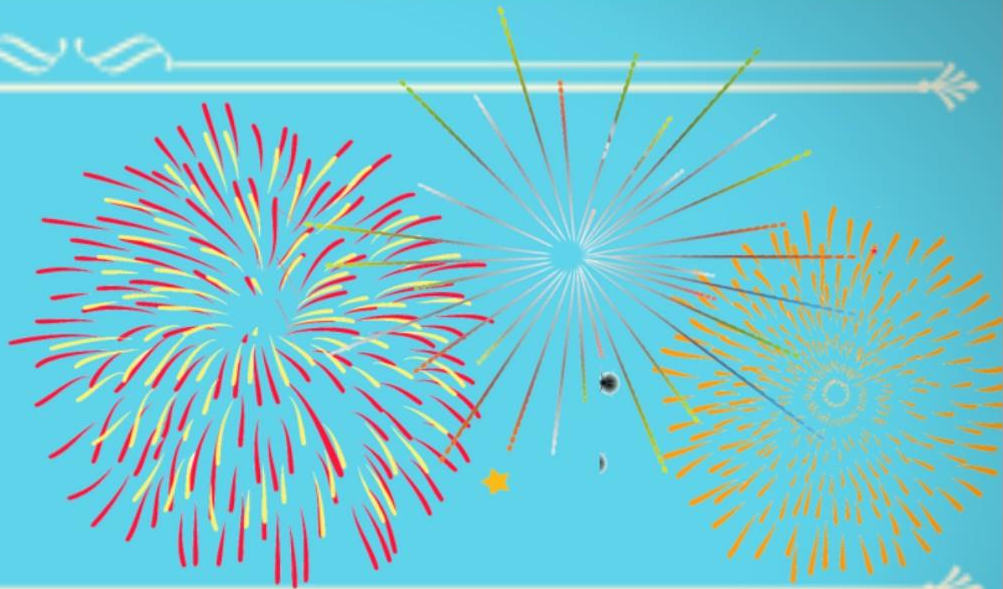


# Remote Sensing in Specialty Crops

Delivering Aerial Intelligence to  
Enhance Farm Profitability



# New Year's Resolutions



**Run 2 Miles  
Every 3 Days**



**Go to the Gym 4  
times a Week**



**Drink Less Beer**



**Eat Healthier**



# Only a Few Things in This Life are Certain

Death | Taxes | Change

A dirt road winding through a forest. The road is flanked by tall, dry grasses and some evergreen trees. The sky is overcast and grey.

**Only the fittest will survive.**

Charles Darwin



**Invasive Pests, Diseases & Weed Infestations Can Spread Rapidly  
Costing Thousands of Dollars in Potential Yield to be Lost**





**2014**

**2015**

**2016**



**Labor Shortages**

**Ever-Changing Immigration Policy**



**Boots on the Ground Management Isn't Viable On it's Own Anymore**

# THE THREE INDUSTRIAL REVOLUTIONS



## 1760: AGE OF MECHANICAL PRODUCTION

The Advent of the  
Steam Engine &  
Machine Tools



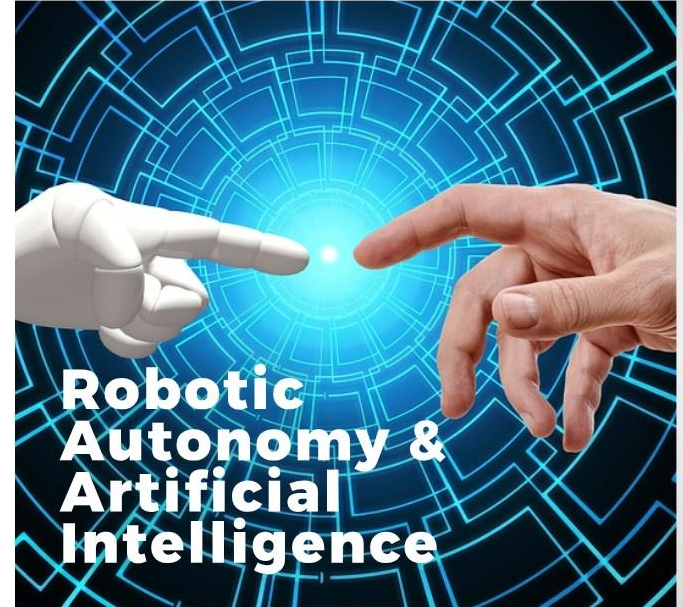
## EARLY 1900'S: SCIENCE AND MASS PRODUCTION

