



# THE TRUFFLE & WINE CO

MANJIMUP ~ WESTERN AUSTRALIA



TRUFFLE BUSINESS – EDITION 03 – JUNE 2017

## Welcome to... *The Truffle Business*



Photos by Martin Eade

## Truffle Kerfuffle 2017

We were proud to be sponsors for the 7th Annual Truffle Kerfuffle, held at Fonty's Pool in Manjimup.

With approximately 5,200 visitors to the region, it is easy to see why the Truffle Kerfuffle is the largest Truffle-focused festival in Western Australia.

With Celebrity Chef Paul West (River Cottage Australia) headlining the weekend's festivities, plus many other top-calibre talents cooking up a storm: festival goers were treated with an array of events (dinners/lunches/breakfasts) showcasing not only fresh Black Truffles (of course!) but also the amazing produce from the Southern Forests region.

Apart from eating and drinking at the TK venue itself, visitors were also able to book onto Truffle Hunts at farms across the region (including TWC). Plus on both the Saturday and Sunday of the festival, the crowd was able to see/taste the various offerings in the main marquee, plus check out various Wine Sessions, Masterclasses, Dog demonstrations, plus try all manner of hot meals from food trucks dotted around the venue.



As part of our involvement with the festival, we were involved in a live cross at Truffle Kerfuffle on the Weekend Sunrise programme, with host JT.

Head of Sales Alex Wilson was interviewed on the truffle industry and on the success of the Truffle Kerfuffle festival

[WATCH ALEX ON SUNRISE](#)



## Brumale Plagues The Truffle Industry

One of the reasons for the incredible success and prestige of the Australian Black Périgord truffle industry is the lack of pest truffle species (particularly *T. brumale* and *T. indicum*), which have plagued the truffle industry in Europe and elsewhere.

The discovery of widespread contamination with *T. brumale*, of plantations across the Eastern States of Australia is regarded as a significant threat to the reputation of the Australian truffle industry as a reliable supplier of high quality, uncontaminated *T. melanosporum*.

**Action is required to prevent the spread of these pest truffle species to protect the productivity and reputation of the Australian truffle industry and ensure it remains competitive in international markets.**

Black Périgord truffle (*T. melanosporum*) Winter truffle (*T. brumale*) and Chinese Truffle (*T. indicum*) are related and very difficult to differentiate. ***T. brumale* and *T. indicum* possess greatly inferior aroma qualities and therefore attract significantly lower prices up to 40% of *T. melanosporum*.**

Within the past 100 years production of Black Périgord truffle has significantly diminished in Europe, but demand among discerning epicures remains strong.

*T. melanosporum* and *T. brumale* share similar requirements of host tree, soil and climatic conditions however *T. brumale* is more tolerant in its range of habitat, which is thought to make it an extremely competitive and invasive species.

In France, *T. brumale* contamination of commercial truffle plantations is a significant problem facing the industry. In the Périgord region, the traditional home of *T. melanosporum*, it is estimated that 30-50% of young plantations are now contaminated by *T. brumale*. This has caused reduced profitability and abandonment of many plantations.

This story of *T. brumale* infections in *T. melanosporum* truffière is repeated round the world and now a similar trend is appearing for the Chinese truffle - *T. indicum*, which has been less well studied, however it is believed to be an aggressive competitor to *T. melanosporum*.

**These inferior truffle species are believed to have been introduced when host tree seedlings were inoculated with contaminated inoculum prior to plantation establishment.**



Tuber brumale

What can be done to lower the risk of *brumale* and *indicum* infection?

It is critical when planting a new truffière that the seedlings are independently certified as being inoculated with *T. melanosporum* alone. While this comes at a cost, such rigor at the start of a truffle project will avoid significant losses in the longer term.

If the truffière is already established it is still important to have the host tree roots examined microscopically by an expert and double up with a DNA test of the inoculation status.

