



Aerobotics[®]

Improve returns with early season fruit structure
harvest estimates using smartphone imagery

Traction

COMPANY HIGHLIGHTS:

- ✓ 250K+ active hectares across 18 countries
- ✓ 150M+ trees & vines processed
- ✓ 200+ growers, packers & marketers
- ✓ 1M+ TrueFruit images were uploaded and processed each month



Impact of fruit size on profitability



Market Segment:

Citrus - Soft Citrus

Grower

South Africa

INDUSTRY AVERAGE			
Export pack out: 73%			
Size category	Size distribution	Export cartons per ha.	Operating profit per carton*
1xxx	5%	118	R 35.30
1xx	5%	118	R 44.66
1x	15%	353	R 47.71
1	15%	353	R 51.63
2	25%	589	R 48.97
3	20%	471	R 36.01
4	10%	235	R 1.70
5	5%	118	R (22.71)
2	100%	2,355	R 37.38
Operating profit per hectare*			R 88,021.67

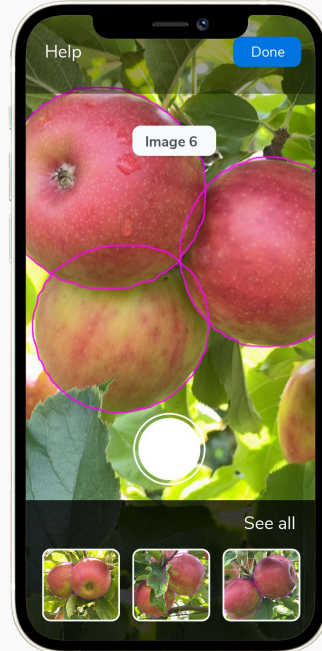
Aerobotics Customer - ABOVE AVERAGE			
Reduce smaller size cartons (5% of 5s and 4s move to size 3)			
Export pack out: 73%			
Size category	Size distribution	Export cartons per ha.	Operating profit per carton*
1xxx	5%	118	R 37.17
1xx	5%	118	R 46.55
1x	15%	353	R 49.62
1	15%	353	R 53.57
2	25%	589	R 50.95
3	25%	471	R 38.01
4	7%	235	R 3.75
5	3%	118	R (20.62)
2	100%	2,355	R 41.55
Operating profit per hectare*			R 97,838.61
Profit improvement/(loss reduction) per ha			R 9,816.94
Profit improvement/(loss reduction) %			11.15%

FULL POTENTIAL			
Achieve target fruit sizes			
Export pack out: 73%			
Size category	Size distribution	Export cartons per ha.	Operating profit per carton*
1xxx	0%	-	R 65.43
1xx	17%	400	R 75.41
1x	26%	612	R 79.05
1	26%	612	R 84.70
2	31%	730	R 83.93
3	0%	-	R 72.59
4	0%	-	R 41.09
5	0%	-	R 17.16
1	100%	2,355	R 81.41
Operating profit per hectare*			R 191,716.16
Profit improvement/(loss reduction) per ha			R 103,694.49
Profit improvement/(loss reduction) %			117.81%

