SupPlant
In Dates
איך שואלים את התמרים, כמה מים הם רוצים?
דניאל כץ

About SupPlant

- Israeli startup
- 8 years- 14 countries
- 33 crops

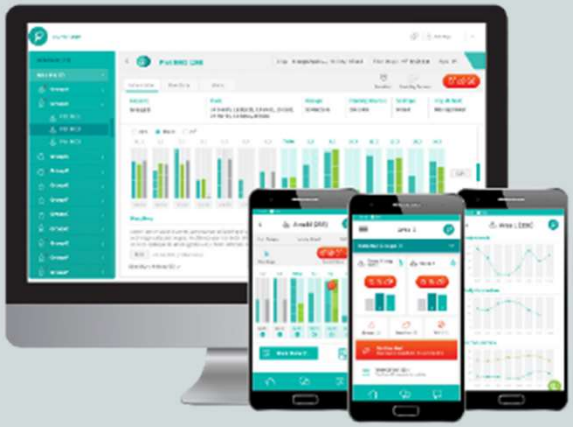
Our Product

- Plant sensors
- Soil sensors
- Meteorological stations
- Meteorological forecast
- Cloud based Algorithm system
- Plant and fruit growth optimization and decision support tools.

Dendrometer

Fruit Sensor

Dashboard and Mobile



Soil Sensor

SupPlant's field "Plant unit"

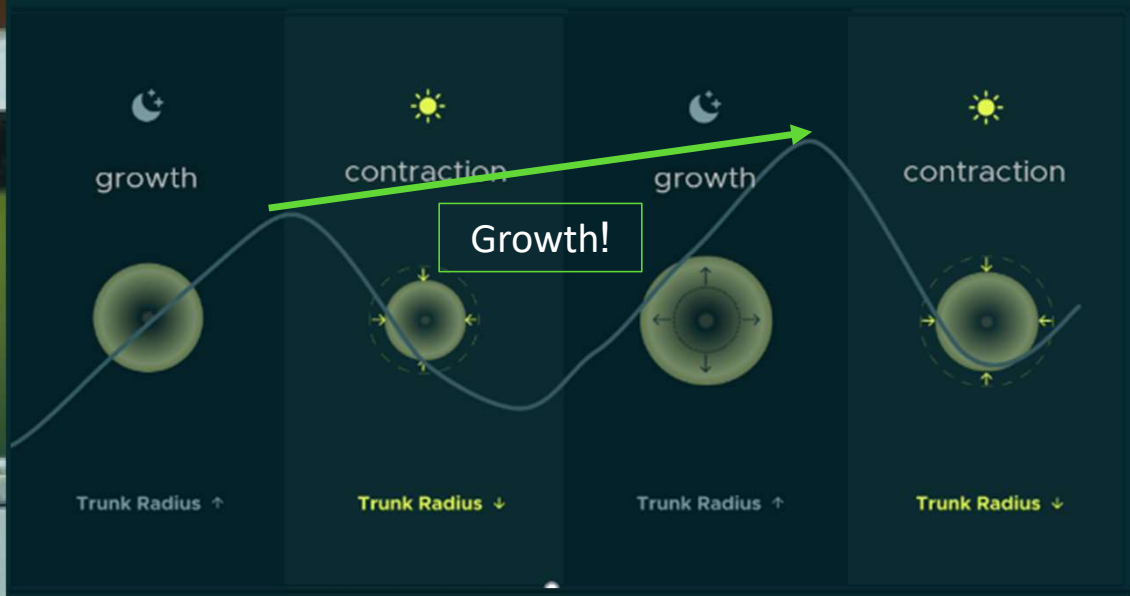
a fruit sensor

Soil sensors

Transmitting unit

a dendrometer

the Dendrometer



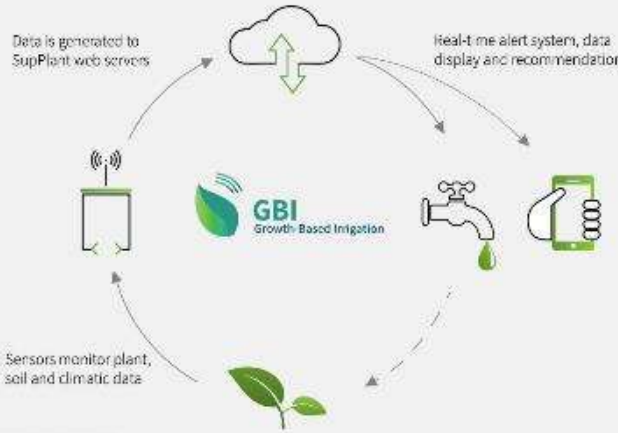
GBI 2018

GROWTH-BASED IRRIGATION (GBI™)

THE AUTONOMOUS VEHICLE OF IRRIGATION

The first autonomous irrigation system, irrigating autonomously, based on real time plant behaviour and necessities.