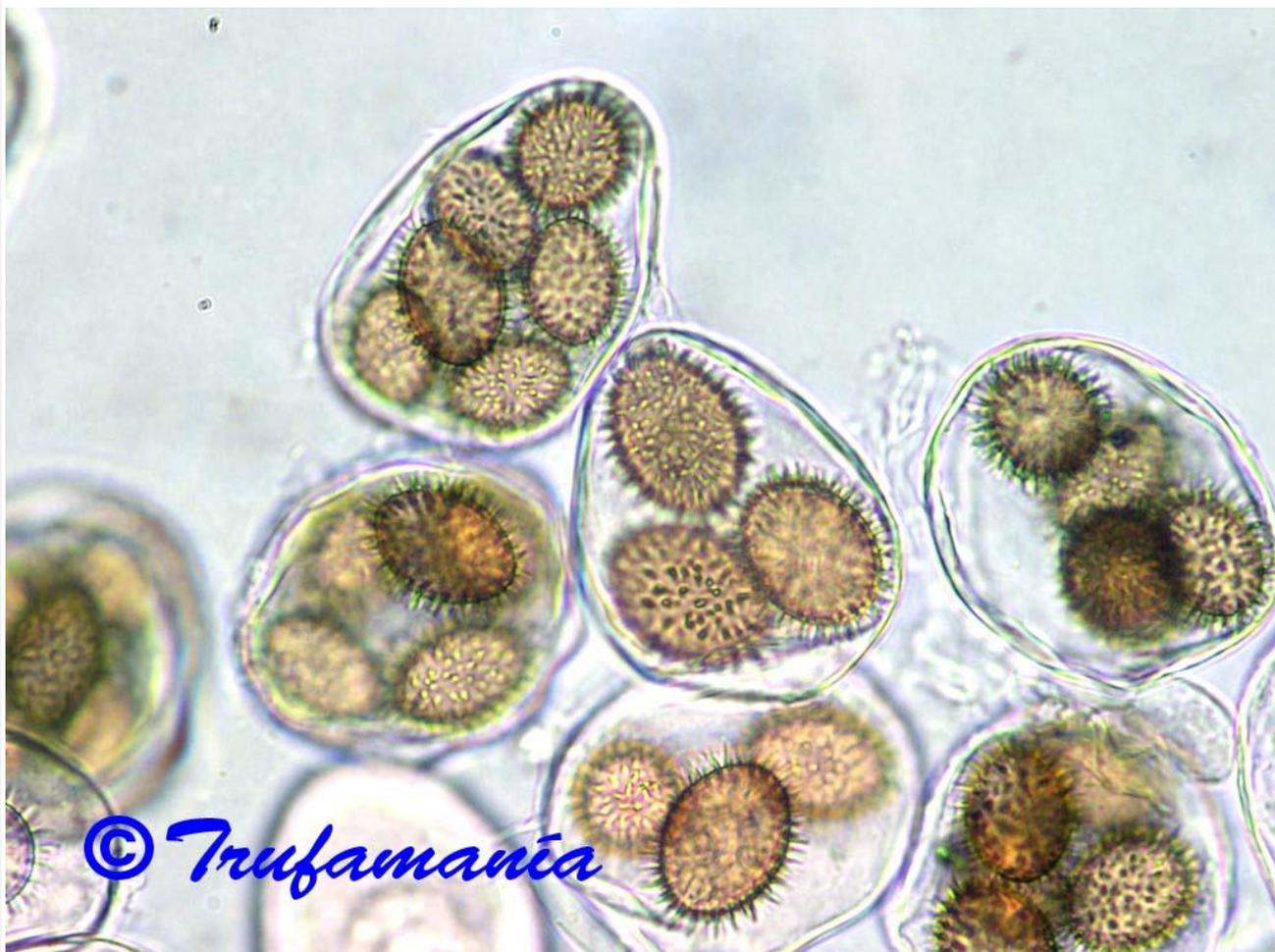
It is also important not to spread last season's truffle rot as an inoculum without independent confirmation that *T. melanosporum* alone is being spread.

Other important quarantine steps against competitor truffles is to ensure people, animals and machinery entering the property follow basic hygiene procedures of wash down and footbath.

