

I know I'm a fungus... but what does that mean?



Fungi can be single-celled or very complex multicellular multi-cellular organisms

They are found in just about any habitat but most live on land in the soil

They eat mould, yeast, mushrooms and other organic matter



You have definitely seen fungi in your life, but probably overlooked them and never considered the purpose of these extraordinary organisms!



The *Agaricus bisporus* is most commonly known as the mushrooms you eat and see in markets.

Fungi is a strange organism—you despise it when you see it in its natural form, or when its growing on your food as mould, yet you love it when it's secretly there, in the medicine you take or that chocolate bar you ate, and then you use it as yeast to bake a fresh loaf of bread!

So, is fungi really that important to me? The answer, yes!

In fact, fungi play a very important role in addressing major global challenges; uses range from improving resource efficiency such as producing biofuel, to being used in medical drugs to prevent disease and antibiotic resistance, helping you get better when you're ill. They also make crops more robust as well as being used as biological pesticides so your local supermarket will never run out of stock! Fungi don't just benefit us on a large scale—that paper you wrote on was made with a helping hand of fungal enzymes, and believe it or not, they are also used for many everyday foods such as bread, yogurt and fizzy drinks!



The *Favolaschia calocera*, aka Orange pore fungus

Abundant worldwide, all such uses for fungi reflects the possible potential for these organisms to thrive in our daily lives, both economically and environmentally.

JOKE OF THE DAY

How much room is needed for fungi to grow?

As mushroom as possible!!



BIOFUEL- WHAT IS IT?

Biofuel is a fuel that, instead of being produced from fossil fuels which are prehistoric, uses recently living organisms (biomass), or other processes which occur in plants.

BIOFUEL

Could our cars run on fungi?

The answer? Quite likely!

It was only till a few years ago that scientists have discovered a unique species of fungi which was capable of being the future replacement of diesel fuel and green energy!



Gliocladium roseum under a scanning electron microscope

The *Gliocladium roseum* is a species of fungi which have some well known cousins, such as the fungi that caused jungle rot during World War II.



G. roseum is harmless to humans and animals

G. roseum was discovered in the Patagonian rainforest, living in the Ulmo tree. Researchers have found that it naturally produces a range of hydrocarbon molecules, incredibly similar to that found in diesel engines, so they gave it the nickname 'myco-diesel'!

How does it work?

Biodiesel made from oils such as vegetable oil have to be processed by 'transesterification', which splits the oil into two parts: the useful fuel and the leftover, which can be used in beauty products. *G. roseum* however, naturally defends itself from threatening substances by emitting gases made up of hydrocarbon molecules. It breaks down cellulose, converting it directly into biofuel, so a huge part in the production process can be skipped leaving the remaining process to be very straightforward! This makes the fuel more environmentally efficient and cheaper. It is possible that you will be filling your car with this fungi in the future!



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