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JASON GOWEN. MELANIE HESS.

Welcome to Chanterelle season!

Letter by the editor

Ethical and safe foraging is becoming a large part of “west coast” lifestyles. Concise and relevant information is becoming more difficult to find, with the amount of books, magazines, websites and social media outlets. Here we’ve tried our best to bring you some tools, in order to provide a safe and simple way of finding The Golden Nugget, *Cantharellus cibarius* (chanterelle). Please bare with us as we grow and gather questions, requests and volunteers to write an article or two... feel free to contact us at fungifama.svims@gmail.com.



It’s interesting to try and imagine how early humans discovered what was edible and what wasn’t. Who figured out that when you cooked stinging nettles, the sting would go away completely? How many people had to die before the relative toxicity of wild mushrooms became widely known?

~Kate Christensen

We would like to remind readers the risk of poisoning when eating unfamiliar fungi. Some mushrooms are acutely toxic and can cause death. Always cross-reference. Gather intel &/or ask professional mycologists.

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Trees



1. Hemlock
2. Spruce
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Basic facts about Chanterelles

- There are many species of edible chanterelles in the *Cantharellus* genus. The most well known is *Cantharellus cibarius*, the golden chanterelle mushroom.
- Like so many different types of mushrooms, there is now debate over the classification of *Cantharellus cibarius*. Mycologists now suspect it could actually be made up of a number of different species. For now, *Cantharellus cibarius* is the most common species name you'll see in North America.
- Due to their mycorrhizal relationship with trees, you'll only find them growing on the ground, usually near some sort of hardwood (oaks, conifers, etc).
- These are summer to fall mushrooms. In my area that means they fruit anywhere from June to September. They mainly fruit in North American and North Europe, however they are also found in Asia, Mexico, and Africa.
- Caps are usually convex to vase-shaped, with a yellow to yellow-orange color. Their stems are smooth, not hollow, and the same color as the cap.
- They contain vitamin C as well as a high amount of carotene. High carotene levels play in part in their distinctive orange-yellow color.
- Fascinating research is being done regarding the insecticidal properties of chanterelles. These properties seem to be the reason that chanterelles resist rot and bugs better than many other wild mushrooms.

Chanterelles & Their Habitat

By Jason Gowen

Chanterelles are a favourite of many local pickers, and one of the first mushrooms many novice mushroom pickers start their journey into foraging with. *Cantharellus* species are either mycorrhizal or ectomycorrhizal depending on species, so learning how to identify trees is a major benefit when it comes to deciding where to look as without these root relationships there won't be any chanterelles. Being able to recognize types of conifer needles and cones and differing bark can tell you if you're in the right place. The importance of tree identification really can not be understated.

With that in mind, here are the favoured habitats for some of our local chanterelle species, and some tips on things to look for.

Cantharellus Subalbidus, “white chanterelle”

C.subalbidus is mycorrhizal and found in association with Douglas-fir and Hemlocks. They favour environments where salal and moss are abundant and hold moisture around the base of these conifers. Often times they will be found growing on sloping terrain. They favour mature forests, so older, large, fairly well spaced forests on hillsides. Take a close look in areas where water would run down or collect, or along fallen logs where the ground will hold more moisture. C.subalbidus may fruit a little earlier in the season than Cantharellus formosus if conditions are optimal.

Cantharellus roseocanus, “the rainbow chanterelle”

These summer fruiters are ectomycorrhizal with spruce and pines, typically on Vancouver island with Sitka spruce and shore pine, they can also be found with Engelmann spruce at higher elevations. The trees they depend on generally favour a coastal habitat, so coastal areas with older more mature trees can be very productive even in the drier months. They can often be found fruiting in the summer months along the coast in low lying areas relying heavily on the oceanic fog. In my experience they seem to favour disturbed ground and I have often found them abundant in areas that have been washed out by past heavy rains, or where debris has been mounded up at the base of larger trees. These chanterelles are less fond of moss and favour needle beds, though they may still be found in mossy areas.

Cantherellus formosus, “the pacific golden chanterelle”

These mushrooms are ectomycorrhizal and can be found fruiting in association with Douglas-fir, Hemlock, and spruce. While some of the other chanterelle species in the region may favour more mature forests, C.formosus is less selective. They can be found in young forests through to old growth forests, but in my experience have been most abundant in mature second growth forests comprised of mostly Douglas-fir. C.formosus favours habitats with ample moss and salal and can often be found nestled amongst those plants at the base of their host trees. They are often found hiding under older roots or in hollows under logs or overhanging moss. Pacific golden chanterelles also can be found in disturbed areas, grown over logging roads and washouts that have good moss coverage can be very productive spots. They are

rarely solitary so if you spot one, take a look around the area for low lying terrain or anywhere the moss is particularly green, others may be hiding where water is more readily available. If you find some along a draw, follow it up or down and you will likely be rewarded with more.

