

Making a commitment to EVOO quality and achieving a consumer focus



By Peter McFarlane, OliveCare® Code of Best Practice Administrator, consultant to OL17006 – Extending OliveCare® to foster excellence in production of Australian olives.

OL17006 Aims

The *OliveCare*® Australian Olive Industry Code of Best Practice program aims to support quality, authenticity and consumer confidence in the Australian olive industry and its products through:

- Building the quality reputation of Australian olive oil, table olives and other olive products;
- Setting benchmarks for improving quality, enabling the Australian olive industry to more effectively compete in the domestic as well as global markets based on product quality;
- Verifying growing, harvesting, processing and oil storage practices, and product label integrity under *OliveCare*® certification, in particular when 'Extra Virgin Olive Oil (EVOO)', or other 'premium' claims are made, underpinning increased consumer confidence in olive products.

OL17006 Aims

- *OliveCare*® incorporates provisions of the *Australian Standard for Olive Oils and Olive Pomace Oils (AS5264-2011*®), introduced in July 2011; and the *Voluntary Industry Standard for Table Olives in Australia (RIRDC 12-111)*, introduced in 2012;
- *OliveCare*® establishes a framework that encompasses good business practice, Good Agricultural Practice & Good Manufacturing Practice) with Hazard Analysis Critical Control Point (HACCP) style production controls;
- More than 140 *OliveCare*® Certified EVOO brands are listed by state of origin on the 'Australian Extra Virgin Everyday' website: australianextravirgin.com.au/brands/.

OL17006 Aims

- AOA members who are *OliveCare*® Signatories are authorised to apply the following AOA trade marks to certified olive products, point of sale materials and websites, in accordance with the rules of use for these logos:



Market Surveys

- AOA market surveys of olive oil products have been undertaken over 6 years, primarily to measure compliance with the *Australian Standard for Olive Oil and Olive-Pomace Oil AS5265-2011*.
- In the 2018 market survey a total of 43 Australian and imported olive oils labelled as EVOO were purchased from supermarkets, independent retailers, wholesalers, farmers markets or 'on-line', comprising:
 - 25 Australian evoo products
 - 18 imported evoo products (Spain 10, Italy 7, EU 1)
- All samples were selected, dispatched and tested in accordance with *OliveCare*® Code of Best Practice protocols.

Market Surveys

All samples were independently tested by NSW DPI Wagga Wagga, a National Association of Testing Authorities Australia (NATA); American oil Chemists Society (AOCS), International Olive Council (IOC) and Australian Olive Association (AOA) accredited laboratory for compliance against the following olive oil standards:

- *Australian Standard for Olive Oil and Olive-Pomace Oil AS5265-2011.*
- *International Olive Council Trade Standard applying to olive oils and olive-pomace oils, COI/T.15/NC No 3/Rev.12 June 2018,*
- *EU Regulation No 1348/2013.*

Market Surveys

Survey test parameters:

- **Chemistry:** Free Fatty Acids (FFA), Peroxide Value (PV), Ultra-Violet Absorption (UV) - (ΔK , K232 & K270),
- **Freshness:** Pyropheophytin A (PPP's), 1,2 Diacylglycerols (DAG's), Induction Time (Rancimat[®]), plus
- **Defects:** Sensory analysis is undertaken in accordance with the *International Olive Council Method for the Organoleptic Assessment of Virgin Olive Oil, COI/T.20/Doc. No 15/Rev. 7, February 2015.*
- Note: The presence of refined olive oil products can be detected through the UV and PPP test parameters.

