



# REDtone SMARTFARMING

## Satellite IoT Solutions

**Near Real Time Data • Deep Learning Algorithms  
• Actionable Insights**

A digital precision agriculture tool, Satellite IoT Solutions equips you, from space, with the ground-truth data you need to make timely, informed decisions.

It utilises the latest satellite data, processed and analysed with widely-used and custom algorithms, such as field contours, tile-based map rendering, VI dynamics, cloud/shadow mapping and change detection among others. Monitor multiple fields at once while tracking the VI change in correlation with the weather, growth stages, crop rotation and other data. Get notified via email and make precision-driven decisions, thus increasing yields and revenue.

### Features

#### Field Monitoring

Have a bird's-eye view of your fields. Get notified about both regular and abnormal changes in the state of your crops throughout the season, based on the automatic VI calculations.

#### Vegetation Indices

Benefit from the algorithm that identifies vegetation density levels on the field throughout the season. Use different vegetation indices (NDVI, NDRE, MSAVI, ReCI) at different growth stages to get the most accurate information about the health of the crops.

### Water Stress Detection

Prevent harvest loss by letting the app detect and analyze abnormal precipitation and critical sudden NDVI change. Take necessary precautions in a timely manner.

### Growth Stages

Track growth stages of your crops on the chart, according to the international BBCH-scale. Check the correlations between growth stages and other data on the chart (vegetation indices, temperatures, precipitation, among others) and make appropriate field treatment decisions, thus lowering costs and increasing yields.

### Improved Cloud Mask

Let the system automatically detect clouds over the fields.

### Crop Rotation

Crop rotation data for each field, including sowing dates and season, is conveniently displayed, along with the map, weather data, and vegetation indices, in one screen. Add crops, their sowing dates, seasons, and access this data anytime anywhere.

## Indices in Crop Monitoring

### Normalized Difference Vegetation Index (NDVI)

- Reflection and absorption of solar radiation at different wavelengths
- Shows plant health status

### Normalized Difference RedEdge\* (NDRE)

- Indication of photosynthetic activity (N)
- Shows plant condition mid-growth to end of season

### Modified Soil Adjusted Vegetation Index (MSAVI)

- Determination of presence of vegetation
- Shows weed density at early phase of planting

### Red-edge Chlorophyll Index (ReCI)

- Measurement of photosynthetic activity
- Monitor damaged part of crop

### Normalized Difference Moisture Index (NDMI)

- Describe crop's water stress level
- Identify areas of lesser water and detect drought

## Who Should Use This?

### Smallholder Farmers & Commercial Growers

Greater insights into the health of their crop, including historical data such as weather, soil conditions, yield, etc which can be correlated to actual harvested yield.

### Government Agencies

For monitoring large swaths of agriculture land to monitor the effectiveness of crop inputs, crop yields, bug infestations, water shortages, etc. Increased efficiencies in subsidy use & accountability.

### Financial Services Providers (Loans & Insurance)

Ability to monitor loan recipients' farm health, measure potential yields, ascertain historical yields for risk assessment for both loan approval as well as crop insurance services.

# REDtone

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