Delta-T Devices

CASE STUDY

Sunscan SS1

This case study is based on the following paper:

"Water use and the development of seasonal crop coefficients for Superior Seedless grapevines trained to an open-gable trellis system"

Irrigation Science
January 2009, Volume 27
Issue 2, pp 109-120

Yishai Netzer, et al

Using SunScan data to establish the relationships between changes in LAI, water consumption, and crop coefficient

This case study is based on research conducted by Dr Yishai Netzer, et al. It focuses on a seven year lysimeter project where crop coefficients were established for grape vines grown under three irrigation regimes.

One of the key objectives of the work was to establish the relationships between the seasonal changes in LAI and changes in ET_C (water consumption) and K_C (crop coefficient).

The Delta-T Devices SunScan system was used for the field measurement of LAI.

A relationship was established between K_C and LAI and also between ET_C and LAI and the authors were able to postulate that "The relationship between LAI and K_C can serve as an additional tool for estimation of K_C …. Where LAI can be measured directly".

The paper concludes: "Both K_C and ET_C (water consumption) were highly correlated to LAI.

Sunscan SS1

A powerful portable canopy analysis system for crops

SunScan uses field measurements of PAR in crop canopies to provide valuable information about Leaf Area Index (LAI) and biomass production.

- Measures incident and transmitted PAR in plant canopies
- Direct display of Leaf Area Index (LAI)
- Usable in cloudy, clear and changeable conditions
- Unique BF5 Sunshine Sensor reference - measures Direct and Diffuse components of incident light

More info at:
www.delta-t.co.uk

email: sales@delta-t.co.uk web: www.delta-t.co.uk

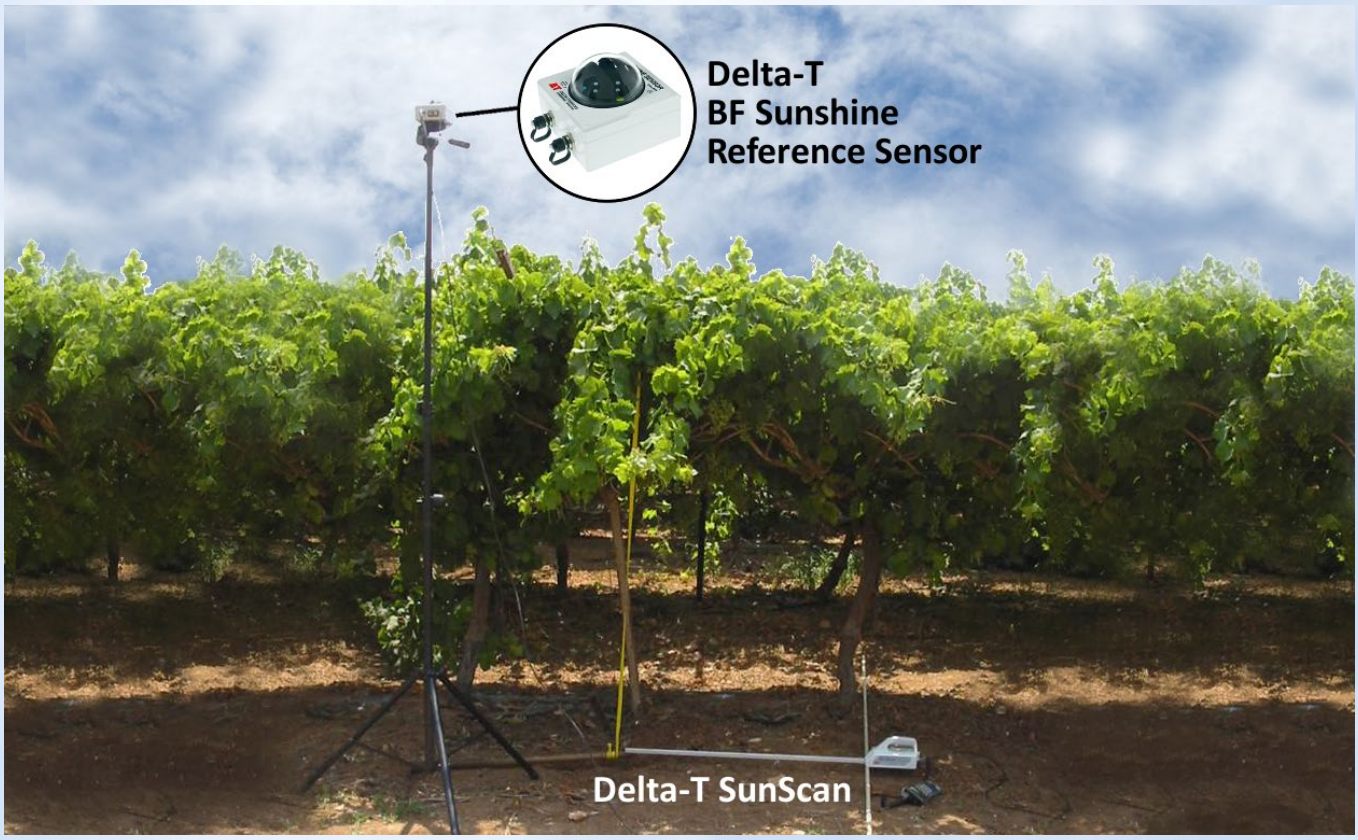
It was important to determine that LAI measurements were reliable and accurate and so in order to verify the accuracy of SunScan LAI measurements, leaves were removed from a total of eighteen 2m sections of grapevine and measured with an area meter.

Estimated and measured (SunScan and area meter) LAI values were highly correlated with one another (R^2 = 0.98).

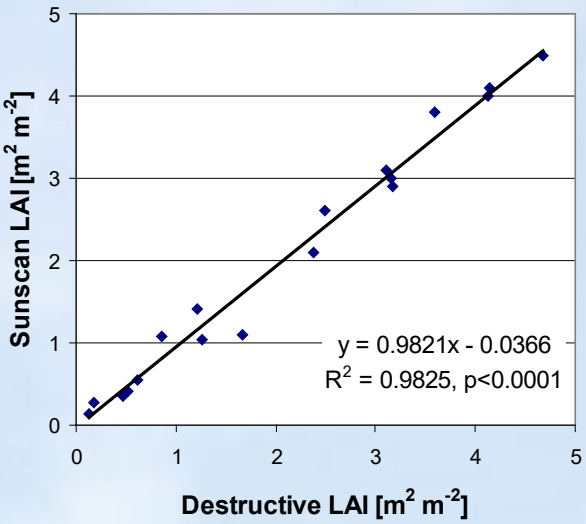
SunScan non-destructive LAI measurements offer accurate results that have been verified using a destructive direct measurement technique.

"Our group has been working with the SunScan Canopy analysis system for over 10 years whilst researching the cultivation of table grapes, wine grapes and olives. The equipment is ideal for robust field work and we have benefited greatly from its simple operation and easy downloading of data. We found the non-destructive LAI measurements that SunScan produced to be highly correlated to destructive measurements in table grapes (y=0.982x-0.0366, R^2=0.9825, n=18) and in wine grapes. SunScan has been a great success in terms of meeting our experimental research needs."

Dr Yishai Netzer
The Hebrew University of Jerusalem



SunScan's measurement validation in table grapes



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email: sales@delta-t.co.uk
web: www.delta-t.co.uk