Keeping these habitats in mind, and being equipped with a good field guide to positively identify your finds, you should be able to fill your basket in no time!



Ask Aunt Amanita

Your local agony aunt

Dear Aunt Amanita,

Last year was my first golden chanterelle season and I noticed that I picked some that were quite soggy and seemed dusty, but I just couldn't help myself and so I fried them up and ate them. They tasted good, but later things got ugly. My question is... can I eat this?

**Yours truly,
Mr. Soggybottom**

Dear Soggybottom,

First of all, these two photos are of FALSE CHANTERELLES. For all you new edible pickers out there, be sure to familiarize yourself with imposters before you go searching and come to our SVIMS meetings to meet experts who can educate you. Autumn is an exciting time for mycolofans because the rains come and with the rains, all sorts of fruiting bodies start to appear! Staying clear of a species' evil twin is not all you need to do to avoid illness or death – if a fruiting body appears soggy, feels slimy, doesn't smell appetizing, or appears dusty, stay away. And when in doubt, throw it out. **The only kind of soggy bottom you want is the kind you get sliding down a moss hill towards a golden sea of mushrooms.**



Ionic Liquids for the Production of Insecticidal and Microbicidal Extracts of the Fungus *Cantharellus cibarius*

Anna Cieniecka-Rosłonkiewicz Agnieszka Sas Elżbieta Przybysz Bolesław Morytz Anna Syguda Juliusz Pernak

First published: 21 September 2007

<https://doi.org/10.1002/cbdv.200790179>

Cited by: 6

Abstract

Different ionic liquids were used as solvents for the effective extraction of the active metabolites of the fruit bodies of *C. cibarius*. The type of ionic liquid was found to play a significant role in this process. We found that the protic ionic liquid 1-[(nonyloxy)methyl]-1*H*-imidazol-3-ium salicylate (**6**) is a most-efficient extracting agent, being superior to classical solvents such as AcOEt or hexane. The obtained extracts generally revealed high insecticidal activities against both house fly and cockroach, with similar potencies as the standard pesticides bromfenvinphos or alphacypermethrin, as well as significant activities against bacteria, yeast, and moulds. Notably, the cidal activities against plant-pathogenic bacteria were stronger than against human bacterial strains.

Human Activities and Impact on Harvesting Edible Wild Mushroom

Have you ever wondered what types of human activities would negatively effect future production and yields of wild edible fungi? Some of these activities such as raking surface of substrates to expose fruiting bodies, digging up soil, trampling over substrates with heavy duty footwear, over-harvesting, or the arguments of whether to pull mushroom from the ground or use a knife to cut the base of the stipe leaving an exposed area and vulnerable area that could be susceptible to contamination or bacterial infection. Some long-term studies have been done on some of these human activities, around edible mushroom patches. Forest fungi not only have important functions within the forest ecosystem, but picking their fruit bodies is also a popular past time, as well as a source of income in many developing and developed countries. The expansion of commercial harvesting in many parts of the world has led to widespread concern about overharvesting and possible damage to fungal resources. In

1975, we started a field research project to investigate the effects of mushroom picking on fruit body occurrence. The three treatments applied were the harvesting techniques picking and cutting, and the concomitant trampling of the forest floor. The results reveal that, contrary to expectations, long-term and systematic harvesting reduces neither the future yields of fruit bodies nor the species richness of wild forest fungi, irrespective of whether the harvesting technique was picking or cutting. Forest floor trampling does, however, reduce fruit body numbers, but our data show no evidence that trampling damaged the soil mycelia in the studied time period.

Mushroom picking does not impair future harvests - Results of a long-term study in Switzerland | Request PDF. Available from: https://www.researchgate.net/publication/222572829_Mushroom_picking_does_not_impair_future_harvests_-_Results_of_a_long-term_study_in_Switzerland [accessed Aug 20 2018].

RESPONSIBLE AND SUSTAINABLE MUSHROOM PICKING SIMPLE RULES FOR SUCCESS

Below are some simple rules and etiquettes around foraging for wild edible mushrooms by Trent Blizzard.

Responsible wild mushroom picking means more than just not over-harvesting our patch. Saving some mushrooms for other pickers is more than just courtesy... it might mean saving our patch for harvests later in the season or years into the future.