THE GBI™ DIAGRAM



Success stories Using SupPlant technology

40%-60% higher Yields (Lemons)

38% water savings (Apples)

21% higher Yields (Macadamia)

Reduce Berry cracking (Grapes)

What about dates?

Dates irrigation Israel

Dates irrigation FAO

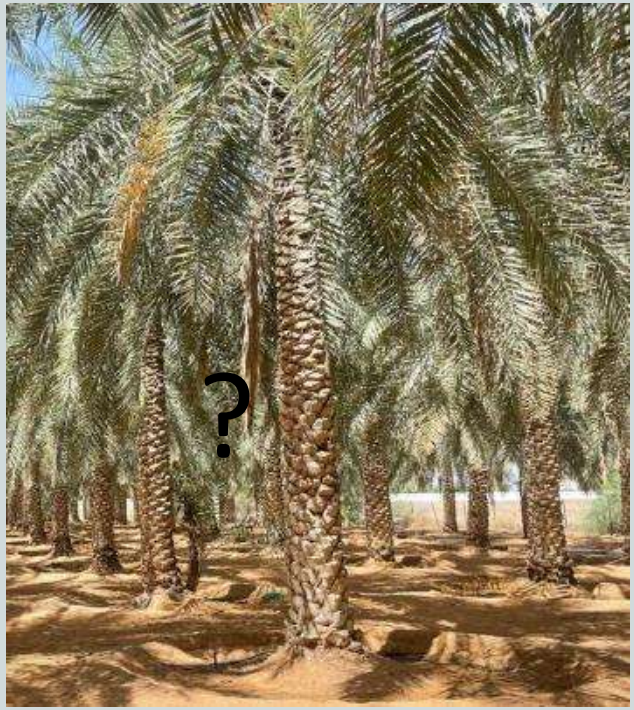
Table 48
Date palm irrigation around the world

Place	Quantity (m^3/ha)
Algeria	15,000 - 35,000
California, USA	27,000 - 36,000
Egypt	22,300
India	22,000 - 25,000
Iraq	15,000 - 20,000
Jordan Valley, Israel	25,000 - 32,000
Morocco	13,000 - 20,000
South Africa	25,000
Tunisia	23,600

The challenge in dates?

Dendrometer on Citrus Trunk

Dendrometer ?



Online Blade leaf and date fruit measurements

Blade leaf growth sensor

Fruit size sensor

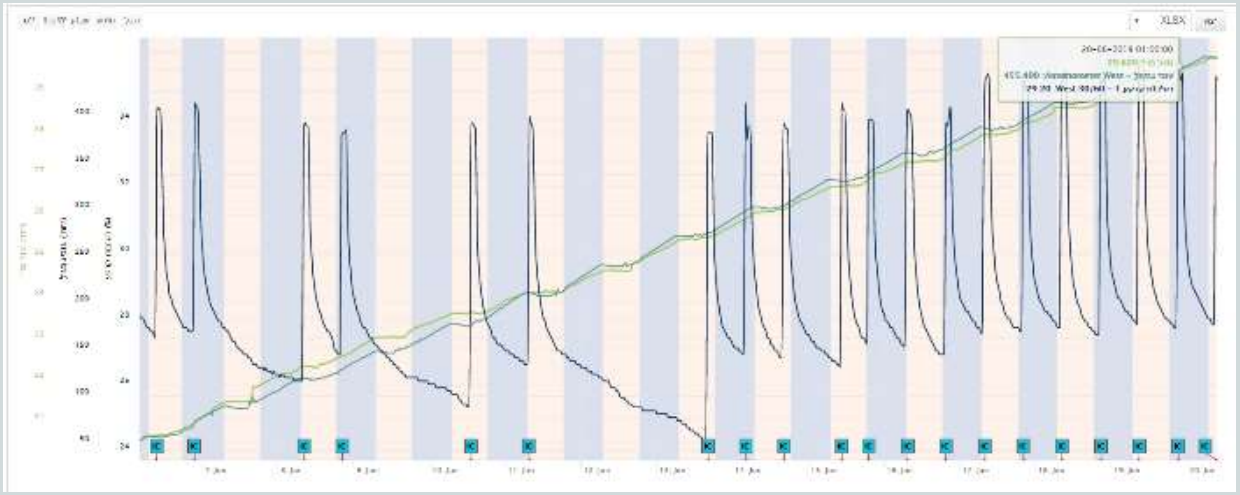
Online Blade leaf and date fruit measurements data

