AOA ‘healthy soils’ field day at Lisadurne Hill, Rushworth VIC.

Some 41 olive producers from 22 olive groves attended a very successful field day hosted by Lisadurne Hill, located near Rushworth in the historic gold mining region of Central Victoria.

Participants were primarily from nearby regions, although a few producers travelled from further afield including the Mornington Peninsula.

AOA CEO Greg Seymour said the participant feedback sheets were extremely positive about the quality of the presenters and their information; as well as the venue, catering, and organization of the day.

Lisadurne Hill field day participants experienced a damp but stimulating and informative day

The Lisadurne Hill grove:

Run by husband and wife team, Russ and Tina Knight, Lisadurne Hill is a family farm established by Tina’s great-grandfather Dr John Vickers Heily at Lisadurne near Rushworth in the 1870’s.

Olives pressed to impress at Lisadurne Hill olives

The Weekly Times, January 22, 2014

Age and ill health forced Tina's parents to move from the farm in 2006 and it was then that she and partner Russ bought the 32ha Hill Paddock portion of the farm.

Tina and Russ, a market researcher, had no background in farming when they decided to make olive oil. They started planting the grove in 2008 and had their first commercial crop of Lisadurne Hill olives in 2011.

Of 27,500 trees grown on the property, 25,000 are signore, an olive variety grown intensively on a wire for mechanical pruning and harvesting. The olives go to make Lisadurne Hill's bulk oil, most of which is sold after processing.

The other 2500 trees are barnea, hojiblanca, frantoio, picual, picholine and coratina varieties, which are pressed to make boutique traditional varieties.

The couple market their oil and table olives themselves, together with their son Justin.

The farm has 400 sheep - 65 Merino ewes, 170 first-cross ewes and 200 lambs.

There are also 50 Angus cattle and an Angus-Wagyu line with new heifers is under development.

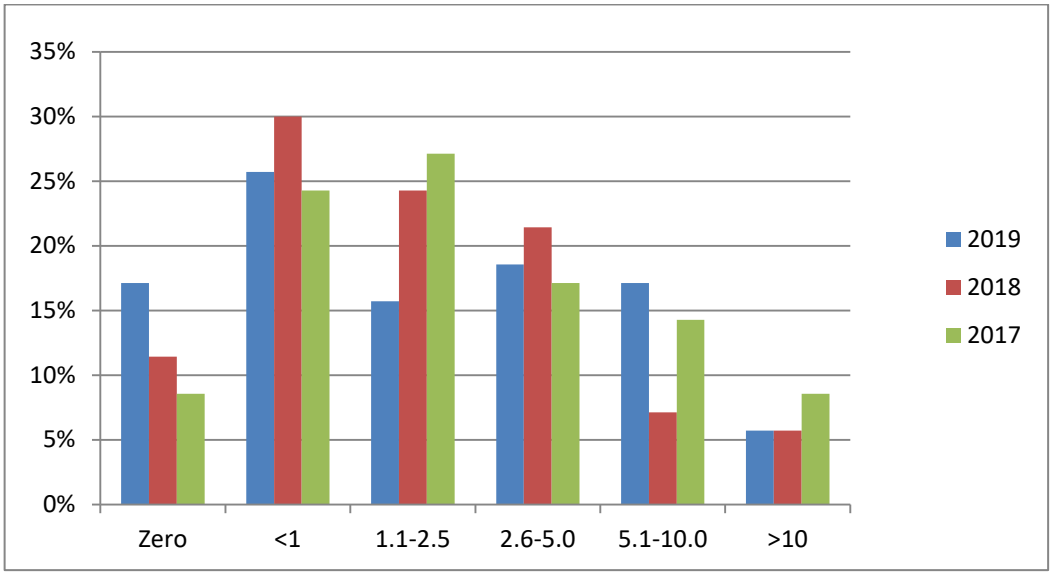
But oil will continue to be the focus of the business, Tina said.

Field day participants were treated to a grove walk that covered important grove productivity topics including practical demonstrations addressing a range of critical grove management issues:

AOA's grove productivity program:

The Australian Olive Association (AOA) is convening a series of field days across Australia with a refreshing 'in the field' demonstration approach. The field day series emphasises the important role of healthy soils in producing healthy trees and lifting grove productivity.

