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The Curative & Culinary Magic of Mushrooms

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A healthy crop of Enoki mushrooms.

# The Magic of Mushrooms

As renowned mycologist Paul Stamets and expert forager/chef Eugenia Bone have long understood, the curative—and culinary—benefits of mushrooms are legion.

By **Bill Giebler**

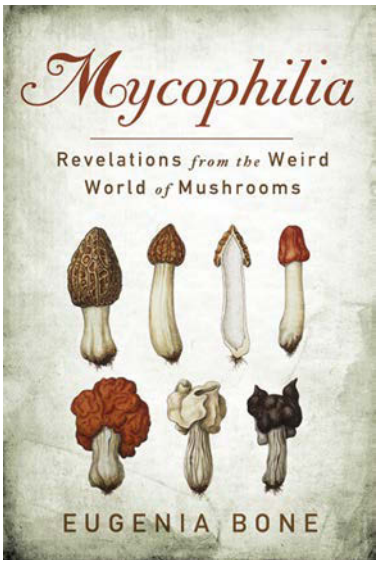
Humans have a complex relationship with fungi, one filled with mystery, excitement and fear. We gobble innocuous varieties in mundane salad bars and recoil as the spores of their creepy cousins decompose leftovers in our refrigerators. We enjoy exotic foraged varieties on specialty menus, while tales of deadly encounters and psychotropic trips fill us with shock and awe.

The healing power of mushrooms is attracting attention from medical experts, as recent advances in mycology (the study of fungi) reveal powerful applications in the treatment of cancer, HIV, herpes and influenza.

Equally curative are the recent uses of fungi in bio remedia tion concentrating and removing soil bound heavy metals from the Fukushima nuclear disaster area, or transforming oil spill hydrocarbons into simple carbohydrates in record time.

No one has done more to forward this awareness than →

IMAGE COURTESY OF PAUL STAMETZ / FUNGI PERFECTI




**Top:** Paul Stamets with *Fomitopsis officinalis*, also known as Agarikon. *Mycophilia* cover, author/forager/chef Eugenia Bone.
**Left, top to bottom:** Porcini mushrooms, Turkey Tail mushroom.

preeminent mycologist Paul Stamets, author of *Mycelium Running* and the owner of many ecological and medical patents in fungal use. Stamets has devoted his life to the study of mushrooms and the multiple ways they can save the world.

A few minutes into conversation with Stamets, it is easy to realize that the many and varied benefits of fungi are as intrinsi cally connected as the mycelial web that exists beneath the fruiting formations we call mushrooms.

We discussed the work of epidemi ologist Dr. Tetsuro Ikekawa, formerly of the National Cancer Center in Tokyo. Wondering why cancer rates were lower in the Nagano Prefecture than in sur rounding areas, Ikekawa reviewed 14 years of cancer death rate data. He noticed that death rates were lower in the spe cific subpopulation of Enoki mushroom farmers.

"Employees take home blemished ones," Stamets explains, "so consumption is super high." The result, per Ikekawa's data, demonstrates 39.4 percent fewer can cer deaths compared to surrounding areas. This work, from the late 1980s, spurred further research into the effects of protein compounds found in these mushrooms, which demonstrated effectiveness against melanoma, human papilloma virus (HPV) and other cancer related diseases.

Similar research, funded by the US National Institutes of Health, studied non estrogen responsive breast cancer patients. Here, Turkey Tail mushrooms were used alongside traditional cancer therapies to boost immune systems com promised by chemo and radiation thera pies. "Turkey tail will bolster the immune system with multiple pathways," Stamets explains, "producing a broad based im mune response without over amping the immune system." The result was a marked increase in "natural killer cells."

This hit home profoundly for Stamets in June 2009. In a moving TedMed pre sentation (readily available on YouTube), Stamets tells the story of his 84 year old mother's late diagnosed stage 4 breast cancer. After a grim prognosis, she saw a remarkable improvement from a case her doctor at Seattle's Swedish Breast Cancer Clinic called the second worst she'd seen in two decades, to no detectable tumors less than two years later. This without radiation therapy or mastectomy due to the patient's age and treated only with two powerful pharmaceuticals and a daily dose of Turkey Tail mushroom capsules.

