



2023

Plant Insights Grower's Guide

For the US



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What is Plant Insights?

Plant Insights is a service that transforms center pivot irrigation machines into crop health monitoring machines. High-resolution cameras mounted on pivot irrigation spans take thousands of leaf-level pictures of the field every time the pivot moves.

Canopy cover report (07/11-07/12)
Soybean PI Demo field 22

Avg. Canopy Cover ~30%

Severity % of scan	Change from last report
● 80-90% Cover - 13%	↗ 5%





Why use Plant Insights?

Scouts can't get to every spot in the field, especially late in the season. Your pivot has the best view of your crops, day and night.



Catch crop failure early

Seedling establishment is crucial to the success of your crop. Plant Insights enables you to optimize planting and harvest schedules, maximizing crop yield and quality.



Save time & labor

Know which fields need to be visited — and which ones don't. GPS information pinpoints problem areas so you can save scouting time.



Optimize inputs and increase yields

Detecting and treating issues early, before they spread, allows for more targeted application of costly inputs. This saves money and increases yields.



Track your progress and improve profitability

Weekly reports ensure that your treatment plans are working and allow for optimal decision-making.



If you can better target and limit a weed or pest and you can improve yield a little bit, it more than pays for Plant Insights.



Beau Hartline
Alsum Farms



● Colorado Potato Beetle



Plant Insights helps farmers produce more, with less.

Production and input costs are rising faster than ever. Growers need to detect and address issues quickly to optimize input and labor costs.



Reduce costs

Save thousands. Target treatments when and where they're needed, reduce trips to the field, and improve the precision of scouts.

Increase revenue

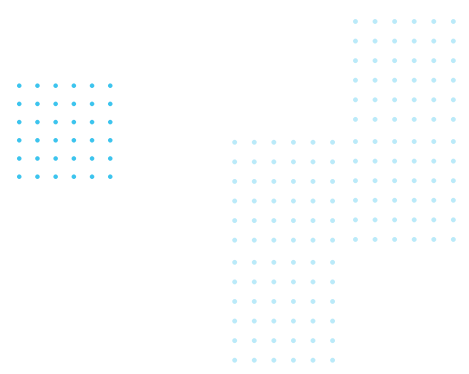
Optimize the timing of treatments to produce healthier crops and higher yields, increasing revenue in every field.



Seeing early deficiencies allowed us to push for a higher yield. Without a doubt, Plant Insights pays for itself.



Ryan Brink
Golden Grain Farms



How it works

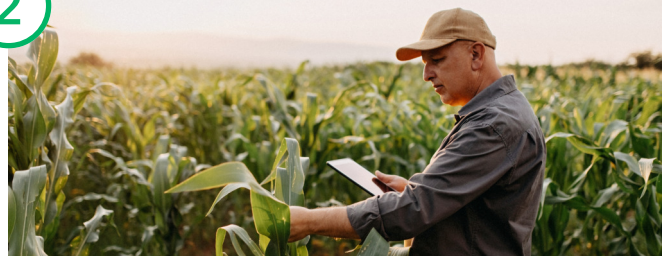
1



Installation

High-resolution cameras are mounted on pivot spans. The cameras take pictures of your crops every time the pivot moves day and night – even when running dry.

2



Analysis

Unparalleled agronomist-led AI analysis finds hard-to-detect crop damage and provides helpful insights to ensure higher yield and greater financial returns.

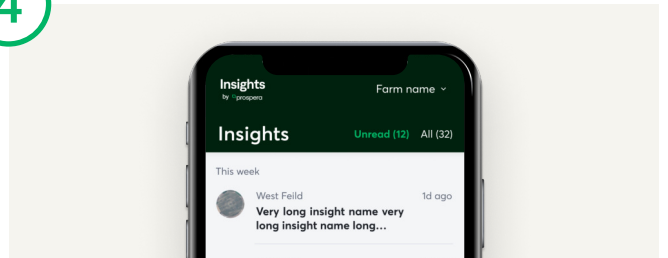
3



Images & Alerts

Open the app to view detailed reports that include high-resolution, GPS-tagged images. You can share the reports with your team. You'll receive a notification the first time we detect an issue.

4



Reports

Receive detailed reports on your preferred day, that include a view of each field, an analysis of findings, and a comparison with previous results.



Crops supported

We'll be adding more supported crop types and detections each season.



Corn

Emergence, Canopy Cover, Weeds

Pests: Grasshoppers, Insect Feeding Damage, Corn Rootworm scraping, Japanese beetle

Diseases: Rust Tar Spot GLS/BLS NCLB

Additional: Nutrient Deficiencies



Potato

Emergence, Canopy Cover, Weeds

Pests: CPB Insect Feeding Damage

Diseases: Necrotic plants (Ver),

Wilting plants (Scler)

Additional: Senescence



Drybean

Emergence, Canopy Cover, Weeds



Cotton

Emergence, Canopy Cover, Weeds

Pests: Stink bugs, Square drop



Sugarbeet

Emergence, Canopy Cover, Weeds



Soybean

Emergence, Canopy Cover, Weeds

Pests: Stink bugs, Grasshoppers, Japanese beetle, Insect Feeding Damage



Sorghum

Emergence, Canopy Cover, Weeds



Alfalfa

Canopy Cover

Additional: Flowering



Peanuts

Emergence, Canopy Cover, Weeds



Plant Insights Reports

You can't treat problems that you don't see. Plant Insights reports show you what's going on in your fields so you can focus your team's attention on the hotspots. That way, you can target treatments, saving you time and money.

