



Automation & Precision Agriculture

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2019 Dic





[Drones Precision Agriculture](#)

VOCAB

Orthomosaic – big picture made of smaller pictures

Resolution – centimetres per pixel = cm/px

Algorithms – image processing software

NDVI - Normalized difference vegetation index – how green is a plant.

Drone
M100



Phantom
4 Pro

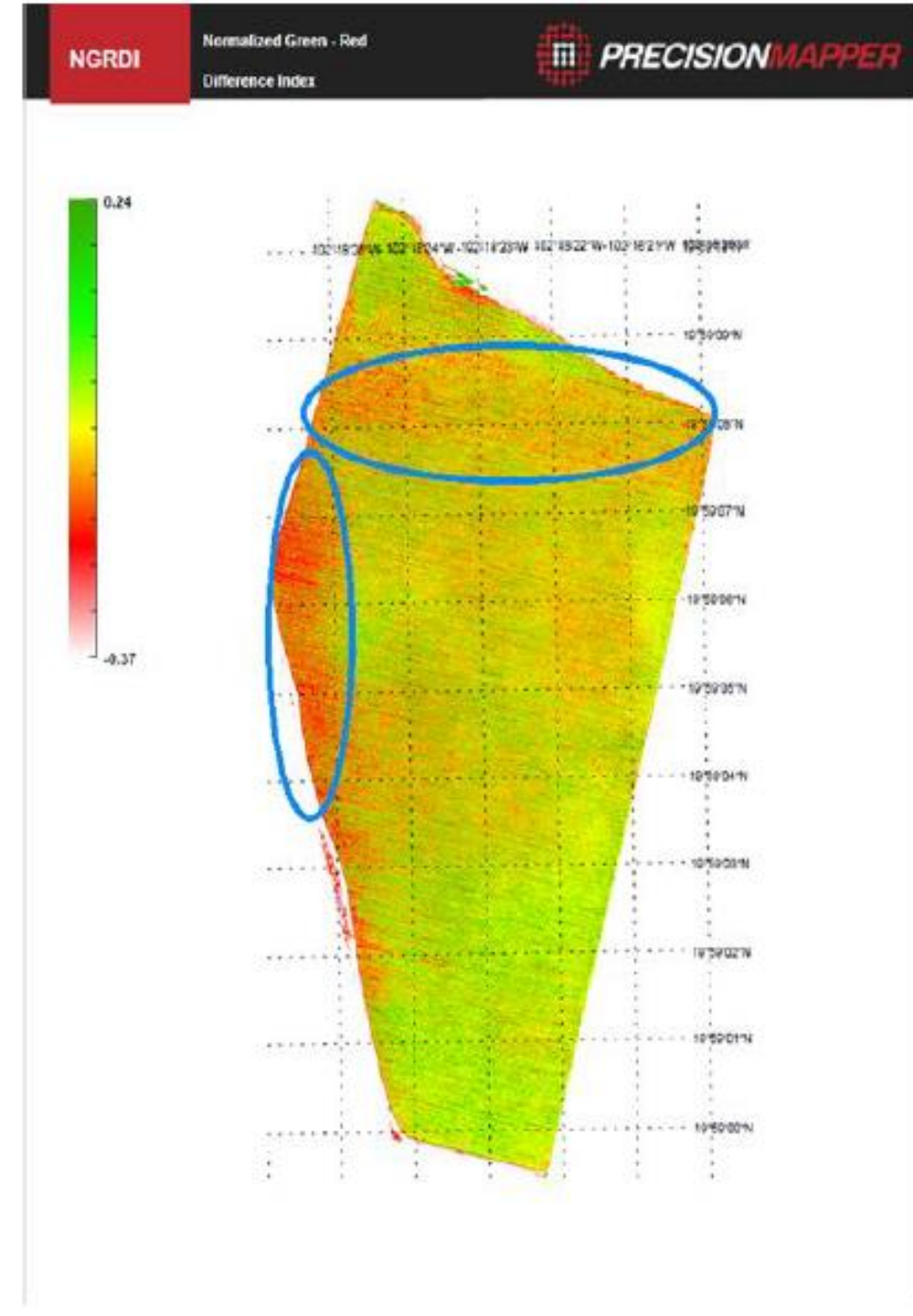


Mavic Pro

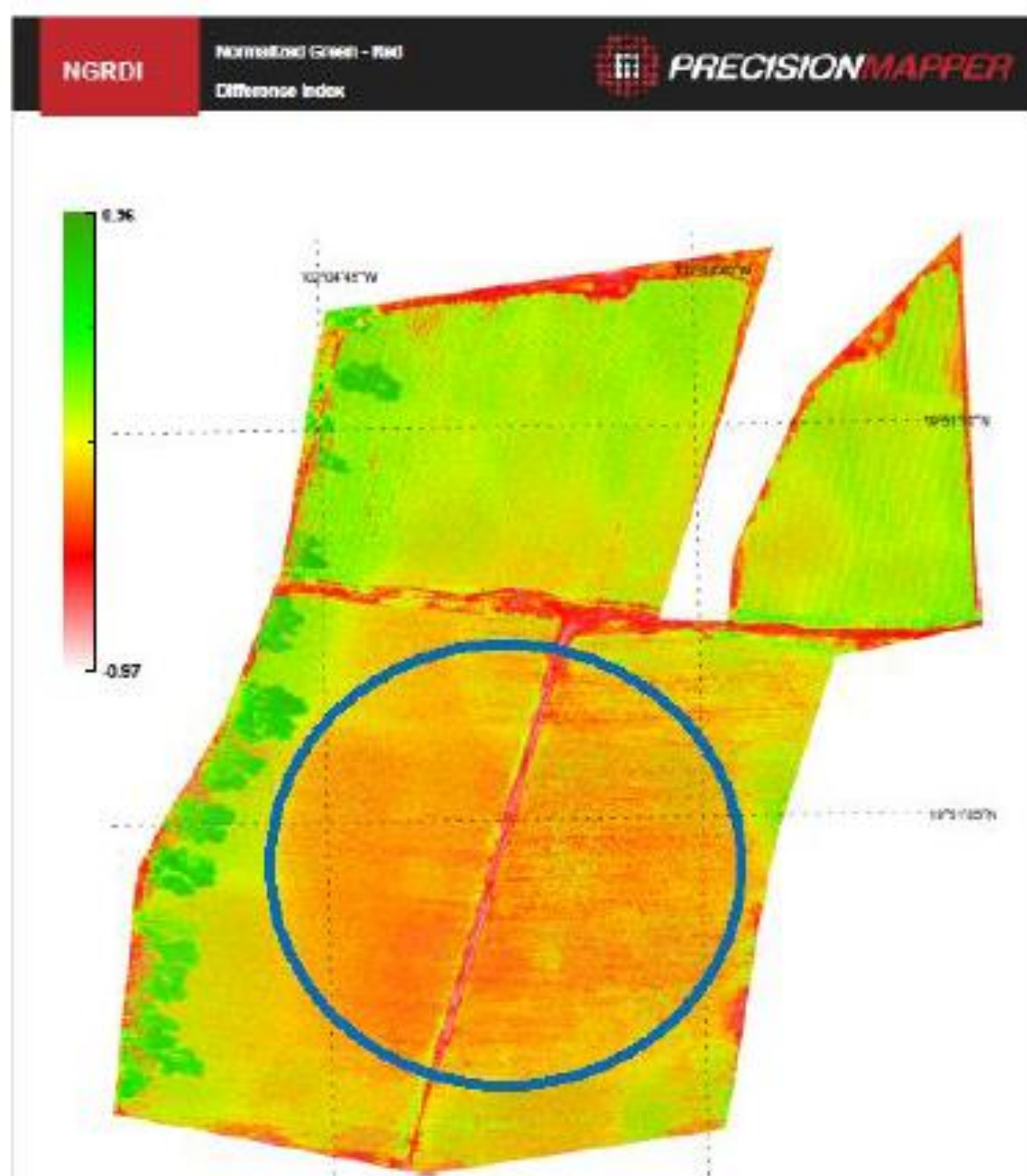




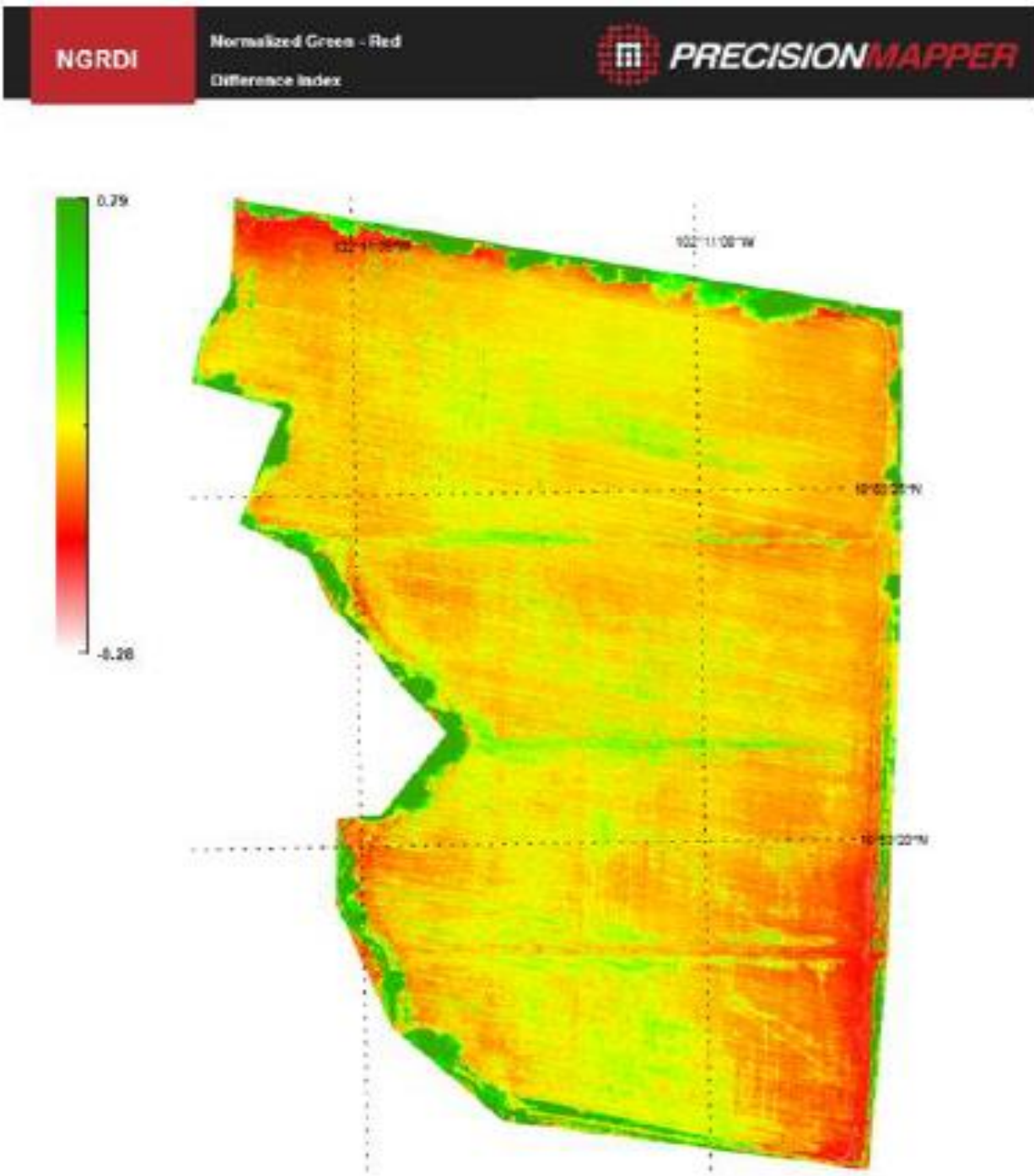
Fecha	miércoles 14 de junio 2017
Nombre	"Los Espinos"
Descripción	Huerta de fresa a cielo abierto
Drone	Mavic Pro
Altura	100m
Tiempo de vuelo	16 min
Resolución	3.28cm/px

