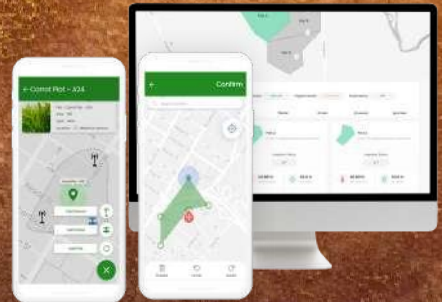


AgriTechs

The technology to feed the world



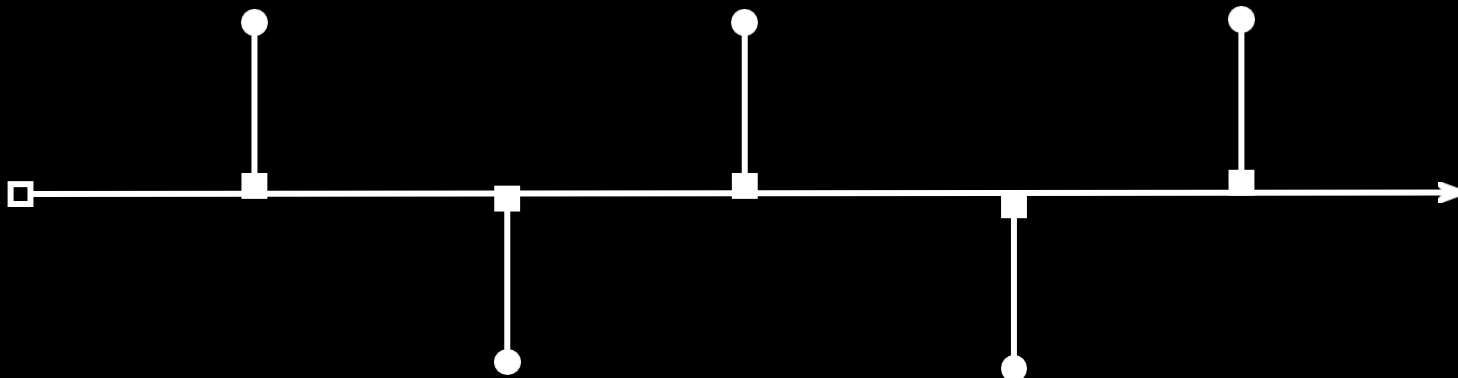
**Grow More with Less, Without
Compromising the Future!**

Orthomosaic Image

30.0419 acres
Area Covered

217 images stitched
>5 GB images

1.68 cm / 0.66 in
Average Ground Sampling
Distance (GSD)



1.68 cm / 0.66 in
Average Ground Sampling
Distance (GSD)

3 Fly in 40 m and 60 meter



Sensors used



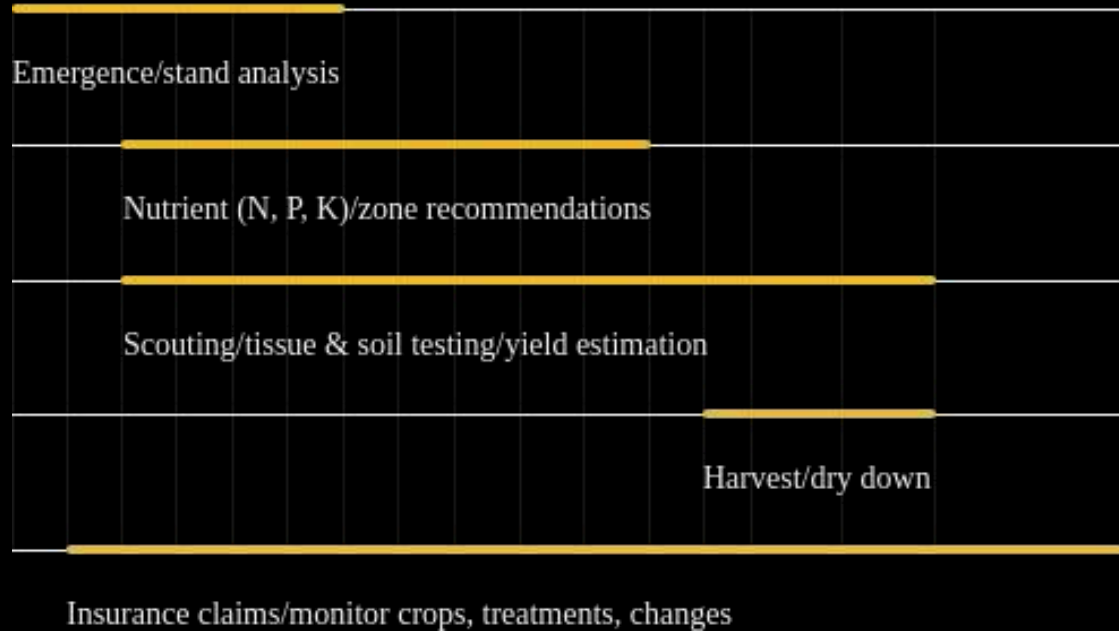
MicaSense RedEdge-MX
Multispectral Camera



Parrot Sequoia+ Multispectral
Camera

Example drone use per growth stage (corn)

Durable senseFly drone technology adds value throughout the growing season, from emergency and early growth assessments to pre-harvest yield prediction.