Each week, you'll receive detailed reports that highlight important insights, allowing you to:

- Review which issues were detected in which fields
- View high-resolution, GPS-tagged images
- See the change from previous reports



The GPS tagging is critical for us. Prior to that, you would have to manually walk the fields and you may or may not see [the issue]. And now you can physically go to the spot that the problem was detected.



Matt Ward
Silver Spur Farms

Depending on what stage of the season you're in, you'll have access to these reports:



Emergence



Canopy Cover



Weeds



Pests



Senescence



Disease



Nutrient Deficiency



Emergence Reports

Closely monitoring emergence is crucial. It can also be time-consuming. Knowing when and how plants are emerging from the soil allows you to make important decisions about irrigation, fertilization, and pest control.

Understanding emergence patterns can also help you optimize your harvest schedule to maximize crop yield and quality.

At the start of the season, you'll enter your stand count goals so we can help you achieve your targets. You'll receive detailed reports each week about your emerging crops with with GPS-tagged images.

● **> 9,500**

6% of scan



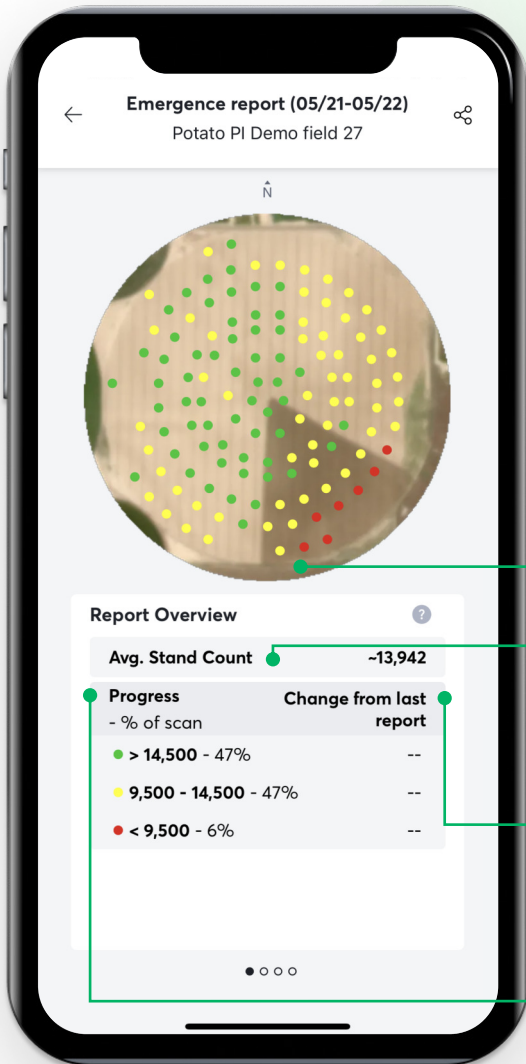
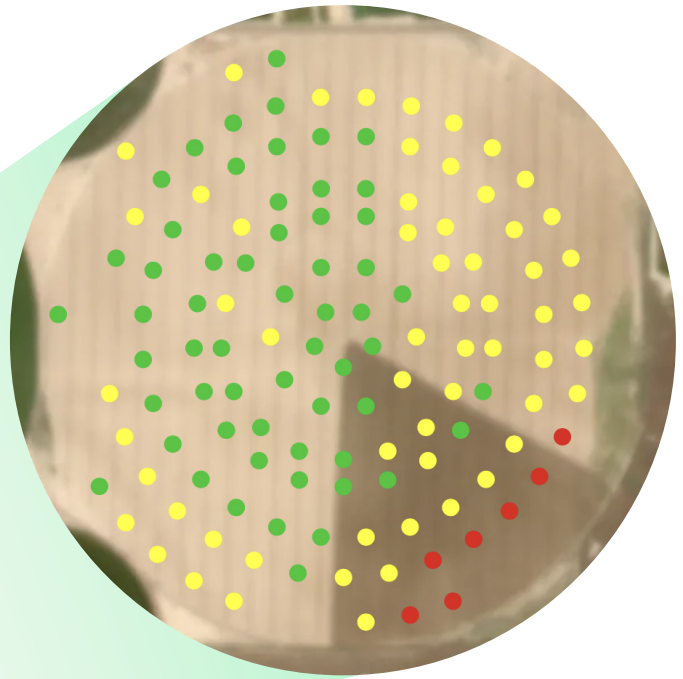
● **> 15,000**

60% of scan



Report Breakdown

Emergence



Field Overview

The field view provides an at-a-glance picture of emergence in the field.

Each dot inside the circle represents a single acre.

Average Stand Count

is the average number of plants in the scanned area.

Change from last report

shows the percentage change from the previous report

Progress - % of scan

shows the distribution of plant density across the entire field

- Green = areas of the field with a stand count above 15,000
- Yellow = areas of the field with a stand count between 10,000 and 15,000
- Orange = areas of the field with a stand count between 5,000 and 10,000
- Red = areas of the field with a stand count of less than 5,000



Pest Reports

On average, pests account for 20–40% of yield losses worldwide.¹ But, you can't treat the problems you don't see — especially in hard-to-reach areas of a field.