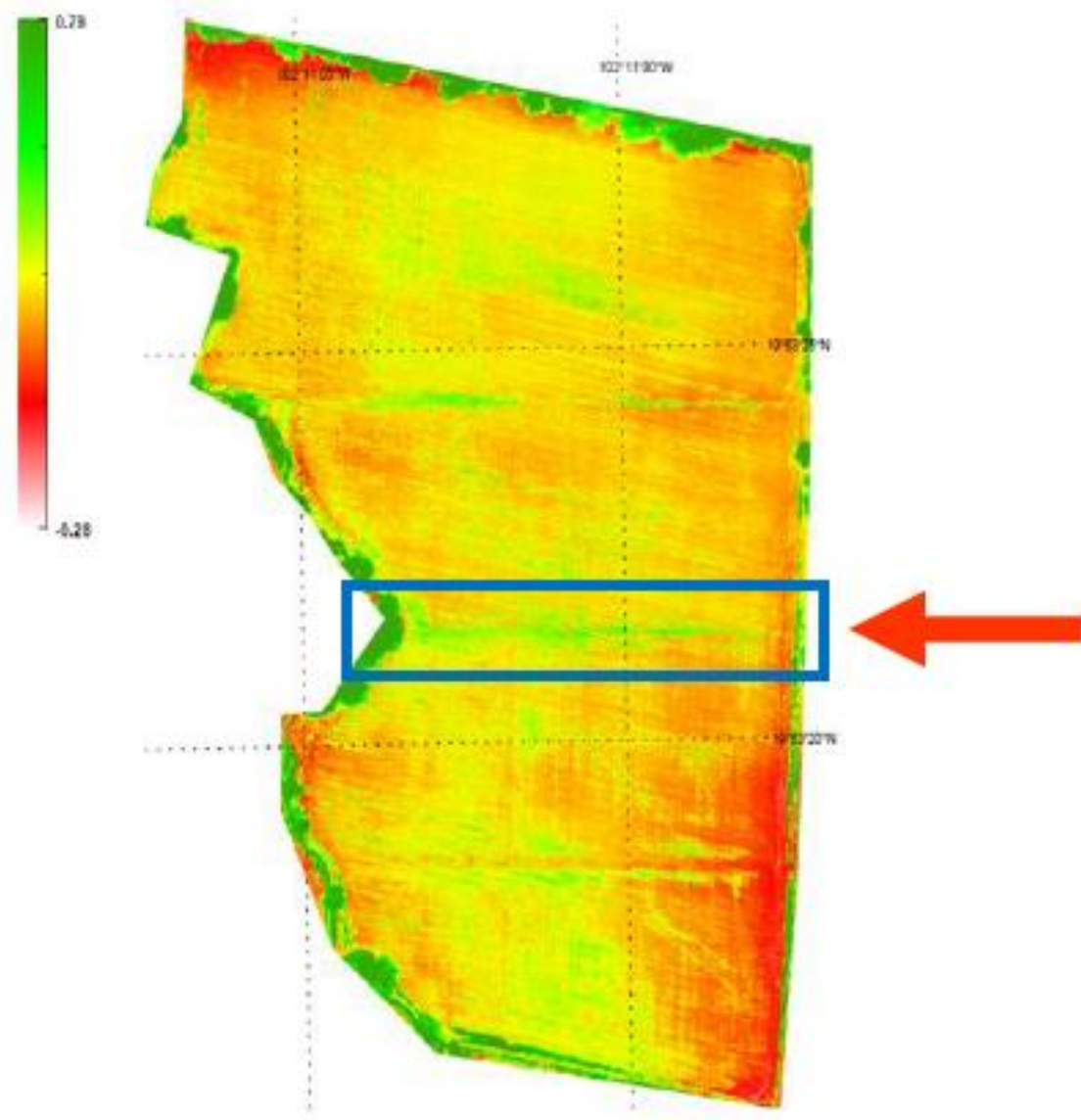


Fecha miércoles 14 de junio 2017
Nombre "Huancito"
Descripción Huerta de brócoli, tenía 12 semanas de plantación
Drone Phantom 4 Pro
Altura 100m
Tiempo de vuelo 9 min
Resolución 4.77cm/px



Fecha miércoles 14 de junio 2017
Nombre "Canindo"
Descripción Huerta de brócoli, tenía dos semanas de plantación
Drone Mavic Pro
Altura 80m
Tiempo de vuelo 13 min
Resolución 2.83cm/px