Current sizing methods are challenging

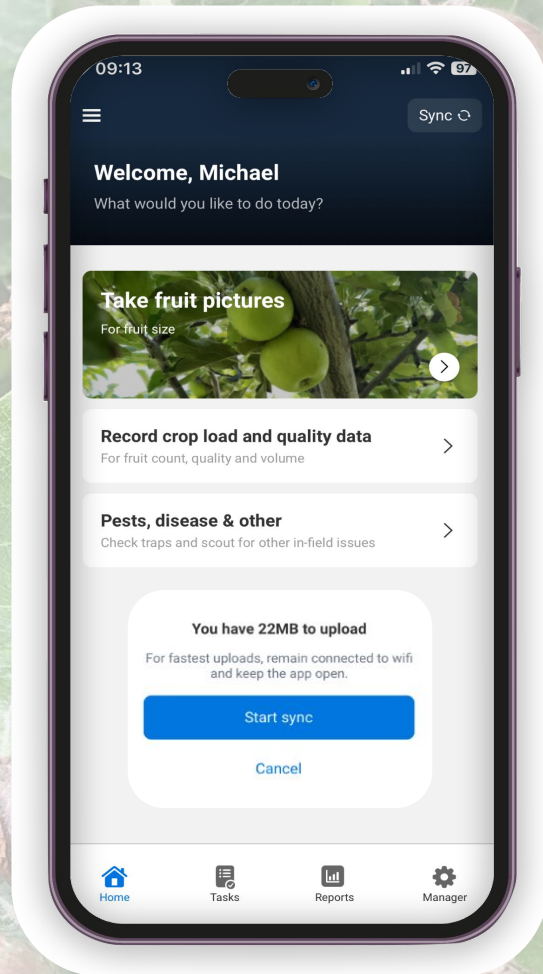


Introducing









09:13

97



Sync

Welcome, Michael

What would you like to do today?

Take fruit pictures

For fruit size



Record crop load and quality data

For fruit count, quality and volume



Pests, disease & other

Check traps and scout for other in-field issues



You have 22MB to upload

For fastest uploads, remain connected to wifi and keep the app open.

Start sync

Cancel



Home



Tasks

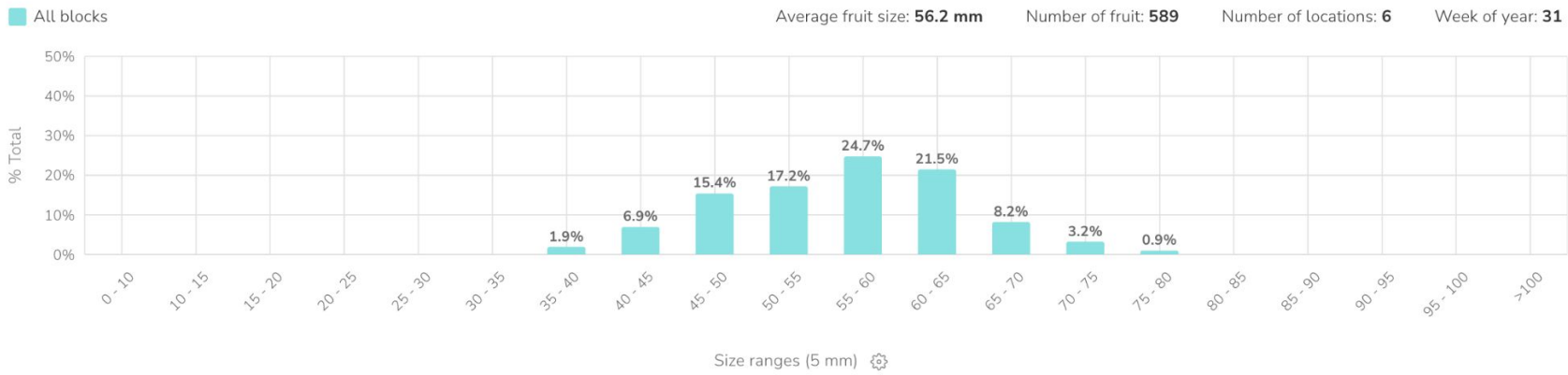


Reports

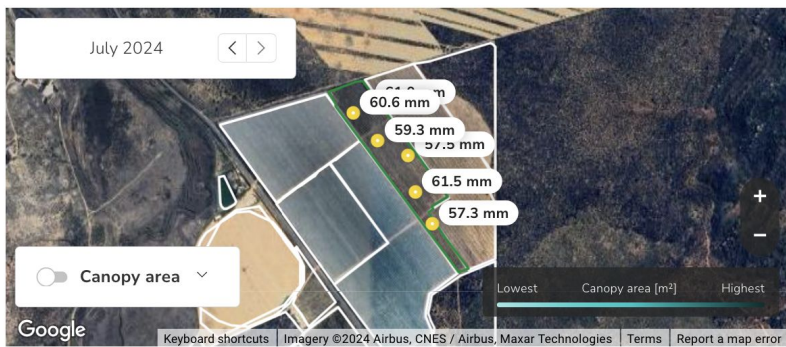


Manager

Farm-level size structure Twaktuin



Sample locations



[Open map](#)

Fruit images



[View all](#)

