

The content of this article 'Basic manual for mushroom farming' was prepared by www.ecoagricultor.com and ecohortum.com and has been revised and republished by FreshFruitPortal.com.

Despite beliefs, mushrooms are easy to cook and combine very well with many other products.

However, farming mushrooms in your growing table in your garden is not so simple. Unlike other crops, mushrooms require great care and some powers of observation, as we are talking about a delicate and demanding crop.



History

The most popular species of mushroom is *Agaricus bisporus* and belongs to the Agaricaceae

family. This is the white mushroom, which in turn has several varieties.

The mushrooms were incorporated in the culinary arts at the beginning of the 20th century in Paris, France. Hence, at the beginning this food was known as "Paris mushroom". Nowadays this mushroom is consumed all over the world.

Sowing

The ideal temperature for farming these mushrooms is 12° to 14° C, with an environmental humidity of 75-80%.

However, they will grow without problems even if the temperature is between 8-18° C, i.e. cold to medium.

The originality of this product is that the CO₂ content of the environment plays a fundamental role during the farming process.

This should not exceed 0.1% and, for that, reason it is important to have a good environmental ventilation.

Unlike other crops, mushrooms don't have chlorophyll, so they cannot feed on mineral substances in the soil.

Therefore, they need to develop on a substrate such as manure to satisfy their needs.

For a good development, it is necessary to pay attention to several parameters: nutrients, temperatures, humidity, carbon dioxide, etc.

Farming is done in caves, cellars, mines or tunnels, i.e. dark and cool places.

You may grow your mushrooms in special bags designed for this purpose that are ideal for the most inexperienced growers or do it in wooden trays 6 inches deep filled with substrate.

When the compost temperature reaches 23-24° C it is time to inject the mycelia (the mass of hyphae that forms the vegetative structure of a fungus) into the substrate using a plastic syringe.

It is important to keep the substrate warm for two weeks to stimulate the mycelium and white roots growth.

It's ideal a temperature of 21°C, so you may use a heating pad.

When you see that roots have formed, remove the heating pad because from now on the substrate temperature should be cold.

Cover it with a layer of soil or moss and place a thin cloth over it for about 10 days.

Plastering hinders the development of the fungus mycelium and forces it to bear fruit.

Finally, remove the layer and continue to moisten the soil twice a day until the first mushroom shoots appear.

Reproduction and farming

The mushroom reproduces through the mycelium, that is, the thallus or nutritional mechanism of fungi, which is made up of a set of filaments or hyphae.

The fertile part of the mushroom is found in the so-called hymenium, formed by lamellae located in the lower part of the cap.

The mycelium contains the spores (conidia in fungi) from which, once farmed, new fungi will grow.

This is purchased in blocks in specialized stores for its use, which is very simple.

An interesting issue: mushroom picking enthusiasts in the field use net bags to introduce them; thus, while they walk looking for mushrooms, the remains adhered to them are released on the ground, thus scattering the mycelium that will be used for the farming of subsequent crops.



Cultivated mushroom mycelium (*Agaricus bisporus*)

Mushroom farming is carried out in dark places (caves, cellars, cellars, etc.), in sacks or crates built for this purpose.

A suitable size of the boxes can be half a meter wide, a quarter meter high and a quarter meter deep.

As substrate we will use a mixture that we will arrange in the crates in layers of the following form:

First layer (bottom of the crate): we place first a third of straw (preferably wheat, but it could be barley or oats).

Second layer: another third of peat mixed with some sawdust is placed on top of the first layer. Another option is to use sandy soil.

Third layer: finally, the whole is covered with well crumbled manure. Another option is to use horse manure.

Once the substrate has been layered in the crates, we take the mycelium and crumble it on

top of the last layer of manure.

Then we cover everything with peat and water, but not too much to prevent excess moisture from forming mildew.

From this moment on, water frequently but not abundantly, as we already mentioned, preferably using a spray gun or a watering can, never jetwatering.

Mushroom farming requires darkness (light kills them).

We will place the crates (they can be stacked on top of each other) in the cellar or basement that we have chosen, taking care that there is always a certain humidity; the ideal for this crop is 80%, which we can control through a hygrometer.

Good ventilation is also necessary. Temperature should not exceed 20° C.



Harvesting

We can get mushroom harvests seven weeks after its farming, harvesting every three days

and before the ring the mushroom has next to the cap cracks.

They are harvested in the dark. Take them out with a screw-shaped twist. They are also stored in the dark.

Plagues and diseases

As already mentioned, mushrooms are greatly affected by excess humidity, which would result in mildew difficult to attack with fungicides; the only way to solve this problem is through prevention.

After each harvest it is advisable to disinfect the crates before using them again.

When farming mushrooms in your home garden you should know that the most known plagues are certain mites, some nematodes and various insects:

- Tyroglyphus sp. (mite) produces irregular cavities in the volva and cap.
- Linopodes sp (mite) causes the roots of the fungus to split.
- Tarsonemus sp. (mite) causes irritation to workers.
- Diptera: plague whose larvae spoil the fungus mycelium causing fruiting failure and damage already formed mushrooms.
- Beetles produce small oval holes on the cap.
- Nematodes destroy the fungus mycelium.

The most common diseases are:

- Bacterial spot or "drop" causes yellowish sticky droplet-like spots on the cap.
- Dry bubble causes deformations and ends up rotting the mushroom.

Essential care

Farming mushrooms in your garden at home is complicated, but it can be done with greenhouses with dark cover to facilitate their development. Here are some basic tips:

- The substrate is usually natural manure, preferably horse or donkey manure. It should come from tame animals that don't eat fresh fodder or green food, as it should be composed of wheat or rye straw.
- Different types of mushrooms require different types of substrates.
- The ideal and continuous temperature for farming is 12-14° C. Below 10° C, farming is very slow. If it exceeds 18° C, the mushrooms are deformed and there is a higher

diseases incidence.

Source: www.ecoagricultor.com, ecohortum.com