

IN THE ENCHANTED KINGDOM OF MUSHROOMS



Mushrooms have roots, but they are not plants and they have meat, but they are not animals. Protein-rich foods mushrooms contribute a delicate tone to the presentation of dishes and even intensify the flavors, as they are sources of umami the fifth taste of the human taste. Fungi are the most important degradation agents on earth and are therefore largely responsible for the maintenance and growth of forest ecosystems.

Worldwide there are over ten thousand mushroom species and two thousand are considered edible and only twenty are commercially produced.

The mushroom production process requires daily control at each stage and depending on how the compost is produced the taste of the mushroom may change. Thus, care begins in the production of the organic compound that is sterilized, passes through the inoculation of the fungi that is done in a controlled environment and continues in the cultivation of mushrooms kept in climatic environments until the moment of sale.

When it comes to mushrooms, the options seem to be endless from types, shapes, colors and textures to the taste and properties that match a multitude of preparation forms. The therapeutic use of mushrooms is as old as their use in cooking.

In modern cooking mushrooms are one of the most appreciated items by chefs, cooks and researchers and in health care they are one of the most beloved by nutritionists, vegans,

vegetarians and the sustainable and healthy cuisine and the routine consumption of mushrooms is recommended. balanced diet because in addition to the low-calorie value and nutrient richness mushrooms are abundant in immune stimulating substances like cytokines that naturally activate the defense cells and have powerful antitumor action.

Mushrooms are known as the meat of vegetarians and are almost unanimous between those who consume animal protein or not and the flavors range from the most striking to the most subtle and can increase a multitude of recipes.

Mushrooms can be made grilled, fried, baked, sautéed and in an infinite number of ways and can be combined with vegetables, meat, cheese, pasta and whatever the imagination allows. Mushrooms, in addition to giving a special and different flavor to meals, have some health benefits as they are generally low in fat, calories and sodium and are great sources of protein, fiber, B vitamins and some minerals like potassium, selenium, copper and zinc.

The amounts of each of the nutrients may vary depending on the mushroom variety and the soil in which it was grown, but in general all mushrooms have greater or lesser nutritional properties.



Some of the benefits provided by mushrooms can be:

1. Weight Management - Mushrooms are high fiber foods and offer plenty of satiety for those who eat them. The mushrooms in the composition have two types of fiber, beta glucans and chitin compounds that help maintain satiety and reduce appetite. In addition, fiber consumption is essential for the proper functioning of the digestive system and may contribute to weight control.

2. Diabetes - Fiber can also be a good ally for people with type 1 and 2 diabetes, as it can help control blood glucose and insulin levels. Thus, in a cup of grilled Portobello mushroom tea or a portion of sautéed shitake, you have at your disposal about 3 g of fiber that in addition to helping with diabetes control can reduce the risk of heart disease.

3. Cardiac System - The combination of fiber, potassium and vitamin C contained in mushrooms is very beneficial for the health of the heart system. Also, because they are low in sodium, mushrooms can help lower blood pressure and the risks of some heart disease. Some experts claim that regular consumption of 3g daily of betaglucan fiber can lower cholesterol by up to 5%. The shitake mushroom is a great source of beta glucan which can also be found to a lesser extent in other mushrooms.

3. Anticancer action - Antioxidant-rich mushrooms have the power to block the action of free radicals that are responsible for triggering some cancers and other chronic diseases. In addition, the presence of selenium is also a good indication of the anticancer action of mushrooms because the rare mineral found in natural foods participates in the enzymatic action of the liver and helps detoxify some cancer-causing compounds. In addition, selenium helps fight inflammation and may slow the growth of some tumors.

4. Immune System - Selenium is also responsible for improving the immune system as it stimulates the production of cytotoxic T lymphocyte a compound responsible for killing cells that could threaten the proper functioning of our body. In addition, the presence of beta glucan fibers can also help the immune system as it can prevent tumor formation and inhibit cancer cell growth.

Mushrooms can be divided into three main groups or families the lamellas, the tubulars and the tubers like truffles and each one has its own characteristics and ways of developing. Latin names such as plants and flowers identify them internationally. However, the same fungus may have more than one name depending on how many people claim its discovery.



