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# Five ways fungi have shaped the world

## 95% of plants, including trees need fungi to thrive

Fungi form important partnerships with plants, including trees. The fungal mycelium (this is an underground network of fungal threads) grows with plants and trees, sometimes on the outside of the root and sometimes growing inside it. Over 95% of all plant species have a fungal partner. The fungus provides water and nutrients that the plants can't get easily from the soil and the plants and trees provide the fungi with sugars, which they make during photosynthesis.

Scientists believe some of the very first plants to move from the oceans to the land could only do so because of this kind of plant/fungus partnership. This means plants and fungi have been working together for millions of years.



Over 95% of all plant species have a fungal partner

Fungi can be found everywhere, from rainforests to the Arctic



## Fungi stop the planet getting buried in waste

Without fungi waste materials like wood, leaves and other organic matter would build up all over the planet. Luckily, fungi can be found everywhere, from rainforests, to the Arctic and even in oceans and rivers. All over Earth, they're cleaning up waste and turning it into food for themselves and for other living things – they are the planet's best recyclers!



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Yeast is a type of fungus which is needed to make beer

## Fungi help to make cheese and chocolate

Fungi are an important part of the process of cheese making, where they are used to ripen and add flavour. Microscopic fungi are also used in a stage of chocolate making, also to add flavour. Yeast is a type of fungus which is needed to make beer and bread (along with Marmite, love it or hate it!). The acidity regulators used in fizzy drinks are made using a fungus too. Without fungi, our meals would be much less interesting.

## Fungi can save our lives

Fungi are responsible for making penicillin, the first modern antibiotic which Alexander Fleming discovered by accident, when some fungal spores landed on his petri dish. Penicillin is thought to have saved over 200 million lives worldwide. Other fungal drugs include statins, used to lower cholesterol and 'anti-rejection' drugs that enable people to have life-saving organ transplants.



Fungal drugs are used to lower cholesterol



Fungal mycelium is being used to grow leather

## Fungi could save the planet

The mycelium of fungi is being used to create environmentally friendly and bio disposable packaging (which could eventually replace polystyrene). Fungal mycelium is also being used to grow leather. Producing leather without cows saves on food and water and avoids methane, which pollutes the atmosphere. As if that weren't impressive enough, many species of fungi (including the UK native grey oyster mushroom) are brilliant at absorbing heavy metals – they can be used to clean up polluted water and soil.

Learn more about the amazing kingdom of fungi and find more great resources:  
<http://www.britmycolsoc.org.uk/education/resources-and-materials>

Had fun learning about fungi? Share your stories and pictures with us!



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