



Buried Treasure



“ There are two types of people who eat truffles: those who think truffles are good because they are dear and those who know they are dear because they are good.”

J.L. Vaudoyer, French novelist 1883-1963

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Gram for gram, truffle is the most expensive food in the world, and in Richerenches, France, a special mass is held in its honour on the third Sunday in January. As truffles become scarcer in Europe with climate change purportedly impacting on harvests, and demand outstripping supply, there are tales of mafia-like tactics and inferior Chinese imports threatening the sanctity of the sacred black diamonds which were first referenced in the writings of Theophrastus in the fourth century BC.

Truffles are the fungi of legends. They look unprepossessing. They defy taste description - with overtones of blue cheese crossed with old socks, musk, sweet body odour, and mould not sounding completely enticing. Yet truffles break the culinary code, and converts to the prized fungi are a passionate, hard core bunch prepared to part with many dollars to enjoy a few fine shavings.

In 2010, a Hong Kong businessman paid US\$330,000 for less than one kilo of white truffle from Italy, while today in New Zealand, truffles fetch upwards of \$3000 per kilo on the open market.

Truffles are the fruiting bodies of a type of fungus which grows on or around the roots of hazelnut and oak trees – collectively known as a truffière. Trees are ‘inoculated’ with truffle spores and, given a combination of optimal climate and soil conditions, may produce truffles under the surface of the ground at their base.

Female pigs are traditionally used in Europe to sniff out mature truffles. The chemical a ripe truffle releases mimics that of the male swine sex attractant. Pigs, however, have a natural tendency to eat truffles so dogs are increasingly used to ‘protect’ the harvest.

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A dose of reality

Alan Hall of Gisborne was a trailblazer for truffle in the southern hemisphere. Back in 1987, he received a regional development grant to establish a truffière on his Gisborne lifestyle block spurred on by his brother, Ian, an international mycologist - a botanist specialising in the study of fungi.

Around 1.5ha of his 2.5ha holding is planted at around 800 trees per hectare. Alan found his first Périgord black truffle – *Tuber melanosporum* – named after the region in France where they are renowned, five years after establishing the trees. His truffière can now produce more than 50kg of truffles each winter. At around \$3000 per kg, it is easy to see why people are keen to jump aboard the truffle train.

“Realistically, however, you must keep an open mind and be prepared to wait many many years for your first truffle,” says Alan pragmatically.

“I admit, on paper it looks great. Potential yields of 40kg/ha at \$3000 per kg equates to \$120,000 per ha on an annual basis.

“I have talked to people who think – or hope - that it is simply a matter of planting

one tree and sitting back and waiting for it to produce truffles.

“If it was that easy, wouldn’t everybody be doing it? Sensible people opt to plant 200 or more trees – some of them up to 10,000 – and then do the hard yards. You should be in it for the long haul and at the very least you will be improving the real estate value of your properties by planting in hazelnut and oaks.”

Having said that, Alan mentions that one of New Zealand’s most productive truffières is a modest backyard of 20 trees in suburban Bay of Plenty but “that’s not common in our experience”.

Today, with the expert help of his wife Lynley, a scientist who has perfected the art of infecting tree roots with truffle spores, Alan has a nursery selling inoculated trees at \$45 a pop to a ready market of willing would-be truffle producers. Through their Oakland truffle business, the Halls also offer a consultancy service including site inspections and soil testing for prospective truffle growers.

“Climate and soil type are key considerations when looking at

establishing a truffière. A high pH soil with good structure, reasonable summer warmth and optimal moisture levels will give you a head start. Success will always be a combination of site selection and luck,” says Alan.

When his truffière first started producing consistently, Alan exported truffles to Korea, Australia, North America and France. A visitor to his property personally took truffles to Italy. Today, the New Zealand market has caught up with Europe, and Alan supplies the domestic market which can take all that he produces.

“Chefs know what they want and are desperate to obtain supplies of truffle.”

Alan has one dog, Brock (pictured below) who is adept at finding truffles.

“Brock was originally trained as an airport sniffer dog but didn’t make the grade. He came from the pound and from dubious lineage but he is an excellent truffle hunter,” boasts Alan.

“My wife’s eye-wateringly expensive imported Italian Lagotto dog – supposedly renowned for their truffle finding prowess – has been less proficient. A pricey indulgence, really,” he laughs.