Season: 2023/2024

Crops: All

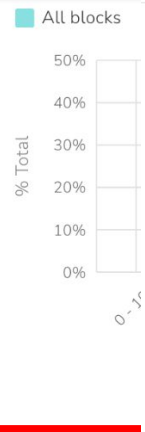
Farm: All

Block: All

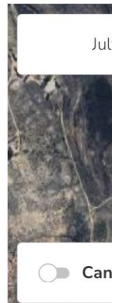
[Compare to previous season](#)

Farm-level size Farm-level fruit images

×



Sample loc:



Google

Keyboard shortcuts | Imagery ©2024 Airbus, CNES / Airbus, Maxar Technologies | Terms | Report a map error

[Open map](#)

[View all](#)

Season: 2023/2024

Crops: All

Farm: All

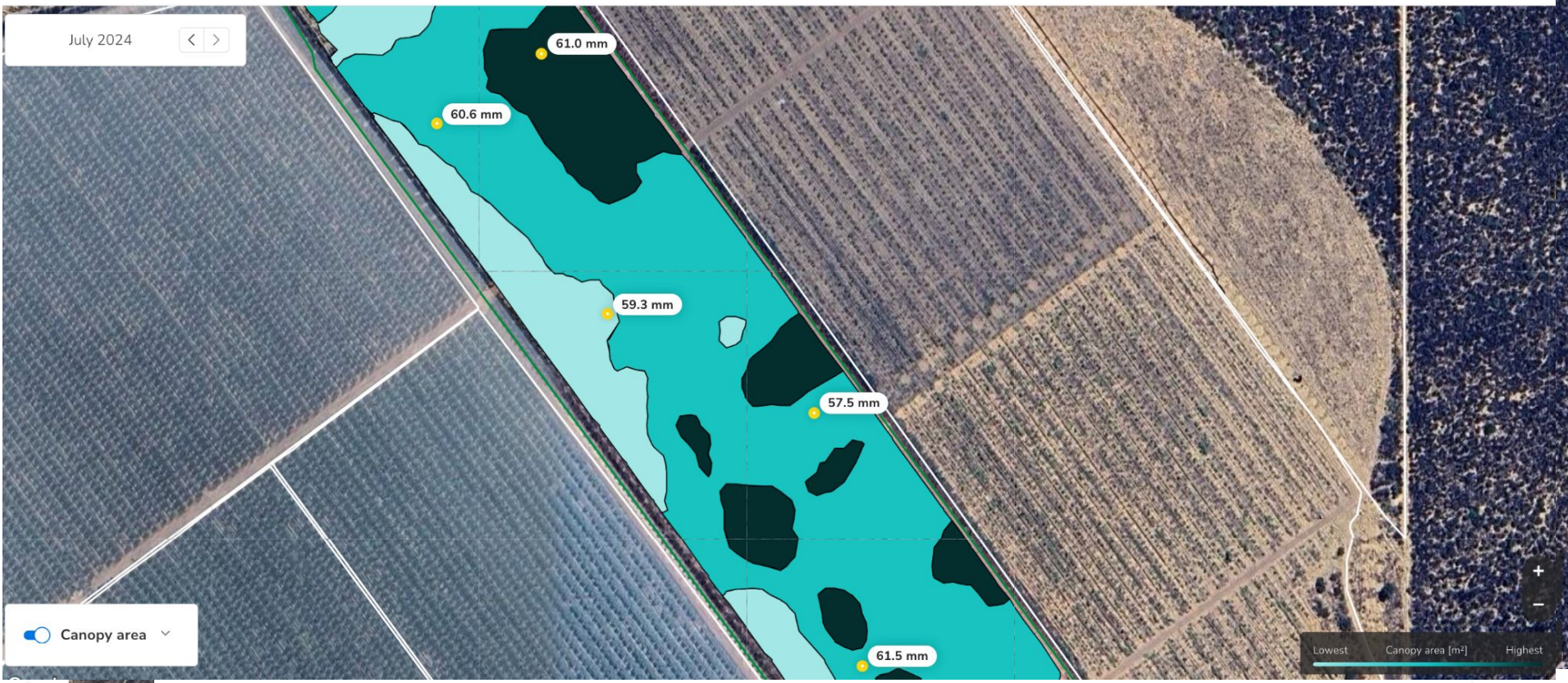
Block: All

[Compare to previous season](#)

