

Questions answered from 9/22 presentation

1) Should mushrooms be cut level to the ground or leave more of the stem?

It does not matter. Cauliflower fungi-cut off at the base, above the stem: more will grow back in the future. Cutting them makes for easier cooking preparation, but does not necessarily benefit the mycelium (The underground, vegetative part of the fungus). Some stems are tough and should be discarded- Birch boletes, honey mushrooms. Morel stems, especially the big ones are very tasty. If you cut stems and don't cover them up, other mushroom hunters will know where your mushroom patches are.

Pulling or cutting makes no difference to the health of the fungus: loss of habitat and soil compaction are more damaging than either of the aforementioned practices. Some fungi like compacted soil and can adapt to a loss of habitat, by growing in "New" habitats.

2) Is there a taste difference between mushrooms found with conifers vs. other trees?

No, but Chicken of the woods growing on Eucalyptus will cause GI distress and may be more bitter (I have not tried it). I have been unable to taste the difference in Oyster mushrooms that grow on alder, maple, cottonwood or oak. Chaga grows on ash, alder, elm, beech and hornbeam, but only contains betulinic acid when growing on birch.

Italian truffles are reputed to be the world's tastiest, but that may be due to soil composition and millenia of culinary traditions. A ripe, Oregon black, brown or white truffle has a similar, embodied feeling.

3) Is there a lookalike mushroom for the Cauliflower?

Not really. Some coral species, look a little bit like it: luckily, none of them are lethal, which means if you make a mistake with confusing a coral mushroom for a cauliflower fungus, you may spend more time on the toilet than you would like to!

2)

4) Will you please show another photo of rings (Annulus) on a honey mushroom?



The top photo is a close-up of mine, the bottom one is from Fat of the land

5) **Bear's head and lion's mane elevation?**

Both of these species can be found at sea level and at higher elevations on conifers: not sure what the highest deciduous tree limits are. I have found both in Portland, Oregon on Maple and Oak.

3)

6)What are the different rhizal terms?

Mycorrhizal-describes a symbiotic relationship between a fungi and a vascular plant, i.e. tree species

Mycorrhizae-umbrella term for microfungi that live in the root-zone

Ecto-mycorrhiza -symbiotic fungi that grows on the outside of the roots

Endo/arbuscular mycorrhiza-symbiotic fungi that grows on the inside of the root

Vesicular arbuscular mycorrhizae-forms vesicles(Bladder-like structures) and arbuscules(Finger-like *hyphae*=root-like structures)

Ericoid mycorrhiza-forms symbiotic relationships with *Ericaceae* which are found In boreal forests, bogs and heaths

7, 8) How is Death cap poisoning treated?

The best prevention is not to eat any white mushroom that you cannot identify as an edible species. *Leucoagaricus* and *Pluteus genera* have white-species that are sometimes collected for the table. Symptoms of the Death cap occur six to twenty-four hours after eating: the earlier you seek help, the better!

If you do make a mistake on your identification, save a sample of the mushroom and call the poison control center **1-800-222-1222** IMMEDIATELY! You would be shocked by how many calls they get each season: do not, "Ride it out" or not call because you feel embarrassed: the quicker you get help, the better chance you have of surviving.

Milk thistle protects and detoxifies the liver. DO NOT EXPERIMENT WITH EATING DEATH CAPS AND MILK THISTLE!!!

9)Is the missing enzyme specific to wild mushrooms?

I am not sure how to answer this question. Squirrels have enzymes in their digestive system that make it possible for them to eat Death caps and not die. Bears do not. Enzymes in mushrooms assist the decomposition process.

4)

10)What is the best way to consume Turkey Tail?

The hot-water extraction method, i.e. cut the fruit-bodies into thin strips and boil them for a half-hour. The longer you boil, the less potent the tea will be. Grinding the dried, fruit-bodies is better than thin-strips and making a double or triple-extraction is even better. Some compounds can be extracted by boiling in water, others are extracted by soaking in alcohol and others are extracted by soaking them in cold-water. A triple-extraction uses all three.

11)Is it true that purple spore patterns(Spore prints) indicate hallucinogenic Mushrooms?

Yes, but do not rely on one Macroscopic Identification Characteristic! Spore-prints of mushrooms from the *Psilocybe* genus are purple-brown: it is Best to use a combination of Macroscopic Identification Characteristics=the Physical aspects of the mushroom you can discern without the aid of a microscope to identify gourmet, medicinal, hallucinogenic and dye mushrooms.