The Australian Standard for Olive Oil

EVOO Limits: AS5264-2011®

- Free Fatty Acid (FFA) %m/m: ≤ 0.8
- Peroxide Value (PV) meqO₂/kg oil: ≤ 20.0
- Absorbency in UV K232: ≤ 2.50
- Absorbency in UV K270: ≤ 0.22
- Absorbency in UV delta K: ≤ 0.01
- **Pyropheophytins a (PPPs)* %: ≤ 17
- **1,2 Diacylglycerides (DAGs)* %: ≥ 35
- Median of Defects (MeD): $= 0.0$
- Median of Fruitiness Attribute (MeF): > 0.0

***AS5264-2011® is a higher standard than the IOC Standard and includes freshness parameters.**

EVOO (fresh & well processed): Modern Olives

- Free Fatty Acid (FFA) %m/m: ≤ 0.4
- Peroxide Value (PV) meqO₂/kg oil: ≤ 12.0
- Absorbency in UV K232: ≤ 2.00
- Absorbency in UV K270: ≤ 0.18
- Absorbency in UV delta K: ≤ 0.01
- *Pyropheophytins a (PPPs)*: 1% increasing by 6%-8% pa
- *1,2 Diacylglycerides (DAGs)*: 90% decreasing by 20%-25% pa
- Median of Defects (MeD): $= 0.0$
- Median of Fruitiness Attribute (MeF): > 0.0

2018 Market Survey

- For laboratory calibration purposes, a total of 12 of the 43 samples were also retested by Modern Olives for quality, freshness and defect parameters.
- Further testing undertaken by Modern Olives at Lara, Vic. a NATA, AOCS, IOC and AOA accredited laboratory included screening for residues and contaminants for 9 of the 43 samples that had made label claims of “organic certification”.
- Testing included 45 herbicides, fungicides, insecticides, and plant growth regulators that are legally available for use on olives, (plus contaminants).
- Assessment was against the *Australia New Zealand Food Standards Code Schedule 20 – Maximum Residue Limits*.

2018 Market Survey Analysis

2018 Survey	Samples	Failed Chemistry	Failed Freshness (SA5264-2011)	Failed Sensory	MRLs exceeded (organic products)	AS5284-2011 Classification	EU Classification	IOC Classification
Imported EVOO Spain 10, Italy 7, EU 1.	18	1 (EU)	1 (EU)	3 (1 EU, 2 Spain & 1 Italy)	0/6	14 EVOO 3 VOO 1 Lampante	14 EVOO 3 VOO 1 Lampante	14 EVOO 3 VOO 1 Lampante
Australian EVOO	25	1	2	3	0/3	21 EVOO 4 VOO	21 EVOO 4 VOO	21 EVOO 4 VOO
Total	43	2	3	7	0/9	35 EVOO 7 VOO 1 Lampante	35 EVOO 7 VOO 1 Lampante	35 EVOO 7 VOO 1 Lampante

Table: EVOO Survey 2018

Congratulations!

Congratulations to the following 21 Australian brands that met the test parameters – chemistry, freshness, sensory, residues, for true classification as EVOO under AS, EU and IOC standards in the 2018 survey:

Australian	Australian
Nullamunje Australian EVOO (Correggiola / Frantoio) East Gippsland Produce (AEV Certified) – 500 ml	Beerenberg Australian EVOO - Limestone Coast (AEV Certified) – 500 ml
Cobram Estate 100% Australian EVOO - Robust Flavour (AEV Certified) – 375 ml	Cobram Estate 100% Australian EVOO - Classic Flavour (AEV Certified) – 375 ml
Cobram Estate 100% Australian EVOO - Light Flavour (AEV Certified) – 375 ml	Red Island Premium Australian EVOO (AEV Certified) - 500 ml
Woolworths Australian Extra Virgin Olive Oil (AEV Certified) – 500 ml	Foodland Limestone Coast EVOO (AEV Certified) – 500 ml
Kangaroo Island Olives EVOO (AEV Certified) – 500 ml	Francesco Adelaide Plains EVOO (AEV Certified) – 500 ml
Every Bit Organic Raw Australian Certified Organic Olive Oil (#11292) – 250 ml	Melrose Organic EVOO (ACO Certified #303) – 500 ml
Pinnaroo Hill South Australia EVOO Premium early harvest (AEV Certified) – 750 ml	Currawong - Australian EVOO - Mild & Fruity (AEV Certified) – 500 ml
Jingilli Devine EVOO – 1 Lit bag in box	Squeaky Gate Growers Co The Strong One Australian EVOO (AOOA Certified) – 750 ml
Kangaroo Paw Australian EVOO (AEV Certified) – 500 ml	Bovalina Australian EVOO (AEV Certified) – 500 ml
Pendleton Olive Estate Australian EVOO Mild (AEV Certified) – 375 ml	Fleurieu Olive Oil (On The Run) Extra Virgin Cold Pressed – 750 ml
Romeo's Delicate EVOO – 500 ml	