Farm-level fruit size locations Wittedrift - Week 16

Share [✕](#)

July 2024 [<](#) [>](#)



Canopy area

Lowest Canopy area [m²] Highest

Farm-level fruit size locations Wittedrift - Week 16

Share

July 2024

61.0 mm

Farm-level overview

Table

Graph

Forecast



Cultivars Farms Blocks

- Twaktuin
- Wittedrift

Canopy area

61.5 mm

Lowest Canopy area [m²] Highest

Season: 2023/2024

Crops: All

Farm: All

Block: All

Week: Forecast middle

Sizes Volume estimates Volume by week Quality metrics

Prepare submission

Apple

[View distribution](#)

[Edit](#)

Cultivar	Farm name	Block name	Week	Avg size (mm)	Undersize	Sizes (Forecast middle)									Green
						132	120	108	98	90	82	76	70	Override	
Granny Smith	Twaktuin	Block 21	26 (2024)	65.0	0.0%	1.3%	5.0%	13.9%	25.6%	24.9%	13.8%	11.0%	4.4%	0.0%	15%
Granny Smith	Twaktuin	Block 22	24 (2024)	69.0	0.0%	0.0%	0.4%	3.8%	18.3%	23.4%	24.4%	23.4%	5.9%	0.5%	-
Granny Smith	Wittedrift	Block 19	25 (2024)	76.6	0.0%	0.0%	0.0%	0.0%	2.3%	6.2%	13.4%	40.7%	30.8%	6.6%	15%
Granny Smith	Twaktuin	Block 06	34 (2024)	58.5	5.0%	10.5%	16.8%	20.0%	22.6%	14.1%	6.6%	4.1%	0.3%	0.0%	40%
Granny Smith	Twaktuin	Block 09	34 (2024)	58.8	2.7%	4.1%	24.3%	19.8%	30.5%	9.7%	7.3%	1.6%	0.0%	0.0%	65%
Pinklady	Twaktuin	Block 31	34 (2024)	55.5	12.9%	12.2%	19.7%	18.0%	23.4%	8.1%	3.2%	2.4%	0.0%	0.0%	50%
Pinklady	Wittedrift	Block 27	36 (2024)	69.7	0.0%	0.6%	2.8%	5.2%	15.3%	22.0%	17.3%	18.9%	15.5%	2.4%	10%
Pinklady	Wittedrift	Block 07	36 (2024)	70.2	0.0%	0.0%	0.9%	3.1%	16.9%	21.9%	21.0%	20.8%	12.5%	2.8%	10%
Pinklady	Wittedrift	Block 12	33 (2024)	69.5	0.0%	0.5%	1.4%	5.1%	14.9%	22.0%	23.7%	20.9%	8.9%	2.6%	30%
Pinklady	Wittedrift	Block 15...	33 (2024)	78.7	0.0%	0.0%	1.2%	1.5%	6.1%	8.4%	13.1%	24.6%	20.0%	25.1%	35%
Total			Forecast middle	69.2	0.3%	0.8%	1.9%	5.5%	15.1%	21.5%	22.9%	20.5%	9.0%	2.6%	-

Harvest estimates

Season: 2023/2024

Crops: All

Farm: All

Block: All

Week: Forecast middle

Sizes Volume estimates Volume by week Quality metrics

Prepare submission

Apple

[View distribution](#)

[Edit](#)

Cultivar	Farm name	Block name	Color			Grade			Volume estimates (bins)		W21	W22	W23	W24	W25	W26	W27
			Green	Colour Break	Full Colour	Grade 1	Grade 2	Grade 3	Original	Latest							
Granny Smith	Twaktuin	Block 21	15%	25%	60%	90%	5%	5%	213.09	180		100		80			
Granny Smith	Twaktuin	Block 22	-	-	-	-	-	-	100	200		100	50	50			
Granny Smith	Wittedrift	Block 19	15%	25%	60%	80%	15%	5%	1200	400			200	200			
Granny Smith	Twaktuin	Block 06	40%	50%	10%	85%	10%	5%	550	580							
Granny Smith	Twaktuin	Block 09	65%	30%	5%	85%	10%	5%	110	110							
Pinklady	Twaktuin	Block 31	50%	30%	20%	75%	15%	10%	530	500							
Pinklady	Wittedrift	Block 27	10%	5%	85%	85%	10%	5%	300	250							
Pinklady	Wittedrift	Block 07	10%	10%	80%	85%	10%	5%	450	430							
Pinklady	Wittedrift	Block 12	30%	25%	45%	80%	10%	10%	370	35792							
Pinklady	Wittedrift	Block 15...	35%	15%	50%	75%	20%	5%	170	165							
Pinklady	Wittedrift	Block 15...	-	-	-	-	-	-	3993.1	38607		200	250	330			
Total																	

