



AOA ‘healthy soils’ field day at Hunter’s Dream Estate.

Some 40 olive producers from 24 olive groves attended a very successful field day hosted by Hunters Dream Estate, located near Pokolbin in the famous Hunter Valley of NSW.

Participants were primarily from the Hunter, although a few producers travelled from Central Victoria and SE QLD. AOA Director NSW Peter Herborn (*Hunter Valley Olive Growers and Sellers*), was pleased with the profile of attendees commenting “*a lot of new faces and people new to the industry - the generational change that needs to happen!*”

The Hunter’s Dream Estate groves:

Hunter’s Dream Estate wine maker and manager *Kees van de scheur* explained that there are eight cultivars of olives growing on the Hunter Valley Estate. One block has about 300 trees, a mix of Picual, Manzanillo, Arbequina and Koreiniki, which are about five year’s old and under 2 metres in height. There is also a new High Density block with about 2,000 trees under three years old. There is also an avenue of older olive trees that proved to be useful for the pruning demonstration.

The olive grove is situated on very flat terrain with not much diversity in soils from block to block, basically a sandy loam with a couple of sections that can be a bit boggy. Typical Hunter! Drip irrigated and fertigated as per the vineyard schedule, also spread poultry manure and grow inter-row cover crops to improve soil carbon.

Note: Hunter’s Dream Estate has a second larger olive grove located at Hillston in the NSW, of 190,000 trees comprising Frantoio, Coratina, Leccino and Pendolino varieties.

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.



Joel Booty (Hercules Landscaping) demonstrating rejuvenation pruning at Hunter's Dream Estate



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/>

Harvest timing in the Hunter Valley and other local grove issues:



AOA Director Peter Herborn discussing emerging issues for the coming harvest.

A key point that Peter makes is that harvest planning is not a ‘set and forget’ process. Circumstances will change and adjustments are almost inevitable, and it is essential to keep a regular dialogue with harvesters and processors to help anticipate and manage these changes.

Peter led discussion on the following harvest planning points:

- What do you want to achieve? eg olive oil or table or both? Robust or mild oil? Single variety oil? Agrumato oil? Black or green manzanillo etc.
- Do you know how to estimate harvest dates and likely yields.
- Have you thought through your pest and disease control program and required chemical use withholding periods?
- Is your grove well prepared and safe for harvesting / is access readily available?
- Have you thought through grove biosecurity?
- Have you contracted required harvesters / transport / processor?
- Who will handle cleaning of the fruit?
- Have you arranged fruit transport / bins / storage?
- Keep olives clean – avoid contamination of olives with soil, bird droppings, hydraulic oil etc
- Manage ‘field heat’ - take care with storage of olive fruit in bins from harvest to milling (consider bin materials, bin storage, fruit depth, ventilation and shading)
- Do you have contingency plans?

Olive Lace Bug (OLB) in the Hunter Valley



Entomologist Dr Robert Spooner-Hart led discussion around healthy trees.

