



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.

Exploring the mind of an EVOO user

More than 1000 Extra Virgin Olive Oil (EVOO) consumers have provided valuable quantitative insights into the attitude and usage of the product through the completion of two consumer surveys.

Titled Project Popeye, the consumer surveys took place in 2016 and 2017 through an online questionnaire, as part of a Hort Innovation Olive Fund project. Each survey was completed by a sample size of more than 500 EVOO users who purchased the product in the last 12 months.

The survey questions were developed by project lead Rigas Harbilas, from Sydney-based consumer research agency The Practice, in consultation with olive oil producers to ensure the survey findings were of practical benefit to growers and could help quantify key issues and opportunities for the industry.

“A variety of topics were covered, such as nutritional awareness, product size preference, drivers of EVOO purchase and EVOO usage compared to other oils on the market,” Mr Harbilas said.

“A surprising discovery was the correlation between growing up in an EVOO household and being a heavy buyer later in life, given 45 per cent of heavy buyers (who purchase EVOO every two weeks) reported frequent consumption growing up.

“This statistic highlights just how important it is to influence cooking culture to get more EVOO into households.”

And in good news for the industry, consumers reported that they perceived Australian EVOO to be higher quality, healthier and better tasting than European olive oils.

Some other key survey findings include:

56% of EVOO users prefer EVOO for stove top cooking



53% of EVOO users purchased their most recent bottle of EVOO on special

40% of EVOO users believe all EVOO products are similar



42% of EVOO users buy one litre bottles because they don't have space for larger tins

19% of EVOO users are confident they know what Extra Virgin means



Project Popeye has provided valuable insights and also offers perspective on possible future R&D investment areas.

“Often industry research is qualitative so it is important to have quantitative research, like these surveys, to measure how the industry is tracking and identify areas for improvement,” Mr Harbilas said.

The surveys are being collated into reports, and will be available shortly on the Hort Innovation Olive Fund page: www.horticulture.com.au/olive

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.



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NSW olive grower Peter Birch travelled to Italy, Israel, Spain and Argentina on a Churchill Fellowship.

Global research brings benefits, says Churchill Fellow

Northern New South Wales olive grower Peter Birch doesn't hesitate when asked what he gained from travelling to Italy, Israel, Spain and Argentina on a Churchill Fellowship in 2001.

"It was without doubt the ability to speak with people at the cutting edge of the olive industry, learn as much as possible about pruning and harvesting, and get a clear picture of what we needed to do to stay viable into the future," Peter says.

"The experts we met in Europe and South America were broadminded enough to share their knowledge without keeping secrets, and we still catch up with some of those people today."

Churchill Fellowships, set up to honour the memory of wartime British Prime Minister, Winston Churchill, offer Australians the opportunity to travel overseas to conduct research in their chosen field that isn't readily available here.

Hort Innovation has now joined forces with the Churchill Trust to offer three Churchill Fellowships annually, each valued at around \$26,000, to drive innovation and transformation within the industry.

Mr Birch's journey towards a Churchill Fellowship and research into olive grove pruning and harvesting started in 1992, when he and his wife Jenni moved from Melbourne up to the cotton growing region of Moree, NSW.

"We'd enjoyed buying good quality olives and oil at the Queen Victoria markets in Melbourne so we decided to order and grow our own olive seedlings from nurseries in South Australia," Peter remembers.

"Seven years later we bought 'Loch Lomond' on the Gwydir River flood plain, 40km east of Moree, and planted 160 hectares to the main Italian varieties Leccino, Frantoio and Coratina as well as Kalamata and Barnea."

In 2009 trading as 'Thunderbolts Olives' they planted another 90ha of Coratina, Picual, Koreneiki, Arbequina and Barnea, and another 15ha two years later.

The Birch family became 'middle tier' private producers, with 75,000 trees planted on 270 hectares of sandy loam irrigated by the river and bores, and averaging 150-200,000 litres of oil a year marketed under the Gwydir Grove brand.

As the Australian industry planted thousands of olive trees to capitalise on demand, Peter realised there was a need to know more about efficient and economical pruning and harvesting, and applied for the Churchill Fellowship to study methods overseas in 2001.

