

International Macadamia Symposium 2023



IMS'23

MOVING FORWARD TOGETHER

Macadamias South Africa (NPC)
(SAMAC)



Next-level farming:
Integrating technology
and sustainability in
macadamia
cultivation

Dr. Theunis Smit

Carbon Friendly

The back of the envelope might hold ideas, but it doesn't hold currency!

The millennial trading post

Average person spends 4.5 Hours on their phone

Majority of the time is spent looking at products

Food is one of the top products people look at

They typically want to know a range of things:

- Health Stats
- Is it gluten free?
- Was this tested on animals?
- Is this organic?

What is the impact on the environment?





Marketing Genius...



Raw
Organic
Natural
No Pesticide
No Artificial Fertilizer
Sustainably Produced

...





The millennial with a phone...

Google

can you grow macadamias in south australia
can you grow macadamias in victoria
can you grow macadamia nuts in florida
can you grow macadamia tree from nut
can you grow macadamia trees in pots
can you grow macadamia nuts in california
can you grow macadamia nuts in the uk
can you grow macadamia nuts in the philippines
can you grow macadamia nuts in texas
can you grow macadamia trees from cuttings

Report inappropriate predictions

Sunfood, Raw Organic Macadamia... \$35.64 iHerb \$26.02 with ...	Genoa Foods Macadamias Natural, 200 g \$8.50 Amazon AU \$7.65 at che...	NOW Foods, Real Food, Macadamia... \$28.62 iHerb \$20.89 with ...	Roasted Salted Macadamias \$9.99 Macadamias ...	Honest to Goodness Australian... \$40.01 Amazon AU Free delivery
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Macadamias Australia
<https://www.macadamiasaustralia.net>

Macadamias Australia - Shop Online - Visitor Experience ...
Family owned for over 60 years, our Bundaberg farm sustainably grows and creates premium macadamia nut products. Discover the true Tree to Table experience.

Macadamia Nuts - Vanilla Happy Nut...
\$8.99
Happy Nut b...
Free gift w/ \$...

Macadamia Nuts - Premium Oven Roaste...
\$13.99
Brookfarm

Macadamia Coffee Syrup - 50 servings -...
\$13.25
Cashmere S...
★★★★★ (455)





How do we leverage Technology to improve profitability and sustainability?



Carbon Footprints

All encompassing metric for efficiency



We calculate Carbon Footprints



Fuel



Electricity



Fertilizer



Chemicals

An increase in efficiency, leads to direct decrease in consumption

Lower Consumption = Greater Profit

Lower Consumption = Lower Carbon Footprints



This is next level Macadamia Farming



MFM 


Agworld
connecting the industry.



GreenAtlas



**CARBON
FRIENDLY**



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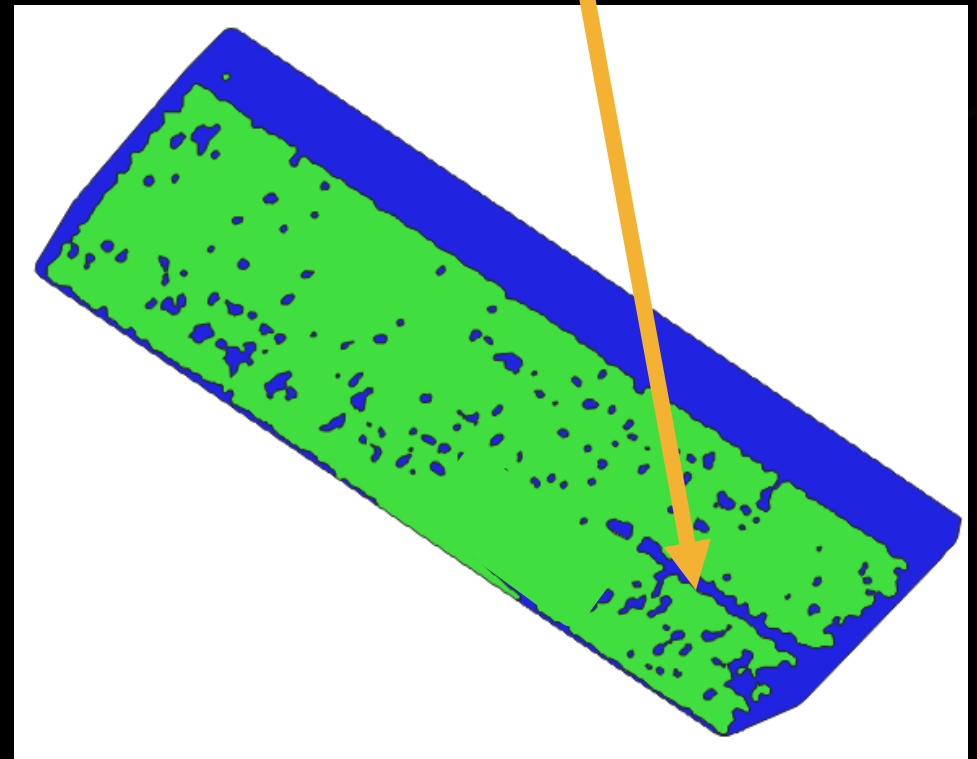
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Every drop counts...



