

# Go mushroom hunting

Most South Africans grow up thinking wild mushrooms are poisonous and one should rather stick to the supermarket variety. But this notion is flawed on every level – and the learning starts right here...

TEXT NICK DALL MAIN PHOTO MICHAEL LE GRANGE



In season, says Gary Goldman, aka The Mushroom Guru, he goes foraging every day. “I’m in the forest before the sun rises, and on weekdays I have it pretty much to myself. But on weekends there are other mushroom hunters. And without fail I hear Greek, Italian, French, German, Polish... Europeans are taking our mushrooms and I’m on a mission to educate South Africans about wild mushrooms so they don’t miss out on all the free food available to them.”

Gary, a Capetonian, knows his wild mushrooms and can identify any mushroom you show him, and his partner at Mushroom Guru, Craig Fourie, specialises in growing mushrooms and teaching others how to do the same. The two sides of the business couldn’t be more different: foraging is musty, grimy and Wordsworthian, whereas cultivation is technical, precise and scientific.

Like all of the most engaging gurus, Gary is self-taught. To cut a long story short, a high-octane career in IT resulted in burnout and a heart attack.

Gary quit the rat race, became a stay-at-home dad and took long walks on Table Mountain, as prescribed by his cardiologist. On one of these walks Gary found some mushrooms and his first thought was, “Can I eat them?”



Gary Goldman

back and the temperature drops below 4°C.

- **Garden Route** You should find mushrooms all year round.
- **Magaliesberg, KZN Midlands and Soutpansberg** The summer months are best for foraging.

**Where to go**  
Ask a seasoned forager where to find mushrooms and you’ll get a range of evasive responses. Mushroom spots, especially mycorrhizal mushroom spots (see “What you’ll find” on page 100), are well-guarded secrets. This is because, if you know where to look, you’ll find mushrooms in the same place at the same time every year until you die >

He went to the library and took out all the mushroom books he could find. He pored over the bibliographies at the ends of these books and ordered any that sounded interesting on Amazon. His mountain walks grew more frequent, and he started to learn where to look for mushrooms and which ones he could eat.

“I’ve never poisoned myself,” he says, “and I never will. I only eat something when I am 100% certain I know what it is.”

Before long, Gary was collecting more mushrooms than he could possibly consume, and he began to supply restaurants and friends with fresh wild mushrooms. Not only was he getting something free of charge, but he’d also inadvertently started a new career. Restaurants would pay between R220/kg and R380/kg in the Cape (and up to R1 000/kg in Gauteng!), but in recent years Gary has focused his attention on guided foraging trips, as he is determined to share his knowledge with fellow South Africans.

## When to go

- **Western Cape** People say you can only find mushrooms in the Western Cape between March and July, but this is a gross oversimplification. Mushrooms will sprout two weeks after a drenching rain, provided there are some sunny days in-between. Last year, for example, Gary had bumper hauls in March, but this year there were very few mushrooms in Cape Town in April.

The first mushrooms to appear are the poplar boletus, followed about a week or two later by the porcini. When the porcini start to die down, the bay boletus and pine rings show their faces. The blushers come out quite late in the season (around mid-June), and the wood blewits appear near the end of June, when all other mushrooms die

## Book a foraging outing



A foraging trip with Gary

### Delheim Wine Estate, Stellenbosch

3 & 4 July 2015

**Cost** R595 per person, including a talk by Gary Goldman, the foraging trip, lunch and either a foraging basket or a bottle of Delheim wine and two glasses

**Contact** Johan van Dyk 📞 021 888 4600  
✉️ johan@delheim.com

### Jonkershoek Nature Reserve, Stellenbosch

6 & 13 June 2015

**Cost** R1 300 for a group of four people (foraging only) or R2 600 for a three-day mushroom identification course, including a forage for you and three friends led by Adriaan Smit

**Contact** Adriaan 📞 082 749 8553  
✉️ info@mushroomacademy.co.za

### Gary Goldman's forages, Cape Town

Gary offers guided forages in Cape Town throughout the mushroom season.