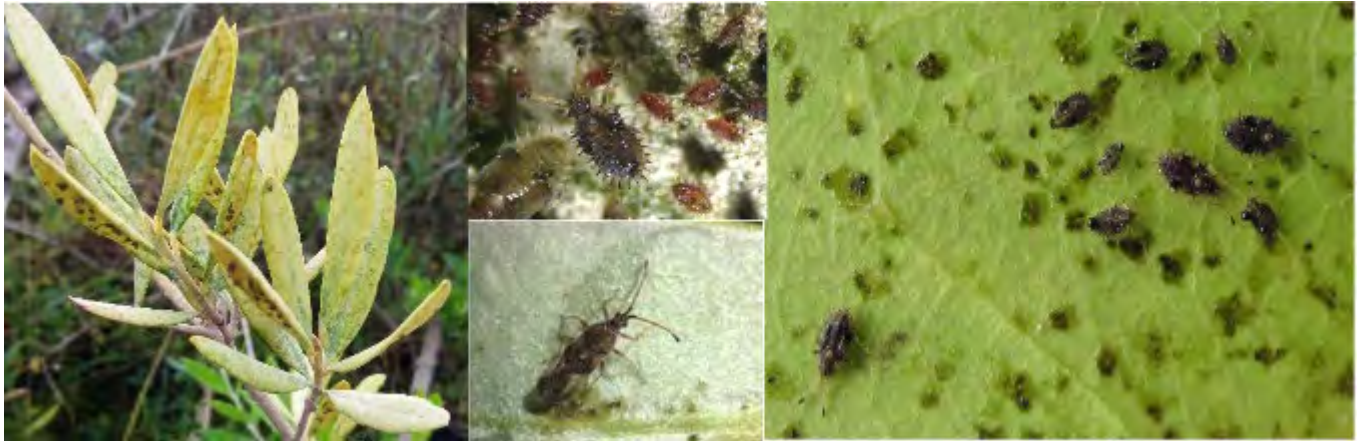
Peter Herborn explained that the current outbreak of Olive Lace Bug (OLB) is predominantly in properties bordering the National Park and State Forest. In discussion with Robert Spooner Hart they agreed that one major contributing factors has been the bushfires that destroyed vast areas of the natural habitat of lace bug and its likely natural enemies.

Whilst this was a year ago it is almost certain that large numbers of lace bugs survived over winter, only to re-emerge with high nymphal survival rates in the abnormally wet, warm and humid summer we have recently experienced in the Hunter.

Noting OLB is now a serious problem in the Hunter, Peter Herborn recommends:

- regularly monitor your groves, especially from spring, to detect emergence of the first generation of lace bug nymphs. This is the easiest infestation to target and effectively manage, and will reduce later season problems
 - healthy trees are less susceptible and more tolerant of lace bug attack
 - don't put off doing something, especially if you see the start of an infestation
 - recognise that use of systemic sprays will have an impact on harvest dates due to WHP requirements. So early intervention with systemic sprays is the best time for this strategy. Later in the season, consider non-systemic alternatives.
 - try a containment approach using a pyrethrum/pest oil mix.
 - cut out and burn affected branches if possible to do so eg low lying/non-fruit bearing limbs harbouring significant colonies of lace bug nymphs
 - be aware that you may get turned away from processors if a) you are unable to confirm you have NOT harvested within the WHP and/or b) there is an obvious presence of lace bug in the delivery
 - treat the problem comprehensively post-harvest - don't allow it perpetuate over winter. Adult lace bugs can survive over winter, as well as eggs laid in olive leaves.
- Access AOA's technical notes on significant pests and diseases of the olive tree [here](#).
 - Access Professor Robert Spooner-Hart's IPDM project resources [here](#).

Long term strategy for management of Olive Lace Bug *Froggattia olivinia*



Olive Lace Bug: <https://olivebiz.com.au/wp-content/uploads/2020/08/OLIVE-LACE-BUG.pdf>

If required, lace bug can be targeted by judicious use of insecticides. Several, including pyrethrum and potassium soap may be organically acceptable inputs. Sprays need to be targeted at young nymphal stages, so monitoring for nymphal hatch of especially the first generation in spring is important. Opening up tree canopies exposes nymphs to greater likelihood of dehydration, and also to access by sprays targeted against them. Stressed trees are more susceptible to lace bug attack, so maintaining healthy trees assists in management of this pest.

AOA technical note on current approved chemical control options for olive lace bug:

- **New PER 89943 Trivor** Insecticide (acetamiprid + pyriproxyfen) Permit to 31 January 2024, **Group 4A (Neonicotinoid)** and **Group 7C (Insect Growth Regulator)** APVMA Permit listing TBA

Maximum of 2 applications per season. Withholding Period 28 days

- **PER14897 Clothianidin (Samurai)** Permit to 31 March 2023: systemic **Group 4A neonicotinoid insecticide**, <http://permits.apvma.gov.au/PER14897.PDF>

Apply one spray only at the nymphal stage. Withholding Period: 56 days

- **PER13999 Version 6 Dimethoate** Permit to 31 March 2021: contact and systemic **Group 1B organophosphorus insecticide**, <http://permits.apvma.gov.au/PER13999.PDF>

Maximum of 4 applications per season. Withholding Period: 42 days.