What Happened?



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Every drop counts...

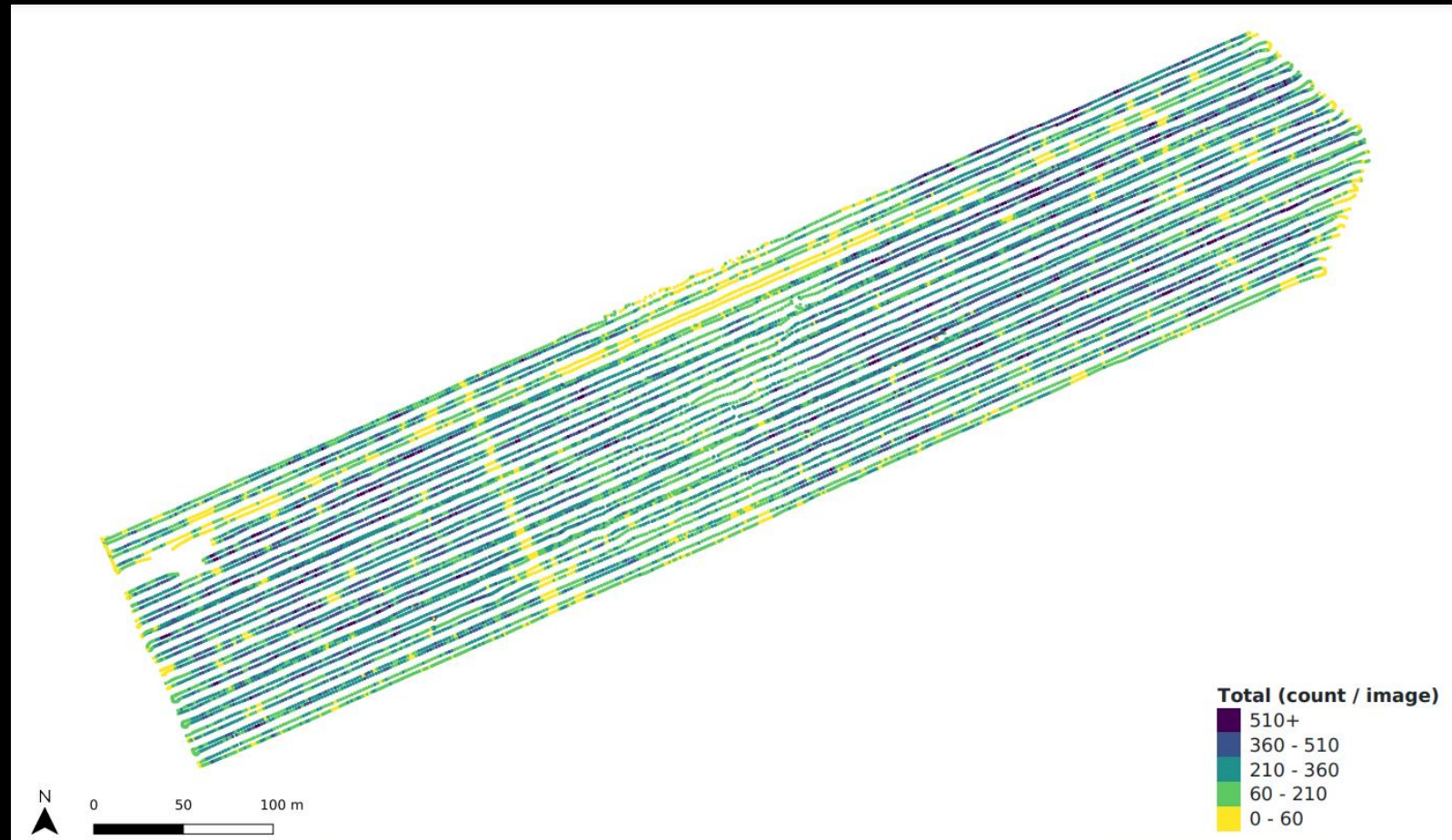


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Measuring a piece of string



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How does this increase efficiency?