Congratulations!

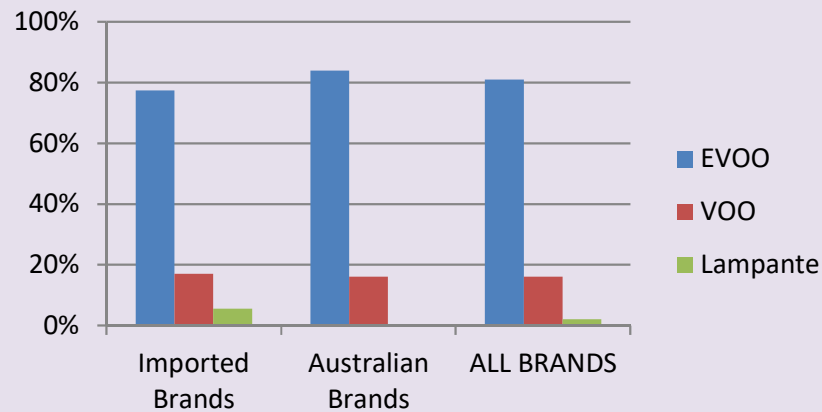
Congratulations to the following 15 imported brands that met the test parameters – chemistry, freshness, sensory, residues, for true classification as EVOO under AS, EU and IOC standards in the 2018 survey:

Imported	Imported
Aldi Just Organic EVOO (AS5264-2011 Certified) – 500ml	Pure Earth Organic EVOO (Manzanilla) – 250 ml
Monini Classico EVOO (100% Italian) – 750 ml	Monini Delicato EVOO (100% Italian) – 500 ml
Bertolli EVOO -Robusto (Bold Taste) – 750 ml	Bertolli EVOO -Originale (Fruity Taste) – 750 ml
Bertolli EVOO -Gentile (delicate taste) – 750 ml	La Espanola EVOO (Product of Spain) – 4 lit tin
Macro Wholefoods Markets (Woolworths) Certified Organic Spanish EVOO (Australian Certified Organic #10908) – 500 ml	Colavita EVOO Organic Mediterranean (ICEA Certified Organic) – 250 ml
Moro Primero EVOO (Rich and Complex) (Product of Spain) (AOOA Certified) – 500ml	Moro Organico EVOO (Certified Organic) (Product of Spain) – 500 ml
Moro Primero EVOO (Rich and Complex)(Product of Spain) (AOOA Certified) – 4 lit tin	Coles Organic EVOO (Product of Spain / Australian Certified Organic # 10645) – 500 ml