"What ultimately came out of that was the change to the Colossus harvester. Traditionally, the Europeans had used shaker harvesters, but the machines were not efficient enough to get a large percentage of high quality fruit off the trees," he said.



Churchill Fellow, Peter Birch with the Colossus harvester that he first saw on his study tour in 2001.

“If you can’t get more than 75-80 per cent of fruit off the trees, next year’s crop will be down, and also if it was warm weather during harvesting, the trunk shakers tended to damage the bark.

“In Argentina we saw the Colossus, a massive, coffee-type harvester that vibrated through the trees and could harvest up to 98 per cent of fruit.”

One of the other growing methods they investigated was high intensity groves which were grown more like grape vines and harvested with grape harvesters.

“Ultimately we decided that the varieties available and the high level of growth that we encounter in Australia were not going to suit this high intensity method,” Peter said.

“We did however adapt some of the techniques used in this method to prune our olive trees into a hedge shape, which gave us more light interception and harvest efficiency.”

When Maqtec in Mildura started to manufacture the Colossus harvester, the Birches changed straight over to a Colossus, based on what Peter had learned during the Churchill Fellowship.

Since then they’ve owned four different models of the Colossus and Peter says that’s resulted in a much more efficient harvesting and processing operation.

The Colossus has been enthusiastically adopted by the Australian industry.

Peter met European experts Professor Shimon Lavee, Israeli breeder of the dual-purpose Barnea variety, and Professor Giuseppe Fontanazza, an authority in olive physiology and high intensity groves at the Olive Research Centre in Perugia, Italy.

“The ability to speak with people at the cutting edge of the industry and work out what they’re thinking and where they’re heading was invaluable,” Peter says.

“The Argentinians were under Italian tutelage but they were working out how to do things better for their groves, and there’s been quite a crossover from South America of people who started in olives there and came to Australia.”

Mr Birch says the outlook is different for future Churchill Fellows from the olive industry, with major Australian processor Boundary Bend the global

leader for research and development in the industry.

“Most questions relating to profitability have been answered, but we’re still hamstrung by the ‘cheap oil’ challenge, where European exporters are dumping lesser quality oils onto the Australian market that are cheaper than ours,” he says.

“If we could crack that challenge the outlook would be different.”

The Birch family have recently sold ‘Loch Lomond’ and leased back their olive groves, with their last harvest expected to be in 2020.

Churchill Fellowships are funded by the Hort Frontiers Leadership Fund, part of the Hort Frontiers strategic partnership initiative developed by Hort Innovation, with co-investment from the Winston Churchill Memorial Foundation and contributions from the Australian Government.



Research Recap

PROJECT NAME: Churchill Fellowships (LP16002)

AIM: To give Australian levy-paying horticulture businesses the opportunity to research an area of interest internationally for the benefit of the wider Australian sector

PROJECT PARTNER: Winston Churchill Memorial Foundation

FUNDING: Hort Innovation’s Hort Frontiers strategic partnership initiative

PROJECT DURATION: Four years

KEY INFORMATION:

- Three Fellowships will be offered annually for the next four years, each valued at approximately \$26,000
- Fellowship recipients can travel overseas for a minimum of four and a maximum of about eight weeks to conduct research.



Apply now

Applications for the 2018 Churchill Fellowships are now open.

Who can apply?

Churchill Fellowships funded by Hort Innovation are open to any levy-paying horticultural industry participants, including olive growers.

More information

Visit www.churchilltrust.com.au for more information and to apply

Or contact Sharyn Casey at Hort Innovation on 0414 257 616 or sharyn.casey@horticulture.com.au

Applications for 2018 Fellowships close 27 April.

IPDM extension project will push growers to think outside the grove

A three-year research project is underway to equip growers with a stronger understanding of the three major olive pests and diseases and the skillset to sustainably manage them.

Led by Associate Professor Robert Spooner-Hart from Western Sydney University (WSU), the project *An integrated pest and disease management (IPDM) extension program for the olive industry (OL17001)* will provide growers and the supply chain with appropriate IPDM extension services focused on black scale, olive lace bug and anthracnose.

A collaborative effort

A strategic investment under the Hort Innovation Olive Fund, the project brings together a national network of highly experienced horticultural IPDM researchers and extension scientists, the Australian Olive Association (AOA), Departments of Primary Industries (DPI) and state olive associations.