Harvest estimates

Accuracy leads to truth

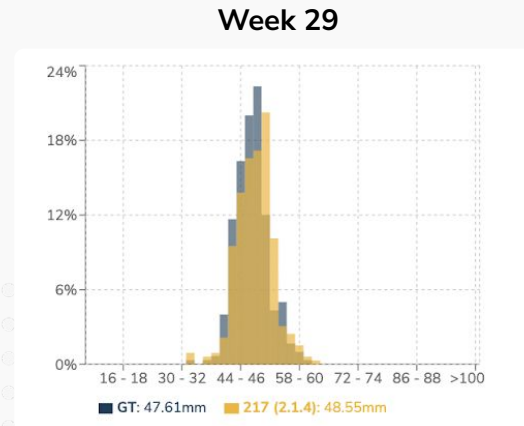
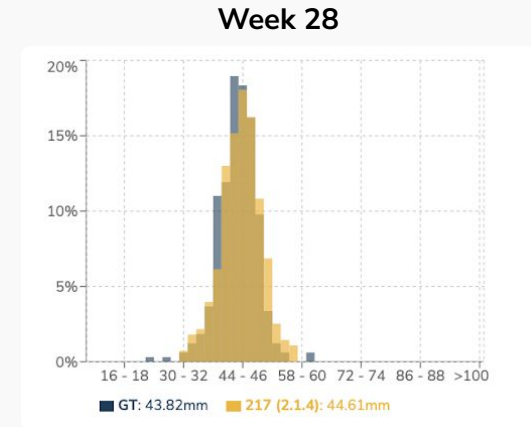
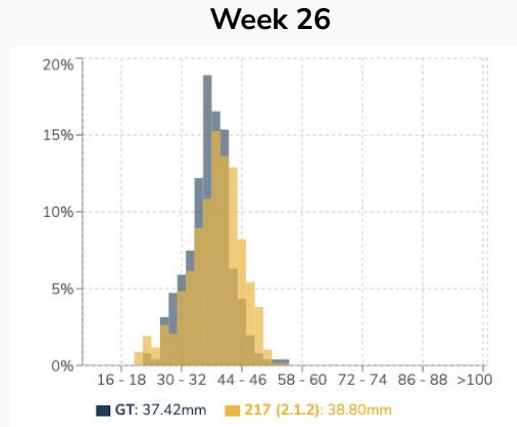


Conclusion	Results
Accurate as current method	✓
Reduced time to measure	✓
Less resource intensive	✓
Less prone to human error	✓
Less weather-dependant	✓
Less cost (time efficiency)	✓

Time to Measure

Time efficiency	5x faster
Measured fruit	+300% sample size

Comparing the time it takes to measure fruit manually vs with AI resulted in increase in sample size in the same time taken.



Drone Data



- Data is capture by flying a drone 100 meters above your crop
- RGB, Thermal and Multispectral Cameras are used to capture data.
- **Resolution : 2-3 cm/pixel**
- Typical resolution from a plane: 40-50 cm/pixel cm

What we do

Aerobotics monitors each tree through the season



Aerobotics Demo / All farms / Product Demo Farm / Irrigation / Block 19

< All blocks February 2022 > > Block 19

- Create task
- Show findings
- Compare
- Add a tree group

tree

Health	0.45
Vigor	0.89
Canopy area	27.2m ²
Volume	58.1m ³
Coordinates	-32.3155486, 18.8168568

Create a task

Create tree group

Google

Transpiration Map Zones Trees

A measure of how much water the plant has available to consume and the plant's ability to take up water.