The lamellate form the majority with hundreds of varieties and their main feature is the lamellae or blades under the hat and the blades is that the fungus develops the spores that are tiny seeds invisible to the naked eye and to see the spores you need to put the slide with coverslips on a piece of paper and after a few hours the microscopic spores will leave an imprint on the paper. Thus, as a fingerprint

each mushroom will leave its mark, unique in color and shape and the most widespread is the *Agaricus campestris* a wild variety.



The second type of fungus and no less common than the laminate is the tubular genus *Boletus* and related. Thus, unlike lamellates, they have bundles of small tubas under the hat and their tubas are invisible to younger fungi when the plant is still immature, but they develop over time and harbor the spores allowing reproduction.

The mushrooms belonging to the group include the famous porcini which with the chanterelle or chanterelle and the spugnola or morel are probably the best edible mushrooms in the world.



The third type of fungi are the tubers and the spores they produce on their surface are scattered not by wind or rain but by insects and their larvae. The truffle is the most famous member of this group and the best ones have fine and striking flavor and aromas that reach very high prices in the market.

On the other hand, they look like potatoes and grow under the ground which makes it difficult to find and so are trained dogs and were previously pigs, because the smell makes it possible to find the truffles.

The life span of a mushroom depends on weather conditions and determines whether it will be from one day to several days from the time they grow to maturity and the best are at

mid-life. However, the smallest ones should be avoided as they look tender and very tempting, but when they mature the aroma deteriorates, the proteins begin to degrade and as they get older, they attract more larvae.

When preparing mushrooms for cooking you should not wash, but wipe with a clean damp cloth and only wash if it is chanterelle or morel mushroom, as they may sometimes have sand on their coverslips and require them to be washed under running water and some of the water. flavor will be lost.

In order to clean the mushrooms, care must be taken not to leave larvae or spoiled parts, and both mushrooms collected in the field and those purchased at markets may have their stalks reserved for later use, either fresh or pickled, but must remain in the refrigerator and for a short time.

Lastly, it should be known that mushrooms need to be cooked and eaten when collected and not left out later because proteins degrade rapidly.

On the other hand, keeping these precautions the mushrooms are fantastic and one way to prepare is simply to slice and sauté in butter or olive oil and with a small clove of garlic, parsley and sometimes sliced red pepper. Following are some of the most common types of mushrooms found in nature or cultivated and used in cooking.

ITALIAN MUSHROOMS

Delirious Agaric or Milk Mushroom (*Lactarius deliciosus*)

One of the nicest of the Agaric family is the yellow-orange hat mushroom belongs to the subspecies *Agarico lactarius*. The mushroom when cut or broken releases a saffron-colored milky substance about 4 to 6 cm high and has a thick, flat and fleshy hat, forming concentric circles with a depression in the center. The brim of the hat faces inwards and the coverslips underneath have the same orange-yellow color as the saffron, as well as the straight, hollow stem.

In Calabria the mushroom is known as sanguinello or sanguigno fungus because of the reddish color of its milk.

Absolutely delicious mushroom with its gently resinous nut flavor. However, you should be aware when buying or collecting to see if there are no larvae and to test just cut the mushroom in half and it is necessary to cook well, otherwise it will be indigestible.

The mushroom is not suitable for drying, but it can be frozen and the best way to enjoy it is cooked with olive oil, a small clove of garlic, parsley and red pepper.



Orecchietta or Ear of Priest (*Auricularia aurcula*, *Auricularia judae*)

The Italian name orecchietta comes from the fact that this mushroom looks like the human ear. The mushroom is brown in color and has a velvety texture on the outside and shiny inside and grows in colonies on top of each other all year round and even in winter if the weather is mild and humid.

The mushroom has no lamellae and no pores and instead the spores are produced inside the mushroom and spread on the bark when wet and are much sought after in China where its gelatinous consistency is appreciated in many dishes.



The mushroom is not widely used in Italy, although it is prepared sautéed in olive oil or butter with garlic, red pepper and parsley and should be cooked over low heat as steam bubbles can form inside the mushroom and burst by splashing hot fat.

On the other hand, if it is possible to get a large amount it can be dried and stored for future use and rehydrated to life size and it is possible to buy it at specialty oriental stores.