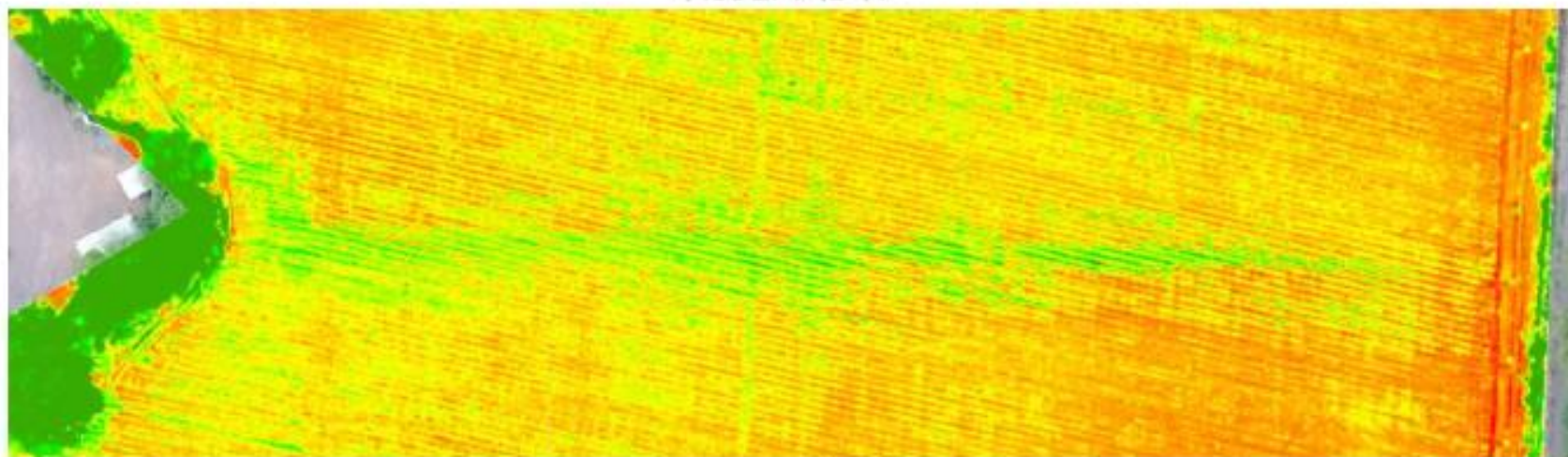




Ortomosaico

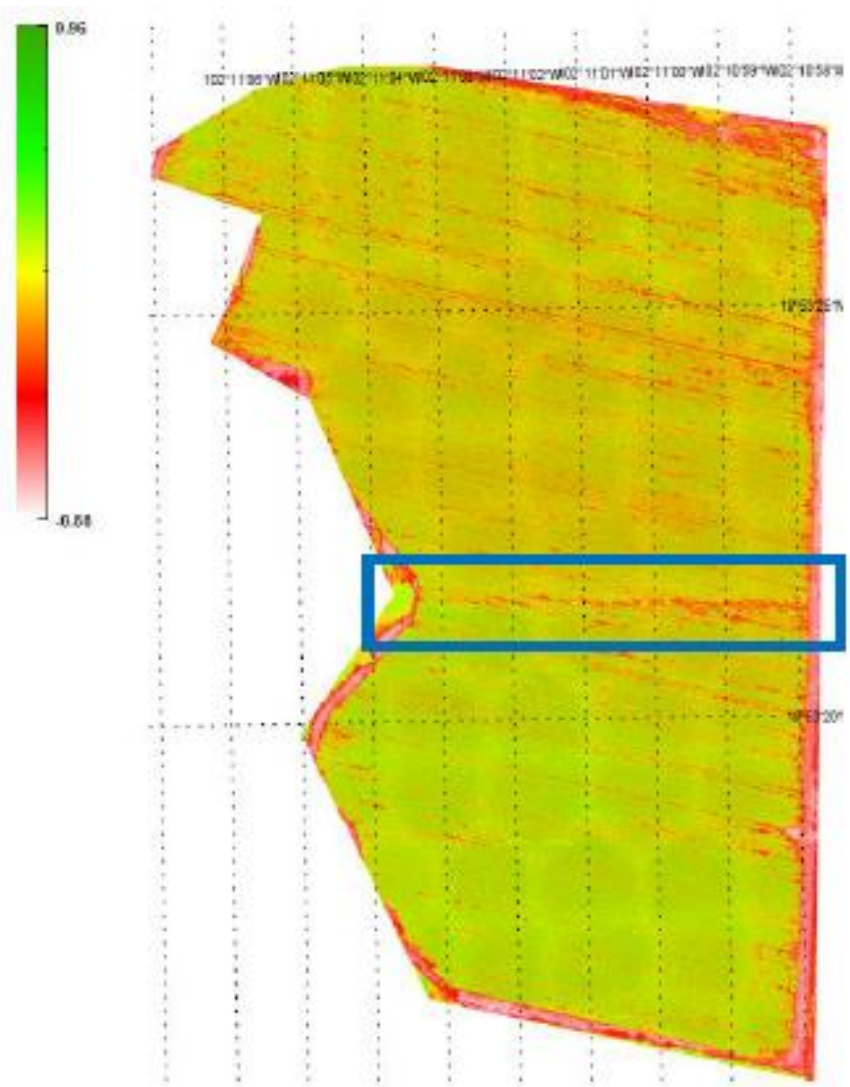


Visual NDVI





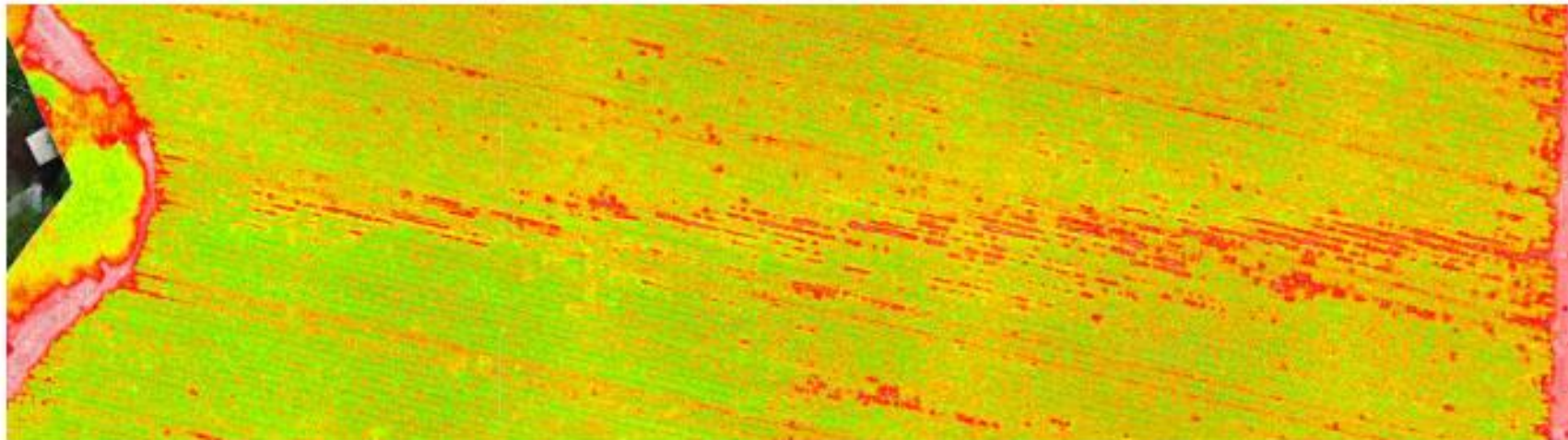
**A FEW
MOMENTS LATER**



Ortomosaico

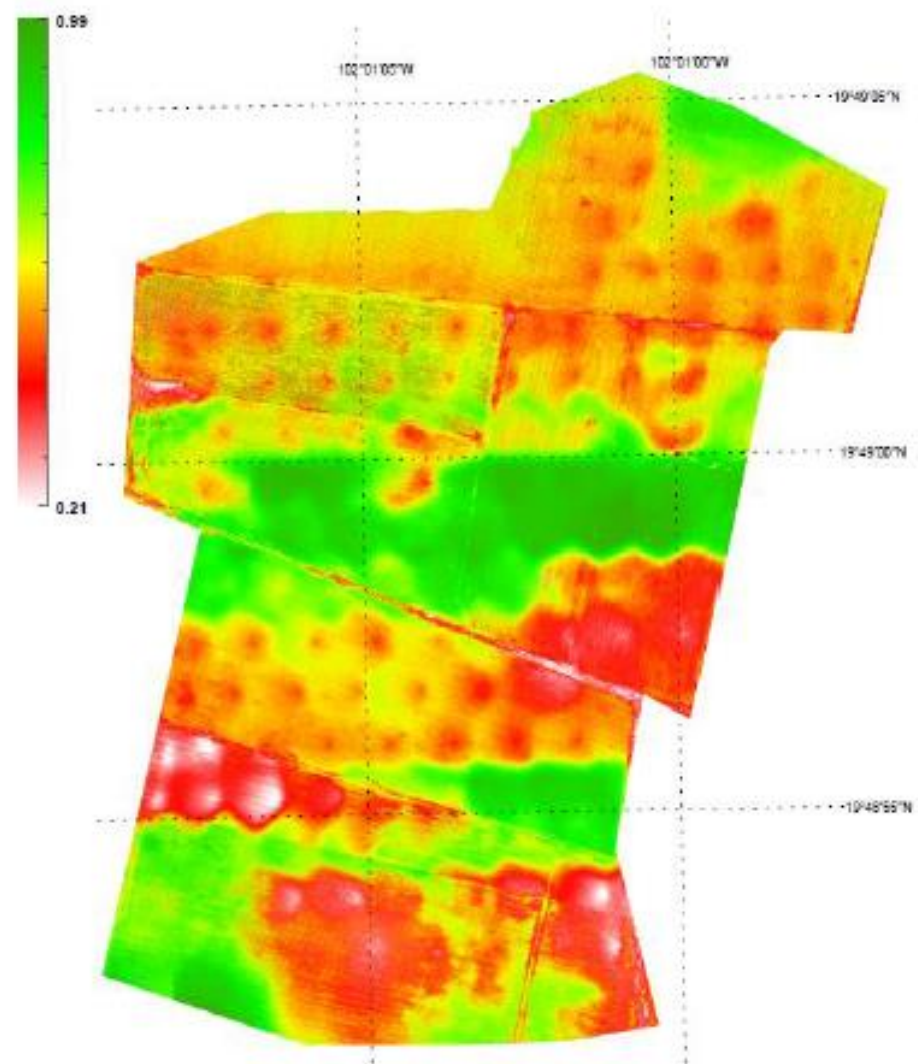












Visual NDVI



TRADE-OFF

Drone		M100	M100	Phantom 4 Pro	Mavic
Altura (m)	Cámara	RGB (cm/px)	Multispectral (cm/px)	RGB (cm/px)	RGB (cm/px)
120		4.88	-	3.17	-
100		4.05	-	2.63	3.32
80		3.49	3.51	-	2.64
70		2.78	3.05	1.8	2.12



