

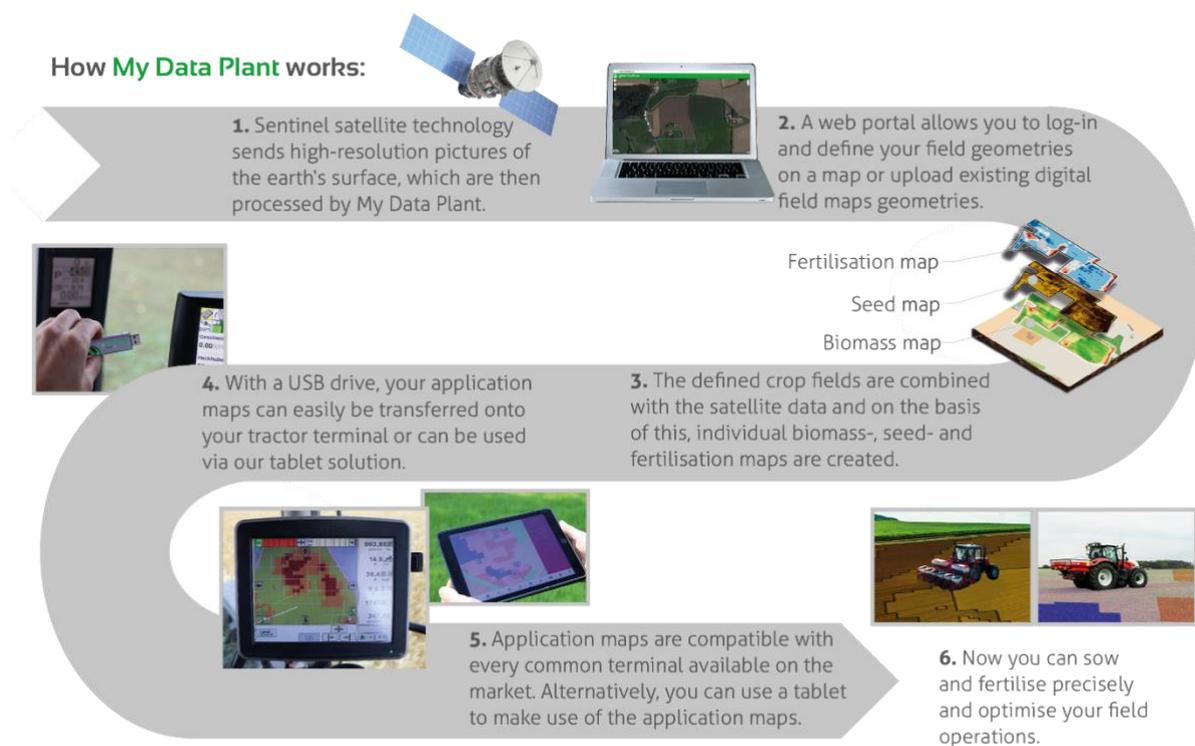
UK My Data Plant Explanation for website link/ presentation use

General information

There are currently two Sentinel 2 satellites of the ESA (European Space Agency) in space, Sentinel 2A and Sentinel 2B, which take multispectral images of the Earth. Each satellite analyses every point on Earth once every ten days. As a result, every five days a new recording of the field appears.

These multispectral images are analysed using an algorithm that automatically converts the data into biomass maps; Simply put, maps showing the vitality of the crop.

The farmer can draw his own field boundaries on the online portal www.mydataplant.com/portal. There he can view the biomass maps of his fields, create his own fertiliser application and field zone maps and download them for the automated usage on a tractor. The grid size is 5 x 5 meters.



Biomass

Biomass maps are created every five days. This means they can be used to reflect different stages of crop development within a field. A farmer can see from home which parts of his field have developed further than others and can regularly analyse his fields for their development. This means areas that are performing poorly can be clearly identified and thus treated appropriately. The plant matter (biomass/vitality) is shown in traffic light colours. Red stands for low, yellow for medium and green for high biomass vitality.

- ✓ Identify high and low yield zones
- ✓ Spot influences of water shortages or surplus

- ✓ Analyze the consequences of soil compaction, water logging, etc.
- ✓ Locate areas prone to disease infestation
- ✓ Resolution of 5x5m
- ✓ 5-day recurring images allow a close monitoring of crop developments

Seed/Zone Maps

Soil type and quality can vary within the field. Using My Data Plant farmers can identify these different field zones. To do this the farmer first chooses a point in time when the field is ploughed or shows only very little biomass. This point in time is chosen to represent the properties of the soil, using the multispectral data. Next, he selects a point in time at which different germination behaviours of a crop are visible, preferably two to eight weeks after sowing. The difference is then calculated through the algorithm to create a zone map.