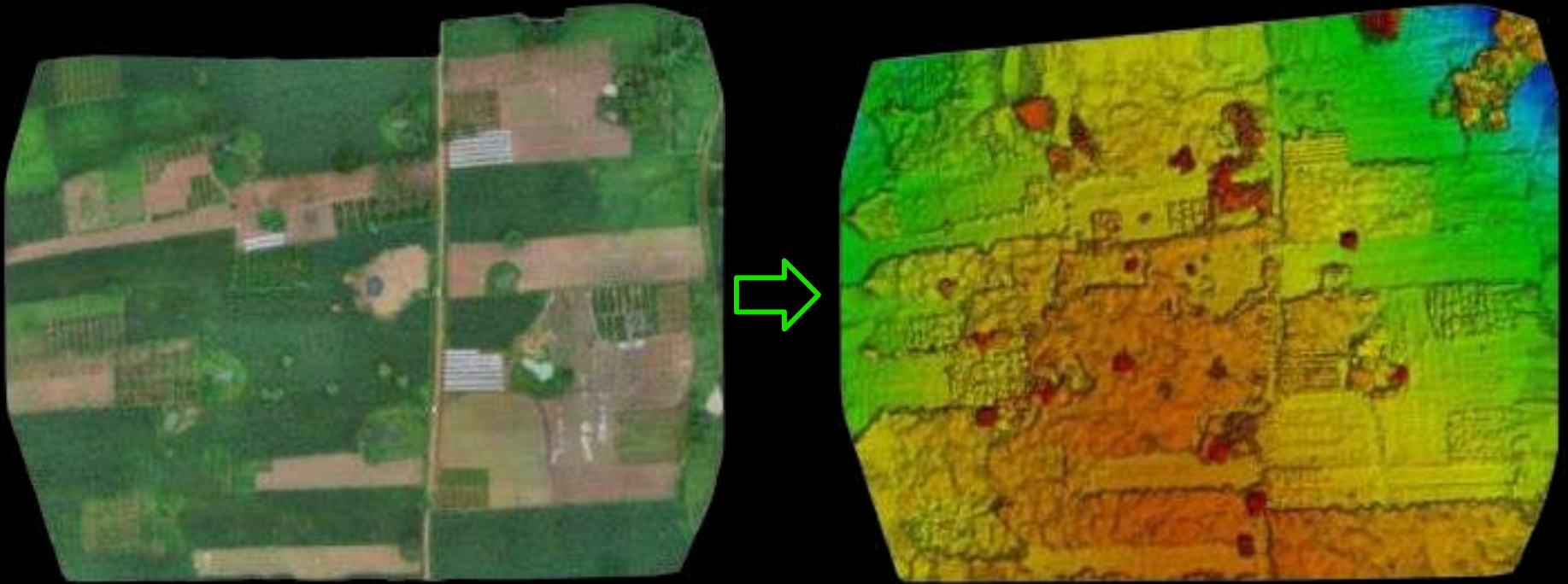
Orthomosaic Image

217 GEO-enabled images stitched together and geometrically corrected so that it is as accurate as a map.



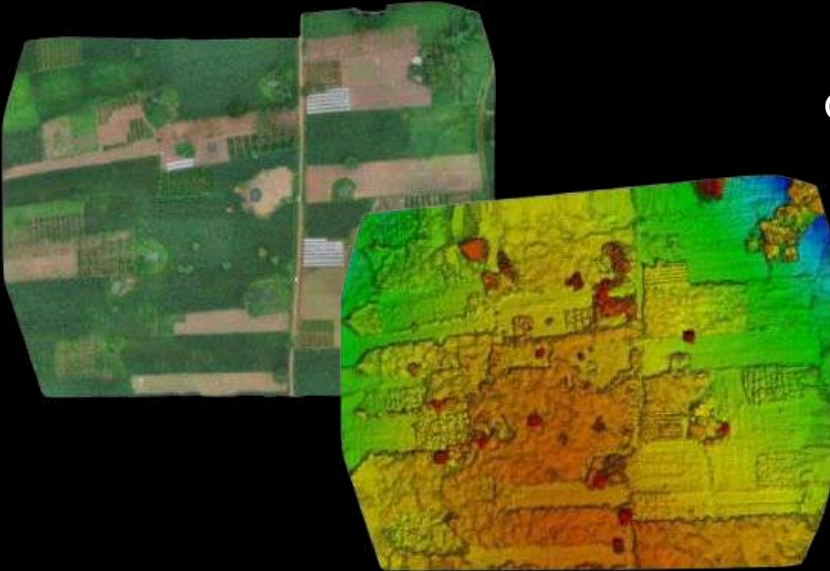
Digital Surface Models (DSM)