Pest reports within Plant Insights draw attention to destructive pests, like potato beetles, stink bugs, and grasshoppers. You'll also get notified on your phone the first time a pest is detected.

With the information you get from Pest reports, you can make better decisions on when and where to treat your field that save you time and money:

- Apply an additional pesticide treatment
- Skip a scheduled pesticide treatment
- Target your treatments

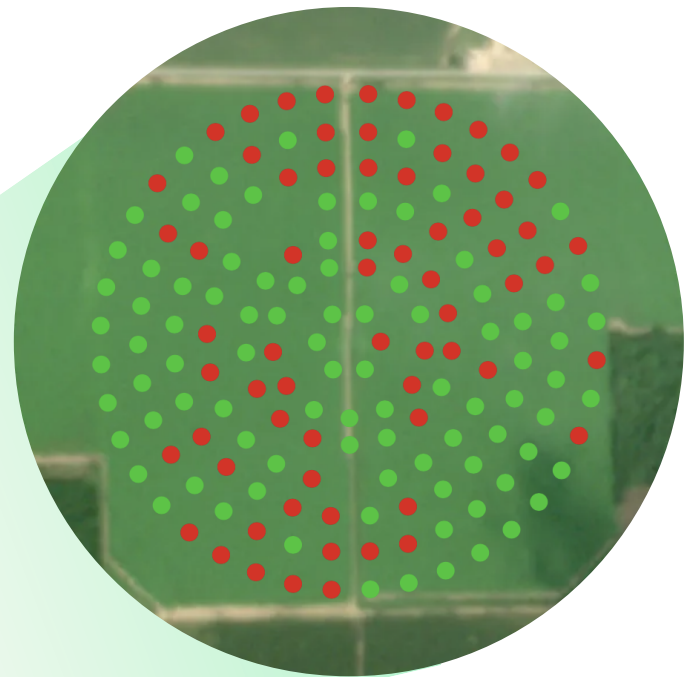
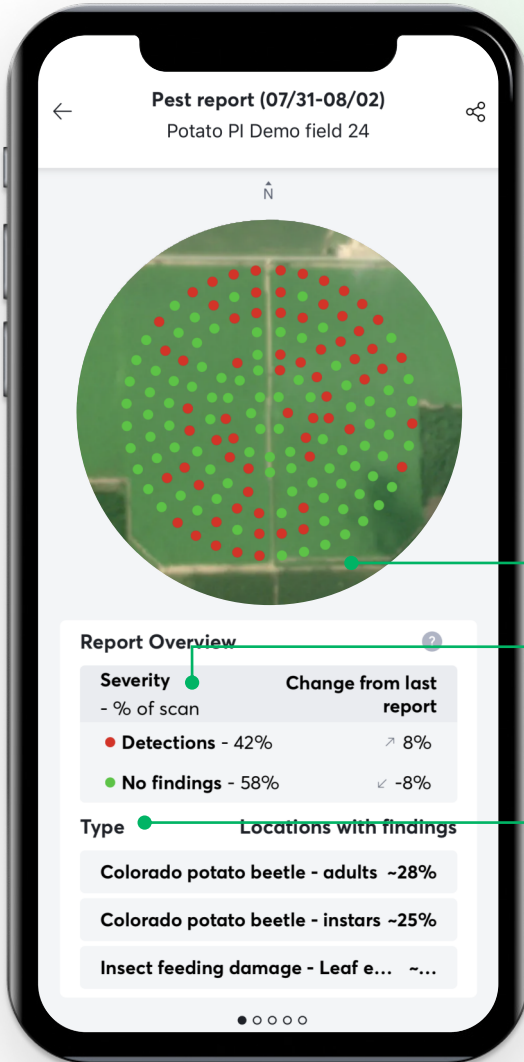
● Image Gallery | Grasshopper



¹United Nations Food and Agriculture Organization.
<https://www.nifa.usda.gov/>. Accessed March 3, 2023.

Report Breakdown

Pests



Field Overview

The field view provides an at-a-glance picture of pests in the field.

Each dot inside the circle represents a single acre.

Severity - % of scan

shows if there's detected pests, including the percentage change from last report.

Type

includes a summary of the detected pests, including the percentage of the field with issues.

- No findings (percentage of field with no pest detections; in this case, 58%)
- Detections (percentage of field with pest detections; in this case, 42%)



Weed Reports

As the season progresses, and plants grow, weeds begin to compete with crops for essential resources. Once weeds begin to deprive crops of these resources, they can negatively impact your yield potential.

Weed reports within Plant Insights reveal issues with broadleaves and grasses.