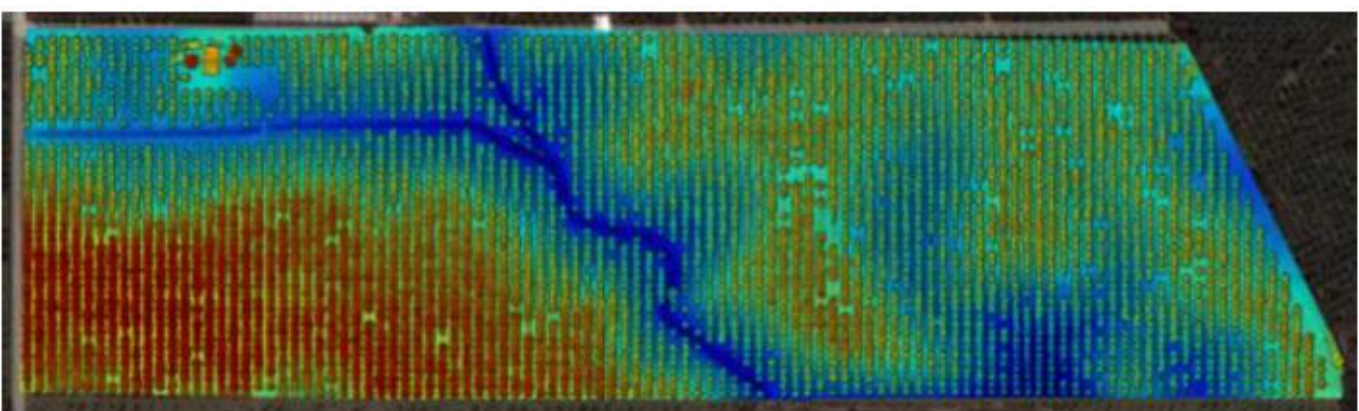
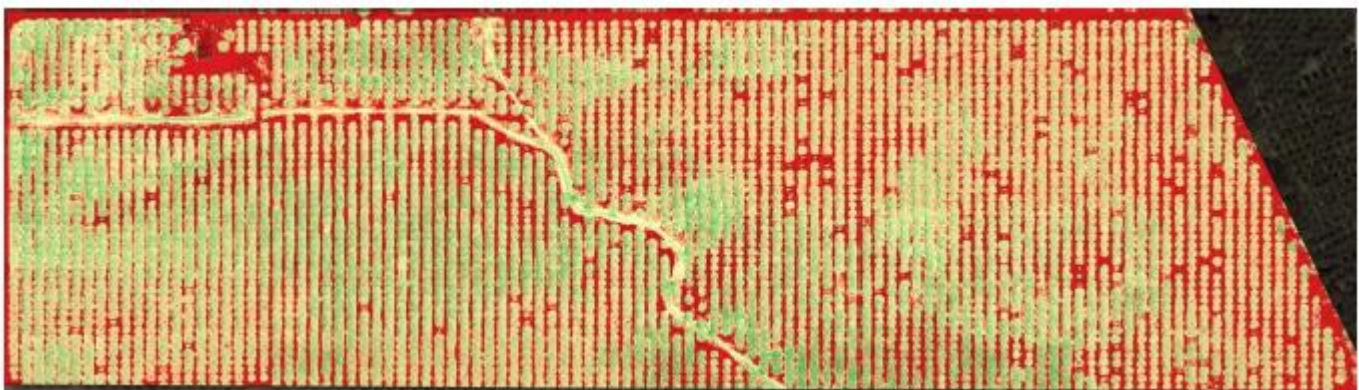
SYMBOL	SCALE IN OKTAS {EIGHTHS}	SYMBOL	SCALE IN OKTAS {EIGHTHS}	SYMBOL	SCALE IN OKTAS {EIGHTHS}
	0 Sky completely clear		4 Sky half cloudy		7
	1		5		8 Sky completely cloudy
	2		6		9 Sky obstructed from view
	3				