10%

Lowest Transpiration Highest

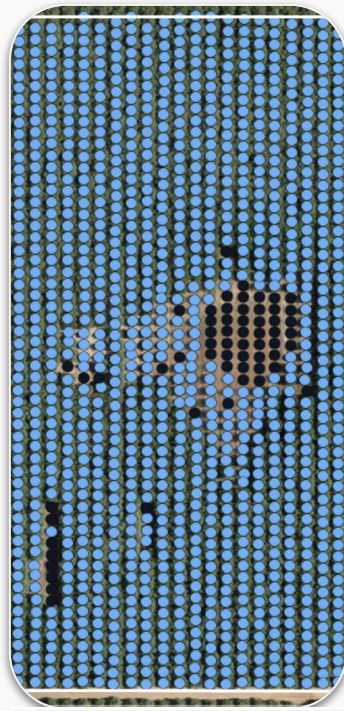
What we do

Some of the data we map

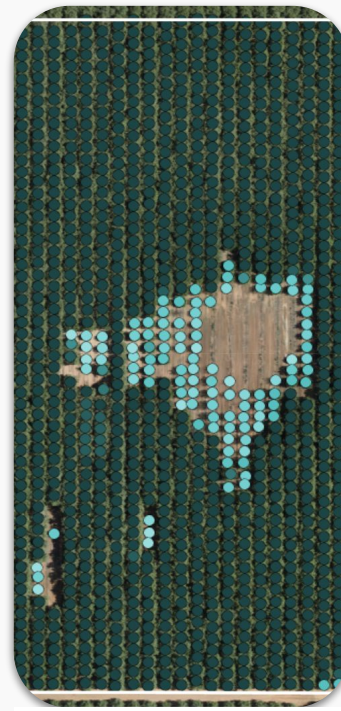
Visual



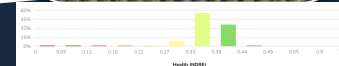
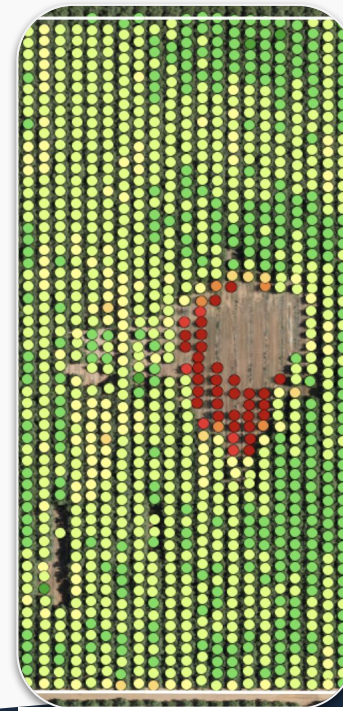
Tree Inventory