Blade leaf growth

Date fruit Growth

Online Blade leaf date fruit and Irrigation measurements data

Blade leaf and fruit growth with Irrigation



Case Study

Kibbutz Shluhut

Majhul – Israel –

2019-2021

Kibbutz Shluhut Plantation

Meteorological station

Soil sensors and mounting device

Blade leaf and fruit sensors

Case Study

Kibbutz Shluhut

Majhul – Israel – 2019-2021

2019 first results (April to August)

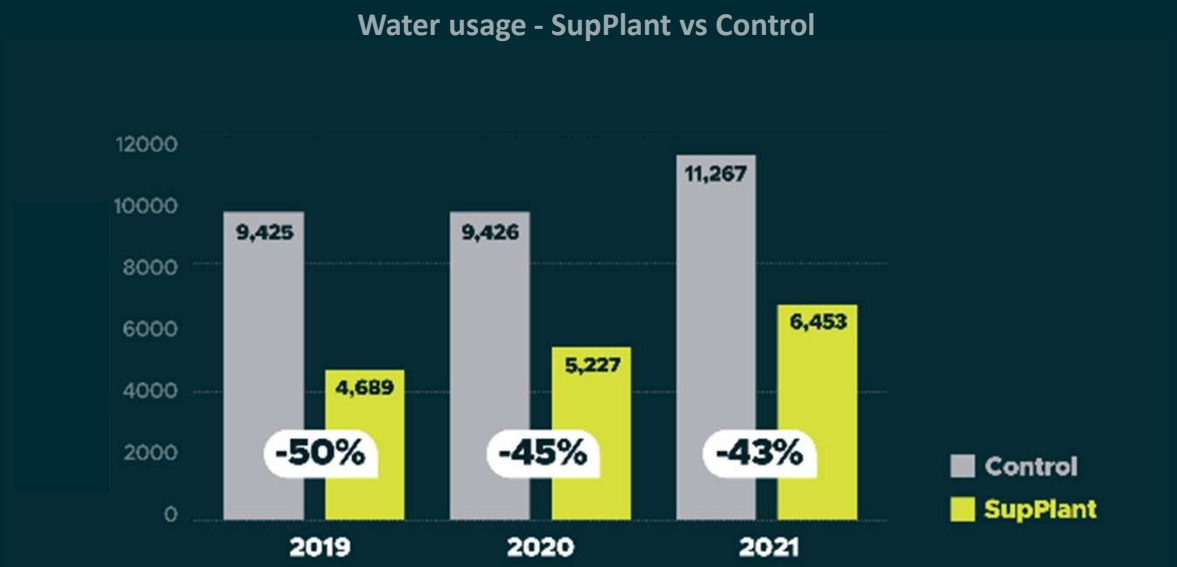
Treatment	Water, m3/dun	Yield, ton/dun	Fruit Quality
GBI	435	1.514	Good
Control	768	1.555	Good
Save water, %	43	-2.6	

Case Study

Kibbutz Shluhut // Majhul – Israel – 2019-2021

Water Saving

By following the tree's growth and irrigating according to the tree's exact needs all along the season, SupPlant's algorithm-based autonomous irrigation system showed an average of 46% water saving 3 years in a row