A dog's nose

In Rotorua, Prue Church from www.truffledog.co.nz doesn't have trees with truffles - she has dogs with truffle-hunting expertise. And from May to August, she and her dogs look for truffles in Hawke's Bay, Gisborne, Rotorua, Bay of Plenty, King Country and Northland.

Several years ago, one of Prue's friends who had truffle trees was unsure how he would find the elusive truffles if the trees ever produced them.

"I decided I would teach my black lab' Sirius (pictured with Prue, above) to hunt them out. I started by putting some good quality truffle oil on a cloth and got her to find the scent and rewarded her when she did," explains Prue.

"I then made it progressively more difficult by burying the scent. Then I got hold of some actual truffle and that's all I use today as I progressively train my newest recruit, a pound pup called Peri (pictured top right) - short for Périgord after the truffle of the same name.

"It's hard work for the dogs looking for truffles. There's a lot for them to

contend with beyond the wide scent range, including wind and other distractions - even rabbit poo."

Once the dogs indicate a truffle find, the decision is made to harvest or not. If the truffle is not ready, the spot is marked for future checks.

"I have to watch the dogs all the time and make sure they are focused. When they find truffles, they give quite subtle indications - just lightly scraping the ground before looking longingly at me for a reward - unlike pigs. That can come down to a race between pig and handler. It is known in the industry that there are pig handlers overseas without fingers."

Dogs do not tend to eat truffle in Prue's experience although she knows Sirius has eaten at least one prized nugget. She will also never know for sure how many truffles her dogs do not find.

"Dogs, like humans, can have tedious days. Last year we went to a Northland property and hunted around 6000 trees without finding anything. But we still had to throw Sirius a scent and reward her to reinforce the process."

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The dogs give quite subtle indicators just lightly scraping the ground before looking longingly for a reward.

Prue Church

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White truffle credentials

The establishment of Jeff Weston's white truffle operation, Borchii Park in Christchurch www.borchiiipark.co.nz, was the result of truffle fever setting in.

"We had been planning to grow walnuts but once we established that it was feasible to grow truffles on our seven hectare property, there was no stopping us," says Jeff.

"In 2002 when we began planting Bianchetto white truffle, *Tuber borchii*, infected seedlings had only been available for a couple of years. It was one of three truffle species available and because Christchurch summer temperatures are considered to be marginal for black truffle, we took the less risky option of attempting to grow Bianchetto."

At Borchii Park, Jeff grows 750 common oak, hazelnut, pinenut and maritime pine trees all infected with the Bianchetto truffle fungus.

Jeff explains that while the ecology and cultivation of Bianchetto and black truffles share similarities, they also differ in many respects and each is unique in appearance, aroma and flavour.

Bianchetto has a wider ecological range than black truffle in New Zealand. It can be grown successfully as far south as Invercargill whereas there has been no black truffle production south of Ashburton, so far.

"Black truffles can grow up to a kilogram or more in weight, but you may wait anywhere from five to as long as 15 years for production to commence. Bianchetto is a more aggressive fungus, and under favourable conditions, truffle production may begin after four years," says Jeff.

"Bianchetto truffles are smaller than black. The largest known to have been grown in New Zealand was 140g, produced at Borchii Park in 2008."

Bianchetto truffle aroma and flavour is complex, and is often described as garlicky, sometimes with mineral or flinty notes. Whereas black truffle requires gentle cooking to develop full flavour, often in sauces, Bianchetto should not be cooked or aroma and flavour may be lost. The heat of the dish it is shaved over or added to is sufficient to release Bianchetto's powerful aroma and flavour.



Grade A Bianchetto truffles currently sell in New Zealand for \$3,500 - \$3,800 plus GST per kilogram. Jeff says it has not yet been possible to determine what yield per hectare can be expected from Bianchetto, but he assures us it is in the kilos not tonnes.

Borchii Park's current truffle dog Bonnie (pictured, top), is a three year old re-homed Spoodle.

"You would not think she was a working dog to look at her but we were amazed that with little to no formal prior training, she searched for and located most of our 2013 harvest. She enjoys her work so much that if we take our eyes off her, she fetches truffles without request," says Jeff.

Supporting a fledgling industry

The function of the New Zealand Truffle Association, NZTA, is clearly outlined in the constitution and is about supporting all aspects of a new industry and product. Manager Belinda Mackay says on the surface you may think – "how hard can that be?"

"Expectations of the customer and the consumer are vastly different today for all foods. Truffles are no exception. We're not completely sure how to produce them, there are no formalised farming practises - no standards for tree management, soil conditions, or underground root/fungi health," she says.

