

The Oyster Mushroom (*Pleurotus ostreatus*)

The oyster mushroom is an edible species in the class Agaricomycetes in the division Basidiomycota. The agaricomycetes include most mushrooms, which makes large fruiting bodies, which often can be seen during a walk in the forest. The oyster mushroom is a white rot wood decay saprotrophic fungus. White rot meaning it breaks down the lignin in the wood, as opposed to brown rot which leaves it intact. The mushroom can be found on deciduous trees, often beech trees.



Liquid Fungi (n.d.) Pearl oyster mushroom plug spawn dowels (100). Available at: <https://www.google.com/search?aei=surl=https://338%2F2Fliquidfungi.com/%2Fproducts%2Fpearl-oyster-mushroom-plug-spawn-dowels-100&sig=8v0vaw2XNADI8zhvUv29aOg6LQwykust=1733141213747400&source=images&oeq=yfe&oi=89978449&ved=0CBOQRzpfwTCkKqgULhhoDQIAAAAAAIAAAAAAIA> (Accessed: 1 December 2024).

The oyster mushroom grows like most Agaricomycetes, starting as a basidiospore formed from a basidium. The spore is spread and when in favorable conditions starts growing a haploid mycelium. Two mycelium with different mating types meet and fuses and then start producing the fruiting body, which is the part of the mushroom we eat.



Fat Moon Mushrooms (n.d.) Oyster mushroom grow kit. Available at: <https://fatmoonmushrooms.com/products/oyster-mushroom-growkit> (Accessed: 1 December 2024).

Growing oyster mushrooms at home has become very popular since they are relatively easy to grow and you can buy prepared kits where you just need to keep the environmental conditions right for them to grow. The mushroom's use in food culture, especially in east asian countries makes it an economically important fungi. The mushrooms are nutritious and have been linked to promote heart and immune system health, provide anti-inflammatory and antioxidant effects, and support blood sugar level control.

Did you know that the oyster mushroom can break down plastic? Research found that species of oyster mushroom could break down microplastic in cigarette butts, as well as PET plastic, commonly used in plastic bottles. Using fungi to break down environmental pollutants is called mycoremediation and it is a very interesting research area which will probably only become bigger in the future. Another interesting fact about oyster mushrooms, they are actually carnivores! Yes, as their usual wood diet is low in nitrogen they also consume microscopic nematodes. When the worm is passing by, they release a toxin which paralyzes and kills it. Then the mushroom consumes their flesh.

In summary, the oyster mushroom is a versatile mushroom, which can be used both as a nutritious food source but also as a way to clean up environmental contaminants. The mushroom should continue to be cultivated and researched as a large scale production could be useful in the future.

References

1. **Agaricomycetes - an overview** (n.d.) *ScienceDirect Topics*. Available at: <https://www.sciencedirect.com/topics/biochemistry-genetics-and-molecular-biology/agaricomycetes> (Accessed: 1 December 2024).
2. **Life cycle of an oyster mushroom** (n.d.) *GroCycle*. Available at: <https://www.grocycle.com/blog/oyster-mushroom-life-cycle/> (Accessed: 1 December 2024).
3. **How to grow oyster mushrooms: The ultimate step by step guide** (n.d.) *GroCycle*. Available at: <https://www.grocycle.com/grow-oyster-mushrooms/> (Accessed: 1 December 2024).
4. **Can mushrooms really break down plastic?** (2021) *EcoWatch*. Available at: <https://www.ecowatch.com/mushrooms-break-down-plastic-2650806634.html> (Accessed: 1 December 2024).
5. **The toxin that helps oyster mushrooms devour worm flesh** (2022) *The New York Times*. Available at: <https://www.nytimes.com/2022/06/14/science/oyster-mushroom-toxin-worms.html> (Accessed: 1 December 2024).
6. Phillips, R. (2006) *Mushrooms*. p. 266. London: Pan Macmillan. ISBN 0-330-44237-6.