



Mushroom, the sacred organism arrives to Jiwa Damai

Introduction

The delicious flavor of mushrooms intrigued the pharaohs of Egypt so much that they decreed mushrooms were food for royalty and that no commoner could ever touch them. This assured themselves the entire supply of mushrooms. In various other civilizations throughout the world, including Russia, China, Greece, Mexico and Latin America, mushroom rituals were practiced. Many believed that mushrooms had properties that could produce super-human strength.

Early Cultivation

France was the leader in the formal cultivation of mushrooms. Some accounts say that Louis XIV was the first mushroom grower. Around this time mushrooms were grown in special caves near Paris set aside for this unique form of agriculture.

From France, the gardeners of England found mushrooms a very easy crop to grow which required little labor, investment and space. Mushroom cultivation began gaining popularity in England with more experimentation with spawn.

In the late 19th century, mushroom production made its way across the Atlantic to the United States where curious home gardeners in the East tried their luck at growing this new and unknown crop. However growers had to depend on spawn imported from England which, by the time it reached the U.S. was of poor quality.

First mushrooms farmers were florists. Since they grew flowers on benches, florists could just slide mushroom beds right under their flower benches and gain a profit in growing two crops in the area of one. Falconer also thought that mushroom growing was ideal for farmers who had access to growing their own manure and spawn. At the time skilled labor was not a necessity of mushroom growing. It was recommended to house wives as well as a source of home income.

The role of the mushroom in the nature

Unlike plants, mushrooms cannot synthesize their own food from the sun's energy. They lack chlorophyll - the substance which permits plants to use sunlight to form sugars from the water and carbon dioxide in the air. Mushrooms therefore had to develop special methods of living: symbiosis, saprophytism and parasitism.

Most of the mushrooms growing on the forest floor are intimately linked to trees by symbiosis. This association, called mycorrhiza, occurs between the root ends of a tree and the vegetative system of a mushroom. Mycorrhiza benefits both organisms: there is



an exchange of nutrients, one providing to other what it cannot synthesize or extract from the soil by itself. In general, the mushroom helps the tree extract minerals and water from the soil; in exchange, the tree supplies the mushroom with sugar compounds (carbohydrates).

Saprophytism is another important living method for mushrooms, especially for species which grow on lawns, on rotting wood or on excrement. Here the mushroom's role is one of decomposition. It feeds itself by digesting the organic matter and at the same time returns nutrients to the soil.

Finally, some mushrooms are parasites. There are several kinds of parasitism, ranging from the species which attacks a healthy host (tree, plant or insect) and lives on it without killing it, to the kind which attacks only unhealthy hosts, thereby hastening their death. The parasitic species are generally microscopic mushrooms.

Mushroom Nutritional Facts

The earth's soil is home to large populations of natural agents that help promote the environment. One of them is the fungi mushroom, which helps restore pollution-damaged habitats, acts as natural pesticides, and even provides a sustainable fuel called Econol.

While mushrooms have the ability to support Mother Nature, they are also capable of promoting your own health, from helping strengthen your immune system to preventing debilitating diseases. Some benefits that you may enjoy from consuming mushrooms are:

- Weight management - One study showed that substituting red meat with white button mushrooms may support a healthy weight.
- Improved nutrition - Adding more mushrooms to your diet may help improve diet quality.
- Optimal vitamin D levels- Eating certain mushroom species is seen in a study to be more effective than taking vitamin D2 supplements.
- Optimal digestive function - Mushrooms support your gastrointestinal health, thanks to their supply of dietary fiber and fungal enzymes.
- Antibacterial properties - Penicillin, streptomycin, and tetracycline are all derived from fungal extracts.

It's small wonder that mushrooms are now gaining a superfood reputation. We recommend you to add more of them to your diet or consume them indirectly through supplementation. But first, let us explain to you how mushrooms support your health.

What's Responsible for Mushroom's Benefits?



Mushrooms contain long-chain polysaccharides, specifically alpha- and beta-glucans. These molecules have beneficial effects on your immune system. In fact, did you know that medications like penicillin, streptomycin, and tetracycline are all derived from fungal extracts?

Other naturally-occurring compounds like fungal proteins, lectines, peptides, and laccases in mushrooms also support your immune function. In fact, studies show that mushrooms have cancer-fighting and anti-tumor properties.