“The collaborative industry approach is to ensure there is a mechanism and platform in place to support ongoing IPDM extension and communication beyond the life of the three-year project,” Professor Spooner-Hart said.

A selection of face-to-face, online and hard copy extension material will be developed and delivered through the project, including:

- Nine IPDM workshops
- Online tutorials and self-assessment accessible to all levy payers
- Three masterclasses for industry consultants or pest scouts
- Best practice information flyers on IPDM for industry use
- Hard copy and electronic information, including a revised

Pest and Disease Field Guide and new best practice IPDM manual to be developed by the project team.

Workshops

A key component of the project is the roll-out of nine IPDM workshops across olive-growing regions of Australia in the second half of 2018 and first half of 2019, to address the difficulties many small to medium growers face in managing their pests and disease problems.

The workshops will cover a variety of topics, including:

- Principles and practices of IPDM
- Monitoring for pests, diseases and beneficial species
- Biosecurity
- Factors influencing pest and disease spread and incidence in groves
- Strategies for conventional and organic management
- Advantages and disadvantages of management strategies
- Importance of timing, application and targeting of interventions.

“Growers can expect to receive detailed information on black scale, olive lace bug and anthracnose, in relation to their local area,” Professor Spooner-Hart said.

“The basis of our IPDM message is that growers need to know what is happening in their grove and adopt an ecological approach to understanding the biology of pests and diseases as well as the olive trees.”

Workshop dates and locations are currently being finalised, with the events likely to be held after harvest this year.

Further details

A survey will also be circulated shortly to growers through the AOA to help identify current IPDM knowledge gaps, and inform the development of extension materials.

The project commenced in October 2017 and is scheduled for completion in 2020.

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.

Project contact:

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AOA contact:

Greg Seymour CEO on 0476 760 160 or ceo@australianolives.com.au

Research Recap

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

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

RESEARCH PARTNER: Western Sydney University

FUNDING: Hort Innovation Olive Fund

PROJECT DURATION: Three years

KEY LEARNINGS SO FAR:

- A variety of face-to-face, online and hard copy IPDM extension material will be developed targeting small to medium sized growers
- The project is an industry collaboration to ensure IPDM extension and communication continues beyond the formal life of the project.

Project lead in the spotlight: Associate Professor Robert Spooner-Hart

Robert Spooner-Hart is the Associate Professor of Sustainable Plant Production Systems at Western Sydney University (WSU), and is currently the project lead for *An integrated pest and disease management (IPDM) extension program for the olive industry (OL17001)*.

Professor Spooner-Hart is no stranger to levy-funded pest and disease research, having been heavily involved in IPDM and beneficial insects in horticultural crops through WSU for more than 40 years, including more than 20 years in the olive industry.

Q: Can you outline your experience in olive industry research?

My first olive industry IPDM presentation was in 1996 in the Hunter Valley, New South Wales, when we didn't really know what was going on around Australia.

Since then we have been able to do a lot more research into IPDM and chemicals for the olive industry, through levy-funded projects, to help give growers more informed and sustainable options for managing pests and diseases.

One such example is the levy-funded project *Evaluation of key chemicals for pest management in the olive industry (OL13002)* that was completed in 2014. It arose in response to a major review of pests and diseases of olives in Australia that identified olive lace bug and anthracnose as the two serious problems without effective, approved chemicals.

Through the project we were able to identify suitable chemicals to combat these two key pests. We conducted field and laboratory trials to generate efficacy data to assist in their registration with the Australian Pesticides and Veterinary Medicines



Associate Professor Robert Spooner-Hart has more than 20 years experience in the olive industry.

Authority (APVMA) for legal use in olives.

Other related olive IPDM and chemical research projects that have been led by Professor Spooner-Hart include:

- *Safe use of fungicides to manage berry rot diseases for sustainable oleiculture (OL06000)*
- *Residue data for key chemicals in the Australian Olive Industry (OL13004)*

Final reports for these projects are available to order through the Hort Innovation website.

Q: What are your top three pieces of IPDM advice for growers?

1. Growers need to see the grove and the surrounding vegetation as an ecosystem
2. It is imperative to be regularly, and correctly, monitoring your grove to keep on top of pests and disease before severe infestations arise
3. Understand appropriate pest and disease timing and application strategies, whether they be chemical or non-chemical, as timing of application is critical for effective targeting.