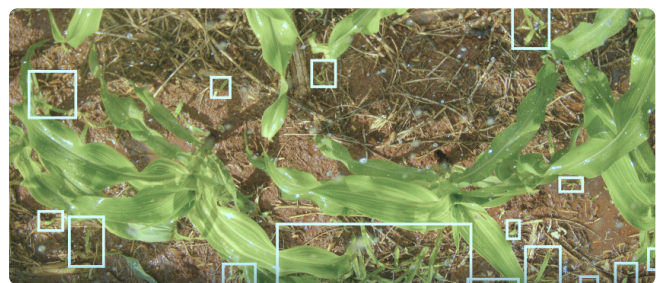
This information allows you to focus your team's attention on the hotspots and accurately target your treatments, saving you time and money:

- Apply an additional herbicide treatment
- Skip a scheduled herbicide treatment
- Target your treatments

Image Gallery | Broadleaves

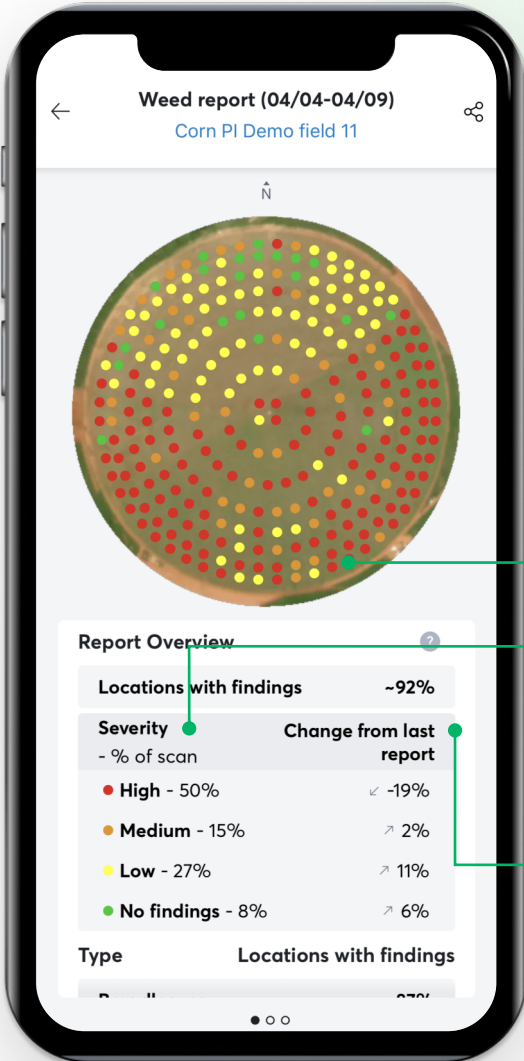
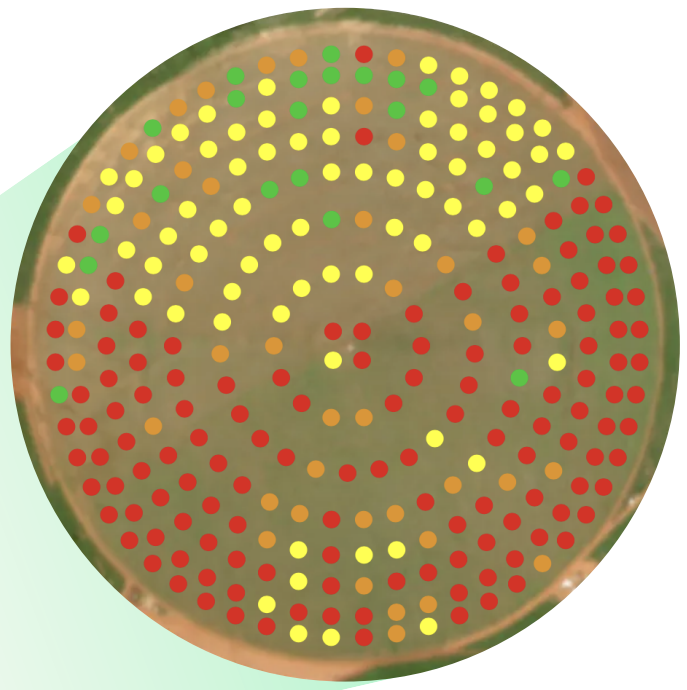


Image Gallery | Grasses



Report Breakdown

Weeds



Field Overview

The field view provides an at-a-glance picture of weeds in the field.

Each dot inside the circle represents a single acre.

Severity - % of scan

shows the distribution of weed density across the entire field, including the percentage change from the last report

Change from last report

shows the percentage change from the previous report

- No findings (percentage of field with no weed detections)
- Low (percentage of field with a low number of weeds)
- Medium (percentage of field with a moderate number of weeds)
- High (percentage of field with a high number of weeds)



Nutrient Deficiency Reports

Monitoring nutrient levels is essential to maintaining optimum plant health. When plants suffer from malnutrition, they show symptoms of being unhealthy.

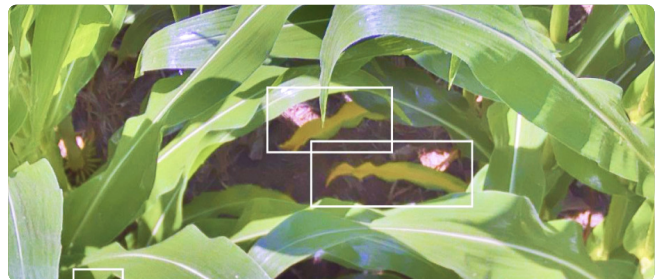
Nutrient Deficiency reports delivered within Plant Insights detect early signs of issues in hard-to-reach areas of the field.

When you identify symptoms early, you can fine-tune your nutritional program and minimize stress conditions.

