

Hummingbird Technologies

Maize Growers Association

Satellite imagery for Trials 2020



HUMMINGBIRD MISSION TO SOLVE 4 PROBLEMS AND OUR SOLUTIONS

“Our mission, through sophisticated modelling and predictive analytics, is to measure sustainability, optimise food production and push the boundaries of science and technology”



YIELD LOSSES:



- Manage large holdings
- AI driven plant monitoring
- P&L benefit
- Predictive analytics



UNSUSTAINABLE PRACTICES:

- Measure it (remote sensing)
- Monitor it (carbon reports)
- Facilitate it (VR maps)
- Report it (stakeholders)
- Avoid wastage (food/input)

INEFFICIENT INPUTS:



- Targeted treatment
Lower chemicals, water and seed inputs where possible
- Prevent overspraying
- Manage resistance
- P&L saving



DECISION MAKING:



- Technology to save time
- Actionable insights
- Integrated data
- Earlier decisions
- Forward plan
- Better management

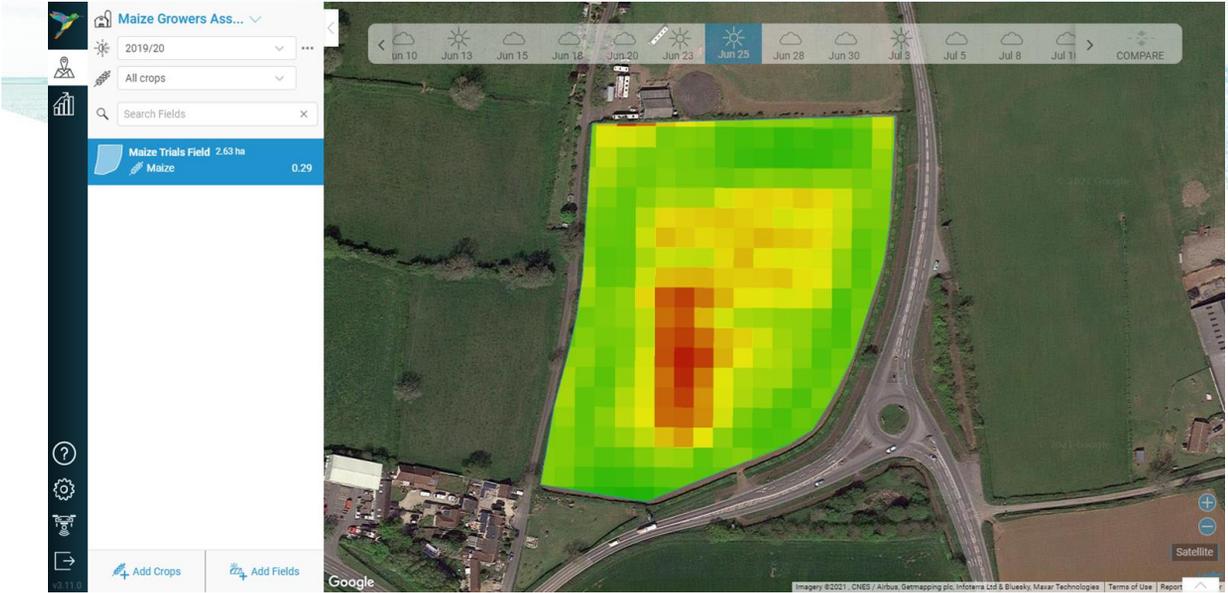




Maize Growers Association Trials Site in Dorset 2020 June 13th



Maize Growers Association Trials Site in Dorset 2020 June 25th



Maize Growers Association Trials Site in Dorset 2020 July 13th



Maize Growers Association Trials Site in Dorset 2020 July 20th



Maize Growers Association Trials Site in Dorset 2020 September 13th



Field Leaderboard

Field leaderboard Compare fields

UK Demo F... x

Season: 2019/20 Export

Compare	Farm	Field	Crop	Variety	Drill Date	Survey Date	Days from drill	Average NDVI	View on map
<input type="checkbox"/>	UK Demo Farm	Hackney	Winter Barley	Planet	2019-03-26	2020-09-26	550	0.225	
<input type="checkbox"/>	UK Demo Farm	Kensington	Winter Barley	Unspecified	2019-09-20	2020-09-26	372	0.248	
<input type="checkbox"/>	UK Demo Farm	Lambeth	Winter OSR	Rocca	2019-08-31	2020-09-26	392	0.255	
<input type="checkbox"/>	UK Demo Farm	Maize	Maize	Maize Forage	2020-05-15	2020-09-26	134	0.807	
<input type="checkbox"/>	UK Demo Farm	Marylebone	Winter OSR	Rocca	2019-08-31	2020-09-26	392	0.405	
<input type="checkbox"/>	UK Demo Farm	Oxford	Winter OSR	Rocca	2019-08-31	2020-09-26	392	0.487	
<input type="checkbox"/>	UK Demo Farm	Piccadilly	Winter Wheat	Graham	2019-10-28	2020-09-26	334	0.453	
<input type="checkbox"/>	UK Demo Farm	Shoreditch	Winter Barley	Planet	2019-09-20	2020-08-17	332	...	
<input type="checkbox"/>	UK Demo Farm	Soho	Winter Wheat	Shabras	2019-10-28	2020-09-26	334	0.435	
<input type="checkbox"/>	UK Demo Farm	Tottenham	Winter Barley	Planet	2019-09-20	2020-09-26	372	0.34	
<input type="checkbox"/>	UK Demo Farm	Vauxhall	Winter Wheat	Extase	2019-10-28	2020-09-26	334	0.562	
<input type="checkbox"/>	UK Demo Farm	Waterloo	Winter OSR	Rocca	2019-09-01	2020-09-26	391	0.365	
<input type="checkbox"/>	UK Demo Farm	Westminster	Winter Wheat	Shabras	2019-10-28	2020-09-26	334	0.586	
<input type="checkbox"/>	UK Demo Farm	Winter Pond	Winter Wheat	Belepi	2019-10-24	2020-09-21	333	0.187	