Cantarello or Chanterelle (*Cantharellus cibarius*)

The mushroom is also known by several other names in Italy and girolle in France. Thus, the fact that almost all regions of Italy have a different name for the mushroom shows how popular it is.

Like porcine chanterelle is available during summer and fall in almost every specialty house, though with its high price and subtle taste chanterelle is also popular because of its bright yellowish-yellow color, size, firm shape and attractive and its thick texture.

The mushroom resembles a funnel with an irregularly shaped hat and its coverslips are slightly loose and fall along a few inches tall stalk and are quite abundant and grow in large clumps on the mossy soils of cold, moist forests. Chanterelles fragrances are delicious just fried in butter with a bit of shallots or small round minced onions and chervil or parsley and some people add sour cream to the dish, but it can mask the delicate flavor.

The mushroom can also be served with scrambled eggs or in omelets or can be used as an accompaniment to steamed fish and meat dishes. On the other hand, chanterelle can be preserved in many ways and even pickled with vinegar to be tasted as antipasto and can be frozen or dried and is the most effective method to maintain its color and shape than taste and serve. to be cured with sugar to be used as a decoration in exotic desserts.



Chiodino or Honey Mushroom (*Armillaria mellea*)

In the fall the mushroom can be found modestly priced at all Italian fairs and is feared by foresters and vegetable orchard owners because of the parasitic habit of feeding not only on decaying wood but also on the sap of living trees which is too much. makes it a threat to the trees. The Italian names chiodino and famigliola refer to their shape and chiodo means nail and to the famigliola growth pattern indicating that they grow in compact groups and in Latin mellea means honey and where the name comes from.

The small heads grow together in a long stalk and are initially rounded, the color of honey, with the top and center black. The coverslips are initially white but creamy brown when the hat is opened. The best time to harvest is when they are closed, otherwise they will become brittle and brittle.

Armillaria mellea is only consumed after cooking and is toxic when raw. Before use it should be boiled in salt water for a few minutes and then discard the water as toxins remain in the water.

The mushroom can be added to tomato polenta sauces, used to prepare delicate risottos or to give pasta a special flavor. One way to eat the mushroom is to sauté in extra virgin olive oil with garlic and red pepper and then season with lemon, salt, parsley and black pepper as a cold salad.



Lingua di Bue or Bull Tongue (*Liver fistulin*)

For the mushroom each country uses a name according to what it looks like to each one. Thus, its name in Latin means liver and in Italian ox language and can be known as poor steak.

Lingua di Bue belongs to the Polypore family which indicates that the underside of the hat is made up of a large number of pores and grows on shelves in old oaks and sometimes

chestnut trees. Despite the fungus feeding on the tree, the mushroom returns a resinous liquid to the parasitized oak that dyes the wood red and makes it required by the furniture industry.

The mushroom grows from late summer to early fall and is about 25 to 30 cm in diameter and is dense, moist and very heavy and some specimens weigh up to 2 pounds. The surface of the hat is sticky and dark red and the underside is rosy and when cut the mushroom secretes a blood-like liquid that dyes any sauce in which it is cooked.

The ideal way of preparation is to select the new mushrooms, clean well and usually are not infested with larvae, finely chop. Then rub half of one garlic in a pan, add butter and olive oil, let butter melt over moderate heat, add mushrooms and fry for 5 minutes. Finally, add two tablespoons full of sour cream, salt and finely chopped fresh dill.



Mazza di Tamburo or Parasol Mushroom (*Lepiota procera*)

The mushroom when mature hat reaches up to 20 cm in diameter on a thin stalk of 30 cm high deriving the name umbrella. The mushroom belongs to the *Lepiota* family and has fairly thick, cream-colored coverslips when young, becoming pinkish as they age and the hat is oval or round and comes from a thin, brownish stalk. As the stem grows the hat opens and its surface begins to flake from the top sprinkling its brown skin with white dots and is plentiful

from late summer to winter, growing in small groups or alone under pines, in fields near forests and sometimes in large lawns.

Mushrooms should be thoroughly cleaned, making sure they are free of larvae before cutting and sautéing or preparing in various other ways. One of the best is that typical of Veneto, where the mushroom is particularly popular and beat together an egg, some chopped parsley and black pepper. To prepare, remove the hat from the stalks, mix with egg and fry on both sides in a generous amount of olive oil and serve sprinkled with salt and a little lemon juice.