Digital Surface Models (DSM) derived from aerial imagery, have the potential for crop type mapping.



Orthomosaic Image to Digital Surface Models (DSM)

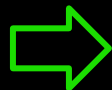
A DSM expresses a digital representation of the elevation of all objects on the map that can be used for surface analysis, 3D modeling, DTM generation, and, subsequently, orthophoto production.



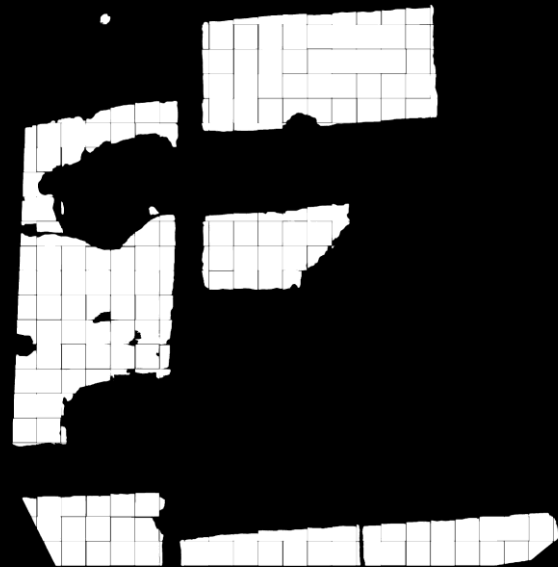
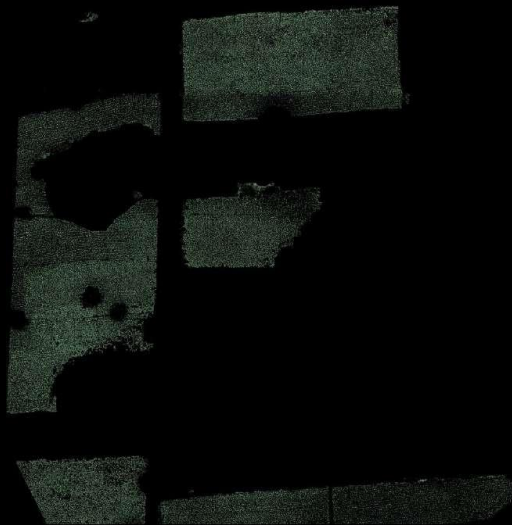
Orthomosaic maps of the farms can be used for:

- Gap Analysis in the Field
- Crop/bush count and density
- Pests and weed detection (in Different height)