Image Gallery | Upper canopy nutrient...

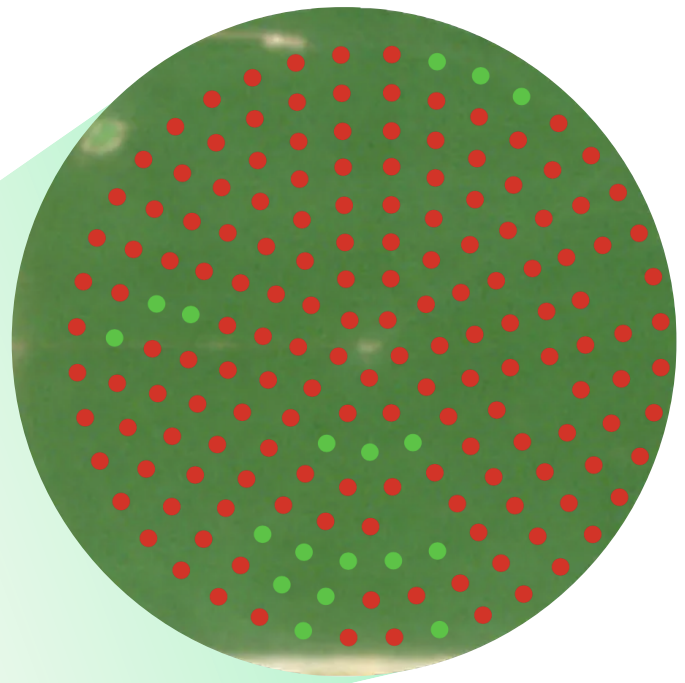
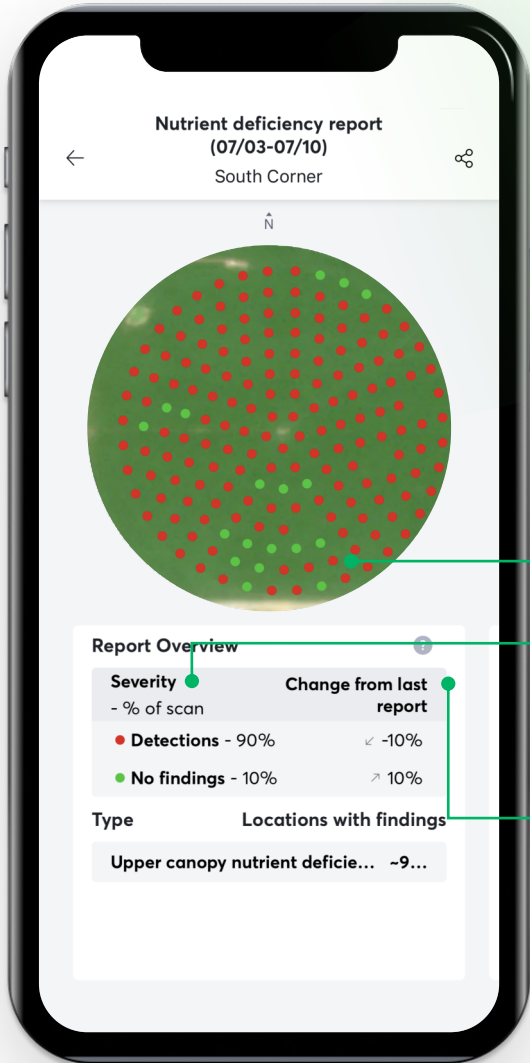


Image Gallery | Upper canopy nutrient...



Report Breakdown

Nutrient Deficiency



Field Overview

The field view provides an at-a-glance picture of nutrient deficiencies in the field.

Each dot inside the circle represents a single acre.

Severity - % of scan

shows if there's detected nutrient deficiencies

Change from last report

shows the percentage change from the previous report

- No findings (percentage of field with no nutrient deficiency findings; in this case, 10%)
- Detections (percentage of field with at least one detection of nutrient deficiency; in this case, 90%)



Disease Reports

As the growing season progresses and plants are taller, it becomes more difficult for scouts to spot diseases throughout the fields.

Plant Insights cameras have the best view of your crops — even in hard-to-reach areas when plants are tall. By analyzing thousands of leaf-level images throughout your field, our agronomist-led AI can spot diseases very early.

Disease reports within Plant Insights highlight issues with lesions, tar spots, and necrotic plants. This information allows you to make more informed treatment decisions.