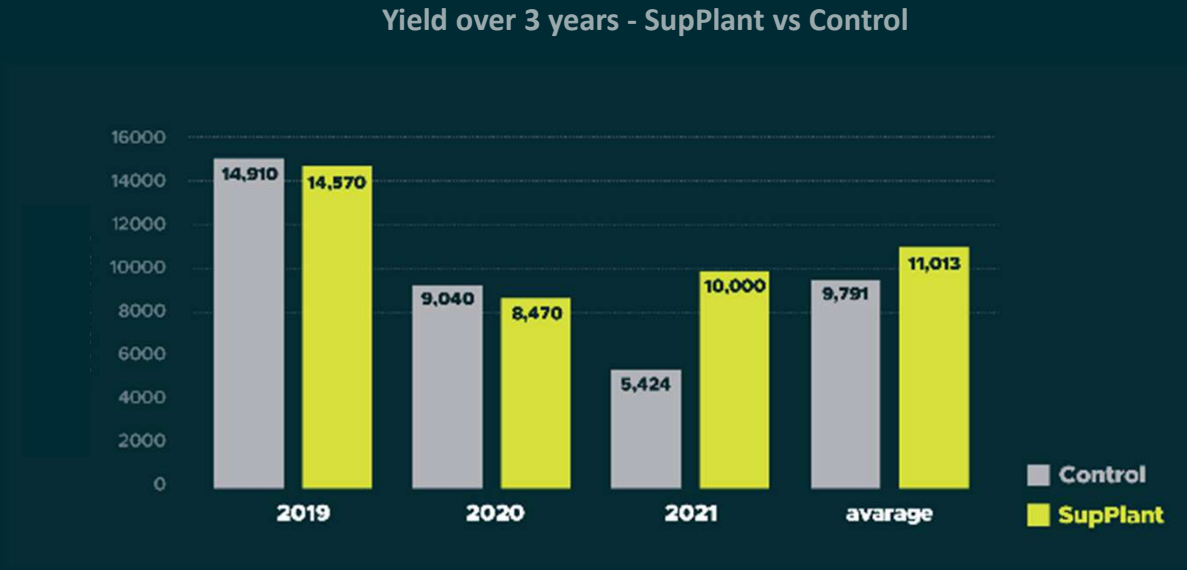


Case Study

Kibbutz Shluhut // Majhul – Israel – 2019-2021

Stable Yields

The 3-year average yield in SupPlant's algorithm-based autonomous irrigation system plot was higher than the control. We made sure that correct irrigation management can maintain and even improve production levels with far less water than used according to current knowledge and practices



Case Study

UAE

2021- 2022

Case Study

UAE

2021- 2022

1.5 million Palm trees

Lack of water for food crops

Case Study

UAE

2021- 2022

First POC results

Irrigation	Plant growth

30%- 40% water saving

Vision & Milestones

The Plan Objectives:

Save water up to 40%

Maintain growth of the plant

Increase yield by up to 25%

Prevent plant stress

Reduce fruit loss

Overcome sever weather conditions

Case Study

UAE // 2021-2022

Water Saving

By following the tree's growth and irrigating according to the tree's exact needs all along the season, SupPlant's algorithm-based autonomous irrigation system showed an 30% water saving in the first year of operation!