Amanita Cesarea or Ovoli or Caesar Mushroom (Cesarean amanita)

The mushroom named after the Roman Emperor who was passionate about the mushroom is one of the most sought-after mushrooms in Italy and perhaps even surpassing the popular porcine and for the extreme delicacy of flavor and attractive colors the mushroom grows under oaks and chestnut trees in climatic places. hot and dry as in southern Italy, but particularly popular in northern Italy.

The mushroom can reach 8.5 cm in height and its bright orange hat is up to 20 cm in diameter with orange-yellow fleshed coverslips and pulp and as an adult a yellow circle appears

on the stalk. As it grows it looks like a large white egg from which the yolk erupts and deriving its Italian name *ovoli*.

Italians love to eat raw, finely sliced salads with truffle slices seasoned with extra virgin olive oil and a few drops of lemon juice.



Pleurotus or Oyster Mushroom (*Pleurotus ostreatus*)

Nowadays, the mushroom is grown and so it can be found all year round far from its natural habitat in decaying trees that give pleasant aroma and strong flavor.

Like other mushrooms belong to the large *Pleurotus* family and the most common is the *ostreatus* with the name for resembling an oyster and attaches to beeches and elms and can even destroy and forming various shelves.

If there are ideal conditions of temperature and humidity it can grow all year round and even during a less harsh and flat-shaped winter it has a short stalk and the color varies from dark gray almost blue to cream gray.

There is a type called a cornucopioid that is similar to a funnel-shaped horn or horn that is pale beige and the lamellae under the tongue are slightly greyish tending to yellow or cream.



The mushroom is delicious when dipped in beaten egg, passed in breadcrumbs and fried with plenty of olive oil and can be brushed with olive oil and charcoal grilled or prepared sautéed in olive oil with garlic, red pepper, parsley and lemon juice and served in salads.

Porcini (*Boletus edulis* or *Boletus* spp)



Mushroom in Italy is synonymous with porcini the king of all edible mushrooms. The mushroom's popularity is a result of its usefulness in the kitchen and its appearance, and there is a wide variety of *Boletus* fungus, but few are good. The first to be avoided is *Boletus felleus* which is so bitter inedible and the second to be *Boletus satanas*, which is as poisonous as it is ugly.

The good ones are *Boletus reticulatus* found from early May to June and from August to September and its name comes from *rete* meaning net because of the typical net pattern of its stalk.

Boletus pinicola can be considered the best of all for its dark chocolate brown color, its fleshy hat and solid stalk that appears from late summer until autumn in coniferous forests growing in ordinary red pines.

Boletus aureus often mistaken for excellent *pinicola* is equally delicious and *aureus* is more common in the South and the best come from Calabria, Sardinia and Campania, where the weather is warm and the oaks are abundant. The most intense brownish red color differs from the other types of *boletus*.

A common feature of the three varieties is that initially the spores have a whitish cream color and change to pale green or dark green and when they reach maturity the hat reaches 30 cm in diameter and the stalk is bulky even when the mushroom is small and for long. This is called *porcini* which means piglet in Italian.

The industry that has sprung up around the fungus includes large and small companies, all of which are located near the areas where mushrooms grow so that the time between harvest and transport is as short as possible. The best source is the mountainous part of Emilia-

Romagna, but can be easily found in other regions like Piedmont, Lombardy, Veneto, Trentino, Tuscany, Umbria, Lazio, Campania, Marche, Abruzzo, Calabria, Basilicata, Puglia and Sicily.



However, not with the same abundance can be found in Emilia-Romagna and Sardinia. Thus, all regions have developed specialized industries for canning mushrooms through canning in olive oil or dehydration.

On the other hand, because of the high demand porcini are also imported from distant countries like Poland, Russia, Turkey, Romania and even Morocco and Tunisia. However, the specimens brought in from abroad do not match the fragrance and flavor of those produced in Italy, which means that Italian families keep their own mushrooms as a guarantee of the highest quality.

In cooking the porcini has a position of honor and during the season specialized restaurants prepare in various ways. The large but still new hats are grilled or sliced, dipped in beaten eggs, breaded and fried in plenty of olive oil. It is probably the only mushroom that remains creamy white even when done and the texture and taste are unmatched. Porcini trifolati is a fantastic dish, but porcini also looks great in stews or soups, in pasta sauces or as an accompaniment to polenta, meat, sometimes fish and great with risotto.