Creating seed maps from the zones:

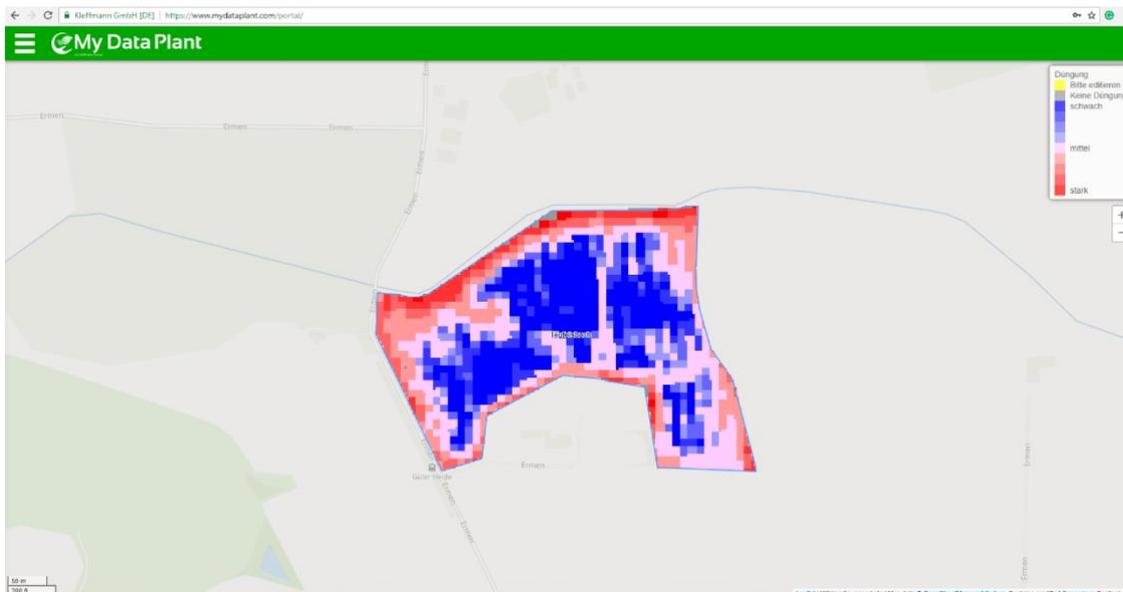
The zones can then be targeted with a variable seed rate set by the farmer. These seed maps can be adjusted to fit the local soil conditions and structures. Using My Data Plant, the farmer can see where the soil has a higher yield potential. Based on this, he can select the seed rate. The number of grains per hectare is adapted to the prevailing soil conditions. By using the zones created by My data Plant and the farmers own knowledge of the fields and soil more precise variable application can be applied.

Fertilisation Management

Fertiliser maps are based on the current biomass of the crop. The maps are generated from the multispectral biomass data from the satellite that are available every five days. Different zones indicate where more fertiliser can be applied and where less is sufficient. These areas can be adapted by the farmer, using The My Data Plant portal which allows the farmer to edit the map. For example, if the farmer wishes to apply no fertiliser to an area or knows that an area will need a different rate because of his personal knowledge of the field. My Data Plant gives farmers the ability to save fertiliser in some places and spread more on other areas, adapting their fertilisation to local biomass differences and their historical experience of the field. A modern terminal automatically implements the fertilisation map. But farmers can also use the helpful Crop Navigator app to manually apply a variable rate without a terminal or precision farming machinery.

Ultimately, My Data Plant allows farmers to create maps based on the vitality of the crop, input their chosen fertiliser, manage and edit the amount applied to the field based on the data and then export that field map to their terminal for use.

Example:



fertilizer map

The different colours indicate how much fertiliser is applied to which areas. In the blue areas, the fertiliser spreader applies a small amount of fertiliser, pink stands for medium strength and red for intensive fertilisation. Partial areas appear grey and receive no fertiliser when a farmer has set a minimum biomass vitality in advance.

- ✓ Adaptation of fertilization strategy to the prevailing circumstances
- ✓ Influence the results according to practical experience
- ✓ Achieve a targeted fertilization of every field zone based on need within a field
- ✓ Get the best out of fields by constantly improving crop performance
- ✓ Optimize harvest conditions and yield

Access to Precision Farming Technology

Fertiliser application maps can be created regardless of the existing equipment you are using. So, there is no upfront requirement to invest in new machinery and the maps are suitable for every technology. This means if you have a terminal already it will work with your software, or if you have no precision technology you can use the crop navigator app.

Crop Navigator App

With the help of our App "Crop Navigator" the generated biomass and fertilisation maps can be displayed and used on a tablet.

You just take the tablet into the tractor cab, and with the aid of GPS your current position is located. The tablet displays the fertilisation zone your tractor is currently positioned in and at what speed you should drive through the next zone to fertilise more precisely.