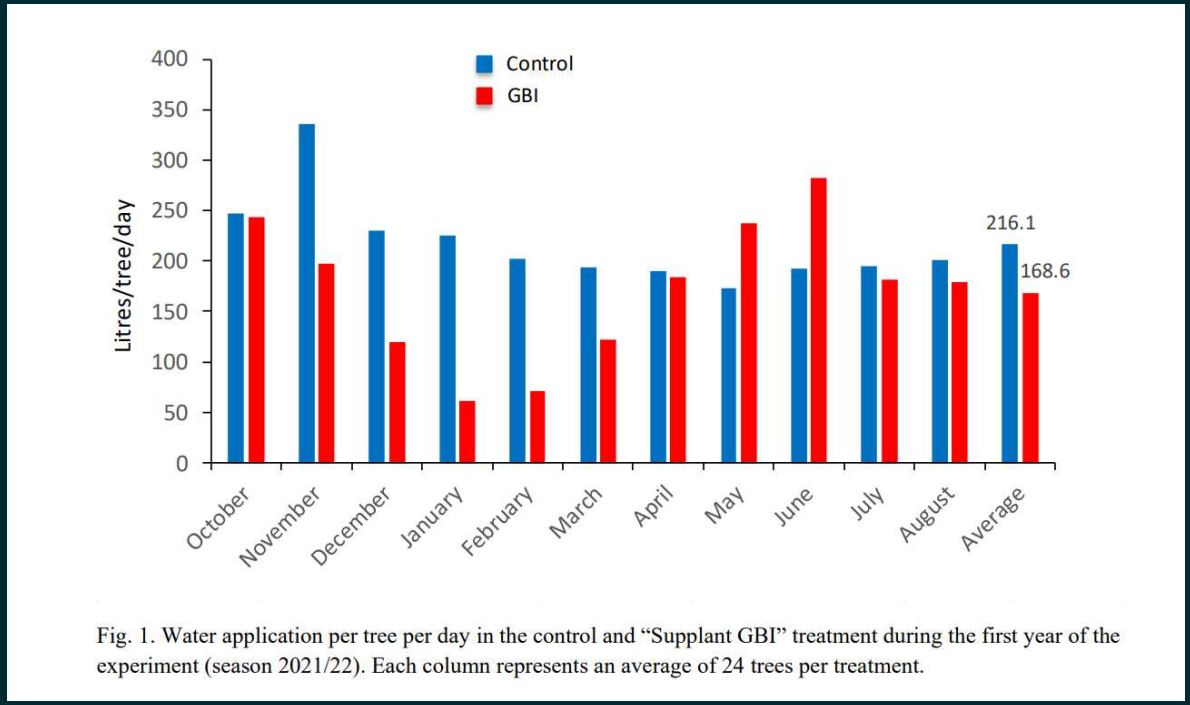


Fig. 1. Water application per tree per day in the control and "Supplant GBI" treatment during the first year of the experiment (season 2021/22). Each column represents an average of 24 trees per treatment.

Case Study

UAE // 2021-2022

Water Saving

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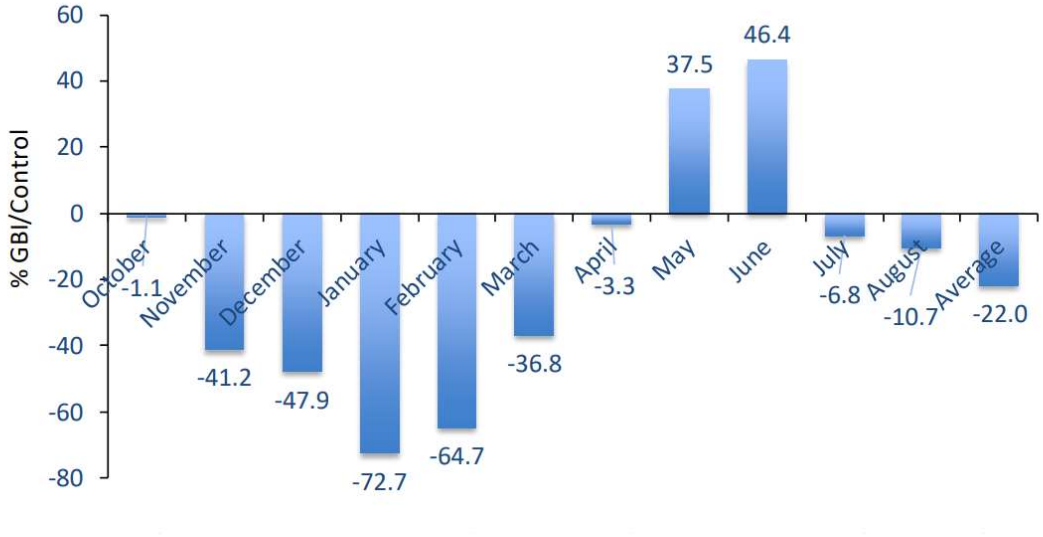