Here are three simple hunting rules that are pretty conventional wisdom:

1. **Don't over pick.** Even if you believe that over picking is not bad for the mushrooms (like apples on a tree, many people believe that harvesting a mushroom patch doesn't harm the health of the underlying mycelium and future generations of that mushroom), it is still courteous and considerate to leave mushrooms behind for another picker. Next time you see that big cluster of oyster mushrooms, leave half for the next person! Don't be part of the [Tragedy of the Commons](#).
2. **Consider the Spores.** Mature mushrooms release spores into the air that are essentially mushroom seeds. You can respect the spores by:
 1. Focusing your collection on mature mushrooms that have already done their thing (released spores).
 2. Leaving some behind, duh, see rule #1. These will disperse their spores.
 3. Use a porous and an open-air container for your mushrooms as you walk through the woods. Don't use plastic bags — which can ruin your harvest anyways; look for [mesh bags, baskets](#), buckets with holes drilled in them, etc.

3. Tread Lightly. Don't trample all the little mushrooms and potential mushrooms in your hunting ground. Those big hiking boots can cause some damage if you are not aware and careful. Plus, it is kind of cool to leave no obvious picker's trail around your shrooms.

The [Oregon 10-year Chanterelle Picking Project by Norvelle 1995](#) confirmed this. In this 10 year study, [chanterelle](#) plots that were picked actually did a smidge better than the unpicked. But, it was not statistically valid. Pulling or cutting was irrelevant. Go figure.

However, this same paper by Norvelle does point out the true killers of wild mushrooms:

- **Clear Cutting** "Sets the mycorrhizal clock back to zero." End of mushrooms. Lots of scientific research on that topic is referenced by Norvell.
- **Dragging and compaction** by heavy equipment during timber thinning
- **Removal of normal forest litter** and other water-holding substrates can also discourage mushrooms.
- **Air Pollution** has apparently decimated mushrooms around the world. Acid rain and fertilizer run-off may also impact (Trent Blizzard, 2017).

Norvelle also makes an interesting "visual observation" that chanterelles do best in a "judiciously managed" mature forest... if the trees were too old or too young they underperformed. Keep in mind this is probably specific to the Portland area chanterelles.

Finally, check out a good article from FUNGI Magazine on the topic that has a lot of links to research: [Agaricidal Tendencies: Settling the Debate over Cutting vs Picking and the Sustainability of Wild Mushroom Picking](#) by Britt A. Bunyard.

Source: Trent Blizzard, April 21, 2017. Responsible and Sustainable Mushroom Picking;
<https://www.modern-forager.com/sustainable-mushroom-picking/>

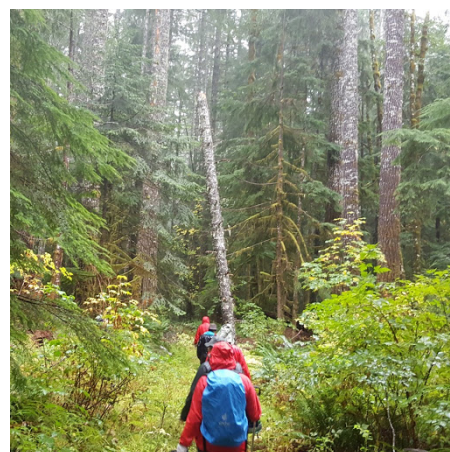
Related Links:

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.572.4260&rep=rep1&type=pdf>

<https://www.conservationevidence.com/individual-study/230>

[https://www.infona.pl/resource/bwmeta1.element.elsevier-361974dd-](https://www.infona.pl/resource/bwmeta1.element.elsevier-361974dd-f9db-3a14-83ca-53a5248a3be1)

[f9db-3a14-83ca-53a5248a3be1](https://www.infona.pl/resource/bwmeta1.element.elsevier-361974dd-f9db-3a14-83ca-53a5248a3be1)



Thyme-Porcini Tart (Boletus Edulis)

By Anja Hesz

This puff-pastry tart combines woody thyme and porcini mushrooms with the delicate richness of ricotta that will warm you from the inside this autumn.

Ingredients:

1 lb fresh porcini, chopped
1 small white onion, sliced
3 tbsp. butter or ghee
1 tbsp. cooking oil
 $\frac{1}{2}$ tsp salt
A few sprigs fresh thyme
3-4 cloves minced garlic
 $\frac{1}{4}$ cup plus large glass white wine (optional)
500g ricotta
Salt and pepper to taste
1 sheet of puff pastry
To serve: balsamic reduction (optional)



Directions:

Heat your oven to 350 Fahrenheit with a rack in the middle of the oven.

Heat a large saucepan on medium, then add butter (or ghee if using) and cooking oil. The oil aids in stopping the butter from burning in the pan. Once the butter is hot, add chopped porcini and sliced onion and sprinkle with $\frac{1}{2}$ tsp salt. Stir about once a minute for five minutes, then add thyme and garlic, stir again, and turn off the heat.