Smaller and firmer porcini make a wonderful salad. So, first clean and slice the porcini



finely, settle on a plate, put extra virgin olive oil and lemon juice, sprinkle with salt and black pepper and serve with grissini.

The mushroom to be stored in the freezer is best cut into slices about 5 mm thick and sauté for 10 minutes in enough butter with chopped onion and divide the mixture into small trays, let cool and freeze and the butter will isolate the Ice mushrooms.

Prataiolo (*Agaricus campestris*)

The mushroom is mainly grown all year round in dark rooms with temperature and humidity control. The spores are mixed with manure and sterile straw and spread in large trays and after 2 or 3 days begin to sprout. Mushrooms are cut manually when they reach the desired size and tastelessly grown mushroom has many uses in everyday cooking.

The wild version of silver that the French call pre rose or field rose is very delicate and available from August to November and growing close to the ground among the short grass of the pastures especially where there are horses.

Prataiolo is part of the genus *Agaricus* and includes many other edible varieties. Among the best varieties are *Agaricus silvicola* that grows between conifers and silver white *Agaricus macrosporus* that prefers high-altitude pastures and has a ring or skirt around the stalk and rosy lamellae that darken over time.

Another family mushroom that has been successfully grown is the *Agaricus bisporus*, where hat can reach 10 in in diameter and is slightly brown at the top and the largest of the group is the *Agaricus arvensis*, or a giant horse mushroom with hat. up to 30 cm in diameter and has the same ring around the stalk and the typical rosy lamellae that like *macroporus* turn almost black over time.



Prataiolo is very versatile in the kitchen and is used in infinite ways from raw salads to sautéed in butter, omelette or fried with garlic and parsley and you should never remove your skin so that all its flavor is not lost, but just clean with a damp cloth and a knife cut the base part with earth or sand.

Trumpet dei Morti or Trumpet of the Dead (*Craterellus cornucopioides*)

The macabre Italian name *Trombetta dei morti* which means trumpet of the dead and does not match the beauty and taste of the fragile, slender funnel-shaped mushroom that is black inside and grayish outside and is a very delicate fungus and grows only a few centimeters. However, it is not at all difficult to find the mushroom, as they arise abundantly from summer to fall in small groups in mixed forests and almost bare soil.

To clean the mushroom it is necessary to remove the base so that it can be seen through the funnel making sure that there is no insect or leaf stuck in the fungus and after cleaning it can be gently sautéed in the butter and used to accompany a steamed fish, especially in a sole filet dish in which its black color and delicate aromas and flavor contrast with white fish and is very popular with professional chefs and can be prepared in the same way as chanterelle.



Cardoncello (*Pleurotus eryugil*)

The most cherished of the mushrooms known as pleurote. The mushroom gets its name from sprouting in tufts of its bases, exposed roots and fallen branches of thistles.

The mushroom in southern Italy is celebrated in October with the Sagra del Fungo Cardoncello.



Morchella or Morille (*Morchella edulis*/*Morchella deliciosa* /*Morchella conica*)



The mushroom has a very different shape resembling a bee hive. The mushroom is among the types of edible mushrooms most consumed by the French such as Portobello and the mushroom Paris or champignon.

The taste is striking and unique with a very pleasant texture and just sauté with butter to highlight its flavor and the mushroom is ready to be served as a side dish.

JAPANESE MUSHROOMS

Shiitake (*Lentinula edodes*)



The shiitake has a broad hat with a dark brown top and the rigid texture of the fresh mushroom acquires a juicy consistency when cooked. The woody aroma is unique and is even more evident when the mushroom is dehydrated. The mushroom has a high guanylate

concentration responsible for the umami taste sensation and is an essential element in making dashi broth used as a seasoning base for many Japanese dishes.

Shimeji (*Lyophyllum shimeji*)

Shimeji grows into small bunches that can be easily separated by hand. The small rounded hats and the long thin rods can be used as the main star of the dish or in more complex

preparations. The mushroom combines with dishes with creamy and light sauces, risottos and fish and even after cooking maintains a firmer and slightly crunchier texture.