While extensive work has been undertaken to try to remediate infested plantations, no effective treatment has been identified.

These competitor truffle species are serious business and have potential to do severe damage to black Périgord truffle production and our reputation in international markets.

It goes without saying that it is critical the industry does not sell *T. brumale* or *T. indicum* black Périgord truffle.



Tuber brumale spores

The Truffle & Wine Co. believe the threat of *T. brumale* and *T. indicum* is so serious that to protect the industry, it is advocating the following actions:

1. Ban the import of all truffle into Western Australia, or,
2. Allow *T. melanosporum* to continue to be imported subject to the application of an empirical test (e.g. DNA test) to ALL proposed truffle imports. Failure to pass the test as positive for *T. melanosporum* should result in rejection and destruction of the shipment.
3. All truffle host trees being imported into Western Australia require independent certification that roots are infected with *T. melanosporum* only with zero tolerance for *T. brumale* and *T. indicum*.

The Australian Truffle Industry is a sunrise industry that needs to continue to build its international reputation as a producer of consistently high-quality black Périgord truffle – it is critical that we do not jeopardise the future of the industry by failing to implement simple quarantine practices.

Note: for Independent testing of *T. melanosporum* inoculation of host plant roots and DNA verification of Tuber species, The Truffle & Wine Co use Dr Celeste Linde at the Australian National University. Celeste can be contacted via email [Celeste.Linde@anu.edu.au](mailto:Celeste.Linde@anu.edu.au)

## Further Reading

- Wang, Y., Tan, Z. M., Zhang, D. C., Murat, C., Jeandroz, S., & Le Tacon, F. (2006). Phylogenetic and populational study of the *Tuber indicum* complex. *Mycological Research*, 110, 1034–1045.
- <https://www.agric.wa.gov.au/new-horticulture-crops/cultivation-black-truffles-western-australia>
- <http://www.agriculture.gov.au/abares/outlook/Documents/presentations-2017/peter-stahle.pdf>
- <https://www.businessinsider.com.au/chinese-fakes-are-being-passed-off-as-the-real-thing-but-this-time-its-800kg-truffles-2014-3>
- <https://www.agric.wa.gov.au/organisms/160542>
- <https://www.agric.wa.gov.au/organisms/160544>



## Where Have All The Truffles Gone?

*We share our reflections on the start of truffle season*

At the beginning of June the question for many was “what has happened to all the truffles?” All the indicators in Manjimup region – Southern Forests - predict a promising year for better yield, less rot and higher quality. Our main issues in the early weeks of the season were minimal rot and good quality.

**BUT WHERE ARE THE TRUFFLES?**

The answer is “In the Ground”

Why?

“Because they are not ripe yet”

Why?

“Because that is farming!”



**Michael Lowe, General Manager  
The Truffle & Wine Co.**

Each factor may or may not be a direct cause of the delay in ripening, each may or may not compound the effect of the other. We have a lot of science backing our knowledge of truffles but

When you grow something out in the open air how it grows is impacted by all aspects of its day to day environment, be it today or 3 months ago. Within each broad category – rainfall, temperature, sunlight hours – there are finer details such as the ratio of soil temperature, air temperature, hours above a certain air temperature, hours below, how much rain, irrigation when, how – many, many factors!

at the same time there are many unknowns. Growing Truffles is working with nature at its most mysterious. The Truffle is not ripe yet – *Tuber melanosporum* is taking its time. Have some patience and you will be rewarded.

## Update on the RIRDC Project

### Pests and diseases of truffles and their host trees in Australia

Stewart Learmonth | Entomologist

Manjimup Horticultural Research Institute  
Department of Agriculture and Food  
[stewart.learmonth@agric.wa.gov.au](mailto:stewart.learmonth@agric.wa.gov.au)

To set the scene for the project, a national grower survey on pests and diseases of truffles and their host trees was undertaken. Results will be presented in 3 reports - pests and diseases, orchard attributes and pests and diseases management. The first of these should be available for circulation in August 2017.