Irrigation efficiency increased by 15%
Reduced electricity consumption by 10%

Increased harvesting efficiency
Decreased fuel use by more than 10%

**Carbon Emissions Footprint of the Macadamia Orchard decreased from
4.5 t CO₂e/ha to 3.8 t CO₂e/ha**



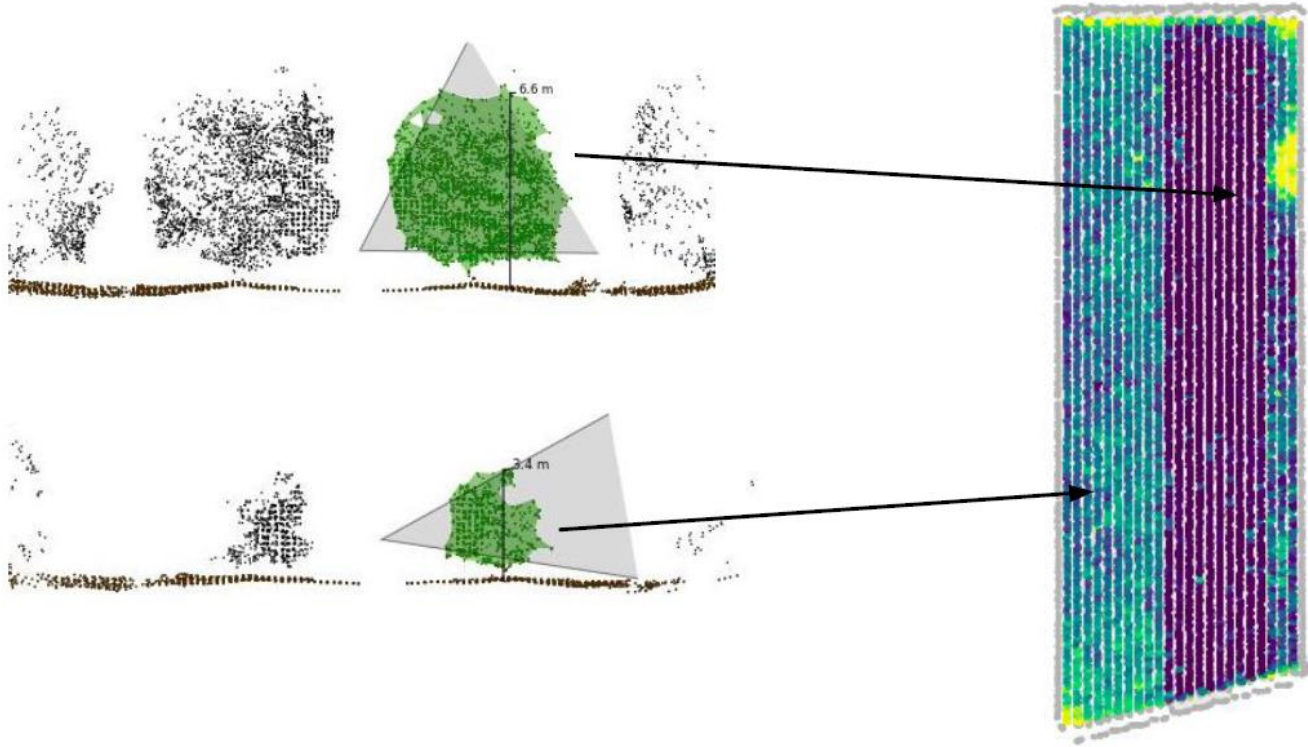
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Why get excited?