Mushrooms are also great sources of protein, fiber, B vitamins (especially niacin), vitamin C, calcium, minerals, and selenium. They also contain antioxidants that are unique to mushrooms, such as ergothioneine, which according to studies is a highly powerful antioxidant. It is produced by fungi and certain mycobacteria found in soils.

A study published in the journal Nature states that ergothioneine is a derivative of the amino acid histidine. The antioxidant also contains sulfur, which may help protect your DNA from oxidative damage.

Mushrooms also owe some of their beneficial properties to the mycelium, a cobweb-like structure that is found in nearly all landscapes. Through the mycelia, fungi absorb nutrients from the soil. When two compatible mycelia join, they form mushrooms, which make spores. These spores, which fly away, are responsible for making new mycelial colonies.

In resume:

Mushroom Nutrition Facts	
Good Sources of	
Vitamin D	
B vitamins (Riboflavin, niacin, and pantothenic acid)	
Offer antioxidants	
Ergothioneine	
Minerals	
selenium, copper, potassium, betaglacans, and polyphenols	
Provide healthful dietary fiber	
Can act as "prebiotics" for the growth of probiotic gut organisms	
Low in calories and sodium	
Gluten-free	

MUSHROOMS ARE GOOD FOR:	
 Weight management	 Boosting your immune system
 Destroying cancer cells and/or facilitating nerve regeneration	 Improving nutrition and promoting better diet quality
 Eradicating viruses (including the flu and poxviruses like smallpox), bacteria (Salmonella and E. coli), and yeast	



Environmental benefits of the mushrooms

Mushrooms are not only good for health but also are good for the planet thanks to its decomposing properties and sustainable and low cost production, here after some of them:

- Cleaning polluted soil and restoring habitats near polluting factories. Examples in China are showing slow but high rate of successes.
- Potential source of fuel: Mycelium can convert cellulose into fungal sugar and maybe use to make mycelium base ethanol.
- Potentially curbing our reliance on plastics: Many projects are using mycelium to create a new material that could be use instead of Styrofoam and many other contaminating materials used in many different industries.

There are some well-known benefits regarding production and consume of mushrooms and some others with ongoing investigations but in our opinion, the best is yet to come for this organism and its development.

Producing mushrooms in Jiwa Damai

Mushrooms are fungi that can be grown as a small-scale crop like we want to do in Jiwa Damai organic center. The fungi grow from microscopic spawn that require moist, humid and dark conditions to turn into the fresh mushrooms. White oyster mushrooms are an easy starter mushroom to learn the growing and harvesting process, this is why we chose it to start our production but you can then branch out and try other varieties that are appealing to you.

Preparation

Choose a location with an air temperature of 55 to 70 degrees Fahrenheit and humidity of 80 to 95 percent. Build some plastic buckets with many holes in the sides. Cook the rice straw in slow fire for 1,5 hours, together with gypsum and let them drain for another couple of hours in a old pillow case or a cloth material bag, depending on availability.

Plant mushroom spawn on the compost once the growing medium stays at a consistent temperature of 70 to 80 degrees Fahrenheit. This temperature reduces the amount of ammonia odor in the compost to prevent killing the spores. Broadcast spread the spawn evenly over the compost and mixes it thoroughly into the medium. Introduce it on the buckets with holes.

Once everything is mixed and settle on the buckets, we have to put those buckets into darkness for 10 days, letting the mycelium spread all the media. To do this, we covert



the buckets with black plastic bags, make sure those are not close in order to let the oxygen pass; as well make sure the plastic bag is not stuck to the sides of the bucket, we avoid this by introducing some bamboo sticks on the top of the bucket. See the video tutorial for a better understanding.

After 10 days, remove the plastic bags the mycelium should have conquered the whole bucket, is now when the fruit starts to grow: the mushrooms.

After another 20 days you will see the first crops coming out from the holes in the sides and the top of the bucket. Don't forget to keep the humidity by spreading water on the space you cultivate the mushrooms.

Harvest

Mushrooms are ready to harvest about four weeks after you add the mix into the buckets. Small mushrooms called "pins" are the first to appear. These mushrooms are ready to pick once the cap starts to bend up. You want to harvest the mushrooms before the veil ridges under the cap open and stretch out. Twist the mushrooms at the base of the stem to remove them from the growing medium, instead of pulling on them, like that we allow to get more harvesting. We could harvest 3 or 4 times on every crop.