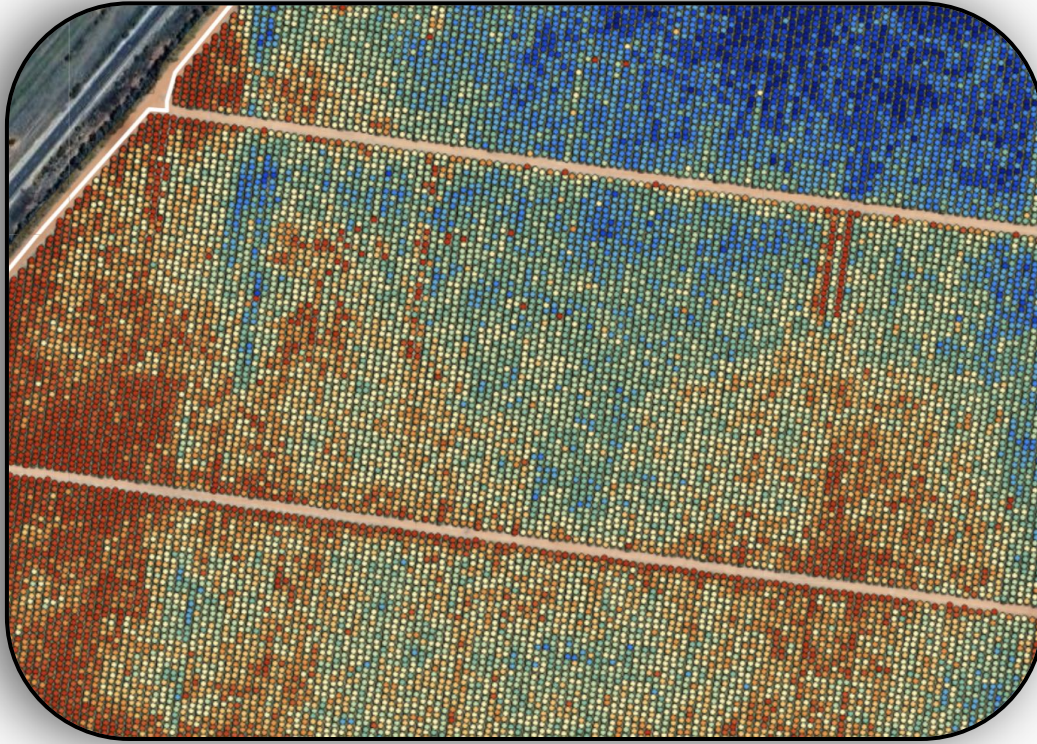
Canopy Area/Volume



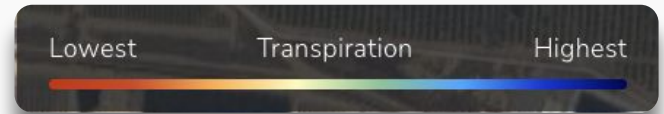
Tree Health



Irrigation Uniformity

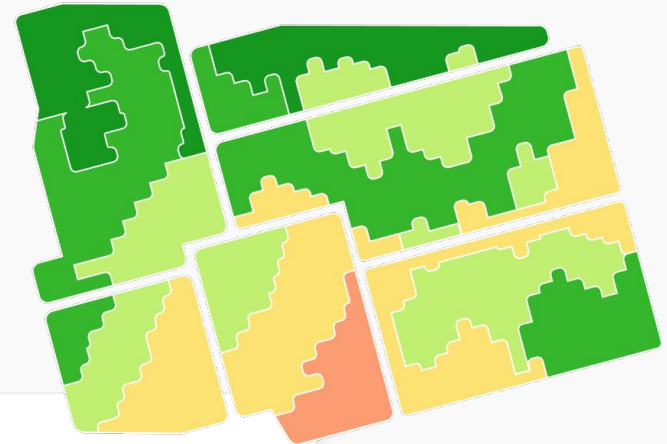


Uniform irrigation is crucial for consistent growth, optimal yield, and efficient water use, ensuring every tree receives adequate moisture for healthy development and minimal environmental impact.



How it works

Correct yield variability with a variable rate fertiliser strategy



Dosage

Zone 1	85 Kg/Ha	13 Ha
Zone 2	123 Kg/Ha	15 Ha
Zone 3	220 Kg/Ha	12 Ha

Total saving - 3,150 Kg / 36%

Thank You from **Aerobotics**[®]

Questions?

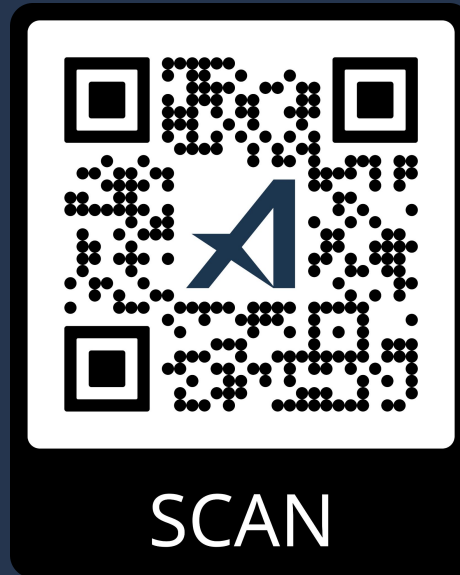


Yoav Yichie

General Manager
Australia

+61 423 9500 45

yoav@aerobotics.com



Benjamin Sharpe

Business Development Manager
Australia

+61 422 240 416

Benjamin.sharpe@aerobotics.com