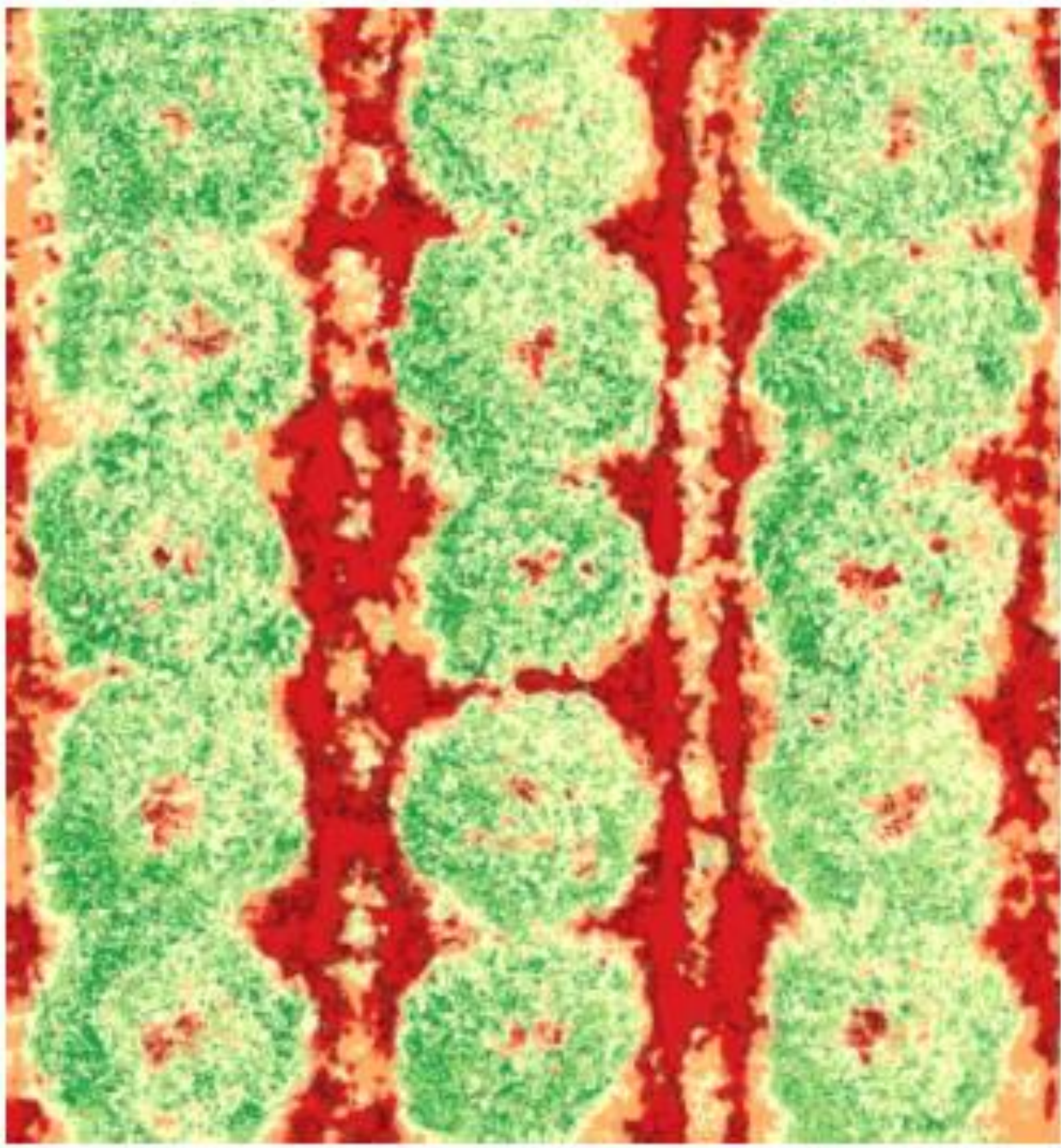


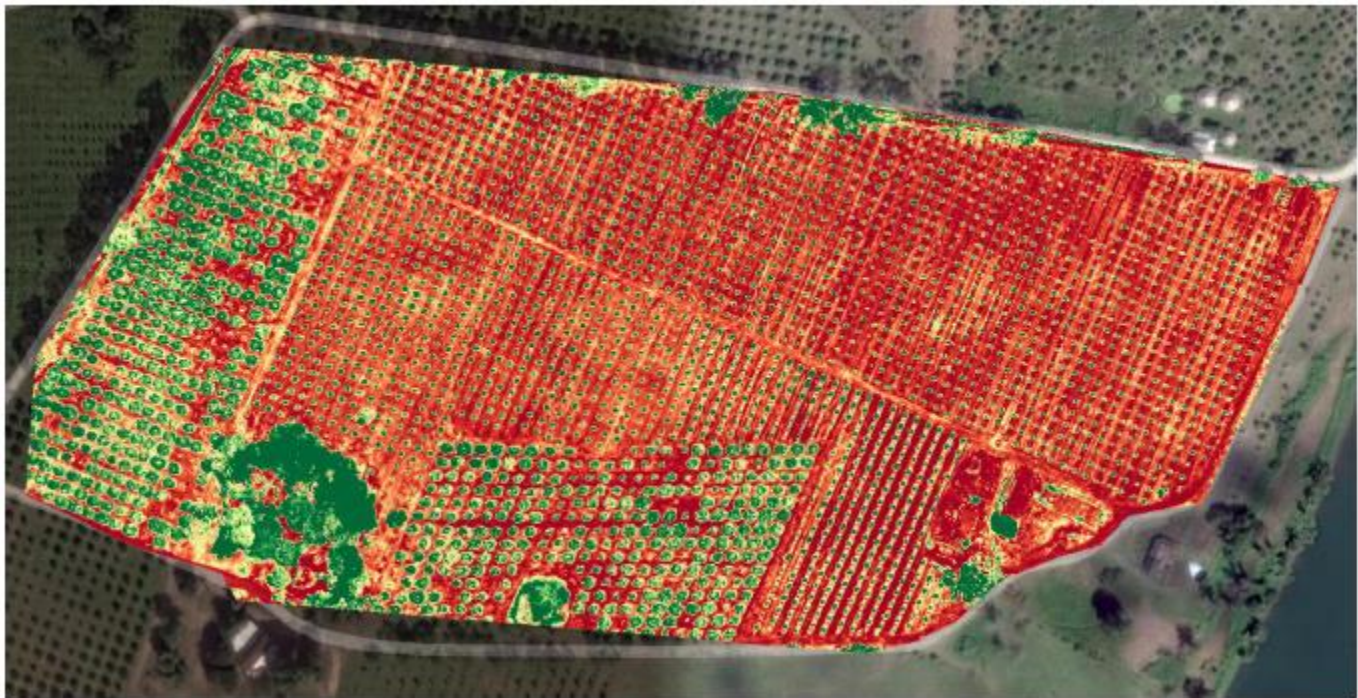


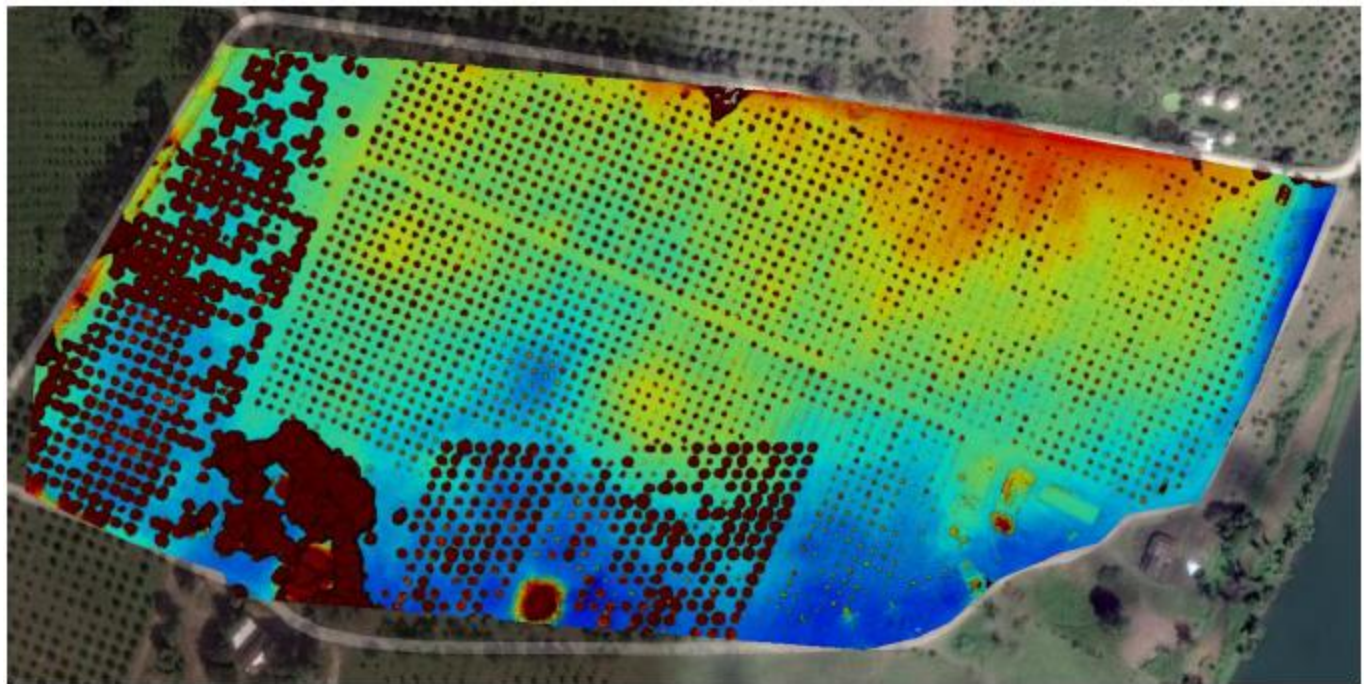