Some *Pleurotus* species have purple/lilac-colored spore-prints and are not hallucinogenic. A beginner may also “See” a purple-brown spore print in a few mushrooms that are poisonous (*Cortinarius* spp.) and a couple that are DEADLY (*Pholiotina*, *Galerina* spp.)!

There are species of mushrooms that stain blue (*Caloboletus*, *Boletus*, *Leccinum*) when cut, injured or handled that are not hallucinogenic. Orange *Lactaria*'s stain green and Some *Hygrocybe* spp. stain black, that can be mistaken by beginners.

12) Are you familiar with “All the rain promises and more” as a mushroom guide?

Yes. I have used it for years and aside from a few, name changes, it is still one of the best guides ever published. Most of the mushrooms covered can be found in the PNW and the small size makes it easy to take into the field. The picture/descriptions are still relevant And I recommend it as a field guide for the PNW butter Boletes that stain

13) Are all Boletes that stain blue not good to eat?

There are a few, bitter-tasting, blue-staining Boletes that are inedible/possibly poisonous: especially ones with red-pores. There are a few, mild-tasting, blue-staining Boletes that are edible- some are choice! I have not found them, but look forward to adding them to my bucket list. CAUTION!! There are a few, mushrooms with pores, that were once lumped in with Boletes that have new names. Not all mild-tasting Boletes, blue-staining or other colors, are edible and some are not well-known or tested!

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14, 15) What native trees/regions are associated with Oregon truffles?

There are over 1,500 species of *hypogeous fungi* (Fungi that fruit underground) In Oregon. They are all mycorrhizal and can be found with conifers-mostly and deciduous-fewer, trees, shrubs and bushes in the spring through winter. About half a dozen have culinary appeal and the rest are eaten by animals, who are much less picky than humans. They emit volatile oils that act as attractants and when eaten, the spores pass through the mammals digestive systems, contained in scat or fecal-pellets. The Willamette valley has some of the best *hypogeous fungi* diversity on the North American continent and Dr. James Trappe has been studying them for over fifty years and has found/described thousands of species around the world.

Doug fir trees have up to 2,000 different fungal associates in their lives from seedling to old-growth. The ecological niche that hypogeous fungi prefer to occupy is young: from a few years to seventy+ years. After that, other mycorrhizal fungi will occupy these ecological niches that are not as mycologically diverse as the aforementioned.

By the time the tree reaches old age, the ecological niches are well-established, thus there is substantially less fungal-diversity. Doug fir and Oaks are the trees that produce the most desirable truffles on the west coast.

16)What tree guides do you recommend?

Online resources

<https://oregonforests.org>

<https://nwtree.com>

<https://treespnw.forestry.oregonstate.edu>

Books

Plants of the Pacific Northwest Coast by Pojar and Mackinnon

Trees to know in Oregon and Washington by Edward C. Jensen

Finding the mother tree by Suzanne Simard

17) Where do I learn more about Macroscopic Identification Characteristics?

David Largent and Daniel Stuntz published a series of books decades ago that is still the most comprehensive treatment on Macroscopic Identification Characteristics for fungi ever printed. Many mycological societies still use these

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books and they can be found at some bookstores (Expensive), Amazon (Expensive and affordable) and through mushroom clubs (Affordable).

All modern field guides also explain MIC's-some in more detail than others. I like Mushrooms of the Redwood Coast by Siegel and Schwarz treatment. The older field guides contain many European species and are not as comprehensive as MORC.

By noticing the visible features of the mushrooms you find-

Gill attachment

Gill spacing

Basal structures

Presence of a ring (Annulus)

What it is growing on

Fruiting pattern

Staining

Cap texture

Odors

Habitat

Spore color

Taste (A small piece and spit out only for Boletus and Russula spp.)

You will acquire a baseline knowledge and in time will be able to identify mushrooms on sight alone. If your curiosity remains intact and you ask more questions than you receive answers to, you may realize that everything in nature has Macroscopic Identification Characteristics that can not only help you learn what mammals, fish, birds, trees, berries, fossils, insects, rocks and nebulae you are seeing, but will also learn how they came to be. This area of inquiry is indeed a rabbit hole and nature provides the best education on earth.