● Image Gallery | Thin brown lesions

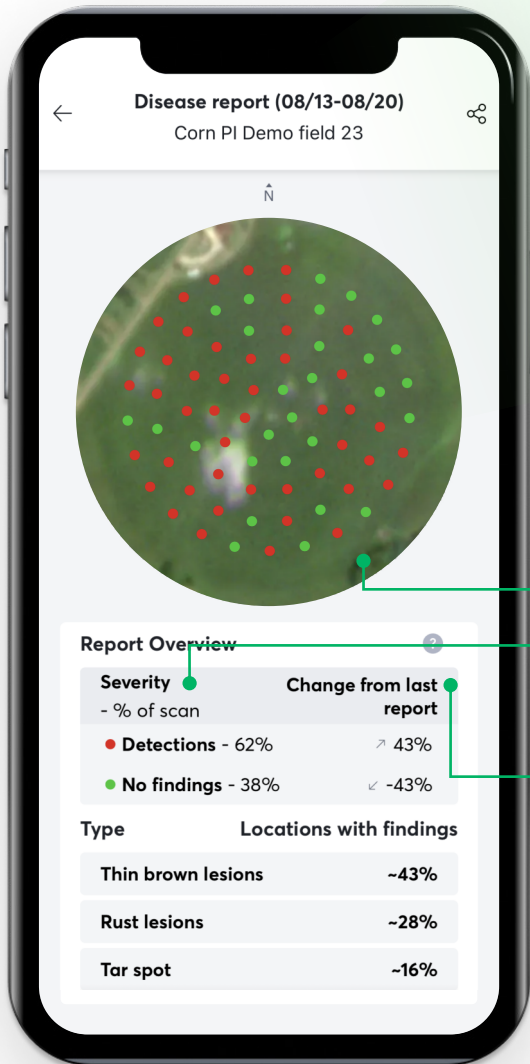
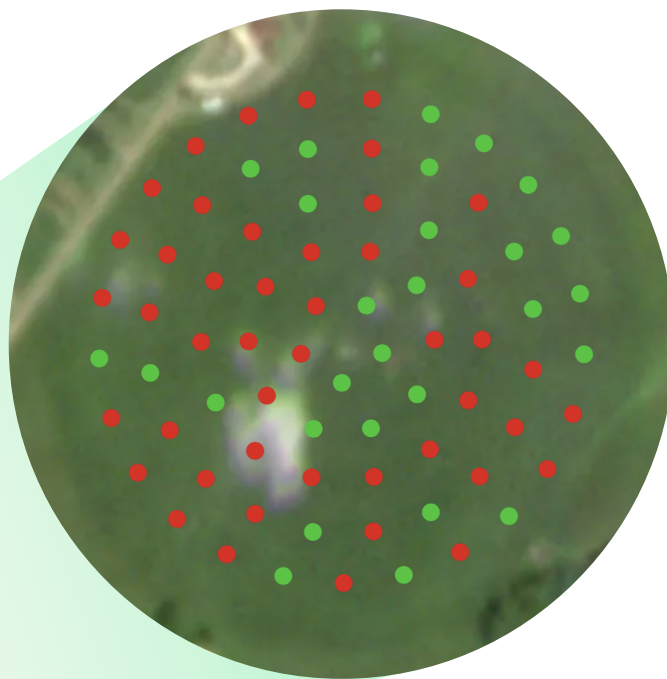


● Image Gallery | Tar spot



Report Breakdown

Disease



Field Overview

The field view provides an at-a-glance picture of diseases in the field.

Each dot inside the circle represents a single acre.

Severity - % of scan

shows if there's detected disease

Change from last report

shows the percentage change from the previous report

- No findings (percentage of field with no disease findings; in this case, 38%)
- Detections (percentage of field with disease findings; in this case, 62%)



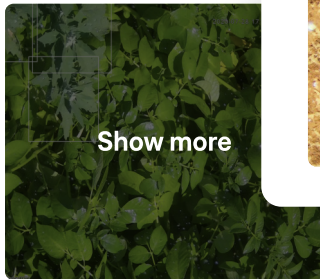
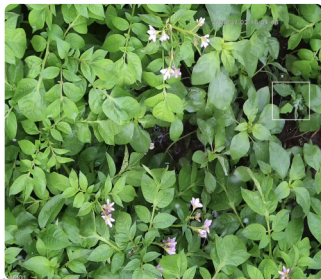
Canopy Cover

Maintaining optimum plant health involves closely tracking and monitoring growth rates and stage progression. Relying on scouts alone can be time-consuming and expensive — and some issues are hard to see with the naked eye.

Canopy Cover reports enable you to assess expected yields and make adjustments between seasons, such as changing planting distances, using more seeds, or trying different crop varieties.