Noting a 2019 AOA grower survey that revealed that Australian grove productivity ranges from zero to 15 tonne / ha, with median production <1.0 tonne / ha, and average production of 3.3 tonne / ha, clearly demonstrating the low productivity of many groves in Australia, reflecting the need to address critical grove management issues:



AOA is also emphasising the value of benchmarking grove performance - setting Key Performance Indicators (KPIs) for improved grove productivity and profitability, including:

- Grove productivity KPIs: kg / tree, tonnes / ha ;
- Cost of production - cost $/tonne;
- Gross margin - $/ha

The value of participating in AOA's *OliveCare®* Best Practice Program was also covered, including the use of best practice management checklists, and having access to technical time critical management information.

- *Download AOA's talking points on the OliveCare® best practice program here.*
- *OliveCare® members are able to log in to access best practice checklists here.*

Canopy management:

The key canopy management point is that because olive trees fruit on one year old wood, the tree canopy needs to be rejuvenated over a 6-8 year cycle to maximise the volume of young fruiting wood that is exposed to sunlight. This practice also enables the height of the trees to be lowered making groves more manageable for pest and disease control and harvest.

Andrew Taylor demonstrated pruning on old wood at Nangkita Grove, SA.

A pruned olive tree at Wollundry Grove near Wagga Wagga showing 6 months regrowth, which will eventually develop into new leaders

With renovation pruning between 25-30% of the canopy can be removed with a single cut between shoulder and waste height on the North facing side of the tree in the first year. This will serve to reduce the height of the tree and stimulate regrowth around the cut that over time will produce new leaders. By removing this limb light will also better penetrate the remainder of the canopy and increase the growth of fruiting wood, and improve fruit set on the remainder of the tree, meaning overall crop yield should increase - not reduce over time.

At Hunters Dream Estate Joel explained and demonstrated:

- Pruning for sunlight/shade pattern
- Pruning for tree row volume
- Pruning for harvest method
- Pruning for leaf/wood ratio
- Pruning as cultural practise for disease control
- Pruning for renewal
- Pruning for frost reduction
- Pruning for consistent production

- *View Andrew Taylor's video on olive tree pruning and disease management Video (7.5 mins).*
- *Read about the Wollundry Grove canopy renovation program in the Australian & New Zealand Olivegrower and processor: June 2020 edition – pp14-17. Also available on-line to subscribers at: https://olivebiz.com.au/magazines/olivegrower/back-issues/*

Soil moisture and temperature monitoring and on-farm weather stations:

Tom Nelligan (Swan Systems)- software

Tom Nelligan explaining the application of 'precision irrigation' using OneTemp farm weather station and monitoring equipment and Swan Systems software at Nangkita Grove, SA.

Tom Nelligan of WA based **Swan Systems** has recently completed a Master in Agribusiness from the University of Adelaide. Prior to returning to his studies Tom worked as an agronomist and as an agribusiness consultant. Tom joined SWAN Systems in early 2020 as its Key Account Manager in South Australia and the Sunraysia district in Victoria and New South Wales.

View the range of Swan Systems water and nutrient management systems at:
https://www.swansystems.com.au/industries/horticulture/

Tom explained and demonstrated:

- Application of remote sensing – soil moisture, temperature, automation and Weather Station Configurations.
- Monitoring of soil moisture/Temperature/ conductivity and evaporation, Soil Water Potential monitoring.
- Calculated Weather Channels – Evapotranspiration, Accumulated Rainfall and Dew point.
- Frost Monitoring.
- Irrigation monitoring and control.

SWAN Systems is a precision irrigation management tool which utilises your existing farm hardware to calculate your soil moisture balance. We use irrigation and weather data, as well as block specific soil characteristics, to create a digital model of your soil moisture. By using the BOM's gridded weather forecast, we can predict where your soil moisture balance will be in 7 days, enabling you to accurately plan irrigation around forecast rain and weather, saving you time, energy and resources.