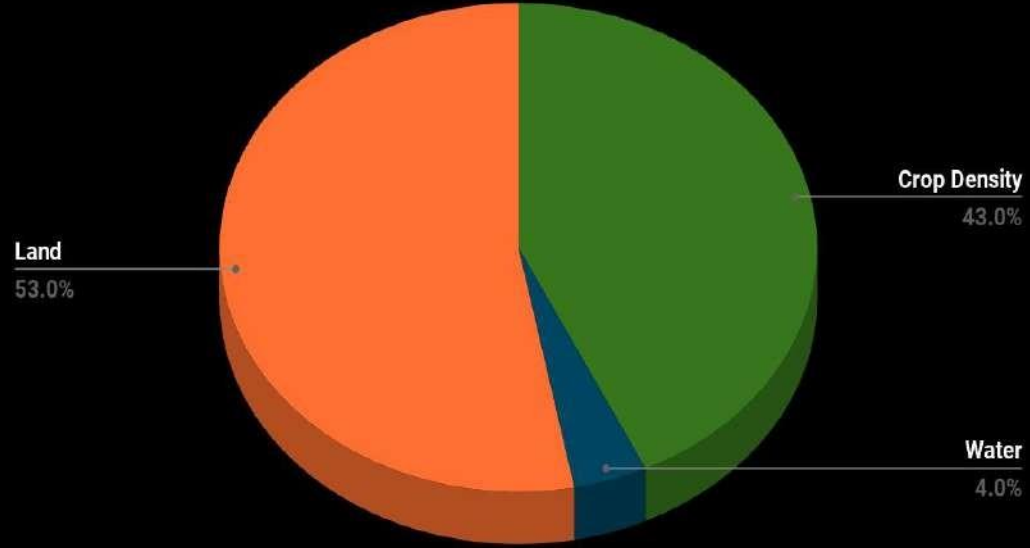
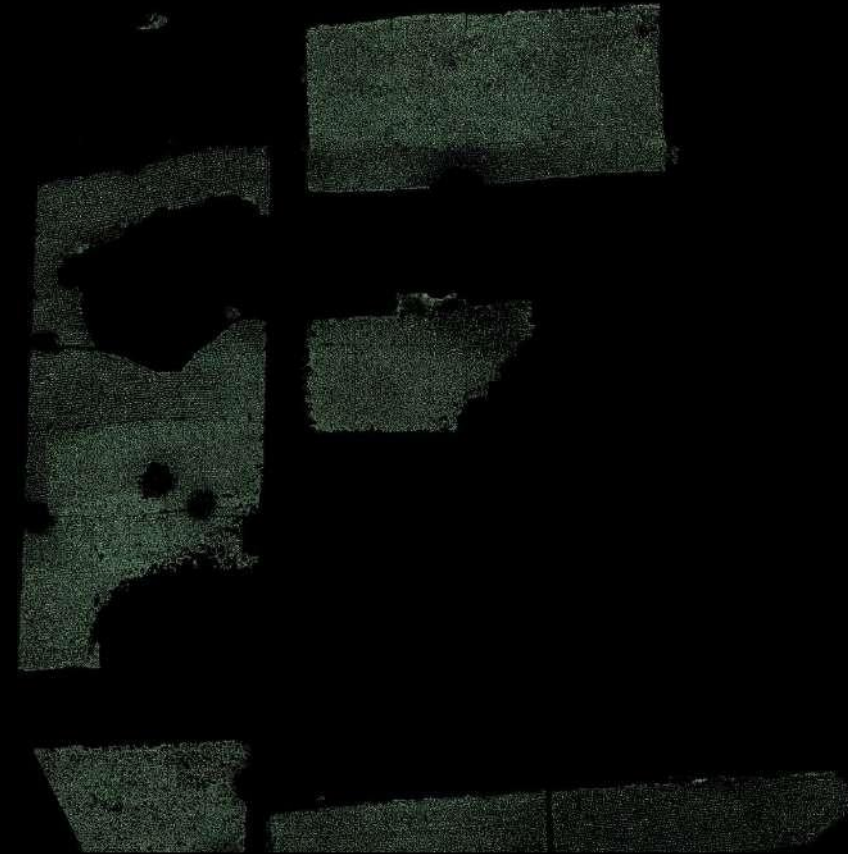
Isolating interested crop