**Cost** Porcini hunts are R350 per person (maximum 10), boletus, wood blewit

and blusher hunts are R250 per person (maximum 15) and pine ring and russula hunts are R150 per person (maximum 20)  
**Contact** Email ✉️ gary@mushroomguru.co.za – provide a cell number and indicate whether you’re able to forage during the week or only on weekends/public holidays (groups are smaller during the week).



A prize porcini (*Boletus edulis*)

MODEL VAYNHUNT O. FROM 20 MODEL MANAGEMENT STYLIST MARGAUX TAIT SHOT ON LOCATION AT GROOTVADERSBOSCH NATURE RESERVE

**DID YOU KNOW?**

The alluring "portabellini" and "brown" mushrooms you buy at the supermarket are actually the same species of mushroom (*Agaricus bisporus*) at different stages of its development. Millions of tonnes of these are cultivated every year, and most are clones of a single clump of pure white mushrooms discovered by a farmer in Pennsylvania in 1926.



Gary cleaning porcini (*Boletus edulis*), a delicious and very popular type of mushroom that attaches itself to the roots of oak trees, chestnuts and certain conifers.

or until the tree is removed. Most species of mycorrhizal mushrooms only attach themselves to certain types of trees. The porcini (*Boletus edulis*), for example, attaches itself to the roots of oaks, chestnuts and certain conifers. The pine ring (*Lactarius deliciosus*) attaches itself to conifers, whereas poplar boletus (*Leccinum duriusculum*) attach themselves solely to the South African poplar tree (*Populus canescens*). Alarmingly, the death cap (*Amanita phalloides*) also attaches itself to oaks and conifers – so be careful!

Someone looking for a mushroom spot should start by foraging under oaks, poplars and conifers. They will gradually learn where to find mushrooms like the field mushroom (*Agaricus campestris*), parasol (*Macrolepiota* or *Lepiota* species), and the ink caps (*Coprinus* species), which are all saprophytes.

You might also wonder whether foraging is legal. This is indeed a bit of a grey area, especially on SANParks land. Most people think mushrooms are like plants and liken picking mushrooms to picking wild flowers. Actually, the two couldn't be more different, as mushroom pickers leave a trail of spores in their wake and assist in the spreading of species.

Gary has been stopped by rangers on numerous occasions but has always been able to convince them he is in fact helping the environment.

Unfortunately, he's never been able to get an official permit because South African law makes no provision for mushroom foraging. On private land you can do what you like, as long as you have the owner's permission.

**What you'll need**

- **A wicker basket or a breathable bag** Make the DIY basket on page 88 and line it with cloth. A reusable cloth shopping bag will do for a start.
- **A small, sharp knife** This is not for cutting mushrooms out of the ground but rather for cleaning them before you put them in your basket or bag. Simply scrape away all the dirt and detritus from the base of the mushroom.
- **A mushroom guide** Unfortunately, most of the best books are out of print, but you can find some in your local library or – if you're lucky – in a second-hand bookstore. Try *Some South African Edible Fungi* (Stephens & Kidd, 1953), *Some South African Poisonous & Inedible Fungi* (Stephens & Kidd, 1953), *A Field Guide to the Mushrooms of South Africa* (Levin et al, 1985), *'n Veldgids tot die Sampioene van Suid-Afrika* (Levin et al, 1987) and *Sasol First Field Guide to Mushrooms of Southern Africa* (Branch & Branch, 2001). >

**DANGER! GEVAAR! INGOZI!**  
 Never eat a wild mushroom until you're absolutely certain of its species. Most books advise getting an expert to identify all of your mushrooms, but – as a recent poisoning case in Cape Town proves – not all mushroom "experts" are created equal. Rather take loads of photos of your mystery mushroom (from above, below and side-on, and at different stages of development, if possible) and email [info@mushroomguru.co.za](mailto:info@mushroomguru.co.za) with as much information about it as possible (where you found it, when you found it, its size). Gary and Craig respond to emails like this every day, because they know the mushroom revolution they dream of will only be possible if South Africans learn more about wild mushrooms.