"There is no established supply chain and no marketing and supply strategy. Keeping connected is how we can establish a successful farming model which will hopefully reward the punters. It is only a hobby or gamble until these aspects are addressed – albeit a very pleasant hobby if you like gardening and looking after trees."

Ian Treloar, president of the NZTA and a grower himself, says producing truffle in New Zealand or anywhere else in the world is not a known science.

"There is some good science and farming knowledge on what essential aspects must be managed to improve the likelihood of truffle fruit, but the

actual triggers which initiate fruiting are not understood. New Zealand is fortunate that it has no endemic truffle, so competing truffle and sorting of fruit will be less demanding when a farmer has production,” says Ian.

“There are significant problems in other parts of the world where low value truffles are passed off as the real McCoy. Maintaining this quality advantage in New Zealand is essential.”

Belinda Mackay feels we can't claim to have a truffle industry in New Zealand...yet.

“We have some very industrious people trying to turn a hobby into a revenue-positive venture, and we are fortunate to have a collective group of investors who are actively working toward understanding how to produce truffle and other valuable edible fungi,” explains Belinda.

“We are also well-served with technical experts who are capable and well-connected internationally, to investigate possible solutions for achieving production and resolving problems.”

Ian Treloar says New Zealand truffle growers have some pockets of really promising production for black (*t.melanosporum*) and white (*t.borchii*) production.

Early predictions of truffle fruit being available in three to four years are correct but embellish the truth. The incidence of early fruit in truffières is low,” cautions Ian.

“Reality is, a successful truffière is more likely to occur at 11 to 15 years old. The other edible fungi from tree roots infected with edible ectomycorrhizal fungi, is more likely to produce good quantities of fruit in less than five years. Saffron milk cap, bolete and porcini mushroom, for example, are looking really exciting from a commercial farming perspective.”

Ian's advice to prospective growers is this: “If something is extremely valuable by weight, it will be because of supply and demand. We can create demand reasonably easily - think diamonds - but supply can often be costly - think gold. When returns look too good to be true, read the fine print.”

Some of the identified challenges for the industry include the importation

of lesser quality truffles and in particular, the Chinese truffle which internationally has a very low value, and looks almost exact in appearance to *t.melanosporum*. The import of fresh truffle to New Zealand therefore, needs to remain under strict control to preserve this advantage.

The key challenge for the NZTA is to maintain members' interest and keep their persistence up. As the journey to produce fruit is not a sprint.

“The other key challenge will be to ensure we have a sound, unified sales and marketing platform for when local

demand is met,” says Treloar.

Truffle is unique and special, and Ian Treloar says they must be treated as such.

“You just can't buy 2000 years of marketing. The Romans were wild about truffles, the Roman Catholic Church excluded truffle from celebratory feasts believing it to be the embodiment of evil, and Alexandre Dumas waxed lyrical on the 'enduring mystique'.

“If we want to reap the rewards of a very long wait for the grower, we must keep it sexy.” www.nztruffles.org.nz

A sweet finish

Leyton Ashley, head chef at Terroir, Craggy Range Winery's flagship restaurant in Hawke's Bay, created a memorable truffle degustation dinner for the New Zealand Truffle Association last year where this finale dessert drew much lip-smacking.

Country readers are treated to the recipe for a simplified version of this standout dessert. Leyton says truffle generally needs fat and heat to bring out the best aroma and flavour so here the warm rhubarb and creamy icecream work well.



Icecream, rhubarb, white chocolate and Bianchetto truffles (Serves 4)

- Rhubarb -3 stems
- 100gm caster sugar
- Seeds from one vanilla pod
- 100gm Vahlrona Ivoire (white) chocolate
- 2 chrysanthemum flowers
- 20gm small Bianchetto truffle
- Icecream 500mls (organic hay icecream Leyton uses in his on this dessert, but for ease at home a store bought vanilla is fine.)

Wash the rhubarb and slice finely across the grain. In a small mixing bowl add the rhubarb, sugar and vanilla seeds and leave to macerate for a couple of hours or chill over night. Stir a few times over this period. The rhubarb should be crunchy but starting to soften and sitting in its own juice.

In a small sauce pan, warm the rhubarb then arrange in four serving bowls. Shave the truffle evenly over the warm rhubarb, and then add a scoop of icecream to the centre of each bowl.

With a knife shave the white chocolate into large flakes and scatter these and the picked chrysanthemum petals over and serve.