by product enables you to adjust all applications using the selected product. From the **Product** tab on the **Bulk Adjust** page, select the product(s) you want to adjust, enter the % change you wish to apply or the new product total you'd like to use, then hit 'Save adjustments'.
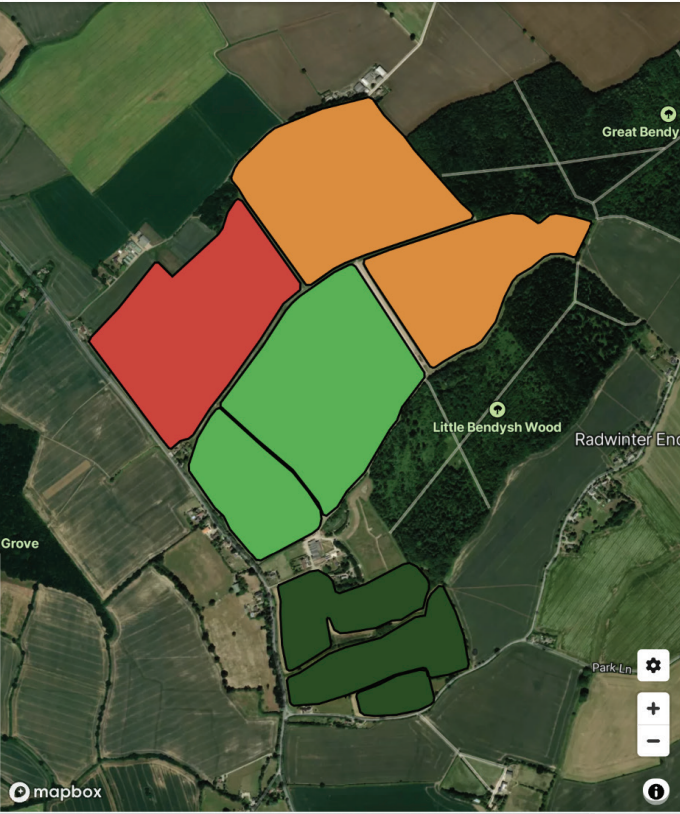
Adjust by Application or by Field

Bulk adjust by application enables you to adjust product totals for a specific combination of product & timing. Individual fields can be selected or deselected, enabling you to adjust product totals for specific fields within an application.

Nutrient Planner automatically checks NVZ compliance for fields situated in England & Wales, incorporating country-specific rules. The system auto-assigns an NVZ status to each field, but you also have the option to label fields as either inside or outside of an NVZ should you prefer to treat them differently.

N-Max limits and Field Manure limits can be checked on the **Plan Compliance** page and compared against nitrogen in planned applications.

Note – only fields in an NVZ and with applications are included in NVZ calculations.

Check & Update Field NVZ Status
Nutrient Planner automatically assigns an NVZ status to each field by cross-referencing DEFRA NVZ areas with field boundaries in Contour. The NVZ status of fields can be checked and updated through the **Legislation** page in **Settings**. Fields with an auto-assigned NVZ status are denoted with an asterisk.

The Crop N-Max view enables you to quickly and easily check the N-Max limit for each of your crop types against your planned nitrogen applications:

- N-Max limit calculations take into account crop type, crop management, and soil type data down to zone level
- N-Max limit is the maximum average rate of nitrogen that can be applied to that crop type
- N-Max applied is the average rate of nitrogen currently planned for that crop type
- Organic and inorganic nitrogen applications are included when calculating N-Max applied
- NVZ availability values are used in calculations
- For any products not specified in NVZ legislation documents, RB209 nitrogen availability values are used
- Only fields with applications are displayed and included in calculations