Five of the best (and worst)

We asked Gary Goldman to pick five of his favourite edible mushrooms and five poisonous ones our readers really should know about. He thought each list should be quite a lot longer (he's foraged 23 edible species in the Western Cape alone) and reiterated that no mushroom should ever be consumed unless you are 100% confident you've identified it correctly. He also insisted we include Latin names, as common names vary from region to region.



**PORCINI**  
(*Boletus edulis*, eetbare boleet)



**POPLAR BOLETUS**  
(*Leccinum duriusculum*, populierboleet)



**PINE RING**  
(*Lactarius deliciosus*, oranje melkswam)



**BAY BOLETUS**  
(*Xerocomus badius*, bruin boleet)



**PANTHER**  
(*Amanita pantherina*, tiersampioen)



**FLY AGARIC**  
(*Amanita muscaria*, vlieëgiftswam)



**WOOD BLEWIT**  
(*Lepista nuda*, pers ridderswam)



**DEATH CAP**  
(*Amanita phalloides*, duiwelsbrood or slangkos)



**YELLOW-STAINING MUSHROOM**  
(*Agaricus xanthodermus*, geelvleksampioen)



**FALSE PARASOL**  
(*Chlorophyllum molybdites*, valssambreelsampioen)

## What you'll find

There are various ways of classifying mushrooms, but the following is one of the most useful. Foragers can target all three classes (although the most rewarding foraging is probably for mycorrhizal species). If you want to grow your own you're limited to saprophytic mushrooms.

- **Mycorrhizal mushrooms** attach themselves to the roots of certain tree species in a symbiotic relationship. Examples are porcini, boletus and pine ring.
- **Saprophytic mushrooms** grow on anything "dead", such as leaves, logs or straw. Examples include shiitake, oyster and button mushrooms.
- **Parasitic mushrooms** live on another living thing, gradually killing their host. The most common example is chicken of the woods.

**"There are old mushroom hunters and there are bold mushroom hunters. Never both."**

## Dos and don'ts

- In the Western Cape, any mushroom with a spongy (polypore) underside (as opposed to one that resembles gills, like those of a fish) is edible.
- All termite mushrooms are edible. These grow out of termite mounds (mainly found in the north of South Africa) and always have long "tap roots", pink gills and spores.
- Never put unidentified mushrooms of different species in the same basket: a poisonous mushroom could contaminate the edible ones. Instead, put each batch of mushrooms in a separate breathable bag.
- Don't cut mushrooms out of the ground with a knife. Pull them from the soil as gently as possible, trying not to destroy the mycelium. Afterwards, cover the hole with soil to protect the mycelium from the elements so another mushroom can grow from it.
- Always clean mushrooms before you put them in your basket.

# PLANT OR ANIMAL?

Scientifically speaking, fungi are more different to plants than they are to animals, and are defined as "organisms that live by decomposing and absorbing the organic material in which they grow". This covers athlete's foot, mould, mildew and yeast – all a far cry from a porcini risotto.

Mushrooms are the "fruit" of certain species of fungi, whereas the "roots" are the mycelium – an incredibly fine branch-like structure that grows in soil, leaf litter and decomposing trees. There are hundreds of thousands of fungi (or maybe even millions) but only a fraction of the fungi in the world produce mushrooms. Of these mushrooms, the vast majority aren't great to eat. The rest can be divided into three categories: delicious, poisonous and deadly.

Mushrooms have been around

a lot longer than humans have (420-million-year-old fossils have been found of mushrooms that are 10m high). The Chinese have long prized their medicinal properties; Egyptian hieroglyphics depict royalty eating mushrooms; and the Romans called them "the food of the gods". The French pioneered mushroom cultivation – Louis XIV is said to have been the first mushroom farmer.

Mushrooms consist mostly of water, which means you can dry them without losing any of their flavour or goodness. And what a lot of goodness there is: mushrooms are jam-packed with healthy amino acids, vitamins and minerals – yet they're very low in kilojoules and contain absolutely no cholesterol. And that's before we've even started on medicinal mushrooms...