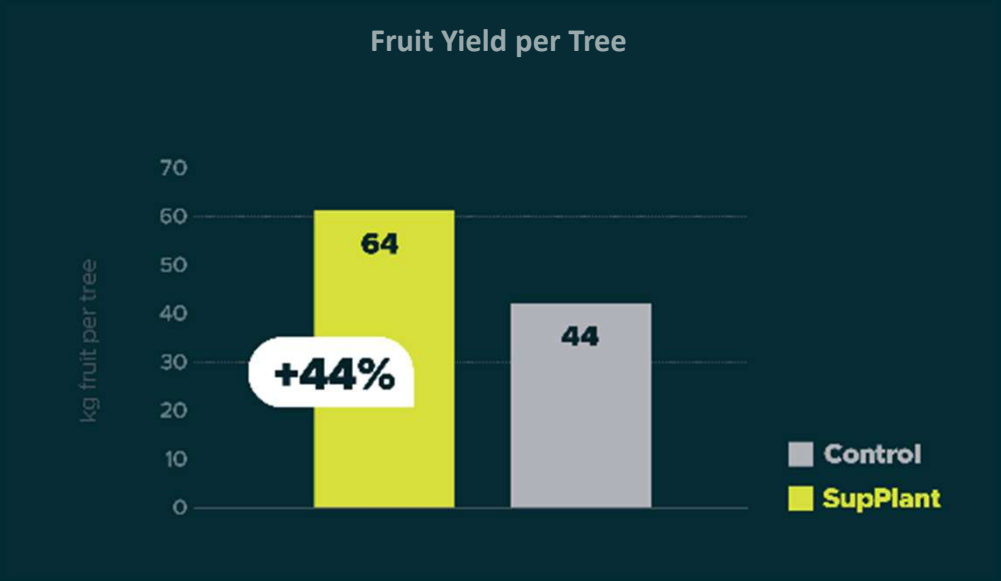
Fig. 2. Water use ratio (litres/day/plant) between GBI and control (GBI/Control), for the first year of the experiment (season 2021/22). Negative numbers represent the amount of water (in percentage) saved by the "Supplant GBI" system during the first season.

Case Study

UAE // 2021-2022

Yield increase

By following the tree's growth and irrigating according to the tree's exact needs all along the season, SupPlant's algorithm-based autonomous irrigation system showed an average of 46% water saving 3 years in a row



Irrigation power

UAE // 2021-2022

Water use efficiency

When the water use efficiency (WUE) was compared between the treatments (Kg of fruit per m3 of water, per tree), the GBI treatment increased the WUE by 86% (more yield with less water).

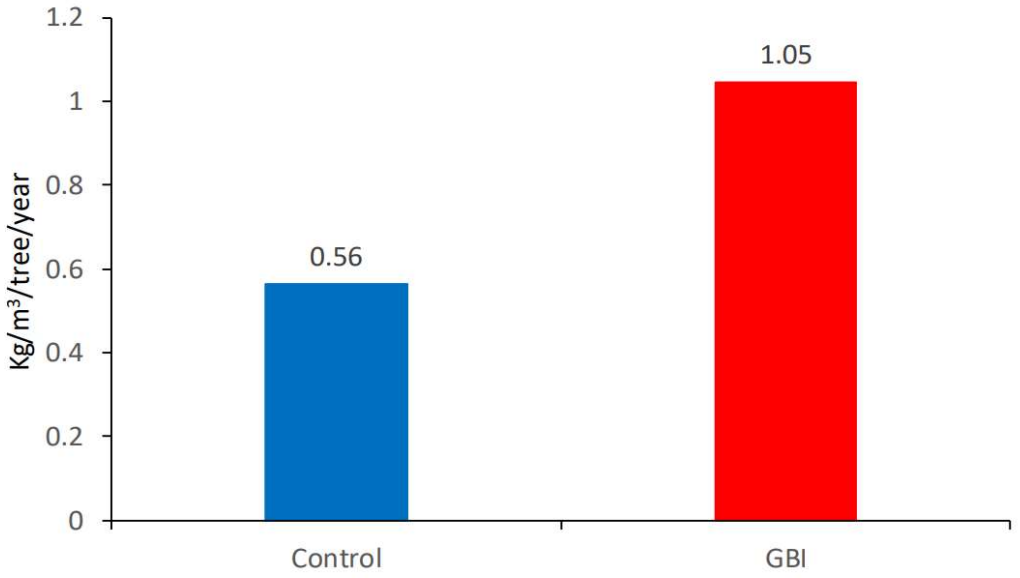


Fig. 7. Comparison between Control and "Supplant GBI" treatments in water use efficiency (Kg of fruit per m^3 of water per tree) for the first year of the experiment (season 2021/22). Each column represents an average of 24 trees.

THANK YOU

Supplant

Unmute your Crops