Density Measures

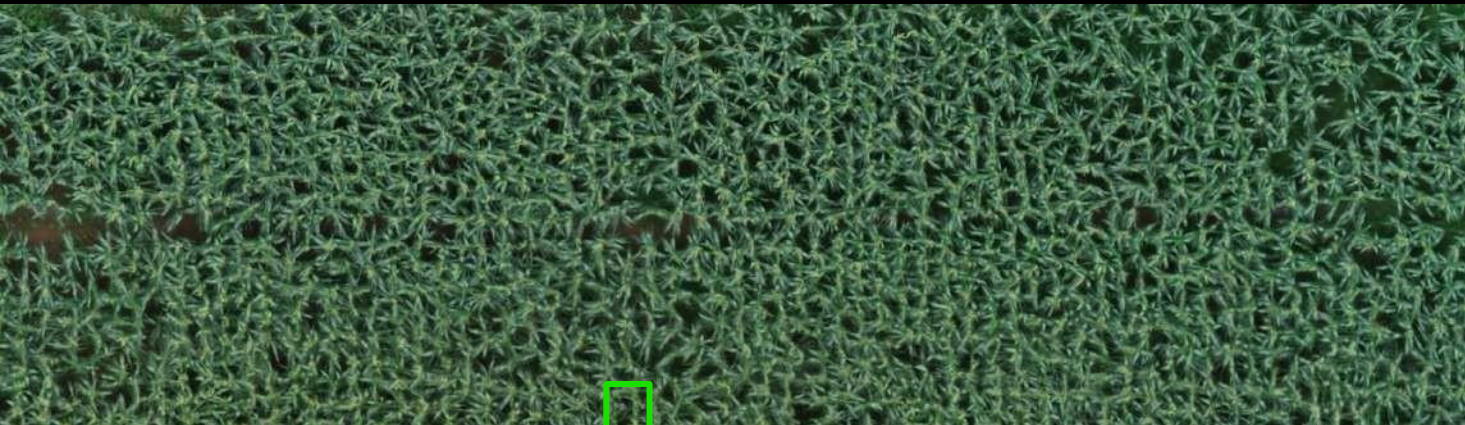


Crop Density Measures

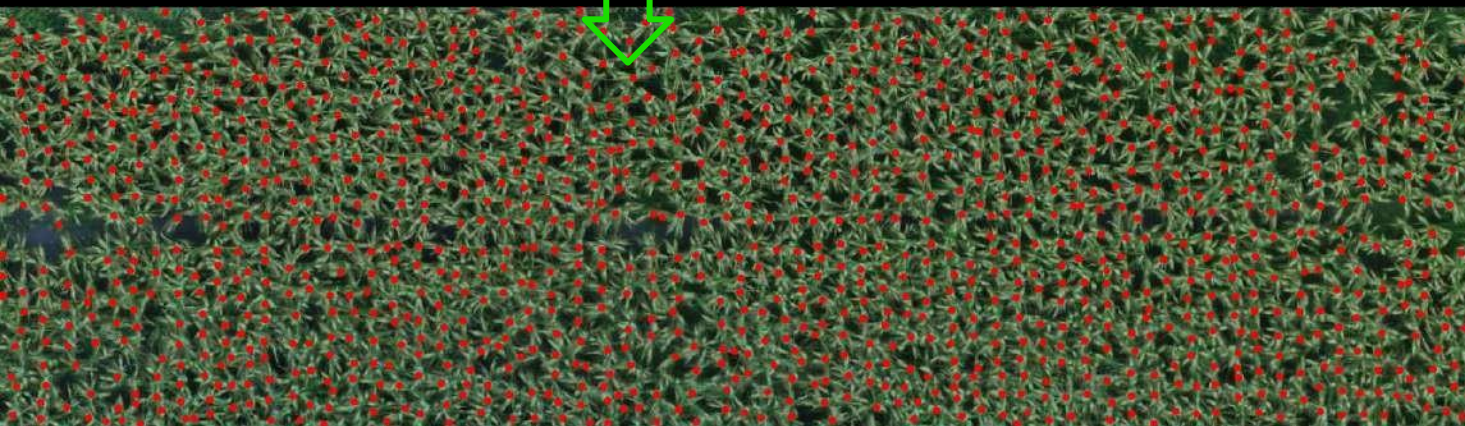


- Planting crops in the gaps, where the gap information is obtained via gap analysis.