On the other hand, there are differences between white shimeji and black shimeji and it is not just the color that changes between the two types of mushrooms. White shimeji and black shimeji are actually different species of mushrooms and white shimeji is more rustic and more fibrous and blacker shimeji is more delicate and needs a higher production investment. In addition, black shimeji has a stronger aroma and flavor.



Hiratake (*Pleurotus ostreatus*)

The mushroom grows with the widest, flattened semicircular flap that resembles that of an oyster. The mushroom is a more rustic type that needs little care to grow and can be found in different colors like salmon, white and gray and has a crispy, fibrous texture and slightly sweet taste.





Enoki or Enokitake (*Flammulina velutipes*)



A mushroom considered winter, because it grows best in environments with lower temperatures. The thin white stems have a small umbrella at the end and are soft, smooth in taste and slightly sweet. The delicacy of the mushroom combines with salad dressing and stew finishing in which it is added at the time

of serving to prevent overcooked.

Kikurage (*Auricularia auricula*)



The Japanese denomination for the wooden ear mushroom. The mushroom has nice consistency, but taste is almost nonexistent. Mushroom typical of Asian cuisine, found dry and increases more than five times the volume when soaked and absorbs the taste of the broth

or sauce in which it was sautéed or cooked. The mushroom is known by the Chinese as mu er.

Nameko (*Pholiota nameko*)



The mushroom is orange and has a soft, moist texture with a gelatinous outer layer. The mushroom is widely used by the Japanese in the preparation of missoshiru a soup seasoned with fermented soybean paste and helps to thicken broths naturally.

The soft taste of the mushroom with brownish notes can also be emphasized in sautéed preparations.

Eryngui (*Pleurotus eryng*)



Mushroom also known as Thistle mushroom the eryngui is one of the fleshy mushrooms. The soft consistency is as soft as its grayish color and allows you to enjoy both the hat and the base for sautéing with butter and sake or pairing with vegetables or thin slices of meat.

Maitake (*Grifolia frondosa*)



Japanese name for the internationally recognized mushroom as hen-of-woods and as the other Asian mushrooms is widely used in the cuisines of China, Korea and Japan in light sauteed, soups or broths or their application in omelets, salads and rice garnish.

The mushroom has a delicate almost floral taste and when cooked it does not lose its original shape as it has a firm texture.

On the other hand, in the West, where it arrived through the kitchen, has been researched for its properties to prevent liver cancer.

Carapuçu (*Lentinus velutinus*)



Variety of edible but underexploited mushroom and shitake counterpart.

FRENCH MUSHROOM

Cèpe (*Boletus edulis*)



Word of the dialect gascon cep trunk, reference to the feet of the pines of the outskirts of Bordeaux, where the hat mushroom and fleshy feet is found and also known as gros pied.

The mushroom is rarely found naturally and is more prized to dry, as it concentrates the flavor even when rehydrated and provides sauces, soups and bases of stew and risotto.

The same cultivated and abundant mushroom is one of the favorite wild species of the truffle and mushroom hunters, mainly in France where varieties such as the cèpes de Bordeaux and cèpes d'été are distinguished.

Girolle (*Cantharellus cibarius*)



Greek word kantaros cup, container, reference to the cup shape of this typical yellow hat summer edible mushroom and also known as Cantarello or Chanterelle in Italy.

The mushroom species is common on all continents and was described in 1581 by Lobelius and cataloged in 1601 in the *Fungorum Historia*.

A rare mushroom to find fresh in the market and the most common is to find dried or pickled salted.

Mushroom Paris or Champignon Paris (*Agaricus bisporus*)

The Paris mushroom is perhaps the best-known mushroom mainly for being sold in its pickled version. The mushroom has a mild but very pleasant taste and a very interesting texture.

The color is pulled to brown and can be prepared braised or roasted and goes a long way with vegetables, herbs and cheese.



Portobello (*Agaricus bisporus*)



The mushroom is one of the most popular types of edible mushrooms, as it is champignon in its more mature version. The shape is the same and the size is bigger and the taste is very mild compared to other mature mushrooms.

The texture is firmer and very reminiscent of meat and is therefore used in some recipes as a substitute for animal protein, especially when it is made on the grill or on the grill accompanied by

strong cheeses to counteract its mild flavor.