Gas Engines, Airplanes,  
Fertilizers and  
Urbanization



## 1950'S: THE DIGITAL REVOLUTION

Semi-conductors,  
mainframes, personal  
computing and the  
Internet



**We're at the Start of What Will be the Fourth Industrial Revolution**

SKYCISION PRESENTS:

# MASTERS OF CHANGE

Enhancing Specialty Farm Profitability

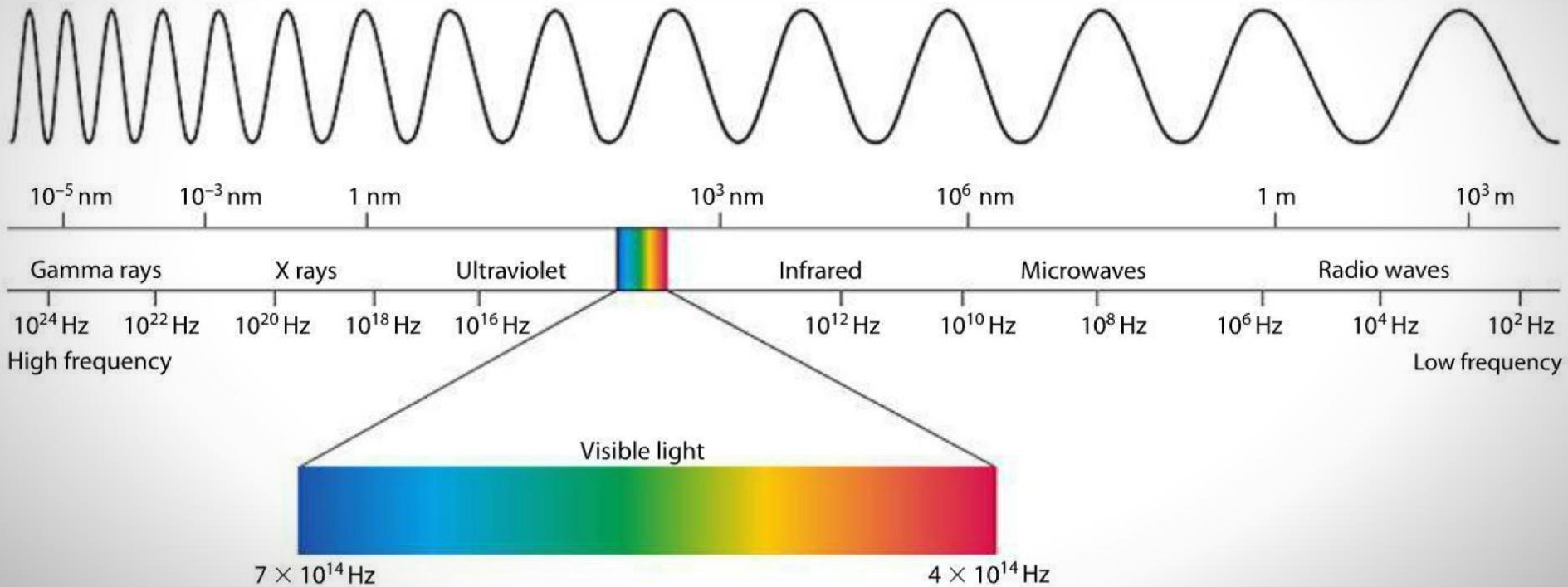


# Remote Sensing & Measuring Seasonal Change

A satellite in space with solar panels and a parabolic antenna, orbiting Earth. The text 'Remote Sensing & Measuring Seasonal Change' is overlaid on the image.