The Field N-Max view enables you to check the N-Max limit against planned nitrogen applications per field, which can be used to identify fields which may have higher limits, or may be causing a breach of Crop N-Max limits.
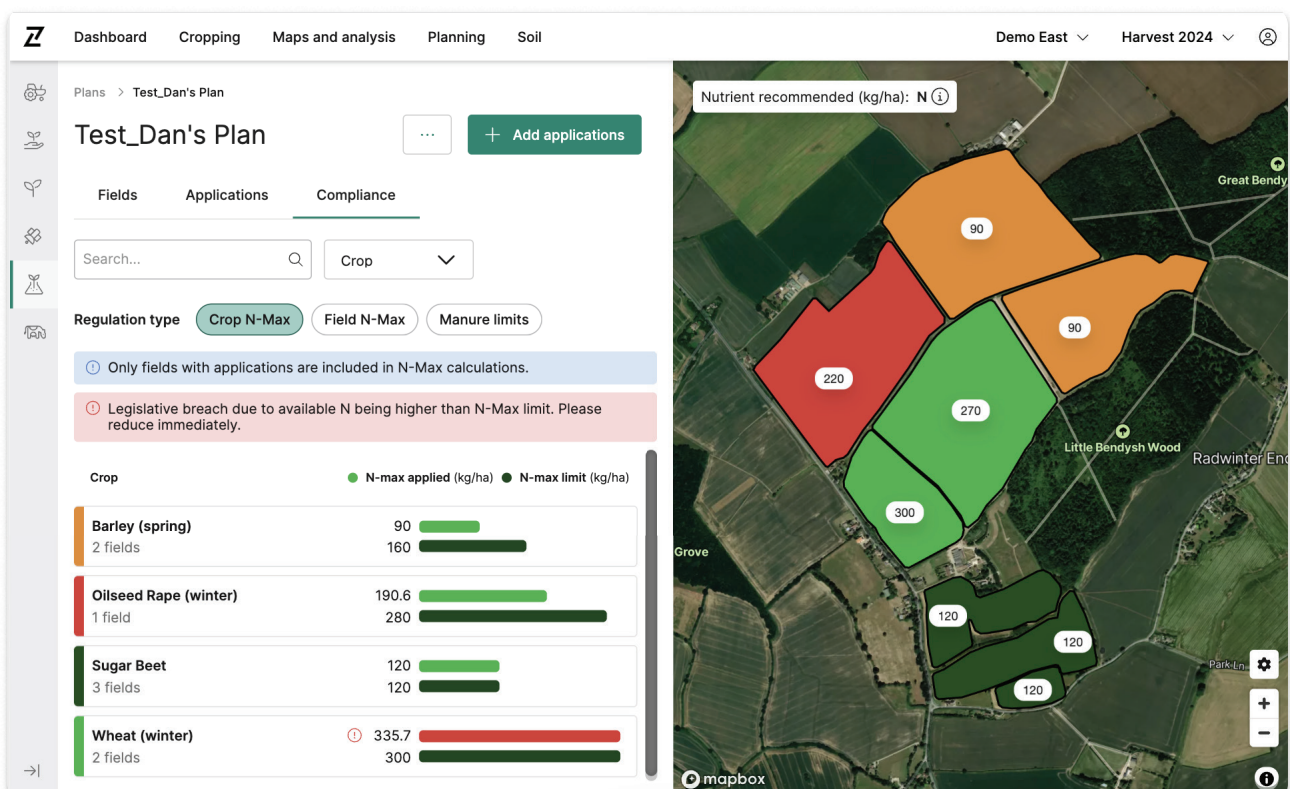
Field Manure Limits