● **100% Cover**

22% of



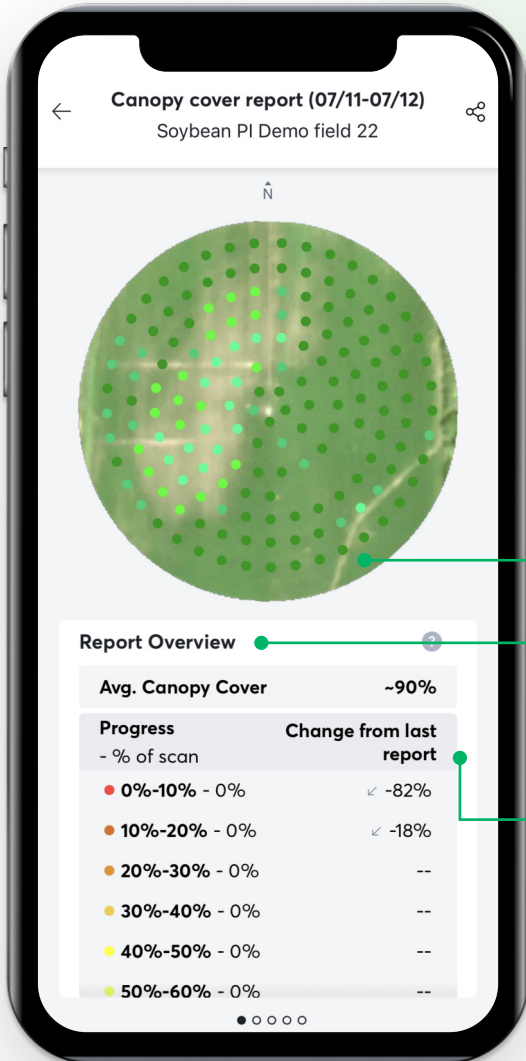
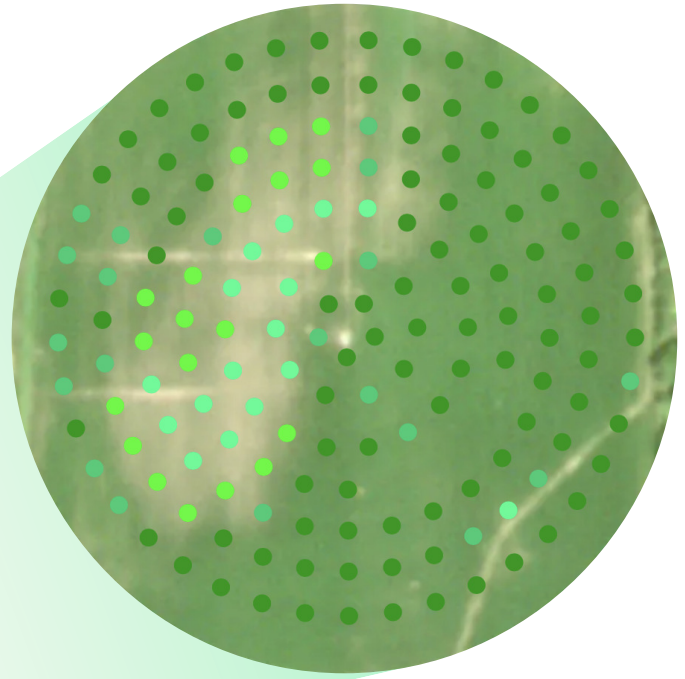
● **10-20% Cover**

15% of scan



Report Breakdown

Canopy Cover



Field Overview

The field view provides an at-a-glance picture of canopy cover in the field.

Each dot inside the circle represents a single acre.

Report Overview

shows the distribution of canopy cover across the entire field.

Change from last report

shows the percentage change from the previous report.

The colors shown in the bottom of a Canopy Cover report represent groupings, ranging from 0–10% of cover (red), to 90–100% of cover (green). Other colors are used to represent the ranges in between these values. The percentage indicated next to the range (0% in the example provided) indicates the portion of the field with this range of canopy cover.



Senescence Report

Issues with senescence tend to happen later in the season, as the canopy grows. At this stage, accessing the field is more challenging and visibility is decreased.

Plant Insights is like an extra set of eyes, providing images of hard-to-reach locations, resulting in earlier detection of senescence.

Senescence reports provide insights into trends — revealing new issues or significant changes from the previous report.



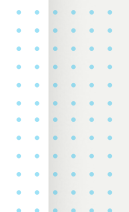
● **60-80%**

9% of scan



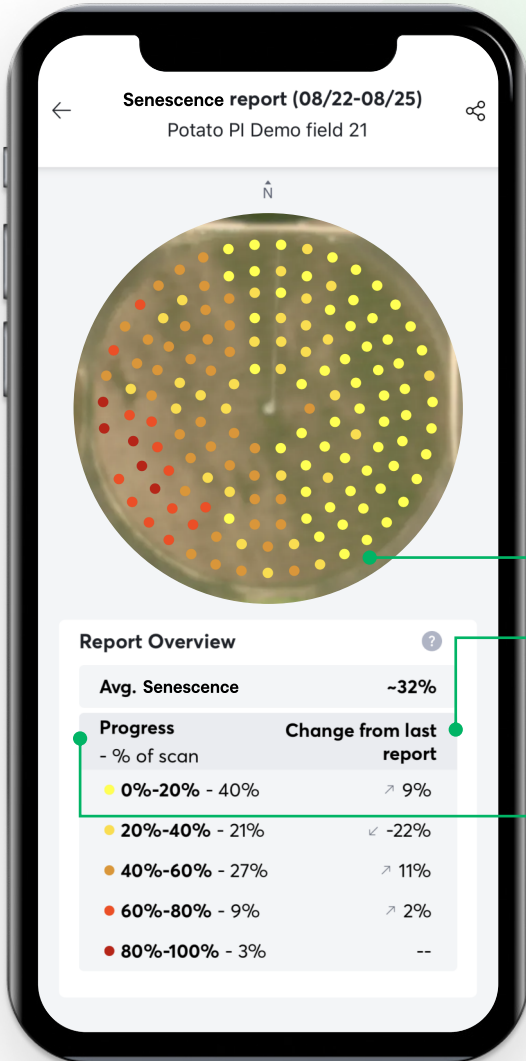
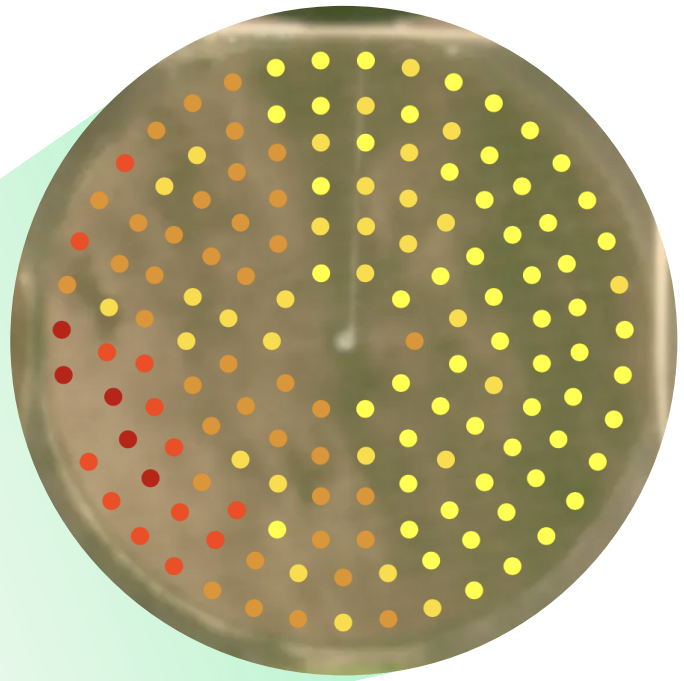
● **0-20%**