## DID YOU KNOW?

*Some mushrooms are being used in bioremediation, a process that involves the absorption and digestion of dangerous substances such as oil, heavy metals, pesticides and industrial waste in locations where they threaten the environment.*

# Grow your own mushrooms

Growing mushrooms is certainly trickier than selecting them from a shelf, but in the long run it's also cheaper and more rewarding. And the best news is that the South African exotic-mushroom market is extremely underdeveloped...

How about a career change?

Craig Fourie became fascinated with mushroom cultivation after a mind-broadening encounter with the "magic" variety 21 years ago. Back then, you couldn't just google stuff, and as a 20-something he spent far too much time in the libraries of Port Elizabeth, teaching himself to grow mushrooms. He learnt by trial and error. And error. And then some more error.

Craig spent the next two decades honing his craft, but it was only in 2013 he chose to make a living from gourmet and medicinal mushrooms. He then designed and built the Mushroom Guru website and launched three workshops with Gary Goldman.

Some might describe Craig's lab technique (when in doubt, disinfect again) as "anal", but when it comes to mushroom cultivation this is most definitely a compliment. Once you've mastered the art of eliminating contamination issues you can grow pretty much any saprophytic mushroom – as is evidenced by Craig's library of 58 edible and medicinal species.

According to Craig, mushroom cultivation entails so many skills it's best to begin your education at the harvesting stage and work backwards. He advises getting a bag that's already growing (see "Or try an easy kit" on page 103) and placing it in a terrarium to learn optimal conditions and how and when to harvest. Because there's such a huge learning curve, starting at the

very beginning (with cultures) can be extremely disheartening, as there will be far more failures than successes. So much so, you might give up and try golf or bird-watching!



Craig Fourie

## Three golden rules

Craig has these three commandments for would-be mushroom growers:

- **Don't believe everything you read on the internet**

There's a lot of nonsense out there (any article titled "Grow your own porcini at home", for example). What's more, once you find a reliable source you'll have to follow the instructions to the letter: mixing valid methods is as futile as following an incorrect method.

- **Mushrooms are not like plants that need a lot of water** Overwatering is a problem at every stage of the cultivation process. Mycelium can even take water out of dry wood, so you need to use very little. Bacteria such as Bacillus and Neurospora thrive where there's too much water.

- **Don't be fooled into thinking you're super clean** Even if you are, your environment may not be. There are particles floating in the air all the time. Once you've prepared your station you need to allow the room to stand for an hour. Then clean the surfaces with

alcohol again and wait another half hour, by which time you'll probably need another shower.

Why does one have to be so clean to grow mushrooms indoors when they pop up so "easily" in the wild?

"Lots of people ask that," laughs Craig. "The answer is simple: The mushrooms you see growing in the wild are from 'the spores that made it' – just like your existence was reliant on that one sperm cell that made it. If you want to grow mushrooms commercially, or at least have some success growing them for your family, you have to create better conditions for them."

## What? When? Where?

In the right growing conditions you can cultivate any saprophytic mushroom (although some species are more high-maintenance than others). Start with a species that has temperature parameters that match the ambient temperature outside. In summer, use warm-weather species such as the pink oyster, Indian oyster and grey oyster). In winter, you'd be better off with the king oyster, wood blewit and black morel. And if you want to grow shiitakes, there are both warm- and cold-weather strains. >





Boletus edulis

Unless you live in Durbs you'll have to mist your growing area three times a day to keep the humidity levels up. Once you've invested in a growing environment that controls temperature and humidity (these start at about R1 000), the sky's the limit.

In the same way you'd need seed, seedlings or potted plants to start a garden, you'll need one of the following to cultivate mushrooms:

- **Spores** Underneath a mushroom you have gills or a sponge, and inside are the spores (like micro-seeds), which can germinate under the right conditions.
- **Cultures** Prepare a Petri dish with agar, malt and water, and you can

place spores or, better still, a piece of mushroom gathered from the forest, on top of the agar. This can then be turned into spawn, but you'll need to have done an advanced course to have any chance of getting it right.

