



R&D Insights contains the latest levy-funded R&D project updates, research findings and related industry resources, which all happen under the Hort Innovation Olive Fund.

Hort Innovation partners with leading service providers to complete a range of R&D projects to ensure the long-term sustainability and profitability of the olive industry.



David Margetson and Rita Bikins take a stroll with their dog, Frank, in their 18ha grove in Pomonal, Victoria.

“We’re half-way through the course now, and the content has been refreshingly relevant to my business – it’s good to be able to reaffirm we are on the right track,” Ms Bikins said.

“The topic we’re currently working on is supply chains and value adding for consumers, so it’s very applicable to our product lines and farm gate café.

“We also had a really good assignment on people and culture – exploring award rates, human resources process and improving workplace culture.”

The 10-month program covers a range of topics, from financial management and law to marketing and communications, through flexible online study offered through University of Tasmania (UTAS) and face-to-face intensives.

The Hort Masterclass is part of the Hort Frontiers Leadership Fund, a Hort Innovation strategic partnership initiative that uses a combination of government and partner funding to address major issues facing the future of Australian horticulture for the benefit of the entire industry.

Hort Masterclass is proving refreshingly relevant

The latest cohort of students are hitting the books for the 2018 *Masterclass in Horticultural Business* program, developed to equip growers and business owners with leadership and business management skills specific to the horticultural industry.

Victorian grower Rita Bikins is representing the olive industry, and is building her financial management skills to improve her understanding of what it means to run a profitable boutique olive business.

Situated in Pomonal, near the Grampians National Park in Victoria, Ms Bikins and partner David Margetson have 5000 olive trees in their 18 hectare grove and also run Merino sheep.

Their business, Red Rock Olives, produces Extra Virgin Olive Oil, table olives and olive salt which they use and sell at their farm gate cafe, local wineries and a few cafés in Melbourne.



PROGRAM INFORMATION

The program will be held for the next three years, accepting around 30 recipients annually. For more information on the program or to register your interest for the 2019 program, visit the UTAS website. <http://www.utas.edu.au/sciences-engineering/masterclass-in-horticultural-business>



Risk and crisis management plan completed for industry

The olive industry now has a comprehensive risk and crisis management plan to deal with potential hazards, following the completion of the research project *Risk and crisis management planning for the olive industry (OL16011)*.

The project, a strategic investment under the Hort Innovation Olive Fund, provides a formal framework, process and understanding for who is to do what, when and how in the event of a crisis such as environmental contamination, food safety concerns or supply chain issues.

Project leader, Dr Duncan Hall from Biologic Pty Ltd, says growers have had input to the plan through the Australian Olive Association (AOA) in face-to-face meetings, online surveys and industry workshops.

Feedback was also sought from key stakeholders such as Hort Innovation, Plant Health Australia and Food Standards Australia and New Zealand.

Dr Hall, who has extensive experience in corporate risk and crisis management in the food and primary industries sector, says growers and processors may well perceive risk differently according to factors such as location, size of their enterprise, previous experience with unforeseen events and the extent of biological risk, and there's no single answer for how to rate the likelihood and severity of the risk.

"These risks could include exotic pests and disease, chemical use, severe climate events like bushfire, social risks such as workplace safety and events on farms or in processing operations, as well as quality issues that may result in a recall of some brands of Australian Extra Virgin Olive Oil (EVOO) from retail shelves," Dr Hall said.

"Throughout the project we've worked with the industry to seek out the perceptions and experiences of olive growers and processors and use them to develop a risk register.

"The risk register ranks issues in terms of the likelihood and potential impact of risks and was informed through our surveys, personal visits to olive groves and production facilities and phone calls, concluding with a national workshop where industry leaders experienced some interactive and scenario-based crisis response training, including media training," he said.

The project used the PESTEL analysis to group the risks under specific criteria – political, economic, social, technology, environment and legal – but Dr Hall said some issues fell across a number of the categories.

They included the risk of losing access to agricultural chemicals, or the consumer perception risks posed by marketing strategies of alternate oils, to erode both the health positioning and consumer demand for EVOO.

"The PESTEL analysis formed the basis of the risk assessment and provided a framework for growers to

develop an industry risk matrix, that analysed the likelihood of the risk or crisis and the potential impact it would have on business, finances and moral responsibilities in the case of workplace safety,” he explained.

“That gave us recognition of the broad groups of risk and a cross section of how the industry perceives these, which can be used as a framework to develop a Critical Incidence Response Plan that will dovetail into the wider Hort Innovation crisis response plans.”