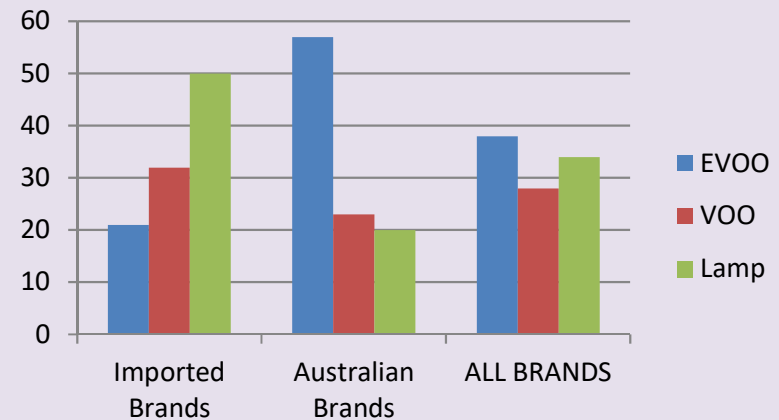
Market Survey Data Analysis

2018 Survey	EVOO	VOO	Lampante	2015/16 Survey	EVOO	VOO	Lampante
Imported Brands	78%	17%	6%	Imported Brands	21%	32%	50%
Australian Brands	84%	16%	0%	Australian Brands	57%	23%	20%
ALL BRANDS	81%	16%	2%	ALL BRANDS	38%	28%	34%

Table / Chart: True Classification EVOO Survey 2018 and 2015/16 comparison



2018 Survey



2015/16 Survey

Market Survey Data Analysis

- The 2018 market survey found that 14/18 (78%) of **imported brands** met the quality requirements (chemistry, sensory and freshness) for classification as **EVOO**, up from a low of 7/34 (21%) in the 2015/16 survey – representing a significant turn-around.
- This compares with 21/25 (84%) of **Australian products** that met the quality requirements (chemistry, sensory and freshness) for **EVOO** classification in the 2018 survey, up from 17/30 (57%) in the 2015/16 survey – also a significant improvement.
- **Note:** 100% of the 15 *OliveCare*[®] certified Australian EVOO products tested in the 2018 survey met all parameters for classification as EVOO under AS5264-2011.

Market Survey Data Analysis

- In the 2018 survey only 1/43 (2%) products tested as **Lampante** classification, compared with 22/64 products (34%) in the 2015/16 survey (16 imported and 6 Australian products); these products are regarded as not fit for human consumption without further processing.
- A further 7/43 (16%) of products (3 imported and 4 Australian) tested as **virgin olive oil** classification in the 2018 survey, compared with 18/64 (28%) products in the 2015/16 survey; whilst this oil is acceptable, it is of a lesser quality, and unless clearly stated on the label may not be what consumers are expecting or have paid for.

Reasons for Product Failure

Reasons for product failure in the 2018 survey include:

- Not meeting **EVOO chemistry test parameters** 2/43 (5%) – down from the 12/64 (19%) failure in the 2015/16 survey;
- Detection of **sensory defects** 7/43 (16%) – down from the 34/64 (53%) failure in the 2015/16 survey; and
- Failure to meet **freshness test parameters** 3/43 (7%) – down from the 18/64 (28%) in the 2015/16 survey.

Reasons for Product Failure

	Sensory 2015/16	Sensory 2018	Chemistry 2015/16	Chemistry 2018	Freshness 2015/16	Freshness 2018
Imported Brands	74%	22%	21%	5%	27%	5%
Australian Brands	30%	12%	17%	4%	27%	8%
ALL BRANDS	54%	16%	19%	5%	27%	7%