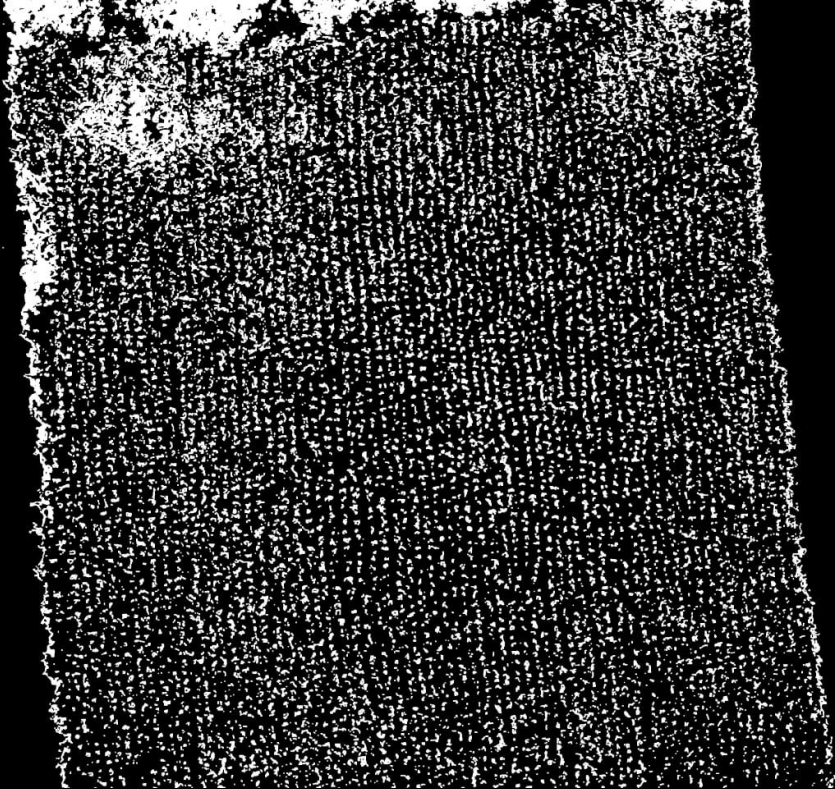
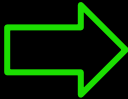
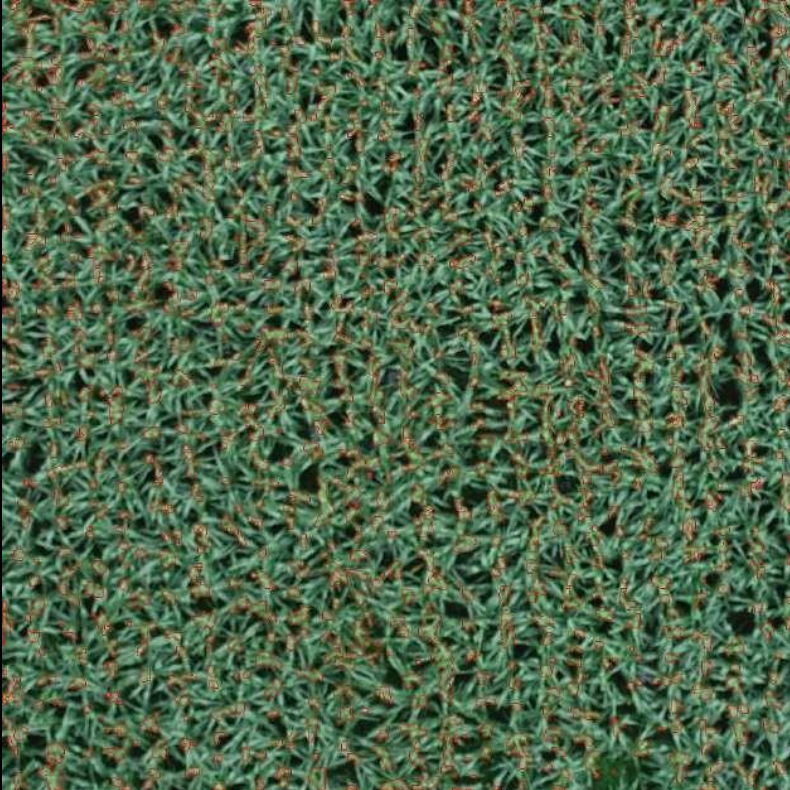
Yield prediction procedure: 1. Crop Count