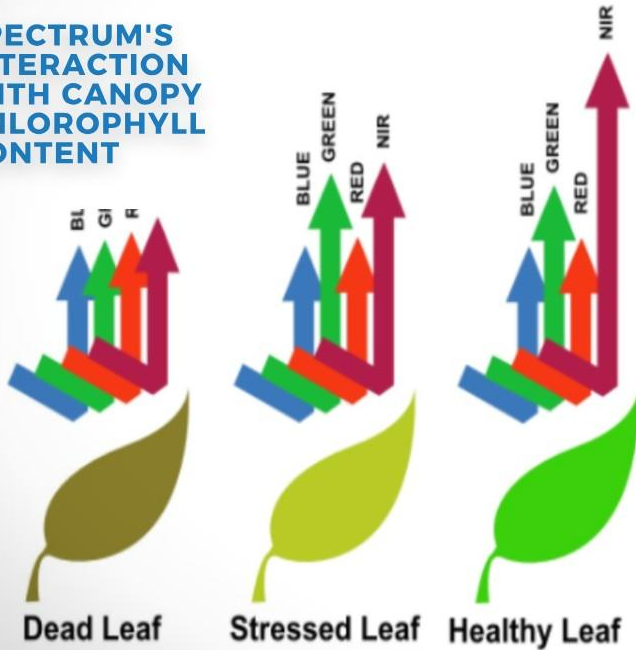
Remote Sensing is the practice of measuring the reflectance profile of the electromagnetic spectrum of light on the canopies of crops in Agriculture. It helps provide information on crop health, potential yield forecasts, and enables variable rate management.