Table: Reasons for brand failure

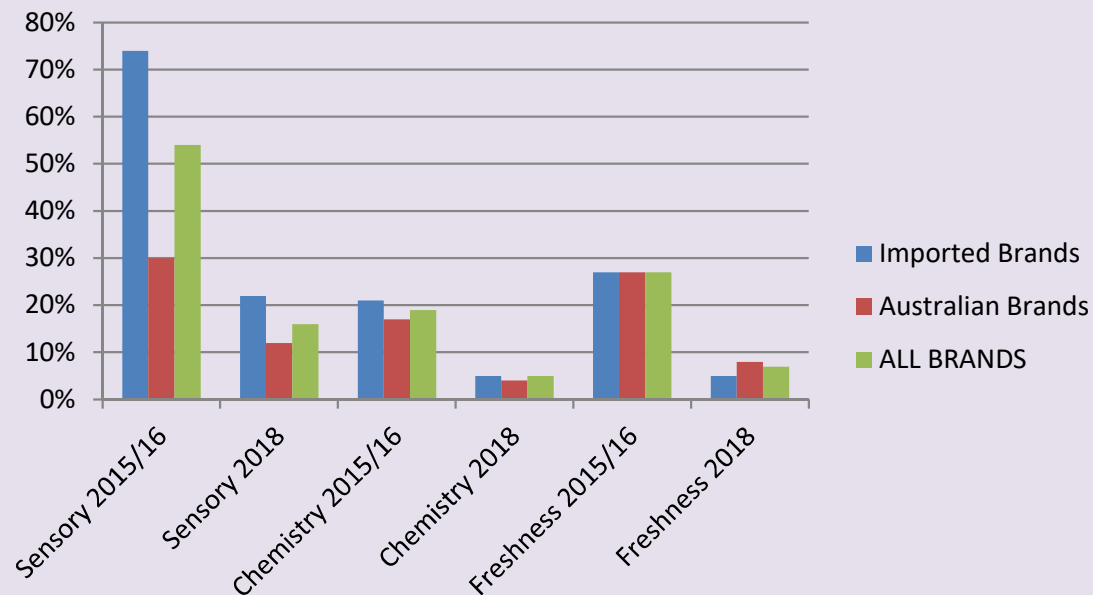


Chart: Reason for brand failure (by percentage)

Freshness Testing

Potential BBD is best determined from the lowest value derived from the following 3 estimations: **Rancimat® (Induction time), PPP and DAG testing***:

- Hours of induction time (IND) at 110°C x 1 = expected shelf life (in months)
- (17.0% - PPPs) / 0.6% = expected shelf life (in months)
- (DAGs – 35.0%) / *FFA factor = expected shelf life (in months)

*FFA factor = 1.7% (if FFA < 0.4%); 2.1% (if 0.4% < FFA < 0.6%); or 2.5% (if FFA > 0.6%)

Eg for an EVOO product to have a potential shelf life of at least 20 months requires: IND >20 hrs, PPPs <5%, DAGs >70%

Note: Under the Australian Standard, the stated BBD on the label may not exceed 2 years – however an oil with a potential shelf life of say 30 months could be bottled after 6 months in storage and still carry a label stating a BBD of 2 years. * *Modern Olives method*

Freshness Testing

Example: Oil “Sample 1” was analysed prior to being bottled and showed the following analytical results:

IND (@ 110°C):	23 hours
PPPs:	1.7%
DAGs:	82.5%
FFA:	0.28% (therefore use the 1.7% FFA factor)

Applying the above formula we would have the following analysis:

IND:	$(23 \times 1) = 23;$	predicted 23 months
PPPs:	$(17.0\% - 1.7\%)/0.6\% = 25.5;$	predicted 25.5 months
DAGs:	$(63.0\%-35.0\%)/1.7\% = 28;$	predicted 28 months.

In this example the Induction Time (**IND**) prediction is the lowest figure, therefore this oil should have an expected shelf life of **23** months from the date of testing (providing the oil is stored under optimal conditions).



OliveCare[®] Certification of EVOO



25 *OliveCare*[®] Signatories, and their 42 products are now AEV[®] Certified 'Freshness Tested', with product Best Before Dates (BBDs) objectively established using 'Freshness Testing' parameters (*providing the product continues to be kept under recommended storage conditions*).

OliveCare[®] Certification of EVOO



**AUSTRALIAN
EXTRA VIRGIN[®]**
Certified
FRESHNESS TESTED[™]



This certificate confirms that:
Waikerie Olive Grove
Is a signatory to the Australian Olive Association's Code of Best Practice (OliveCare[®]).
The Extra Virgin Olive Oil that accompanies this certificate, identified as:



The Distinguished Olive Premium EVOO
This FS17 Signore varietal meets the specifications of Australian Extra Virgin Olive Oil under the Australian Standard (AS5264-2011[®]) and OliveCare[®].

