



AUSTRALIAN AGRIBUSINESS GROUP
MARKET OVERVIEW –
THE AUSTRALIAN TRUFFLE INDUSTRY

Independent Assessment – October 2006

Industry Snapshot

- Black truffles are reputed to be one of the finest foods in the world.
- Black truffles have been traditionally been harvested in France, Italy and Spain.
- European production has decreased significantly over the past century.
- Australia found its first ever French black truffle in 1999.
- Currently, there are 200 truffle growers in Australia; production is forecast to increase significantly in the future.
- There is an enormous demand for French black truffles, particularly during Australia's harvest season (June – August); the off-season for European producers.
- The average price for Australian truffles ranges between A\$1,500/kg and A\$3,000/kg.

1 Introduction

French black truffles are considered one the great foods of the world. The French black truffle is a fruiting body of the fungus *Tuber melanosporum*. This fungus forms a symbiotic relationship with the roots of oak and hazel trees. Truffles are found just below the soil surface to a depth of 20cm and vary in size from 2cm in diameter to the size of a grapefruit. Specially trained dogs (and pigs) are used to search for the truffles. The edible portion, or truffle, is harvested in winter once it has matured. The truffle then has a shelf life of approximately three weeks, after which there is a rapid deterioration in quality, hence, each year a portion of truffles are processed. Truffles can also be tinned and bottled. Second and third class products can be made into processed products such as salsas ¹.

The truffle has a range of uses. It can be used as a flavouring (similar to a herb) in many dishes, such as veal, soup, fish, shellfish, game, rice, pasta and salads. Exclusive French chefs will only cook with the fresh product ¹.

The ancient Greeks and Romans attributed therapeutic and aphrodisiac powers to the black truffle, concepts that were still in fashion last century ¹.

The first black truffle ever found in Australia was unearthed in northern Tasmania during 1999. The first company in Australia to establish a trufferie was Perigord Truffles of Tasmania (PTT) ⁴.

2 Producing Regions In Australia

There are currently 200 truffle growers in Australia, with 30 of these located in Tasmania. Most Australian growers are hobbyists.

French black truffles have traditionally been harvested in France, Italy and Spain along the line of 45° latitude. Tasmania's geographical position with respect to latitude, climate and temperatures are very similar to these principal production areas of Europe. Hence, Tasmania is currently the main production area of truffles in Australia. *Truffieres* have also been established in the colder areas of NSW, Victoria and Western Australia.

In NSW there are truffieres located in the Southern Highlands, Yass, Tumbarumba, Oberon and Orange/Bathurst areas. Truffieres have also been established in the ACT, the Yarra Valley and the Goldfields region of central Victoria and the south west of Western Australia (Figure 1) ¹.

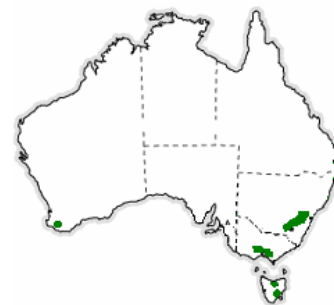


Figure 1 French black truffle growing regions in Australia ¹

Production areas for truffles should have winter minimum temperatures that regularly fall below -2°C and summer maximum temperatures that do not regularly exceed 40°C. Soils need to be free draining and well structured and in Australia, good quality irrigation water must be available. A regular daily air service is essential to deliver the truffles to restaurants as fresh as possible ¹.

The Australian truffle harvest season runs from June through to August.

3 International Supply and Demand

France is the traditional and major producer of French truffles ²; however, their production levels are in decline. Towards the end of last century, France annually produced up to 1,000 tonnes of French black truffles from more than 20 regions located in southern France. Currently, France, Spain and Italy have a combined production level of 50 – 80 tonnes annually. The causes of this decline are numerous including abandonment of land cultivation, wartime destruction of trees, urbanisation, planned de-forestation and acid rain ².

Up until the late 1970's, truffles were gathered only from naturally producing areas. In the late 1970's the French developed a technique to artificially inoculate oak and hazel trees. Agritruffe, a private company, began using this technology under license to produce and market inoculated trees, resulting in a renewed interest in producing truffles. Inoculated trees are now being grown in France, Italy, Spain, USA, New Zealand and Australia ^{2,4}.

Although inoculated trees are available, up to 70% of French's annual harvest is still collected from native oak and hazel forests and not from specially planted truffieres. However, droughts and other adverse conditions do have a significant affect on the level of production and thus many French producers are adopting horticultural management systems, resulting in more consistent yields from their plantations ².