Another facet of the project was to identify key industry leaders within and outside AOA who could be part of a crisis ‘team’ that assessed the risk and had ownership of the issue.

“For example, if you have a highly technical issue you want someone who is well versed in these aspects to be involved, but that’s not necessarily the same person who responds to media and public inquiries,” Dr Hall said.

“You have the option to structure a team to suit a particular risk, then document an ‘all hazards’ approach. You may not be able to foresee every critical incident, due to issues like complex supply or distribution chains, but you can formulate a plan that can be adapted to whatever you’re facing.”

The next challenge facing the olive industry, he said, is to turn risk and crisis management into a ‘top of mind’ issue, so that there is an immediate response in the field.

“There are 900 olive growers and any one of them could have an issue that they have to confront that may be of importance to a wider industry group, such as a packaging defect or a new pest, and we want them to be able to identify

the risk and know what steps to take,” said Dr Hall.

“There are now templates to help assess industry issues and risks and we have tools to help guide how we respond – whether we act now or wait and monitor. Many of these issues such as recall management are well documented but part of this project is ensuring everyone is aware of the steps to take.”

The project culminated in a real life scenario being presented to an industry working group, with participants required to respond to media and have their performance peer reviewed.

“The industry participants took it very seriously but I think a number of them found it quite challenging to be in a position where you’re required to come out with key messages and up to date information in a rapidly changing situation,” Dr Hall said.

“In a crisis you’re not always across the facts but you must take ownership of the issue and try to lead, rather than letting someone else fill the void. There’s also the challenge of responding on behalf of diverse stakeholder groups too, such as regulators, growers, suppliers, distributors and staff.

“This risk and crisis management plan will stand the industry in good stead for the future and can and should be developed and communicated further by AOA.”

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This project has been funded by Hort Innovation, using the olive research and development levy and contributions from the Australian Government. Hort Innovation is the grower owned, not-for-profit research and development corporation for Australian horticulture.

Further information:

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Research Recap

PROJECT NAME: *Risk and crisis management planning for the olive industry (OL16011)*

PROJECT AIM: To develop and maintain the Australian olive industry’s risk management and crisis preparedness and response plan

PROJECT PARTNER: Biologic Pty Ltd

FUNDING: Hort Innovation Olive Fund

PROJECT DURATION: One year

KEY LEARNINGS SO FAR:

- The project has developed a detailed risk and crisis management plan that will stand the industry in good stead for the future
- The next challenge facing the olive industry is to turn risk and crisis management into a ‘top of mind’ issue.



The Tornado shaker ensures there is no handling or contamination of the fruit and it can be processed the next day.

Saluté Oliva is keeping it fresh

Understanding the key factors that accelerate the breakdown of Extra Virgin Olive Oil (EVOO) is vital for delivering a consistently high quality product.

Nestled in Boort, Central Victoria, Peter and Marlies Eicher produce certified organic EVOO and table olives through their boutique business, Saluté Oliva.

The Eichers have perfected their management practices over more than 10 years to ensure that their harvesting, processing and storage methods minimise the breakdown of EVOO.

Originally both engineers, Peter credits their management practices to the development of a methodical business plan before the grove was planted and strategic investment in harvesting and processing machinery.

“Our business plan helped us keep quality product top-of-mind right from the start – beginning with variety selection and tree spacing,” Peter said.

“The grove was established in 2000, and contains 2150 trees spanning eight hectares with 250 trees per ha. We have 1250 Frantoio trees for oil, 350 Manzanillo trees for table olives and oil, plus 500 Kalamata trees that are mainly used for table olives.”

For small businesses to be viable, Peter believes it is important to be a reliable supplier and produce consistently high-quality product, which is related to efficient harvesting, processing and storage methods.

“When it comes to harvesting, it is important to have a healthy grove and an effective harvesting method, as the timing between harvest and processing is critical for reducing fermentation,” Peter said.

“Factors that affect oil quality include the delayed processing of harvested fruit, and the processing of damaged, diseased or frost affected olives, resulting in an oil of high free fatty acid (FFA) and peroxide.

“To address these factors, we use a Tornado shaker so the fruit is collected in an inverted umbrella and goes straight into a bin for us to process the next day. There is no handling or contamination of the fruit and it is processed before fermentation has occurred.”

The Eichers process their olives, and other growers’ olives, on their property using PIERALISI processing equipment with an Alfa Laval decanter. The three-phase extraction method allows them to process 1 tonne per hour.