- *Download Tom's 'Precision Irrigation' chart here.*
- *View OneTemp demonstration of weather stations, remote sensing and automation at Nangkita Grove Video (14 min)*

Soil health and leaf and soil nutrition monitoring with Peter Briscoe from Bioptiv (VIC)


Peter Briscoe from Bioptiv Australia and Andrew Taylor discussing the soil profile at Lisadurne Hill

A major point made by Peter is that it is essential for growers to undertake both soil and leaf analysis, and pH to enable a more accurate diagnosis of actual nutrient deficiency, and in designing a grove nutrition program. Sample the same soil sites and trees at least annually to enable comparable data and to read trends. Peter explained:

- How do you maintain productive groves while streamlining nutrient requirements?
- How do you manage applications of fertilisers to optimise plant uptake and minimise losses to run-off, leaching or gas emissions?
- When should I take soil and leaf tests?
- Why is soil pH important?
- What fertiliser methods should I use?
- How do I improve soil biology and carbon in my soils?
- Building soil nitrogen and nitrogen fixation
- The use of soil amendments to correct sodic and acidic soils

- *Download Peter's talking points on soil health and grove nutrition here.*
- *Download Peter's notes on taking soil samples here & taking leaf samples for analysis here.*
- *Download Bioptiv report on Longridge Olives (SA) Bactivate Program from 2015 - 2020 here.*

Note: The Bactivate Program is designed to add specific microbes required for nutrition conversion, plant immune health and growth by adding in key Bacillus bacteria in an antagonistic form while feeding those microbes, initiating soil structure improvements and driving increased cropping outcomes for a long-term sustainable solution. This report looks at soil and leaf analysis results over a 5 year treatment period.
Click on the above link and read on.

The MicroBIOMETER®

Research shows that microbial biomass (fungi and bacteria) is the leading indicator of soil health. Living soil fixes nutrients, improves plant immunity, stores water more efficiently and builds soil structure, therefore, a healthy level of microbes increases productivity while reducing inputs.

The microBIOMETER® measures the microbial biomass of soil, compost, and compost teas and extracts. It also calculates the fungal to bacterial ratio for soil and compost. This data allows you to track the health of your soil over time. Microbial biomass is calculated and displayed in micrograms of microbial-carbon per gram of soil (µg/g) and fungal to bacterial ratio is calculated and displayed as F:B, F% and B%.

Note: Iron rich soil can have iron nanoparticles. These are red particles in the same size range as microbes, which have buoyant densities that prevent their being precipitated during settling time, and which may affect the test readings. Work is being undertaken to include a magnetic settling step in the instructions for use. Further details and instructions for use of the microBIOMETER® is available at: https://microbiometer.com/

Also available from The Meter Man *(David von Pein)* in Toowoomba, QLD (cost approx. $300 including 20 tests): https://www.themeterman.com.au/microbial-biomass-tester-kit.php

Making and using compost with John Barton (Charton & Bang, Research & Development):

John Barton explaining the finer points of making and using high quality compost at aFthonia Farms QLD

John Barton grew up on a rice farm near Griffith, NSW and worked in agriculture across a range of crop types. After sustaining a back injury John retrained in horticultural science, specialising in soil function and farm ecosystems. He has worked for 10 years in commercial composting at every level and in the production of 1 million cubic metres of compost, and in the commissioning and staff training of 5 new composting sites around Australia. John is passionate about creating sustainable farms and soils that can produce food forever with degrading. John explained and demonstrated:

- Composting
  - Compost recipe
  - Compost application rates
- Soil water
  - Collecting more water
  - Holding more water
  - Giving back more water
- Soil carbon
  - Living carbon
  - Simple carbon
  - Complex carbon
  - How we lose soil carbon
  - How we can build soil carbon
  - How to keep soil carbon

        - Measuring soil carbon
- *Download John Barton's (Charton & Bang, Research & Development) talking points on composting and soil carbon **here**.*
- *Download Compost for Soils trial at Regans Ford olive grove WA **here**, and Guide your Compost Application **here**.*
- *For more information on compost and composting click **here***

Lisadurne Hill field day participants reported they had a 'great day' and were provided 'timely and practical information'.

AOA has received very positive feedback from field day participants, and is now interesting to hear what participants have been inspired to do with their field day learnings, and to track these outcomes over coming years.