- **PER81949 Esenvalerate (Sumi-Alpha-Flex)** Permit to 31 December 2023: broad spectrum **Group 3A synthetic pyrethroid insecticide**, <https://sumitomo-chem.com.au/sites/default/files/literature/per81949.pdf>

Maximum of 4 applications per season. Withholding Period: 14 days. Demonstrated efficacy but disruptive to beneficials.

- **PER81870 Pyrethrum (Pyganic)**: Permit to 31 Oct 2019, broad spectrum **Group 3A organic pyrethroid insecticide**, (organic certified), <http://permits.apvma.gov.au/PER81870.PDF>

Maximum of 2 consecutive sprays. Withholding Period: 1 day - *trial work currently underway for label registration.*

- **Pending: Flupyradifurone (SIVANTO)** - (Xylem mobile) foliar contact agent and in soil systemic **Group 4D butenolide systemic insecticide** - **IPM compatible** – work contracted April 2018, due for completion June 2021 - for OLB control.

Technical Info: <https://www.sivanto.bayer.com/doc/Technical-Information-SIVANTO.pdf>

Anticipate Use: maximum of 1 application per season. withholding Period: 20 days - TBC.

Other “soft” control options for OLB:

- **PER14414** (Natrasoap®) **fatty acids - K salt** Permit to 30 September 2023: Contact agent <http://permits.apvma.gov.au/PER14414.PDF> Withholding Period: Nil.
Note: Many growers report that Natrasoap® and its equivalent - potassium salts mixed with spray oil products may not be highly effective.
- Potassium carbonate and potassium bi-carbonate are foliar nutrients that may have **incidental contact agent** pest control properties.
- Horticultural spray oils are simple, easy to use safely, and are kinder to beneficial insects, but they do depend on the spray fully “wetting” the instars and insects. Since the instars and insects live on the underside of olive leaves, the spray equipment must be set up carefully to saturate the undersides of the leaves right across the tree. Recommended rates of application for spray oils are around 1000 L/ha.
- <http://websvr.infopest.com.au/LabelRouter?LabelType=L&Mode=1&ProductCode=59092>
Note: *Paraffinic and vegetable oils (including olive oil) - contact agents - potential low toxicity organic options - however there are implications for use of vegetable oils close to harvest as this may alter EVOO fatty acid profile test results.*
- The native green lacewing *Mallada signata* is commercially available. Robert Spooner Hart says he “has several times observed in the field lacewing larvae attacking nymphal stages of OLB (including with carcasses on their back). But this has been rare, and I have been through many populations of lace bug with no obvious signs of predation, except for occasional spiders”. <https://bugsforbugs.com.au/product/lacewing/>

Suggested resistance management strategy for the control of Olive Lace Bug (OLB):

(Assuming the grower has legal access to the above Group 1B, 3A, 4A, 4D, 7C pesticides)

- **DO NOT** apply consecutive sprays of solo products containing **Group 4A**, consecutive sprays include mixtures containing **Group 7C** pesticides.
- **Consecutive application** includes from the end of one season to the start of the following season.
- **DO NOT** apply consecutive sprays of solo products containing **Group 1B, Group 3A, Group 4D** pesticides.
- **Rotate** use of products from **Group 1B, Group 3A, Group 4A, Group 4D or Group 7C** pesticides.

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



Peter Briscoe from Bioptiv Australia presenting on soil and leaf testing

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
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- *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 ($\mu\text{g/g}$) 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

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](#)*



Hunter Valley 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.