“For our first year we used a two-phase process, though the efficiency was not great and we had issues with dirty oil. For our second year we moved to three-phase and everything got much easier,” Peter said.

“By our third year we were using different grids in the hammer mill (5 mm for Frantoio, 6 mm for Manzanillo), using enzymes as a processing aid for improved

extraction efficiency and doing laboratory testing to check the peroxide and FFA in the oil.”

Equipment cleanliness is taken very seriously by the Eichers, with one and a half hours set aside to clean the machine properly between processing jobs.

“We process more than 40 tonnes of olives for local growers each year so it’s vital that the equipment is cleaned properly to avoid having old product in there that will downgrade the quality of the oil,” Peter said.

“Before processing our own olives and after we processed other growers’ olives, we do a 150kg purge cycle to flush out any remaining olive residue. This oil will be stored separately and is not considered organic certified.

“I’d encourage growers to ask their processors how their equipment is cleaned as it affects EVOO quality.”

Oil storage is also an essential factor of EVOO quality, and Peter believes it’s important to keep the product you have worked hard for as fresh as possible.

“We use a vertical separator at the end of the decanter to remove water droplets and larger sediment before it goes into decanting tanks,” Peter said.

“These tanks have variable lids, flush valves at the bottom and are kept at roughly 20 degrees for better settling of the oil.

“For the growers I press for, I encourage them to bring a 70-litre stainless steel drum with them and store it in their rumpus room, then one month after processing, start decanting it into a freshly cleaned drum until the sediments come.”

Saluté Oliva produces approximately 70 tonnes of olives per year. In 2017, they made 10,500 litres of EVOO and 4,500 kilograms of table olives. This year will be a similar sized harvest but an increased oil production due to the Frantoio yielding heavy.

Saluté Oliva supplies a variety of Bendigo and Melbourne restaurants, gourmet businesses and sells directly through their website and farm shop.



Peter and Marlies Eicher produce approximately 10,500 litres of EVOO per year using Peralisi processing equipment.

Peter Eicher believes it is important to be a reliable supplier and produce consistently high-quality product.



As an OliveCare® signatory, Saluté Oliva undergoes an independent audit and evaluation on an annual basis, to confirm the business encompasses the industry’s best management practices.

“It’s important that the product you’re producing is scrutinised in a laboratory. It is just not enough to think that your product is of a high quality, it must be verified in a laboratory environment to be sure you’re meeting the standards,” Peter said.

Market survey findings released in 2017 through the project *Australian Olive Industry Code of Practice* (OL13007), a strategic investment under the Hort Innovation Olive Fund, indicated that 70 per cent of Australian EVOO is meeting the freshness test parameters when assessed against three standards, including the Australian Standard for Olive Oil and Olive-Pomace Oil AS5265-2011.

With the aim of achieving 100 per cent, growers are encouraged to review their copy of the *Australian Olive Industry Code Of Practice HACCP-style Food Safety/Food Quality Plan for the production of EVOO* to identify areas they are doing well in and areas that could be improved. A variety of resources and information is available for growers – contact the Code of Practice facilitator Peter McFarlane on peter@mc.com.au

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Keep an eye out for a video case study with Peter Eicher from Saluté Oliva, to be circulated through the Grove Innovation e-newsletter.

Integrated pest & disease management – a boutique perspective

Business: Leaping Goat Olive Oil

Location: Arthurs Seat, Victoria

Size: 900 trees (2.5 ha) on 10 ha property

Grove established: 1999

Production: 8-12 t

Buying an established grove comes with its own set of challenges and opportunities, as first-time growers David and Lisa Lindholm discovered when they purchased their Mornington Peninsula grove in 2004.

Overcoming peacock spot in the previously-organic grove was the start of their integrated pest and disease management (IPDM) journey, which has led to some sizeable investments and an improved understanding of what it takes to effectively manage a productive grove around other work commitments.

Today, the Lindholm family produce and supply Extra Virgin Olive Oil (EVOO) to a variety of local businesses and online through their business, Leaping Goat Olive Oil.

The early days

Chasing a tree change, David and Lisa Lindholm relocated from Melbourne to Arthurs Seat on the Mornington Peninsula, and started Leaping Goat Olive Oil one year later, using the established 2.5 ha grove on the property.

Like many boutique growers, the Lindholm family juggle the grove around full-time work. For the first six years grove management was done by hand, though once the trees reached 12 to 15 years of age, David found that their grove became increasingly harder to handle and there was an urgent need to update resources.