Apologetically, I steer the conversation toward comestibles, delicate about reduc ing the scientific miracle of mushrooms to the dinner plate. Stamets responds without hesitation. "I no longer know the difference between culinary and medici nal. They are both."

Rich in potassium and 40 percent pro tein by dry weight, mushrooms contain no cholesterol and can be a fantastic source of vitamin D if exposed to sunlight. And because fungi digest and decompose plants for a living, they contain large quantities of digestive enzymes. "They of fer a very high level of nutrition and host many medicinally active compounds that work synergistically to improve overall

BOOK COVER: HUGER FOOTE / PORCINI PHOTO: EUGENIA BONE / TURKEY TAIL, PAUL STAMETZ IMAGE COURTESY OF FUNGI PERFECTI

health," Stamets says.

Mushrooms must be cooked (or tenderized by pickling or alcohol tincture) to release these nutri tive properties. Yet few of us know to cook them effectively.

"How you cook them comes from the morphol ogy of the mushroom," says Eugenia Bone, experi enced forager, cook and author of *Mycophilia*.

For Bone, the hunt came first whether for blue berries, Cape Cod mussels or mushrooms with the palate in lock step, favoring the strong and bitter flavors that come from foraged foods. The biology came later.

"Knowledge clarifies our food experiences," she explains. "The better knowledge you have [of biol ogy] the better cook you are. If you back up and say 'What is this thing I'm cooking?' and cook it as what it is, you'll have a great experience."

Bone recommends cooking mushrooms as a pro tein rather than as vegetables. In fact, says Bone, "if you replace mushrooms for meat five meals a week, you'll not only take in fewer calories, you'll be less inclined to snack." This is a result of the water content and the high grade protein.

Stamets points out that in the last two extinc tion events that our planet endured, plants and animals that paired with fungi were able to stave off extinction. "[Fungi] are a keystone species," he says, "the foundation of the food web and the interface between life and death."

As current human behavior points us toward what many consider the sixth great extinction, Stamets argues that mushrooms can once again save the day, if we let them. In other words, disliking mushrooms is more than surprising to Stamets, it's ill advised. "Make friends with fungi," he laughs, "because they're gonna get you in the end anyhow."

## Wild Mushroom Soup with Mascarpone

Recipe from Eugenia Bone

*Serves 4*

Use any combination of cultivated mushrooms, like maitake, shiitake, or oyster mushrooms, or a combination of cultivated and wild, or substitute the wild mushrooms with dried porcini and white button mushrooms. (Combine 10 ounces of dried porcini soaked in half-cup warm chicken broth for 30 minutes with 5 cups sliced button mushrooms.)

- 2 tablespoons olive oil
- 1 medium onion, chopped (about 1 cup)
- 1 pound mushrooms, sliced (about 5 cups)
- Salt and freshly ground black pepper
- 1/3 cup dry Marsala or sherry
- 1 tablespoon flour
- 3 cups porcini stock
- 2 sprigs fresh thyme
- 2 tablespoons mascarpone cheese or sour cream
- Chopped fresh thyme for garnish

1. Heat olive oil in a heavy soup pot over medium heat. Add onions and cook until soft, about five minutes.
2. Add mushrooms and sauté until they give up their liquid, about 10 minutes. Add Marsala wine, cover, and bring to a boil. Uncover and allow wine to cook out, 3 to 5 minutes.
3. Stir flour into the mushroom mixture. Add the porcini stock and thyme. Bring soup to a boil, then turn down the heat and simmer for 20 minutes.
4. Remove about half of the mushrooms and grind them in a food processor. Return the ground mushrooms to the soup and combine. Stir a tablespoon of mascarpone into each bowl. Garnish with chopped thyme.