Deglaze the pan with $\frac{1}{4}$ cup white wine or water by immediately pouring the liquid into the pan and scraping the browned bits from the bottom with a wooden utensil. Take a sip from your large glass of white wine (if using).

Next, stir the ricotta into the pan and taste. Adjust for salt and add pepper to taste. Your filling is complete.

Roll out the puff pastry dough and lay over a buttered pie dish or casserole dish so that the dough is going up the sides at least 1 inch. Cut off the excess and set

aside. Now, dock the base of the tart by poking holes in it with a fork every inch or so. Pour in the filling and spread it out. Wrap the excess dough around two fingers and place the spiral in the centre of the tart – it will look like a rose when it's baked. Place in the oven and bake for 25-30 minutes or until the pastry is golden.

***Anja's shortcut for pot-pie: use an oven-proof pan to prepare your filling and when it's ready, add an extra ½ cup of liquid (wine, milk, or cream) and place your rolled-out puff pastry on top, piling any hanging corners on top of the pie. Brush with beaten egg, slice a few venting holes in the top, and bob's your uncle.**

Some Science for the Soul

Polyphenol oxidase in golden chanterelle (*Cantharellus cibarius*) mushroom

Jacqueline Keyhani and Ezzatollah Keyhani

Microorganisms in Industry and Environment, pp. 111-115 (2010)

Abstract:

The golden chanterelle (*Cantharellus cibarius*) is an edible ectomycorrhizal mushroom much appreciated for its flavor and quite beneficial for the health through its antioxidant, immunomodulatory, anti-inflammatory and antimicrobial properties. Edible mushrooms are characterized by a short shelf life due to post-harvest changes resulting from the activity of enzymes such as polyphenol oxidase (PPO), responsible for browning reactions. Although the active site of PPO is conserved, its characteristics such as substrate specificity and sensitivity to inhibitors vary considerably among species. In this research, PPO activity was investigated and characterized in *C. cibarius* mushroom. Data showed that at least one soluble isoenzyme (~ 90 kD) of PPO was detectable in *C. cibarius* extract. The enzyme oxidized monophenols and diphenols, with a maximum limiting reaction rate when p-cresol was used as substrate, and the highest catalytic efficiency when caffeic acid

was the substrate. Activation by SDS and inhibition by kojic acid were observed, although to various extents, depending on the substrate used.

LIBRARY

We have a vast array of books, videos, manuals, magazines, texts etc! For our library list, it is available online at www.svims.ca. To borrow, please contact Thor (email available on the library webpage). Please return books after a month's use!

Upcoming guest speakers with SVIMS

January = no SVIMS meeting. But a banquet dinner with loads of tasty dishes and laughter!

June = also no meeting, because we have a picnic!

November 1

✦ Dennis Benjamin

December 6

✦ AGM + Emma Harrower

February

▸ Paul Kroger

March

▸ Thomas Maler

April

▸ TBA

May

Yonathen Uriel



All meetings will begin promptly at 7pm, and ending no later than 9pm. They will be held on the first Thursday of the month, at: Pacific Forestry Centre, 506 West Burnside Rd, Saanich, BC V8Z4N9.

For up-to-date information, please visit www.svims.ca

List of Local Events

<https://forums.botanicalgarden.ubc.ca/forums/fungi-events.321/>

Some of the Tools and Gear:

- ♦ Knife - for defence as well as to extract fungi
- ♦ Whistle - to communicate with your pals, or to help Search & Rescue find you...
- ♦ Wax paper – allows the mushrooms to breathe so you can ID them later
- ♦ Magnifying glass - for ID'ing smaller visual keys
- ♦ Paper bags = non-mushy mushrooms
- ♦ Bright coloured weather appropriate clothing - especially in fall, when others will be hunting!
- ♦ Comfortable, sturdy and moisture proof footwear
- ♦ Rain gear
- ♦ Bear spray - for the cougars, bears, wolves and humans
- ♦ Water and non-perishable snacks
- ♦ Personal locator beacons –

You can find these at MEC, London Drugs, Amazon and many other retailers. **A PLB is an invaluable tool when you travel beyond the boundaries of cell service and will send emergency responders your GPS location.**

Newbies Guide to Foraging

It is safe to say that one of the most important things to remember is to have a “check in time” with someone whom is NOT coming along on a foray with you. This means they need to know what area you will be going to, what route you’ll be taking (loosely) and when you want to be back by... latest. In our next issue we will be addressing what kind of Personal Locator Beacons, GPS apps/devices, survival and first aid kits should be on your person. **Happy Foraging!**