Investments and learnings

In 2010 the decision was made to invest in a larger spray unit, a Hardie industries 2000I airblast and



David and Lisa Lindholm operate their business, Leaping Goat Olive Oil, from their Mornington Peninsula property.

tractor New Holland 4050F with Supersteer, marking the first step towards a better antifungal and scale management program.

“The sprayer was a significant but necessary investment, given the age and size of our trees there was a need to mechanise the pruning and spraying to ensure the trees are kept at a manageable size so the chemical application was effective,” David said.

“We have one of the older groves in the area, and while black scale was not a problem initially when we bought the property, it’s now one of the main pests we find in the grove, along with peacock spot.”

Alongside the machinery expansion, David has also adopted a more targeted approach to chemical usage, ensuring that the quantity and timing of application are effective and economical.

“If there are small areas within the grove that have black scale or peacock spot, I try and be a bit more focused in my application,” David said.

“A big part of chemical effectiveness comes down to implementing a regular monitoring program, to ensure you’re not treating pests and diseases too late.

“Although we juggle full-time work and our olive business, we are fortunate in that we live on the property with our grove so we can monitor the grove frequently.”

David encourages other growers to listen to the science and utilise the resources that are available.

“A lot of IPDM comes down to having the right weather, time and equipment to do the job correctly, though having a sound knowledge of aspects like pest and disease life cycles and symptoms is important in the decision-making process,” David said.

“It’s important that as an industry we apply the science that is available, and use the resources that have been developed, to ensure we are doing the job properly.”

IPDM key messages:

- Monitor the grove regularly
- Healthy trees are an important component of IPDM
- Know your pests and diseases, as well as beneficial species
- Understand the range of management options, including non-chemical options
- If you're using chemicals then good timing, effective coverage and minimal disruption of beneficial species is essential.

Upcoming workshops

A three-year project, *An integrated pest and disease management (IPDM) extension program for the olive industry* (OL17001), is underway to provide growers and the supply chain with appropriate IPDM extension services focused particularly on black scale, olive lace bug and anthracnose.

The project, a strategic investment under the Hort Innovation Olive Fund, will host nine IPDM workshops across olive-growing regions of Australia in the second half of 2018, to address the difficulties many small

to medium growers face in managing their pest and disease problems.

Here are the dates of the first three workshops:

- Saturday 21 July at Rylstone Press Grove, Rylstone NSW
- Friday 10 August at Daisy Bank Grove, Big Hill NSW
- Sunday 12 August at Adina Vineyard and Olive Grove, Lovedale NSW.

The all-day workshops will involve technical presentations from the project lead, Associate Professor Robert Spooner-Hart from Western Sydney University and other industry experts, followed by practical sessions in the grove.

Keep an eye out for more details through the Australian Olive Association's (AOA) communication channels, or contact the AOA directly for more information.

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Research Recap

PROJECT NAME: *An integrated pest and disease management extension program for the olive industry* (OL17001)

PROJECT AIM: Develop, coordinate and provide industry with appropriate IPDM extension services focused on sustainable management of black scale, olive lace bug and anthracnose

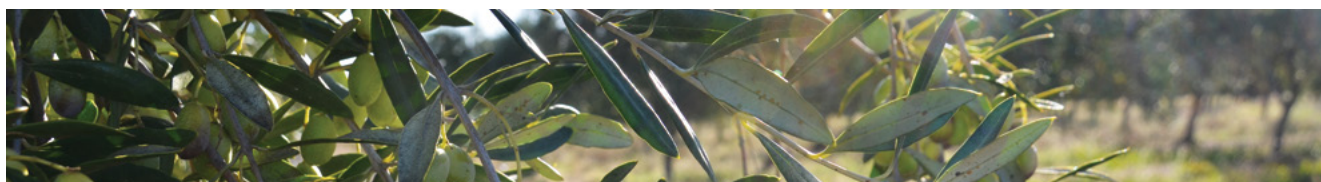
PROJECT PARTNER: Western Sydney University

FUNDING: Hort Innovation Olive Fund

PROJECT DURATION: Three years

KEY INFORMATION:

- Nine IPDM workshops will be held across olive-growing regions of Australia in the second half of 2018
- The project will also deliver a best practice IPDM manual and fact sheets, plus other hard copy and digital information, including a revised Pest and Disease Field Guide for the industry
- The project is an industry collaboration to ensure IPDM extension and communication continues beyond the formal life of the project.