# THE ELECTROMAGNETIC SPECTRUM



# HOW IT WORKS

**SPECTRUM'S  
INTERACTION  
WITH CANOPY  
CHLOROPHYLL  
CONTENT**



**PIONEERED BY NASA  
IN THE 90S BUT IS  
LOW RESOLUTION  
AND INACCURATE**

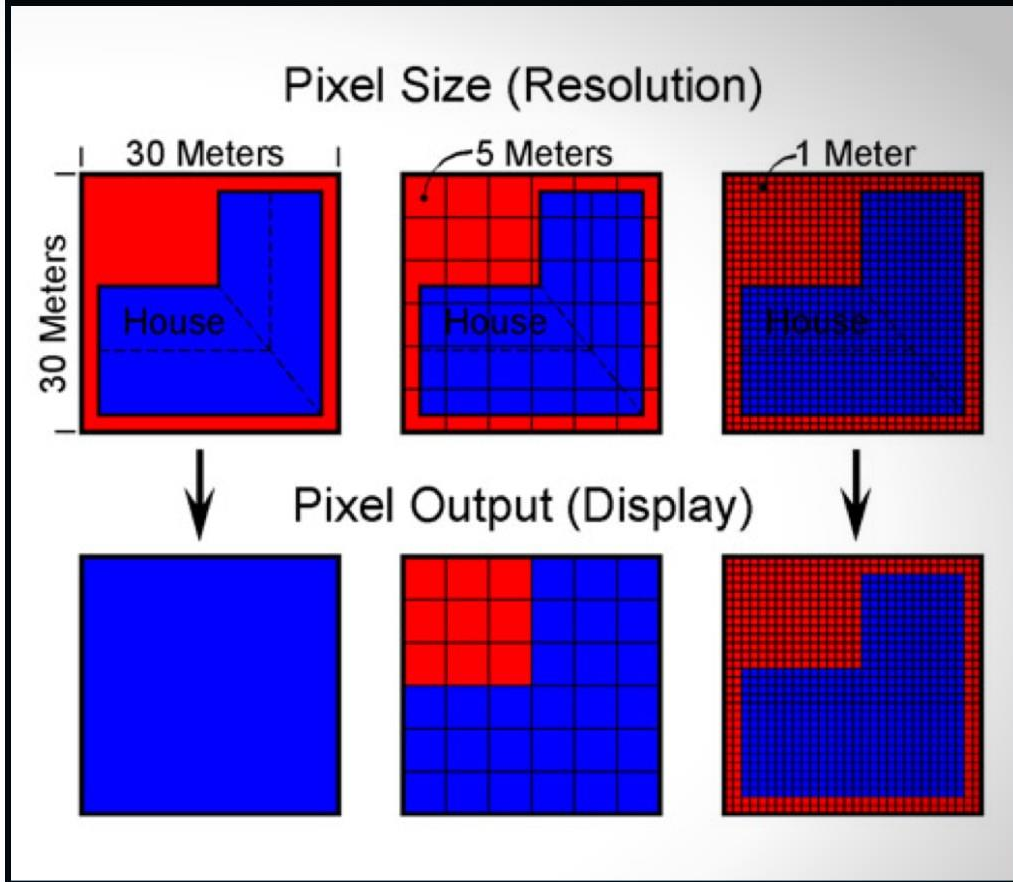


**IR IMAGERY HAS PROVEN TO BE A STRONG  
INDICATOR OF CROP HEALTH IDENTIFYING  
STRESS 10-14 DAYS EARLIER THAN THE  
HUMAN EYE**



# Why is Imagery Resolution Important?

THE RESOLUTION OF AN IMAGE IS NORMALLY MEASURED BY THE NUMBER OF PIXELS WIDE BY PIXELS TALL. WHEN IMAGES ARE STITCHED TOGETHER, THEY ARE MEASURED BY THE DISTANCE COVERED IN EACH PIXEL.



The above image shows a 30m/p, a 5m/p, and a 1m/p sample and how the area imaged would display below it after processing.