Monitoring in 20 Australian orchards for general and specific pests is being undertaken. This has demonstrated the unique nature of the range and abundance of pests and diseases of truffles and trees in each orchard. The main truffle pests and this includes recently identified agents, are slugs, slaters and millipedes. Truffle beetle, a native insect, has been significant in one orchard only but occurs in low numbers in other orchards – only in WA so far, though present in eastern Australia also. The project team hopes to learn more about truffle beetles from European scientists visiting WA during the *2017 Truffle Kerfuffle*.

Other aspects of the project include quantifying the effect of tree health as influenced by diseases on truffle yield. This study is being undertaken in both the eastern states and WA. Another disease study being planned is to clarify the pest status of tree diseases prioritised from field observations.

Research into management of key pests and diseases has commenced. This includes laboratory bioassays for the major pests and cultural control field studies for slug control – desuckering hazelnut trees, removing litter and cultivation effects on truffle depth.



Desuckering hazelnut trees and removing leaf litter was investigated as a cultural control tactic to reduce slug numbers

The project team will be providing updates in a series of talks in WA and the eastern states in late June to mid-July 2017.

The fourth project newsletter with more detail is planned for July 2017.

Now that truffle harvesting has commenced for the 2017 season, it is a good opportunity for growers to contribute to the project by sending in reports and photos of any agent damaging truffles. The easiest way to do this is to download the DAFWA app [MyPestGuide](#)



Slaters have been identified as a pest capable of causing extensive damage to truffles

**Reporter** onto your iPhone or computer. When providing a report, select "Truffle survey" from the dropdown box.

**GOT TRUFFLE?**  
contact our dedicated Grower Liaison Milly today!  
0499 188 231 | growers@twc.com.au



Mark Hollett

## Truffle Ale & Truffle Cider is Launched

*We interview Mark Hollett, Brewer at The Cidery & Blackwood Valley Brewing Company*

The world of beer has always been of interest to me (since adulthood), The possibilities are almost infinite. While I appreciate many styles of beer it's characterful ales that have become my specialty. At the Cidery in Bridgetown I make a range of mostly traditional UK style ales under the banner of the Blackwood Valley Brewing Company. I'm always up for a new idea and often find inspiration when sampling ales while travelling. Early in 2016 The Truffle & Wine Co. in Manjimup approached us about making Truffle Ale and Cider. This was a exiting proposition as the use of truffle in beverages is a pioneering area. Early trials were very encouraging, The ale has been designed to embrace the flavour of the truffle while the truffle brings a totally unique flavour to the ale. The ale is rich and designed to be savoured and I believed best served in a wine glass to enhance the aromas.



Truffle Cider is a totally different experience. While the ale embraces the truffle the cider steps aside and allows the truffle to dominate the experience. Truffle owns the aroma and is very apparent on the finish. I was surprised how well cloudy vintage cider worked with truffle.

Our truffle Ale and Cider have been under development for over 12 months but the time spent has proven that truffles make an attractive addition to both. It has been great working with Alex from The Truffle & Wine Co. who have been so supportive and encouraging.



These beverages require real hand crafting and attention to each stage of the process but the end result has been worthwhile. Both of these products are an experience in themselves indeed you may taste something like you've never tasted before.

To purchase the beverages, visit:

**The Truffle Restaurant, The Truffle & Wine Co.**  
**The Cidery & Blackwood Brewing Company, Bridgetown**  
**Tall Timbers, Manjimup**

## You Can't Manage What You Don't Measure

As truffle harvest gets into full swing it is important to record a range of information which will allow growers to analyse production information at the end of the season and to develop truffière management plans for the 2018 season.

The financial impact on our business has been very positive. Not only have we reduced the incidence of rot, but we have also increased the quality of truffle produced and reduced grading costs.

The table below uses terminology which requires some explanation and which hopefully becomes consistent throughout the industry. When a grower says they have produced, say 100kg of truffle, does that mean total production or truffle less rot or saleable truffle or sold truffle?