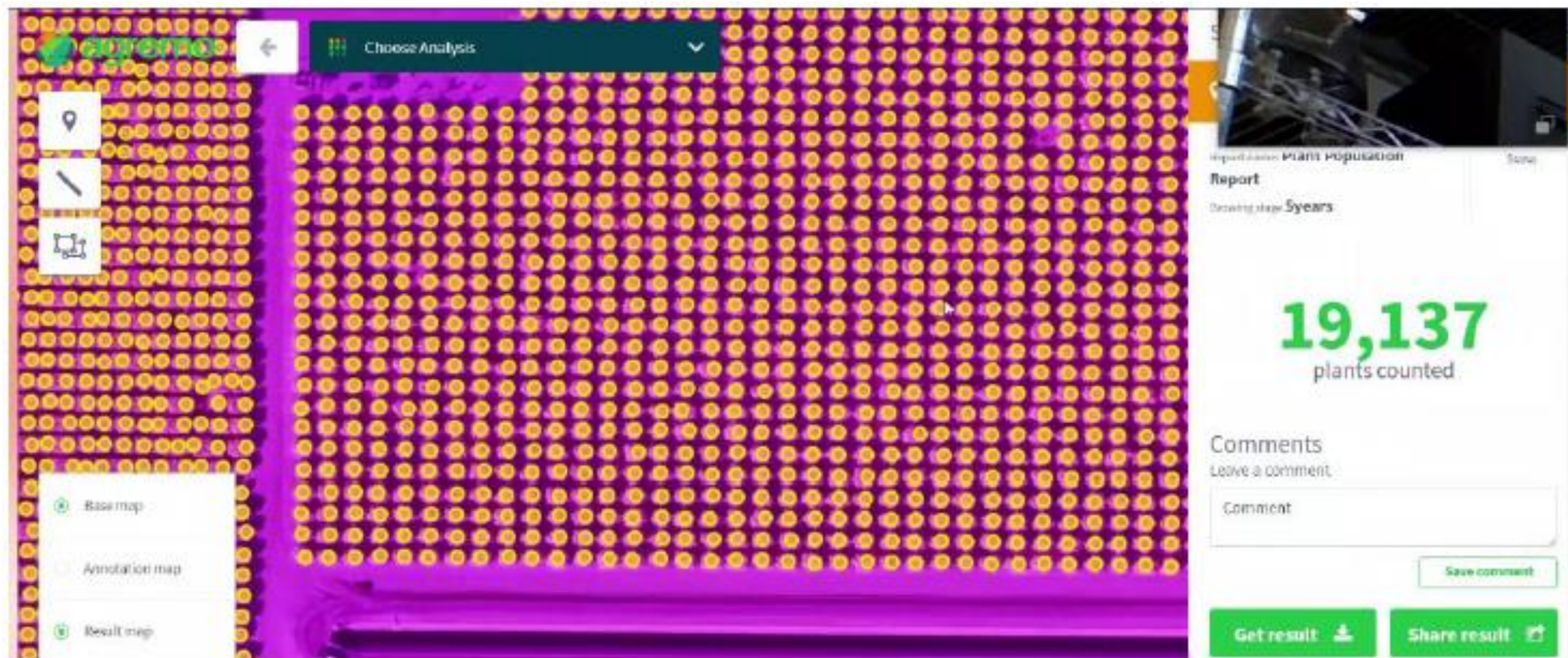












The future of agriculture?



LIQUID
TANK





THANK YOU!