

PERMAFUNGI – INNOVATIVE TECHNOLOGY TO RECYCLE USED COFFEE GROUNDS IN BELGIUM

[Permafungi is a social cooperative](#) that operates in Brussels (Belgium) since 2014 recovering used coffee grounds, an abundant urban waste, to produce oyster mushrooms Pleurotus.

Following a circular economy approach, *Permafungi* produces 1 ton of fresh oyster mushrooms and 10 tons of fertilizer each month, meanwhile it recycles 5 tons of used coffee grounds collected in bars and restaurants in the city.

Permafungi is based on an innovative technology that transforms coffee grounds, an abundant organic waste, into Pleurotus mushrooms, fertilizers and chicory. The coffee grounds, thanks to their microelements, are in fact an ideal substrate to produce mushrooms. In the process, the fungi turn the coffee grounds into an excellent soil 100% natural, the compost, and such fertilizer is used to grow other vegetables in the farm Nos Pilifs of the Cooperative. In addition, the cooperative recycles part of the waste from the production of mushrooms into a biodegradable material capable of replacing plastic, making the LumiFungi lamps.

The coffee grounds are collected by the cooperative using bicycles, which take a tour of the restaurants and bars of Brussels and the sales of new *Permafungi* products are made by bicycle, too.

[The 2018 Report of the Permafungi Cooperative](#) shows the results of great social, environmental and economic impact achieved with the innovative technology adopted. In particular, in the year 2018 the cooperative achieved to:

- Produce and sell 10 tons of fresh and organic mushrooms, recycling 39 tons of coffee grounds, with an increase of 33% compared to 2017.
- Produce and sell 7.5 tons of fresh and organic chicory, grown on land using the compost and rainwater.
- Produce and sell 85 LumiFungi lamps, achieving the ambitious objective of creating a new material transforming the residues of mushroom production.
- Sensitize more than 7,000 people to the circular economy and social entrepreneurship approach through visits, team building and professional training.
- Produce and sell more than 3,000 kits to persons interested in producing mushrooms and recycling coffee grounds at home.



The process to produce mushrooms from coffee grounds is developed in the following stages:

- *Inoculation.* The coffee ground is mixed with straw and mycelium in a sterile room to prevent other unwanted microorganisms from growing in the substrate. Once mixed, the substrate is placed in large bags.
- *Incubation.* The bags are placed in an incubation room for approximately 2 weeks. During this stage the mycelium will *colonize* the substrate and breaks down the coffee grounds that become white during the process. This stage takes place in a clean room, in the dark and under a rough temperature of 20°.
- *Fructification.* When the mycelium has eaten all the coffee grounds it is ready to fructify and the bags are placed in an enlightened, cool and very wet room. In a few days, the mycelium grows into beautiful oyster mushrooms ready to be harvested. Each bag produces generally 2 or 3 harvests, while production residues are recovered as a breeding ground for other vegetables.

The *Permafungi* cooperative is inspired by the principle that there is no waste in nature. Considering that 7 million tonnes of coffee grounds are produced every year worldwide, *Permafungi* works to recycle this waste through mushroom cultivation and to promote this approach in Belgium and with all interested stakeholders.

In 2018, 25 potential future entrepreneurs from various countries visited the cooperative to learn the method with a view to duplicate the project in their city.

This extraordinary cooperative develops the local economy by creating sustainable and qualified jobs. *Permafungi* is an example of a circular economy in action, eliminating a residue of food and creating new qualified, organic and widely consumed products. Its plans are to continue to create new ecological innovations and implement new measures to minimize the environmental impact, compensating the residual impact that can not be eliminated and converting the production process into neutral CO2.

Permafungi is associated with the Transition Towns movement and Network, and participates to this movement with the purpose to promote the sustainable development articulating in its approach and practices the social, economic and environmental aspects.

To know more

[Permafungi website](#)

[Permafungi in Facebook](#)

[Prix belge de l'énergie -bx1.be](#)

[Permafungi in wave-innovation.com](#)

[Article in lavenir.net](#)

[Article in environnement.brussels](#)



[Article in lecho.be](#)

[Article in foundationfuturegenerations.org](#)

[Article in carnetsdenormann.com](#)

[Permafungi in stemgarden.co](#)

[Articulo en dot-to-dot.be](#)

[Transition Network website](#)