- **0.1 Acre**
- 1171 plants
- ~ 1171 Corn cobs

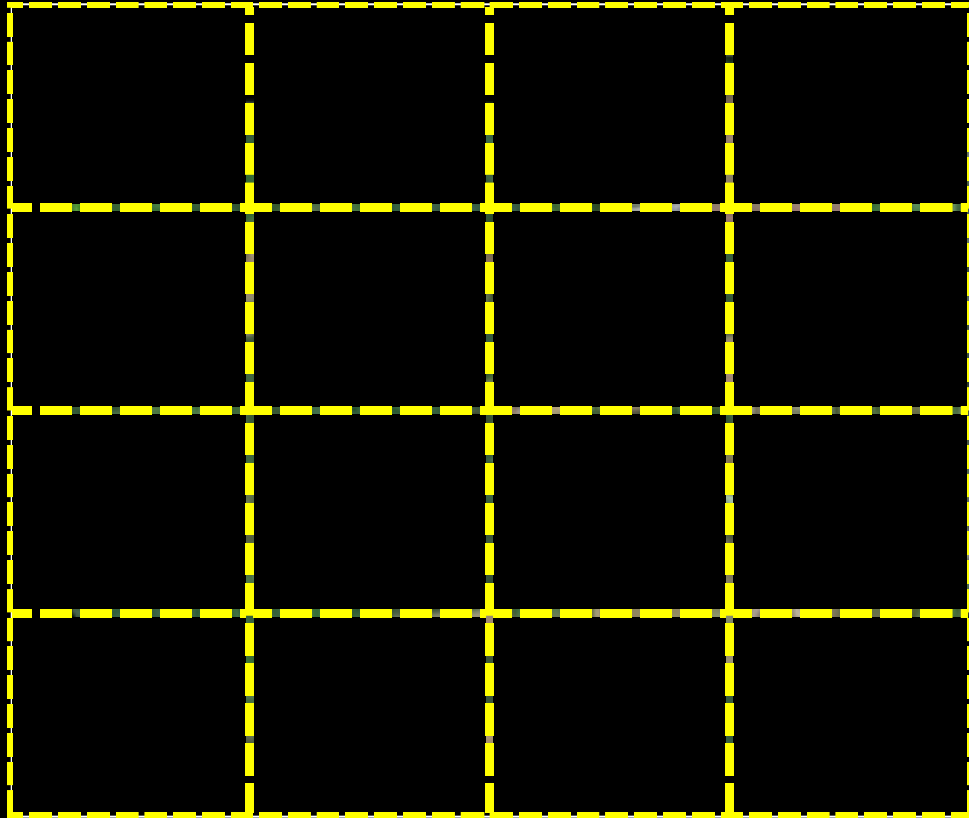


Noise removed image



Yield prediction procedure: 1. Yield Mapping

* Future implementation



* Actual harvest-based mapping
Experimental training needs support
from CBL.

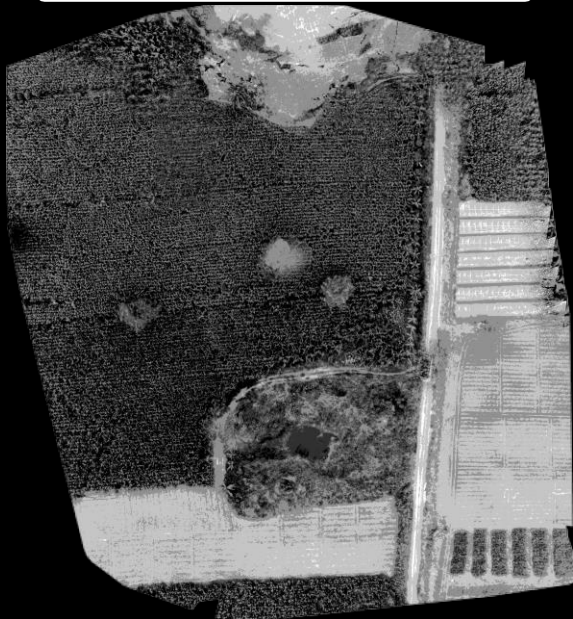
Mapping will give more accurate yield
predictions with

- Crop count
- Grain count
- Way ahead yield prediction
- And improvement guidance.

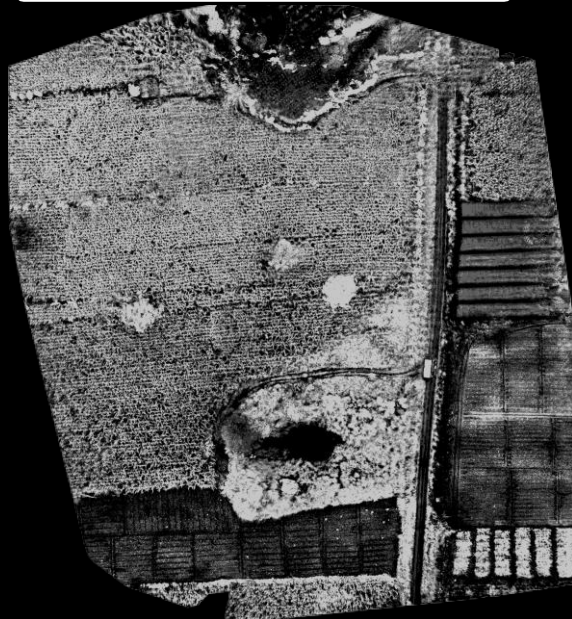
NDVI (Normalized difference vegetation index)

NDVI is an indicator of a plant's health based on how a plant reflects different light waves.