	Guidelines	
	Grams	%
<b>Total Dirty Harvest bought in from the Orchard</b>	1,000	
<i>composed of:</i>		
Dirty Truffle	830	
Dirty rot	100	
Dirt	70	
<b>Total Dirty Harvest</b>	<b>1,000</b>	
<i>less dirt removed during cleaning process</i>	70	7.0%
<b>Clean truffle and dirty rot (A)</b>	<b>930</b>	<b>100%</b>
<i>less dirty rot (segregated in field)</i>	100	
<i>less clean rot (removed during cleaning process)</i>	30	
<i>less graded rot (rot/insect damage cut out during grading)</i>	56	
<b>Total Rot and insect damage (B)</b>	<b>186</b>	<b>20.0%</b>
<b>Total Graded and Saleable Truffle (A-B)</b>	<b>744</b>	<b>80.0%</b>
<i>composed of:</i>		
Extra Class & 1st Class (sold)	298	40.0%
Large and Small Pieces (sold)	260	35.0%
Trimmings (sold)	97	13.0%
Peelings (sold)	52	7.0%
Weight loss & marketing samples	37	5.0%
	<b>744</b>	<b>100.0%</b>

#### Potential Saleable Yield from 1000g Harvested Truffle (Dirty Weight)

These are the labels we use:

- Dirty truffle - truffle harvested from the paddock before any washing or grading. Importantly this includes "dirty rot".
- Dirty rot - most growers do not harvest this and leave it in the paddock as it has no commercial value. We harvest everything as we want to know the extent of rot and what our potential yield could be if we could reduce the incidence of rot.
- Clean truffle and dirty rot - the total of all truffle harvested after washing dirt off.
- Clean rot - during washing there will be some additional rot found and it is removed at this time.
- Graded rot – during the grading process rot and insect damage is removed from truffle which is otherwise sound. We do not currently separate insect damage from rot as we have a very thorough insect monitoring programme, however it is important to keep a mental note of the visual proportion of insect damage, which can rob even more potential yield than rot does.
- Total graded and saleable truffle – this is the truffle which remains after washing and removal of rot and insect damage. This can be as low as 50% of the "Clean truffle and dirty rot" figure. **If your figure is under 75% this is definitely an area on which you can focus management effort and increase profit.**

"Graded and saleable truffle" is where your revenue comes from and the return on this truffle will be determined by the percentage of high quality extra class and first-class compared to pieces, trimmings and peelings.

The higher the level of rot and insect damage, the more cutting you will do in the grading room and the less higher grades you will have for sale.

We record the yield in each grading category in grams and in percentage terms, allowing us to compare actual v/s budget in each part of the process and to compare yield between years.

- “Graded and saleable truffle” is calculated as a percentage of “Clean truffle and dirty rot” and we aim for this to be 80% or higher. This is a measure of the efficiency of truffière management in keeping rot levels low and insects under control
- We also allow up to 5% of the Saleable Truffle as a combination of weight loss (moisture loss) and marketing expense (samples for market development and promotional activities)
- Truffle grade percentages are measured against “Graded and saleable truffle” and are a measure of truffle quality. We aim to achieve at least 40% of graded truffle as Extra class and First class

Of course every season is different and in some seasons we do better or worse than our targets, BUT at least we have a target and our R&D program, truffière management and grading practices are focused on attainment of these targets. As we improve in these areas we lift our targets.

There are no “best practice” guidelines in our industry, so we have created our own. In a very competitive market we believe that it is the most efficient growers, producing the best product who will survive and prosper.

Should you be interested in discussing how you can use this chart to your advantage, contact our Grower Liaison Officer, Millie Smith on 08 9777 2474 or Michael Lowe on 0418 953 200.

## *Truffle Business*

INFORMATION

EXPERIENCE

HELPING YOU SUCCEED



[cassandra@twc.com.au](mailto:cassandra@twc.com.au)

The Truffle & Wine Co.

T: +61 459 490 015

F: +61 8 9777 2820

PO Box 422, Manjimup WA 6258

W: [www.truffleandwine.com.au](http://www.truffleandwine.com.au)