 Crop Scan Tech

Mapping canopy volume and density

 GreenAtlas



We can use canopy volume to calculate carbon sequestration of the orchards

3-5 t CO₂e
Per hectare
Per Year

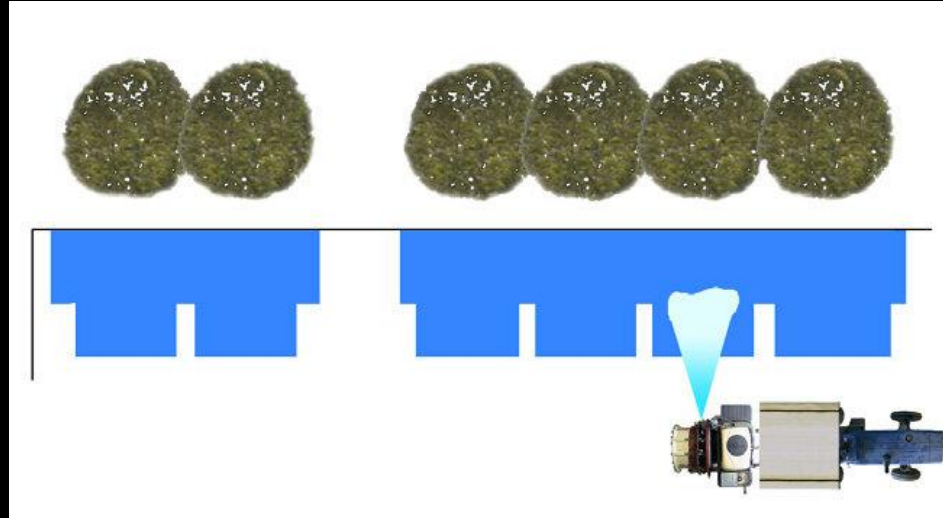


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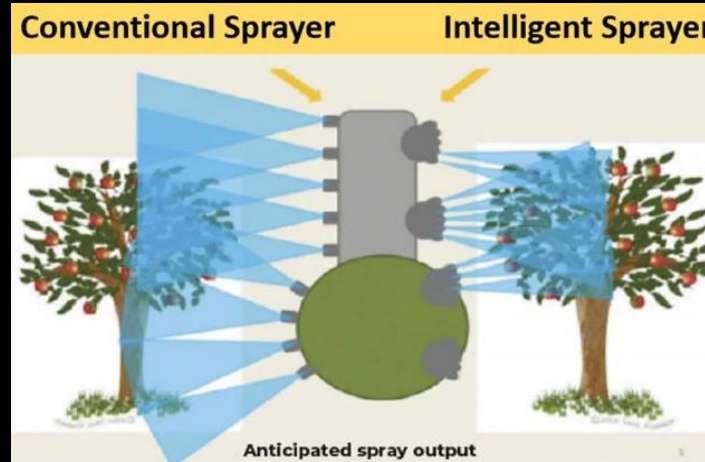
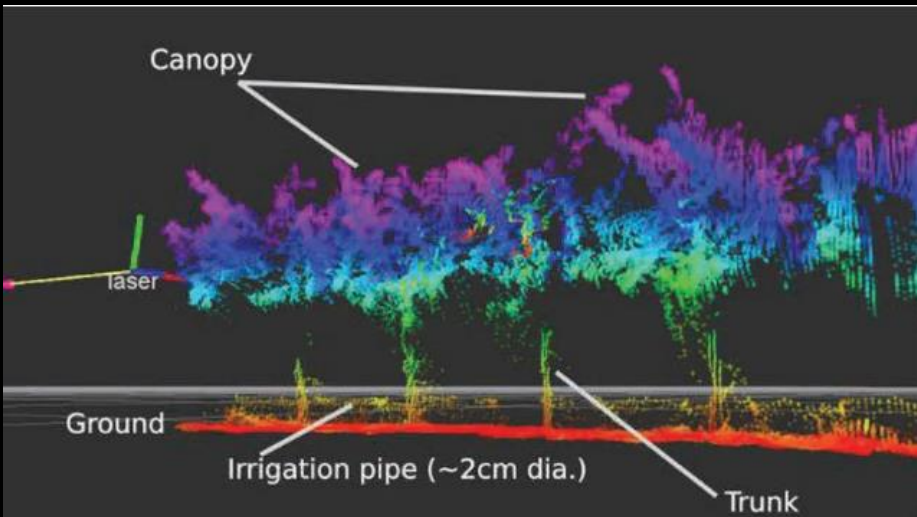
Variable Rate Spraying



Will use 73% less chemicals than conventional systems

87% less Spray Drift

<https://youtu.be/xmfwbuyWASE>



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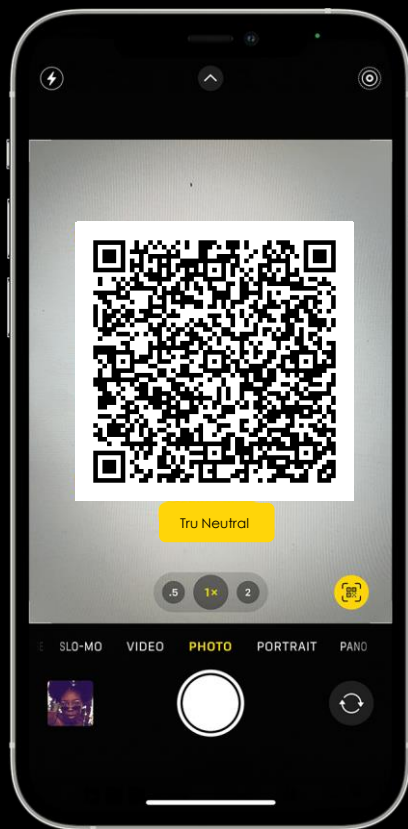
All needles and no haystack...



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Traceable and Transparent Sustainability



Tru



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QUESTIONS ?