Fresh French black truffles are sold to the restaurants around the world. The French are the largest consumers, eating up to 40% of their fresh truffles, with the balance exported. Other major consumers are the UK, Belgium, Germany and Switzerland ².

Production in the USA is less than 100kg annually ². Due to insufficient data it is unclear what the production levels of New Zealand and Australia are.

The world's major importers of truffles include the EU, Japan and the USA. Japan is the largest importer outside the EU, importing large quantities of fresh and preserved truffles annually; 3,184kg and 1,563kg respectively during 1998 ².

Approximately 60% of annual global production is sold fresh, with the remaining 40% sold in a processed or value added form. There is a wide range of truffle products on the market, ranging from whole truffles in jars to truffle purees and truffle pieces in oils and juices ².

It should be noted that a portion of production is consumed without ever entering the market and, due to the cash nature of the industry, total production figures cannot be totally relied upon for accuracy ².

It is estimated that the world market could absorb a significantly increased level of supply of truffles than are currently produced ⁵.

4 Australian Supply and Demand

In Tasmania there is known to be approximately 130 ha under cultivation ². The total area under cultivation across Australia is unclear.

Current annual consumption of imported fresh truffles is between 100 and 150kg, with imported preserved or value added truffle production consumption estimated at 200kg ². There is insufficient data and it is unclear what the annual consumption is of domestically produced truffles.

Due to higher yields this season there has been an increase in exports. Export batches were sent to Europe and Japan.

It is forecast that Australian truffle growers, who currently measure their annual harvest in kilograms, could end up producing as much as 20 tonnes of truffles a year ⁴.

In Australia a number of fine food outlets including David Jones and Simon Johnson stock a range of truffle products ².

5 Possible Price & Yield Scenarios

There are four main factors that influence the price of truffles in France, including supply, quality, seasonal demand and freshness. Fresh in season prices in France can be as high as \$2,500/kg at exclusive French fine food outlets ². On average, poor seasonal production results in wholesale prices of approximately \$2,000/kg, whereas good seasonal production results in wholesale prices as low as \$1,400/kg. Higher prices are achieved for truffles of good shape and perfume. Prices also tend to peak during the Christmas period, reflecting increased demand and lower supply in the earlier part of the Northern Hemisphere season. Freshness also has a slight impact on prices received by wholesalers; however this is not significant ².

Prices paid to farmers in France vary considerably. In the typical French truffle market where the truffles are sold unwashed and ungraded the farmers receive \$600 - \$900/kg. The wholesale mark up is between 50 – 100% on this price, allowing for the typical loss of weight after cleaning of 10 – 15% ².

Australian produced fresh truffles are currently selling to the Australian market for \$2,200/kg - \$3,000/kg.

Year	Conservative (kg/ha)	Maximum (kg/ha)
6	0.75	1
7	1.5	2
8	3	4
9	6	8
10	12	16
11	20	32
12+	40	60

Truffles are sometimes found four years after planting, however, it is advised to budget on finding the first truffles in year six to seven. With good plantation management you could expect to find 0.75-2 kg/ha in year six and seven, with this yield eventually increasing to 40 – 60 kg/ha (Table 1).

6 Future Outlook and Conclusions

Traditionally, French black truffles have been produced in the Northern Hemisphere and only available as a fresh product during the months of December, January and February. Hence, there is an opportunity for producers in the Southern Hemisphere to produce and market fresh truffles to the Europeans, six months out of season ².

With the opportunity to market fresh truffles, grown in Australia, to European consumers during their summer months, when France's population of 55 million substantially increases due to the influx of tourists, French truffle marketers believe that it will add to the overall awareness of French black truffles and result in an overall increased demand ¹.

A threat to this industry's future is substitution, with the risk that Brumale – an inferior European truffle that looks similar to the French black truffle – could be introduced accidentally or deliberately with the black truffles that are used to produce the inoculant for the plantation trees. To ensure this does not occur greater control is required to determine what comes into Australia and what nurseries are producing ⁴.

Although scientists and producers improve their understanding of commercial truffle production every season, there is still a long way to go. There is a lack of predictability and high risk associated with the industry. If the secrets to commercial truffle production are discovered, documented and proven to be replicable and production becomes more reliable, even though production would increase significantly, the enormous demand and long lead time for plantations would ensure that it was decades before supply and demand became even close to equal ⁴.

7 References

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5. Tasmanian DPI, 2005, Retrieved August 2006 from: <www.dpiw.tas.gov.au>

8 Glossary

Trufferie – A farm where truffles are produced.

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