Certificate issued by:
Australian Olive Association Ltd (AOA).
A.B.N. 57 072 977 489
PO Box 6661
Baulkham Hills, NSW 2153

AOA Office:
Phone: 0478 606 145
E: secretariat@australianolives.com.au

Code Administrator:
Phone: 0418 839 836
E: peter@au-thentic.net

Certificate No. 1199FT
Expires: **30 June 2021**
COP ID #: **345**
Harvest Year: **2019**
AOA Number: **A4204**
Laboratory Test Results: **AU19/0347-1**

Signed:

CHIEF EXECUTIVE OFFICER

**Australian
Extra
Virgin
olive oil
Everyday[®]**

OliveCare® Industry Best Practice

Producing high quality award winning olive oils involves attention to detail from grove practices, through to timely harvest, olive processing using a master miller and best practice oil storage and packaging.



***OliveCare*[®] Managing Olive Oil Quality Risk**

The major risks to olive oil quality are:

Fruit damage in the grove – poor quality olives – diseased, damaged by insect pests, drought or frost (fusty, rancid, dried & frosted defects).

Failure to synchronise harvest and processing – fruit held too long and too hot between harvesting and processing starts to ferment – the shorter and cooler this period the better. (musty & vinegary defects)

Poor processing technique – incorrect malaxing time and temperature, failure to clean machinery between batches (burned & metallic defects).

Poor oil storage – failure to purge and rack off sediments (muddy sediment defect), exposure to oxygen by not completely filling tanks or using other air exclusion methods (rancid defect) – more on this in the *OliveCare*[®] News.

Poor supply chain handling – including displaying product near heat and light sources, and failure to efficiently manage stock rotation.

OliveCare[®] Best Practice Conversations

- **Grove Establishment Checklist**, 13 items including nursery plant health status; varietal selection and grove design.
- **Biosecurity Checklist**, 8 items including managing biosecurity risk, enforcing visitor requirements, good grove hygiene and monitoring.
- **Enterprise Viability Checklist**, 8 items, including managing enterprise risk, benchmarking grove productivity, and regulatory compliance.
- **Regulatory Compliance Checklist**, 15 items including responsible chemical use, environmental management and being a good employer.
- **Grove Care Checklist**, 36 items including tree nutrition, soil moisture, IPDM, chemical use strategies, canopy management, and harvest management.
- **Processing Checklist**, 22 items including EVOO and table olive production.
- **Product Quality & Storage Checklist**, 12 items including EVOO and table olives.
- **Product Packaging & Distribution Checklist**, 5 items including labelling requirements, storage, transportation, retailer handling and product recall.

Take Home Messages

- Australian Consumers can be reassured that they are able to purchase high quality EVOO with confidence by choosing current season Australian and imported products (be sure to check the BBD), and by looking for the *Australian Extra Virgin*[®] certification, and AS5264-2011 compliant symbols on the product label.
- Australian olive oil producers should not ‘rest on their laurels’, as imported olive oils continue to improve in quality and are now challenging the high performance of Australian brands.
- ‘Freshness Testing’ by producers and marketers of EVOO products is strongly encouraged to underpin consumer confidence.
- The previous industry practice of routinely applying a 2 year Best Before Date on EVOO products without supporting test data is strongly discouraged.

Take Home Messages

- EVOO producers and marketers should routinely and independently test olive oil stocks to ensure older product continues to meet EVOO test parameters (this also applies to producers and marketers who purchase bulk EVOO from third parties.)
- EVOO producers should be aware that when they use the term ‘extra virgin’ they are making a “premium” or ‘credence’ claim. The *Australian Competition and Consumer Commission (ACCC)* state that consumers should be able to trust that what's written on the label is what's in the bottle.

Making a commitment to EVOO quality and achieving a consumer focus



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