60% of scan



Report Breakdown

Senescence



Field Overview

The field view provides an at-a-glance picture of senescence in the field.

Each dot inside the circle represents a single acre.

Change from last report

shows the percentage change from the previous report.

Progress - % of scan

shows the distribution of senescence density across the entire field.

The colors shown in the bottom of a Senescence report represent groupings, ranging from 0–20% (yellow), to 80–100% (red). Other colors are used to represent the ranges in between these values. The percentage indicated next to the range (40% next to the 0–20% value in the example provided) indicates the portion of the field with this range of senescence.



How to get started

Install the Hardware

Plant Insights includes the hardware listed below:

- 4 cameras
- 1 analyzer
- 2 Wi-Fi antennas
- 1 Wi-Fi repeater
- Mounting and connection hardware

Note: Your dealer should complete the wiring, installation, and configuration of the Plant Insights hardware.

All Plant Insights hardware comes with a 2-year warranty.

Provide Field & Crop Information

Once the hardware is installed, our team will provide a link to our Field Management Tool where you'll enter details about your crops so we can deliver helpful reports throughout the season.

Download the App

The Insights app is available from both the Apple App Store and Google Play.

[Talk to an expert to get a demo](#)





Service & support



Prospera team members meeting with a customer and local Valley dealership team at Golden Grain farm in Michigan.

Our US-based technical support team is here to help you with any questions you have.

Call

1.888.223.0595, Option 1

Monday – Friday, 7:00 am – 10:00 pm CT

Email any time

valleyinsights@prospera.ag

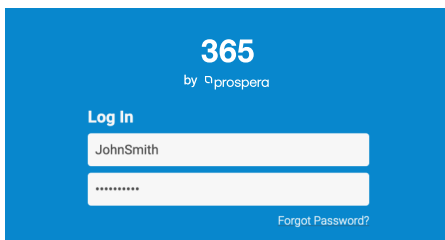


Invoices & billing

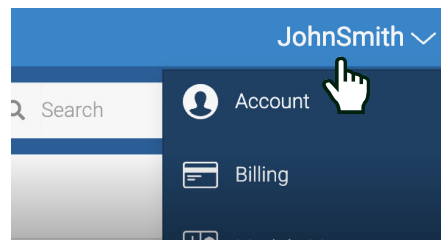
No surprises here. All invoices will be sent to the email address you provide when setting up your account. You'll also receive an invoice via mail.

Go to Valley365.com to view your invoices and pay your balance online.

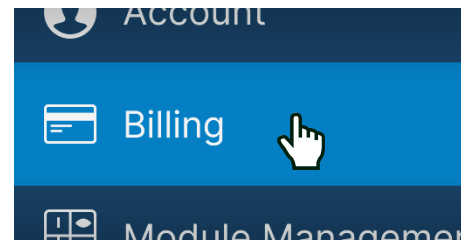
How to get to your billing information from Valley365.com:



Log in with your AgSense/Valley username and password.



Click the down arrow next to your username on the top right of your screen.



Go to Billing.

If you're already a Valley or AgSense customer — thank you! We'll send your invoices to the same place your other invoices are already being sent.

Need to update your info?

Contact our billing support team at 1-605-352-8350. Monday – Friday, 7am – 5pm CST



FAQs

Does Plant Insights support fields with multiple crops?

Yes, Plant Insights supports up to two crops (from our supported list) per field.

Does Plant Insights work with any pivot brand?

Yes, Plant Insights can be installed on any pivot brand as long as a 120 V AC power supply is present where necessary.

Can Plant Insights hardware be relocated each year?

Yes. We recommend you work with your local dealer to move the hardware.

What machine configurations are supported?

Plant Insights comes with four cameras. They need to be installed on spans 1 through 8. Machines with corner arms can be configured with Plant Insights; however, the swing span will not be outfitted with cameras. Similarly, Plant Insights can be ordered on machines with benders and/or drop spans, however, cameras will not be installed on spans beyond the bend location or on the drop spans. We recommend you work with your local dealer to install the hardware.

[Talk to an expert to get a demo](#)