Minor use permits

While the use of pesticides is being modified through the increasing uptake of integrated pest management, there is still a need for the strategic use of specific chemicals.

Pesticide companies submit use patterns for registration to the Australian Pesticides and Veterinary Medicines Authority (APVMA) and the olive industry is generally provided with limited registrations because of its minor crop status. Minor use permits

are required in the olive industry where the market size is considered too small to generate adequate commercial returns for the research and development investment by the pesticide companies.

Hort Innovation has supported the horticultural sector to gain access to additional funding for strategic investments. In 2015/16, this included almost \$1.1 million in assistance grants for access to industry priority uses of AgVet chemicals, from a possible

\$1.6 million available. In 2016/17, this included almost \$1.3 million from a possible \$2.4 million available across all agricultural and livestock RDCs. Fortunately, the olive industry has been the beneficiary of some of these grants to help fast track their pesticide program. The Hort Innovation Olive Fund project *Olive industry minor use program* (OL16000) also supports the submission of applications and renewals for minor use permits with the APVMA.

ST15027

A multi-industry data generation project has undertaken residue trials for the renewal of:

- **PER14908 Pyraclostrobin + Metiram (Aero) / olives / anthracnose, with the residue data soon to be submitted with an APVMA application for the permit to support its renewal**
- **PER14897 Clothianidin (Samurai) for the control of olive lace bugs. The residue studies have been completed and an application has been prepared and submitted during 2017 to maintain the current permit, which is currently with the APVMA.**

ST16006

A multi-industry data generation project contracted by Hort Innovation in February 2017, which is undertaking studies required for new label registrations with Bayer and ADAMA for the following:

- **Bayer Luna Privilege (Fluopyram) for the control of anthracnose in olives**
- **Adama – Trivor (acetamiprid 186 g/L + pyriproxyfen 124 g/L) for the control of olive lace bug and scale in olives.**

MT17012

A new data generation project contracted by Hort Innovation in late December 2017 will conduct the following:

- **Mancozeb residue trials in olives, to support a new permit request to assist in the control of anthracnose**
- **Residue trials for the renewal of PER81870, which covers the use of Pyganic Organic Insecticide for the control of olive lace bug.**

Hort Innovation projects ST15027 and ST16006 use funds from the Australian Government's Agvet program, with some additional levy contributions. Project MT17012 is a multi-industry project that involves contribution from the olive research and development levy.

Below is a list of minor use permits for the olive industry, as of February 15, 2018.

Permit ID	Description	Date Issued	Expiry Date	Permit holder
PER14414	Natrasoap insecticidal soap spray / olives / olive lace bug	4-Oct-13	30-Sep-23	AOA
PER11360 Version 3	Copper / olives / fungal leaf spot and fruit rot.	24-Mar-09	30-Nov-21	AOA
PER82184	Fenoxycarb (Insegar) / olives / black olive scale	4-Mar-16	31-Dec-18	EE Muir
PER13999 Version 5	Dimethoate / olives (oil production only) / olive lace bug, green vegetable bug & Rutherglen bug	19-Apr-13	6-Mar-19	AOA
PER85411 Version 2	Paraquat & Diquat (Spray Seed) / olives / range of broadleaf & grass weeds (as per label)	1-Nov-17	30-Nov-22	AOA
PER14580	Azoxystrobin (Amistar) / olives / anthracnose	23-May-14	31-Aug-19	AOA
PER14575	Chlorpyrifos (Lorsban) / olives / ants, African black beetle, light brown apple moth	23-Dec-13	31-Mar-19	AOA
PER14460 Version 2	Ethephon / olives / fruit loosening	1-Jun-14	30-Jun-22	AOA
PER14791 Version 3	Alpha-cypermethrin / olives / curculio beetle / apple weevil & cutworms	6-May-14	30-Nov-21	AOA
PER80718	Methyl Bromide / fruit & fruiting vegetables, food producing plants & ornamentals / fruit fly, silverleaf whiteflies & thrips for biosecurity decontamination (all states)	12-Apr-15	31-Mar-25	Biosecurity SA
PER14908	Pyraclostrobin + Metiram (Aero) / olives / anthracnose	8-Jan-15	31-Mar-20	AOA
PER13859	Dimethoate / orchard cleanup – fruit fly host crops following harvest / fruit fly	9-Feb-15	31-Jul-24	Growcom
PER14897	Clothianidin (Samurai) / olives / olive lace bug	4-Mar-15	31-Mar-20	AOA
PER80751	Fluazifop-P (Fusilade Forte) / olives / grass weeds (Queensland only)	7-Aug-15	31-Jul-20	GOMVITA
PER81949	Esfenvalerate (Sumi-Alpha Flex Insecticide) / olives / olive lace bug (14 day WHP)	20-May-16	30-Nov-21	AOA
PER81870	Pyrethrins (Pyganic Organic Insecticide) / olives / olive lace bug	17-Dec-16	31-Oct-19	AOA