Field / Farm Comparison tool

Field leaderboard Compare fields

Export

Maize remove

Farm: UK Demo Farm
Crop: Maize
Variety: Maize Forage
Drill Date: 2020-05-15

Cloud Coverage: 0% < 2020-09-26

Hackney remove

Farm: UK Demo Farm
Crop: Winter Barley
Variety: Planet
Drill Date: 2019-03-26

Cloud Coverage: 0% < 2020-09-26

Oxford remove

Farm: UK Demo Farm
Crop: Winter OSR
Variety: Rocca
Drill Date: 2019-08-31

Cloud Coverage: 0% < 2020-09-26

Tottenham remove

Farm: UK Demo Farm
Crop: Winter Barley
Variety: Planet
Drill Date: 2019-09-20

Cloud Coverage: 0% < 2020-09-26

Days from drill	Maize (Green)	Hackney (Orange)	Oxford (Yellow)	Tottenham (Purple)
0	0.15	0.15	0.15	0.15
100	0.75	0.45	0.45	0.45
200	0.55	0.55	0.55	0.55
300	0.35	0.35	0.35	0.35
400	0.75	0.75	0.75	0.75
500	0.35	0.35	0.35	0.35
600	0.25	0.25	0.25	0.25

Benefits of Using Hummingbird & Remote Sensing

- Remote sensing allows the grower to continuously monitor their maize crops from satellite, to observe interfield variations and identify areas of the field performing well vs poorly.
- Field survey comparisons using the NDVI imagery allows the user to see the crop variability in the field. Identifying the rapid growth areas vs slower growth, a useful tool in understanding performance.
- Via our variable rate application plans, the user can generate a variable rate nitrogen plan for the fields, precision targeting inputs to lower or higher biomass regions.
- We can provide satellite data at a 10x10m resolution. Depending on the level of insight you would like to utilise, both services offer an excellent tool to help remotely monitor maize and provide useability to generate variable rate application plans.

NDVI



AN NDVI MAP IS PROVIDED WITH EVERY MULTISPECTRAL SURVEY

SENSOR & IMAGE RESOLUTION: MS SENSOR & SATELLITE IMAGERY.

PURPOSE

This map quantifies vegetation by measuring the difference between near-infrared (reflected by healthy vegetation) and red light (absorbed by healthy vegetation).

BENEFITS & VALUE

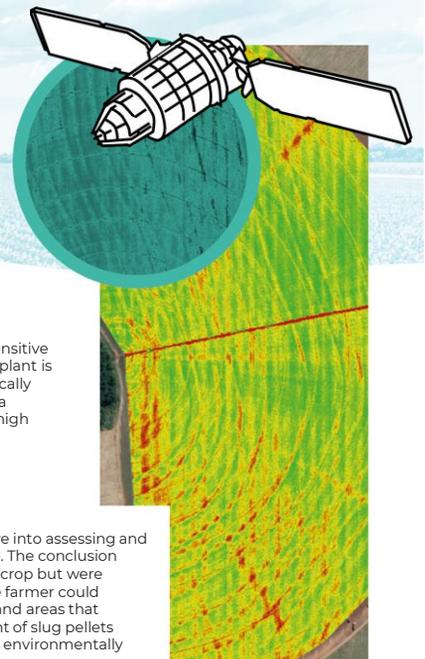
The map gives a total overview of the crop, compared to a view from the side of the field, and frequently shows variability during its growing cycle. Using these maps, you can make precise and accurate decisions to help consistently improve your crops and prioritise areas that need further attention from your agronomists.

HOW IT WORKS

NDVI highlights areas of live vegetation and is sensitive to small changes in plant productivity when the plant is under stress. We ensure we are using radiometrically calibrated imagery to calculate NDVI, and apply a statistical transformation to emphasise areas of high variation within the image.

USER CASE

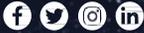
In this case, the red areas drew the customers eye into assessing and field walking these areas to determine the cause. The conclusion was slugs were having a negative impact on the crop but were currently isolated to the red areas. As a result the farmer could precisely identify the areas to apply slug pellets and areas that would not benefit. This reduced the total amount of slug pellets applied to the field, saving money and was more environmentally responsible approach.





GET IN TOUCH

www.hummingbirdtech.com
sales@hummingbirdtech.com



UK - AUSTRALIA - BRAZIL - RUSSIA - UKRAINE - CANADA - NZ