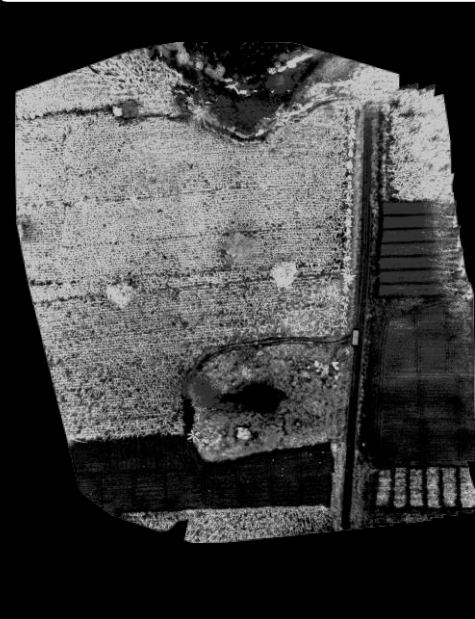
NDVIRGBaRED



NDVIRGBaNRI

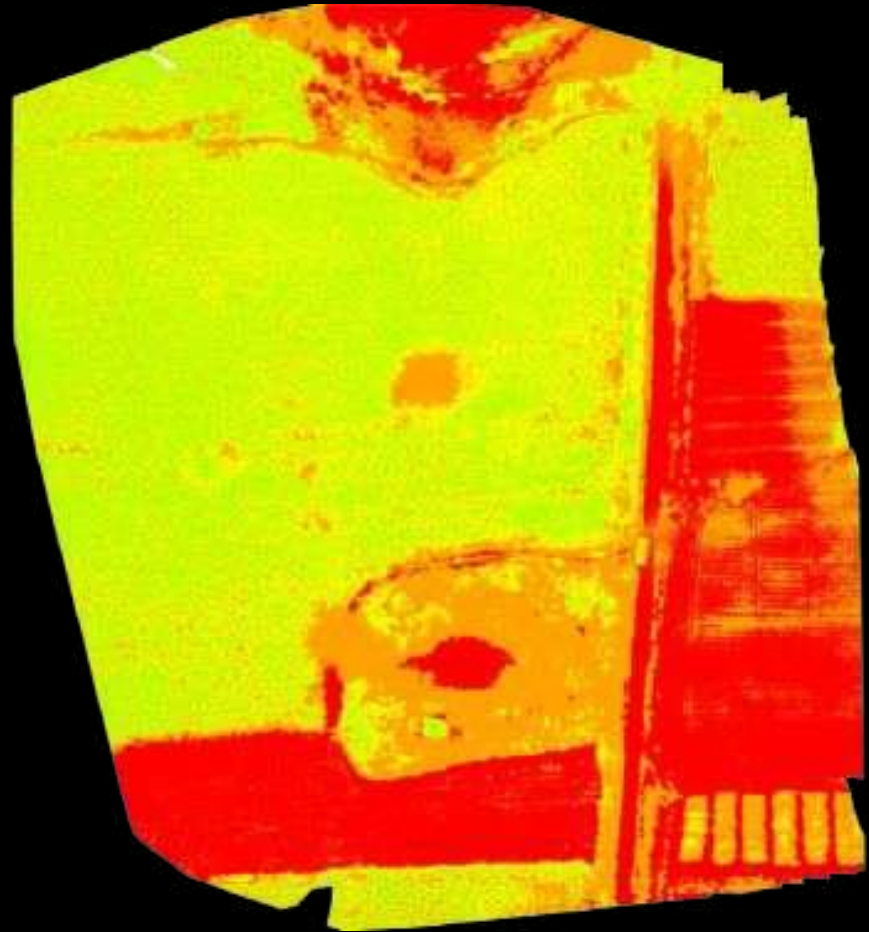


NDVI RGBa RED EDGE

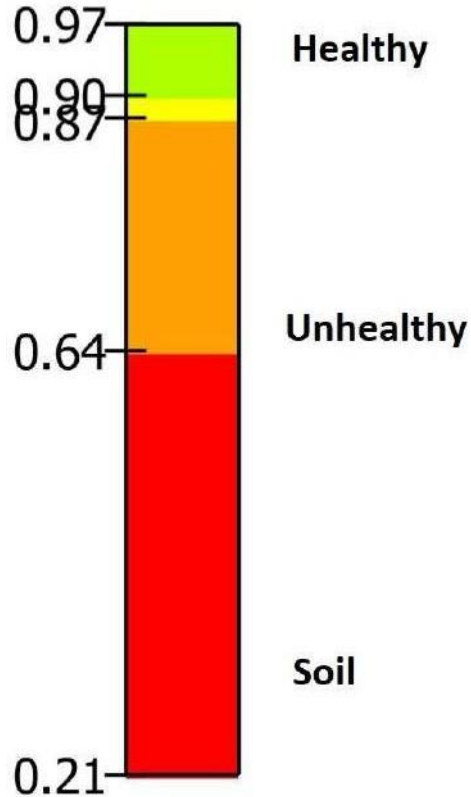


NDVI index helps to understand how the plant has survived through the season. It provides information on the areas with healthy and unhealthy corn crops to enable the farmers to take immediate corrective actions to decrease the loss.

If the index values are medium to **high (0.5–0.85)**, most likely there are **no major issues in this part of the field**. If the index is low, probably there are specific issues, like a lack of moisture and nutrients.



Pilot area NDVI



Most likely there are no major issues at this part of the field.

Expected Future Deliverables

- Yield Prediction
 - Yield prediction through corn crop count estimation and Crop Health report
- Crop Health Report
 - Providing Health information on corn crops regarding diseases, pests, and weeds
- Precision Crop Dusting
 - Realtime precision crop dusting based on the healthiness of the crop
 - Differentiating weed and crop
- Nutrition requirement (NPK map)