Get closer to previous olive research

In addition to industry communications, official final reports from industry-funded research provide a platform for service providers, like universities and private industry consultants, to communicate outcomes and outputs of completed R&D projects.

For the olive industry, historical and recent final report topics include:

- *Use of ultrasound technology for olive oil processing* (OL08003)
- *Development of a biosecurity plan for the olive industry* (OL14008)
- *Essential work to facilitate increased exports to China, removing roadblocks and enhancing competitive advantage* (OL14003)

Requesting a final report from Hort Innovation is easy, and reports are free for olive levy payers.

1. Visit the final report order form under the 'resources' tab on the Hort Innovation website www.horticulture.com.au
2. Note the name and code of the project/s you are interested in (for example those listed above), or if there's something else you're looking for, download and browse the current final reports list from the web page (you can also search for the project code or keyword using control F within the list)
3. Complete the online form on the website.

Final reports will be sent from Hort Innovation via email.

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More information: Contact Will Gordon, Relationship Manager for the olive industry at Hort Innovation, on 0427 920 924 or will.gordon@horticulture.com.au

Head chef enjoys educating cooks about 'classic' ingredient like EVOO



Head chef Nicky Reimer from Bellota Wine Bar in South Melbourne.

Filming of four prominent Melbourne chefs has been completed and videos on the value of using Australian Extra Virgin Olive Oil are in production, as part of a two-year education program to show young chefs the benefits of the product.

The project *Olive Oil Food Service Project* (OL16004), a strategic investment under the Hort Innovation Olive Fund, aims to boost usage and consumption of EVOO through educating people in the food service industry, and is being implemented by Nutrition Australia.

Featured head chef Nicky Reimer from Bellota Wine Bar in South Melbourne says having the chance to pass on her knowledge of locally produced EVOO has been a valuable experience.

"When I was approached to take part in the video I said yes, sure, because I think it's important to share knowledge and keep our new young generation of cooks interested in a classic ingredient like EVOO," Nicky said.

After growing up in North Queensland when olive oil was imported from Italy and considered 'a bit fancy', Nicky trained as a chef and began to learn more about the benefits and uses of EVOO.

"When I started cooking professionally in my early 20s the olive oil was very expensive imported Italian product that nobody really knew what to do with," she recalls.

"Then when I was working with Stephanie Alexander we were using Australian oil and seeing that the flavour was just as good if not better than overseas oils, and I developed a close affinity with a local producer in Victoria.

"Fast forward to today and every supermarket has shelves of Australian olive oil and the EVOO flavour profile is wide – there are gutsy and robust oils or almost gentle, floral-like flavours."

In the kitchen at Bellota Wine Bar, Nicky uses EVOO for dipping with breads, as a dressing or to lightly drizzle over fresh cooked fish, and she teaches her apprentices to cook with it in a variety of ways.

"With the apprentices you have to catch their attention with dishes that look fun and exciting. In the video I used EVOO on a classic beef carpaccio as well as roasted beetroot, where the pepperiness and robustness of the oil added to the earthiness," she said.

She's learned a lot through visiting the Victorian producer, and believes it is very important for staff to learn about the provenance of ingredients.

"Every year and every new press of olives there's a slight variation according to the seasonal conditions while the fruit has been growing and you can really taste the difference," Nicky said.

"The new chefs are a bit more food-savvy than we were, maybe due to social media or TV, but they don't always understand why EVOO is a specific flavour."

And she's happy to take part in the campaign to educate fellow foodies.

"It was good fun to do the videos and talking about EVOO is a buzz. If it convinces someone to try the cooking techniques just once, I'm happy with that because that person may tell 10 of their friends," she said.

Educational material including the videos, fact sheets and a new web page will be rolled out to the food industry over the next 12 months to May 2019, and included in the curriculum for trainee chefs and culinary school students in Melbourne and Sydney.

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Research Recap

PROJECT NAME: *Olive Oil Food Service Project* (OL16004)

AIM: To boost usage and consumption of EVOO through educating people in the food service industry

RESEARCH PARTNER: Nutrition Australia

FUNDING: Hort Innovation Olive Fund

PROJECT DURATION: Two years

KEY INFORMATION:

- The project is developing three videos for TAFE curriculum to educate trainee chefs about the benefits and uses of Australian EVOO
- The final phase of the project is developing a webinar for olive growers to provide insights into the use of EVOO in the food industry and options for aligning their production to food trends.