- **Spawn** Once spores or a culture have grown on sorghum, millet or wheat, you

have what is known as spawn. Break up that grain and add it to straw, and you can grow mushrooms. The sorghum is merely a transfer medium to get spores onto the growing medium. There is no such thing as spawn in nature, but it is the best chance a beginner has of successfully cultivating mushrooms. 

### DID YOU KNOW?

After athlete's foot, the most googled fungus in the world is the reishi mushroom, which has been proven to cure just about every malady you can think of apart from impotence. Dried reishi sells for R2 400/kg, which is why most of the mushroom farmers in South Africa are focusing on it.



Pink oyster mushroom

## Sign up for a course...



### MUSHROOM GURU COURSES

Craig Fourie and Gary Goldman run several courses: a two-hour oyster mushroom workshop includes a CD with course notes and a bag with spawn to take home, or you could



Shiitake cultivation

try the two-hour shiitake log workshop where you will inoculate your own take-home oak log with spawn. In the reishi mushroom workshop you learn how to grow the trickier ultimate health mushroom (and you get to keep your reishi grow bag). Serious mushroom addicts should consider Craig's one-on-one advanced fungi-culturing course, where you learn culturing on agar Petri dishes, isolating good mycelium from bad contaminations, making your own master spawn, and growing edible and medicinal mushrooms.

**Where?** Somerset West and Johannesburg  
**Cost** From R575 for the shiitake log workshop to R1 200 per module for the advanced fungi-culturing course

**Contact** 📞 021 852 6771 ✉ info@mushroomguru.co.za 🌐 mushroomguru.co.za



Reishi

### GOURMET MUSHROOM ACADEMY

As a young boy, Dr Adriaan Smit (above) enjoyed kicking puffballs, fascinated by the clouds of spores. One thing led to another and before he knew it he had a PhD in microbiology.

In 2001 he organised South Africa's first gourmet and medicinal mushroom conference, and since then the industry and his involvement in it have, well, mushroomed.

His Gourmet Mushroom Academy is the only company in the world providing mushroom training on a weekly basis, as well as e-learning courses. Although it also offers basic foraging and cultivation courses, its main focus is on small entrepreneurs or commercial mushroom farmers who want to make money out of mushrooms.

**Where?** Cape Town, Johannesburg, Durban, Port Elizabeth and East London

**Cost** R3 300 (entrepreneurial course) and R9 000 (commercial course). Prices are advertised in euros and rands – due to exchange-rate fluctuations it may actually be cheaper to pay with your credit card in euros!

**Contact** 🌐 mushroomacademy.co.za



## Or try an easy kit

Growing your own mushrooms is easy with The Mushroom Factory's all-in-one growboxes. We spoke to co-founder Carla de Freitas.

### Where did it all begin?

The Mushroom Factory was started by Quentin Duncan and myself. We are keen gardeners and wanted to try growing our own mushrooms. The oyster mushrooms were super easy to grow and, after researching some kits being made in other parts of the world, we thought, "Why not?"

### Which kits do you stock? And how easy are they to use – could anything go wrong?

We currently stock four types of kits: pink and white oyster mushrooms, button mushrooms and portabellas. Buttons and portabellas are only stocked in winter, as they are quite sensitive to high temperatures. The kits are designed to be easy; we do all the technical



Carla de Freitas and Quentin Duncan

stuff like inoculating the growing medium and controlling the humidity. The customer just has to add water. Obviously, with it being a natural product, kits don't always work, but we have a replacement policy.

### Who is buying the kits?

The kits are proving very popular as gifts

for people who have everything, and for vegetarians, foodies and people who love growing things.

The recommended retail price is R180 for the oysters and about R250 for the buttons and portabellas. Visit 🌐 mushroomfactory.co.za for a list of stockists.



### Buying spawn and supplies

Spawn can be couriered to your door – you can use it straight away or store it in a fridge below 4°C (but don't freeze it!). Try the following online stores for an incredible variety of mushroom-related supplies:

- **Mushroom Guru** 🌐 mushroomguru.co.za
- **Funguys Gourmet** 🌐 funguys.co.za
- **MushRush** 🌐 mushrush.co.za