# PLATFORMS FOR IMAGE CAPTURE



**DRONES:** HIGHEST  
RESOLUTION & ACCURACY



**PLANES:** RELIABLE QUALITY  
BUT LOW RESOLUTION

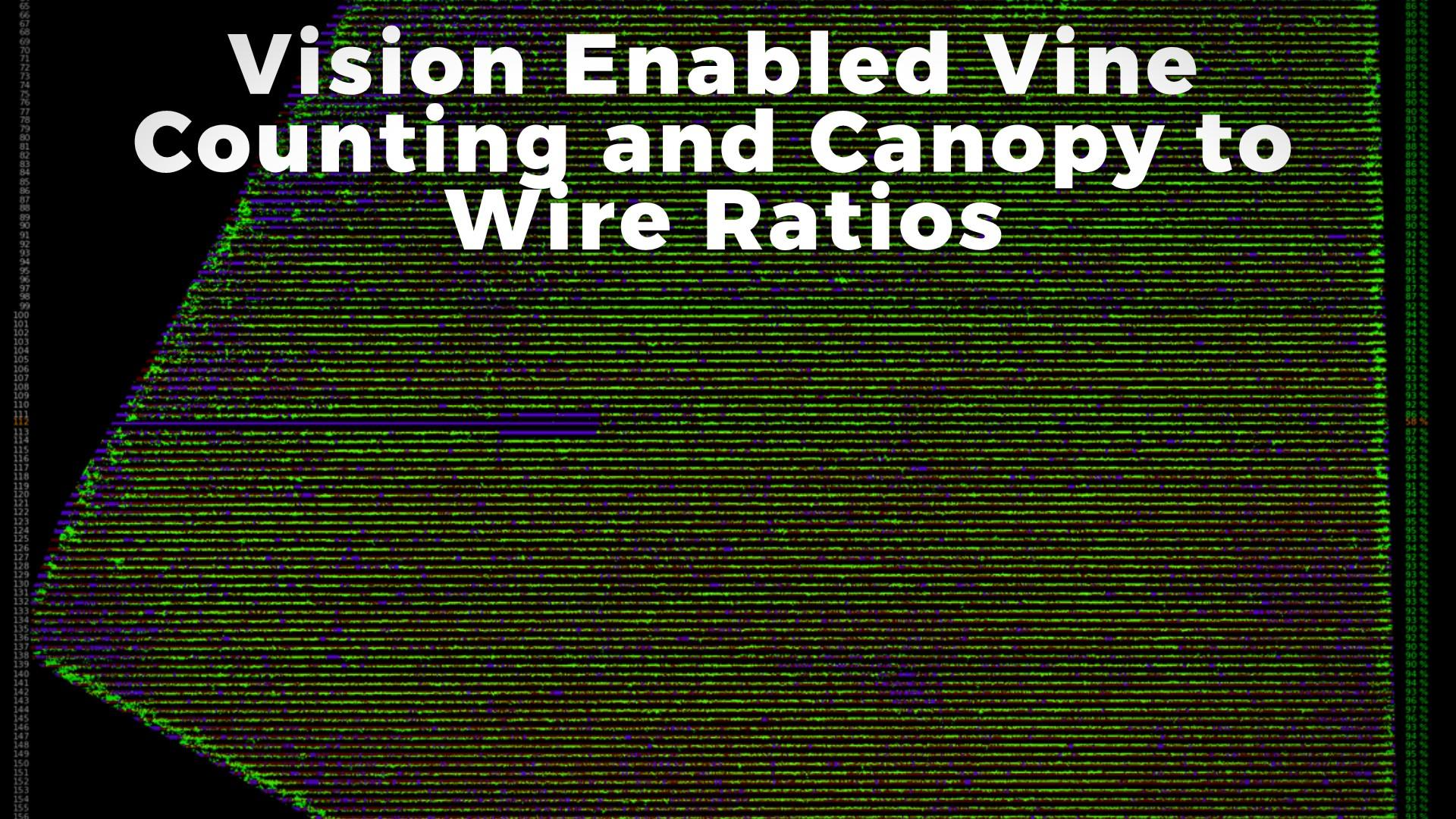


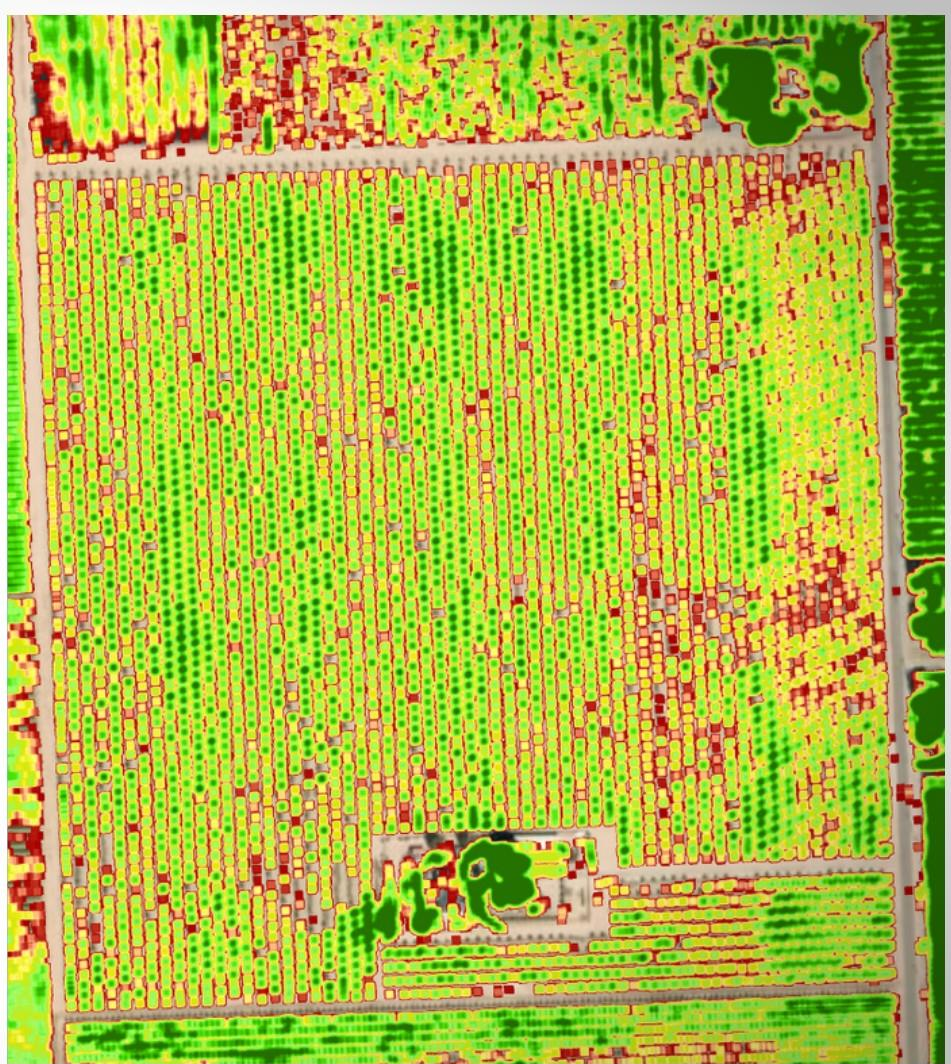
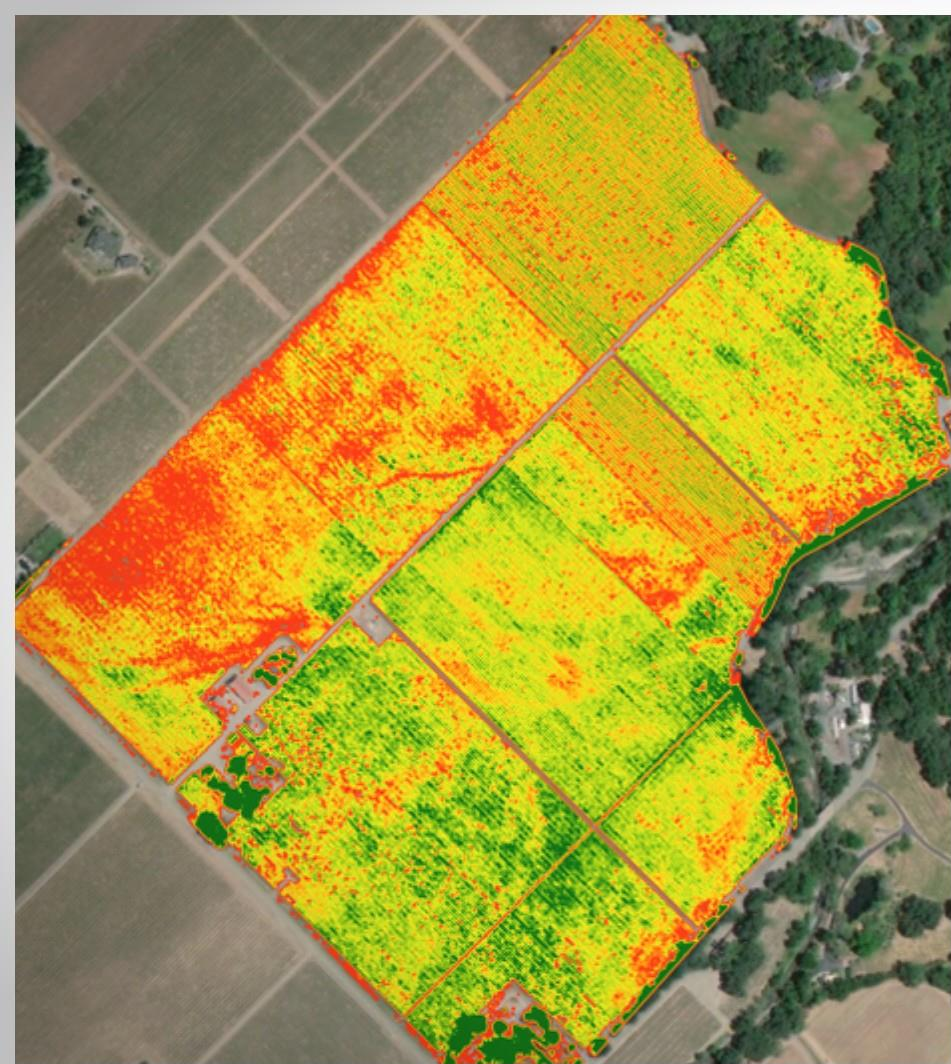
**SATELLITE:** AFFORDABLE,  
LOWEST QUALITY &  
RESOLUTION

# High Visual Resolution is Imperative to Delivering Value in Specialty Crops



# Vision Enabled Vine Counting and Canopy to Wire Ratios







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