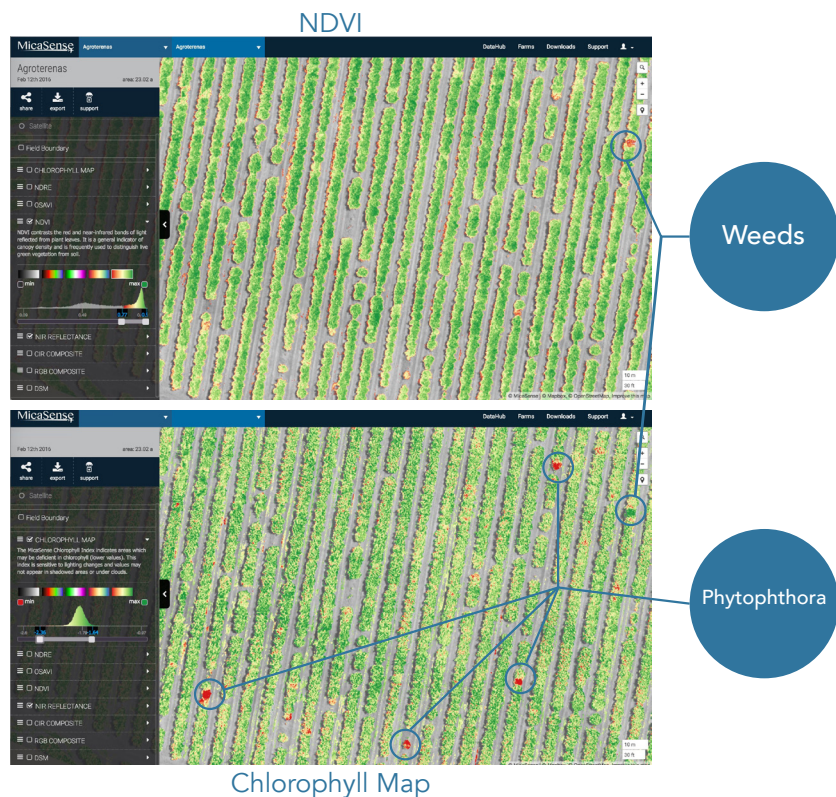


Dissatisfied with the information presented by NDVI, Bruno switched to the Chlorophyll Map layer in Atlas, an index specifically targeted to measure plant health. This layer showed a different picture, calling out several trees with extremely low values. With the help of the geo-location tool in Atlas, he and the grower then walked out to the affected trees, and were able to confirm that they were indeed diseased, showing signs of phytophthora. The grower later removed them, halting the disease's spread and saving that year's yield and profit.



While NDVI tells a lot about a crop's vigor, its ability in detecting plant health issues is limited. This is why we focus on creating health-based analysis tools to bring value to our customers. With the help of a detailed and vigilant service provider, this grower was able to identify disease before it was visible to the naked eye, demonstrating the power of advanced vegetation indices and a sensor that makes that analysis possible.

Turning imagery into actionable information.  
2018 MicaSense, Inc.

## CITRUS GROVE - BRAZIL

Chlorophyll  
Map

Using the MicaSense Chlorophyll Map to  
identify disease not shown in NDVI





# MicaSense® CASE STUDY

## Using the MicaSense Chlorophyll Map to identify disease not shown in NDVI

Many of our customers come to us disappointed with the limited value they get from basic indices like NDVI. This is because NDVI primarily measures vigor, or how “green” or leafy a plant is. Vigor is not always a clear indicator of health. A similar comparison can be made in humans; a doctor wouldn’t look at a patient’s height or hair to tell if that patient was sick; instead she would use a thermometer to measure body temperature.

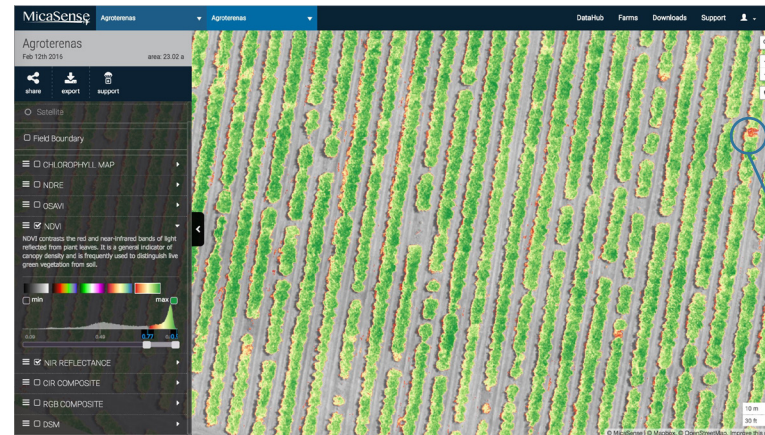
To measure overall plant health, as opposed to just vigor, it is necessary to use a sensor that captures specific spectral bands beyond just those needed for NDVI. Also required are advanced analytics, with outputs that can detect signs of stress and disease earlier and more accurately.

SENSOR	RedEdge
ANALYTICS	MicaSense Atlas
LOCATION	Brazil
CROP	Citrus
INDEX	NDVI, Chlorophyll Map
AREA	Fungal Disease Detection

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Fungal disease is a major issue in citrus groves. If a fungal disease goes undetected, it can spread quickly, with the potential to damage an entire crop. Therefore, a major key to the success of a citrus crop is through and careful disease monitoring.

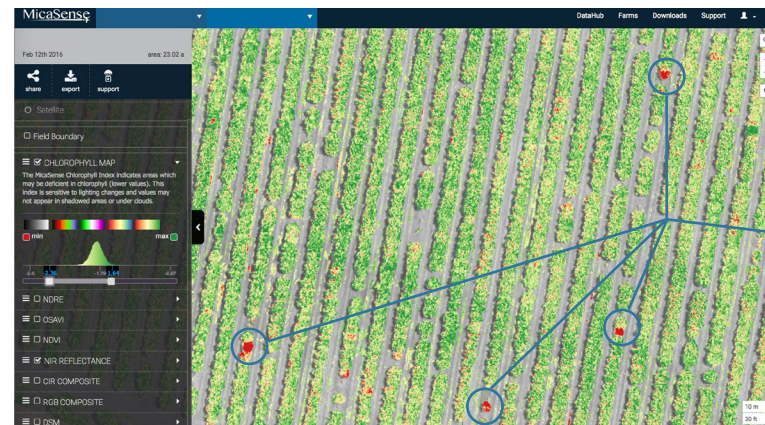
Bruno Holz Gemignani of 3DGEO, an aerial mapping service provider, was helping a grower do just that over a citrus grove in Brazil. After flying and collecting imagery with the MicaSense RedEdge sensor, Bruno used MicaSense Atlas to analyze the imagery, beginning with the NDVI vegetation index.



Weeds

NDVI

In this case, the NDVI layer looked mostly homogeneous, identifying some areas of stress that were later confirmed to be weeds. Not much help. However, Bruno did have some knowledge of this field and knew that phytophthora, a fungal disease affecting the roots of the plant, was present. He and the grower just didn’t know which plants were affected and where it was spreading.



Phytophthora

Chlorophyll Map