

Truffles: Can California really cultivate culinary black gold?

A British scientist is helping a California vineyard to grow its own truffles. It's a first for the US, discovers Tim Walker

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The sixth annual Napa Truffle Festival included demos of how dogs will sniff out the fruit *Charles Stewart*

On a damp winter afternoon at the Robert Sinskey Vineyards in northern California, Gig, a six-year-old English Sheepdog, weaves between the leafless trees, nose to the ground as she hunts down her elusive quarry. In her day job as a search-and-rescue dog, Gig has sought out murder victims and missing people, but today she is on the scent of something new.

Finally she stops, sniffs the muddy earth, and barks to tell her handler that she has found what she was looking for: a small, buried vial of oil carrying the scent of a black winter truffle.

This demonstration is part of the sixth annual Napa Truffle Festival, a weekend of truffle discussion and consumption, and Gig is being trained for the day when she can smell out a real truffle in the same spot.

It's five years since a start-up business called the American Truffle Company, or ATC, planted a small truffle orchard at the Sinskey vineyard near Sonoma. It takes five to seven years for farmed truffles to bear fruit. As and when a dog finds one of the precious fungi here, the firm's founders say it will be the first truffle ever cultivated in California, and the first "scientifically grown" truffle in the entire US.

The Sonoma Valley and neighbouring Napa Valley are where the first internationally acclaimed New World wines were produced. In winter, the vines are brown, but ATC is confident that its crop is flourishing below ground. Last year, truffle dogs identified three trees in the orchard with "truffle potential", where the scent is strong enough for the firm to hope they'll produce ripe truffles soon.

A culinary delicacy, not to be confused with the confectionery of the same name, truffles are the fruit of a fungus that thrives among tree roots. The varieties most highly prized by chefs are the black winter truffle, originally from the Périgord region of France; the black summer truffle, from Burgundy, and the white alba truffle, from Piedmont in northern Italy. There are hundreds of other truffle varieties, including at least four species that occur naturally in nearby Oregon, but none are as celebrated for their flavour as that mid-European triumvirate.

French and Italian truffles take at least three days to arrive in California, but ATC says it will be able to deliver black truffles to a kitchen in Napa 20 minutes after they emerge from the ground.

That would make a crucial difference to a foodstuff that begins to lose its freshness, flavour and perfume as soon as it is harvested. Truffles have a so-called aroma "half-life" of four to five days. After eight to 10 days, 75 per cent of their pungency is gone. Ken Frank, chef-owner of Napa's Michelin-star La Toque restaurant, says a California-grown truffle would be a "game changer".

“It means we could brag of having cracked the code of yet another world-class food item,” says Mr Frank, who has cooked with truffles for more than three decades. “We cleared a bar with wine in the 1970s. We cleared another 10 years ago when Michelin started handing out stars in the Bay Area. California is known for some of the best foods grown in the world. Truffles would be a natural fit.”

Truffle harvesting today is very far from the traditional image of a man scouring the woodland floor with a pig and a stick. Most modern truffle hunters use dogs – pigs are banned from the practice in Italy.

The basic method for cultivating truffles, by inoculating young oak or hazel trees with truffle spores, was developed in the 1970s. Cultivation of the white truffle still eludes science, but nowadays 95 per cent of black truffles that are harvested in France are not wild, but grown in orchards.

Over the past decade, two countries have dramatically disrupted the global truffle market. China has begun exporting vast quantities of its inferior black truffles, which resemble the Périgord variety in looks but not flavour. Like fake Rolex watches, they are regularly passed off as the real thing.



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Australia, meanwhile, has enjoyed marked success in cultivating genuine Périgord truffles, giving northern hemisphere chefs an unprecedented opportunity to cook summer ingredients with winter truffles. Wines differ based on the slightest climatic variation, but a Périgord truffle from Tasmania tastes the same as one from Périgord – whatever French gourmands may claim to the contrary.

So-called “chief truffle officer” at ATC is Robert Chang, a 45-year-old former executive with American technology company Yahoo! He first tasted truffles at a trattoria in Munich 15 years ago and gave up his career in Silicon Valley for one in Napa Valley in 2007.

ATC, he says, “is a start-up not unlike the classic Silicon Valley model, where a technology guy founds a company with a business guy. Our technology is proprietary, but in this case the product is truffles, not computers.”

The “technology guy” is ATC’s chief scientist, Dr Paul Thomas, who grew up in Stockport, Greater Manchester, and fell for fungi while foraging for mushrooms as a child. At Sheffield University, where he studied plant sciences, he once had a batch of truffles delivered to his student digs. “I opened the bag and it filled the whole house with truffle aroma,” he says. “It didn’t go down well with my housemates. It even flavoured the orange juice in the fridge.”

Dr Thomas, now 35, presented his original idea for a truffle cultivation business on the first series of BBC TV’s *Dragons’ Den* in 2005, securing investment from YO! Sushi restaurant chain founder Simon Woodroffe, only to pull out of the deal after the cameras stopped rolling. But when Mr Chang tracked Dr Thomas down in London two years later, the pair hit it off and agreed to set up ATC.



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Dr Thomas begins cultivating his gourmet crop by growing the trees in a lab, using seeds inoculated with truffle spores. The saplings aren't planted in an orchard until they are a year old. Rival efforts at sustainable truffle production elsewhere in the US have yet to succeed at scale. "What sets us apart is that we produce our own trees," Dr Thomas says, "so we produce far better inoculated plants."

ATC partners with its truffle producers, providing the trees, expertise and distribution in return for a minority share of the revenues. The firm now has client orchards in more than two dozen countries, and last year Dr Thomas excavated the first black truffles from a six-year-old ATC orchard in Leicestershire – the UK's first successful commercial truffle production.

Robert Sinskey was the first California winemaker to come on board five years ago, but others have since followed. The firm chose to focus on the Napa region, says Robert Chang, because it has a favourable climate for both the cultivation and the business of truffles: wineries already have the necessary land for an orchard, and follow a business model based on patience, which is set up to serve a sophisticated foodie market. ATC intends to sell truffles directly to consumers, as well as to chefs.

Truffles can be many times more profitable per acre than grapes. A successful truffle orchard produces some 50lb of Périgord winter truffles per acre annually, and more than twice that weight of summer truffles. Périgord truffles currently cost about £700 per lb, while the Burgundy variety is worth up to £276.

"Domestic truffles will command at least what imported truffles do, and likely will command a higher price because they're so much fresher," Mr Chang says.

The centrepiece of the Napa festival is a five-course truffle dinner at La Toque, featuring dishes such as "truffled cappuccini with truffle butter toast and shaved black truffle", and Mr Frank's truffle-studded veal, roasted on the bone. This year, the truffles on the menu came from an Italian supplier. Next year, they might just be all-American.