All efforts have been made to provide the most current, complete and accurate information on these permits, however you should always confirm details on the APVMA website at portal.apvma.gov.au/permits. Details of the conditions of use associated with these permits can also be found on the APVMA site

Export handbook supports EVOO sales to China

Olive producers seeking to gain a marketing edge in China and raise awareness of Australian Extra Virgin Olive Oil (EVOO) are turning to the *Olive Industry Export Handbook* to fine-tune their understanding of Chinese import protocols and testing requirements.

Developed during 2016 through a project in the Hort Innovation Olive Fund, the handbook was written by industry consultants Chris Mercer and Paul Miller to strengthen producers' knowledge of the Chinese market place and in turn, boost access for Australian EVOO.

Speaking from Shenzhen, Mr Mercer said one of the initial challenges to overcome is that many Chinese consumers are unaware that Australia produces EVOO, with the market dominated by Spanish, Greek and Italian product.

But he says consumer perceptions could be shifted over time, and marketing initiatives such as QR codes on Australian EVOO have been well received.

"We developed the QR codes in response to studies that showed 90 per cent of Chinese shoppers research a product online before they buy, and that they value the origin and quality guarantee of the olive oil they buy," Mr Mercer said.

The Chinese EVOO market is dominated by Olivoilá, which uses Spanish and Italian oils, but Mr Mercer says it could be considered a 'benevolent' competitor for the work it's doing to educate shoppers.

"The brand has a massive advertising budget but it's actually doing a lot of good in terms of educating consumers about the lifestyle and health benefits of EVOO, so that definitely works in our favour," he said.

The handbook provides guidelines for export to China covering product standards, food safety, traceability,



Chris Mercer helped develop The Olive Industry Export Handbook, to provide guidelines and tips for export to China. (Photo: Lucinda Jose ABC)

quality, packaging, labelling and product distribution. It also provides tips and advice across areas such as planning and shipping, finance and insurance, and brand development and communication.

A producer 'roadshow' was delivered in six locations across the country to assist with the preparation of the handbook and its partner initiatives, as part of the strategic levy investment project *Essential work to facilitate increased exports to China, removing roadblocks and enhancing competitive advantage* (OL14003).

Mr Mercer says a key concern expressed by the growers looking to export to China was security of payment.

"Most growers who attended the workshops had concerns about getting paid and I guess there are two strands to this – making the sales in the first place, and then getting paid for what is sold," he said.

"The first is something that can be worked on in terms of branding, positioning, social media marketing and content generation. The second is a question of education and

information for growers as to how to go about doing overseas business safely, which is all available in the handbook."

And the workbook isn't limited solely to exporters.

"I think a lot of the advice in there would also be useful for domestic sales and positioning, especially the first two or three chapters," Mr Mercer said.

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

To order a copy of the *Olive Industry Export Handbook* contact Will Gordon, Hort Innovation Relationship Manager Lead on 0427 920 924 or will.gordon@horticulture.com.au

Research Recap

PROJECT NAME: *Essential work to facilitate increased exports to China, removing roadblocks and enhancing competitive advantage* (OL14003)

AIM: To help grow Australia's share of the Chinese market for EVOO

RESEARCH PARTNER: Pomology

FUNDING: Hort Innovation Olive Fund

PROJECT STATUS: Complete

KEY LEARNINGS:

- Olive growers don't need huge volumes of EVOO or ultra-low pricing to get into the export market
- A handbook has been developed for olive growers who want to explore the possibility of exporting to China.