The Manure limits view enables you to check the total organic nitrogen per hectare that you've applied to each field against the 250kg/ha limit if in England, or 170kg/ha limit if in Wales.
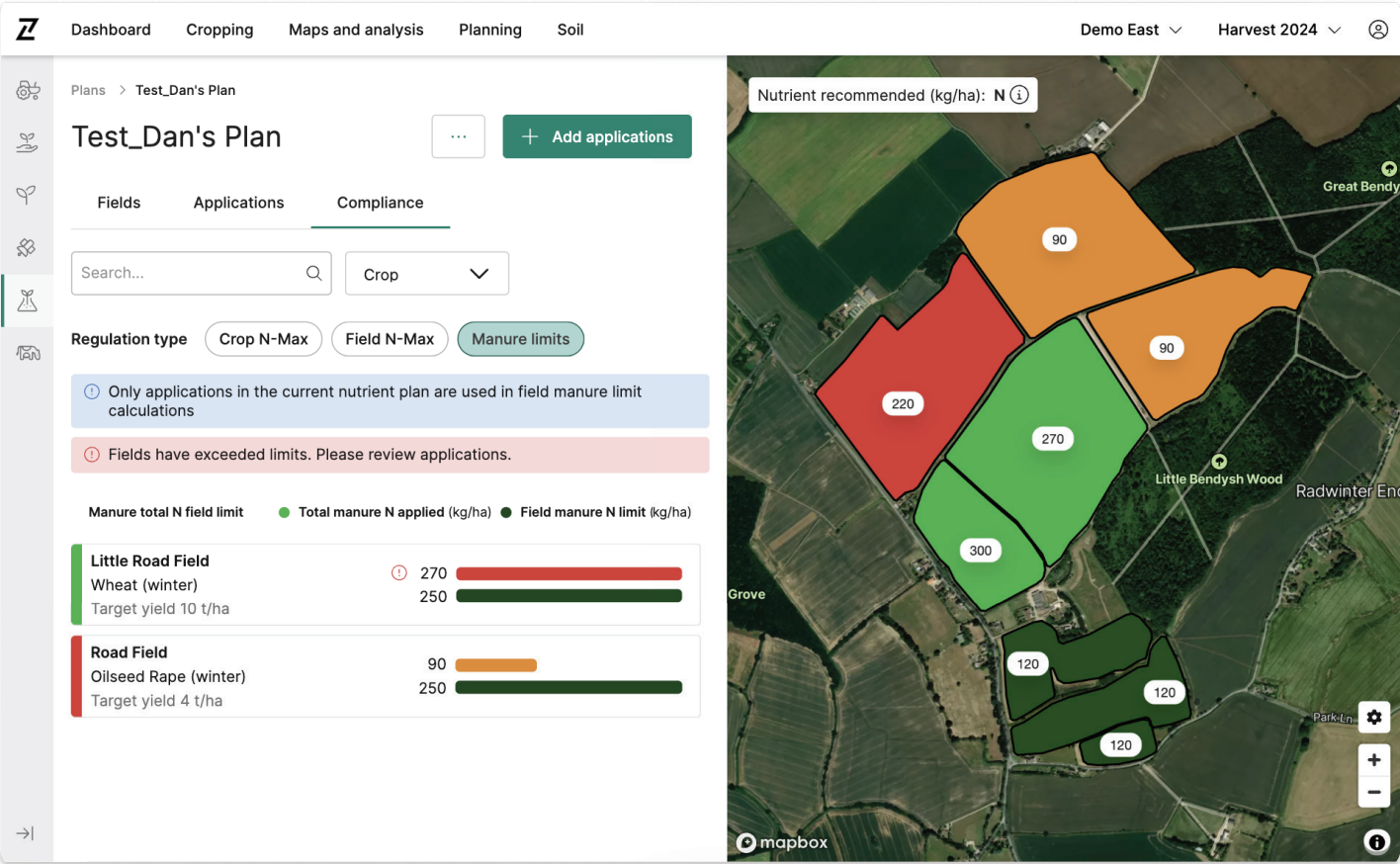
File downloads in Nutrient Planner cover a wide range of uses including variable rate application, identifying product totals for ordering, and compliance inspections.

From the Nutrient Planner homepage, you can export and download reports, risk maps, and GPS files for any nutrient plan by clicking the 3 dots next to it. These files can also be downloaded when viewing a plan by clicking the 3 dots next to **Add applications** on either the **Plan Fields**, **Plan Applications**, or **Plan Compliance** page.

Job Sheet Reports

Job sheet reports provide a summary of applications inside the nutrient plan, including overall product totals, field product totals grouped by application (product & application timing), and application maps. Application dates can be recorded on the job sheet by operators for easy record keeping when back in the office. Job sheet report downloads are disabled until at least one application has been created.

Nutrient Management Reports

Nutrient management reports provide a detailed breakdown of crop nutrient requirements against the nutrient content of planned applications. A summary is provided for each zone in your nutrient plan, containing soil analysis data, nutrient recommendations (N, P2O5, K2O, MgO and SO3), planned fertiliser applications (product, timing, rate, nutrients supplied) and total nutrient applied.

Nutrient management reports can also be downloaded without any applications in order to demonstrate that recommendations have been calculated early in the season before applying any fertiliser.

NVZ Reports

NVZ reports provide a detailed breakdown of N-Max calculations and Field Manure limits.

N-Max calculations display the total amount of available N from organic and inorganic applications, and total available N applied to each crop type. N-Max limit calculations are provided at zone level to identify any adjustments for yield, shallow soils, and crop management.

Manure field limit calculations are also provided to demonstrate the total amount of organic N applied per hectare.

Note: Only fields with applications are included in NVZ reports

NVZ Risk Maps

NVZ risk maps illustrate spreading risk across the farm, using field and zone boundaries, Ordnance Survey data, and soil type data to calculate risk scores and to identify no spread zones.

NVZ risk maps can take up to 5 minutes to generate as PDFs, and the page must be refreshed after selecting generate before they will download. In the event of the map displaying "no data", please contact support.

Variable Rate Application (VRA) files

Variable rate application (VRA) files for a wide range of machinery manufacturers can be downloaded for your nutrient plan, including shapefile and ISOXML formats. VRA file downloads contain all applications in the nutrient plan and are ordered into folders based on applications (product & application timing). Out of boundary and loss of GPS rates can be specified for ISOXML files if desired.