



What Do Fungi Do For Us?

Fungi are often used commercially – many industries couldn't do without them.



Did you know that without fungi, you wouldn't be having bread with your butter, or soy sauce with your sushi?



Cheese and alcohol are fermented through fungi, and penicillin was discovered when a petri dish grew mold (and is still cultivated in a similar way today).



In the above examples, *Koji* mold and yeast are utilised in but there are many more types and products that benefit too.



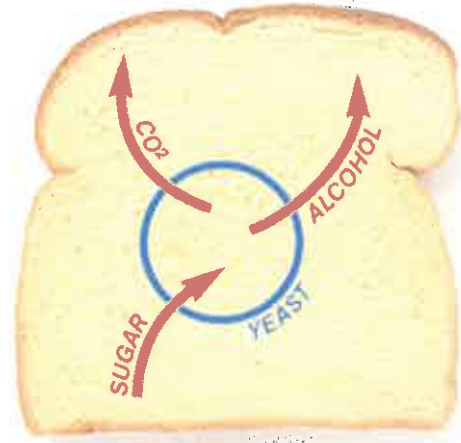
Fungus is used in food processing (to stop your snacks going off) and to produce pesticides and insecticides (for example, fungus is used to control Colorado potato beetles which can devastate potato crops) as well as being further explored by researchers to see what other surprises microbiology holds.



How Are Fungi Used In The Production Of Bread?

Saccharomyces cerevisiae (more commonly known as brewer's yeast) is used in bread-making to leaven (rise) the bread and give it the signature light and aerated texture.

- In bread dough, the core basics are flour, water and yeast.
- When these ingredients come into contact with each other, starch molecules in the flour are broken down into simple sugars by enzymes from the yeast and flour.
- When the yeast starts to metabolize the sugars, it will secrete a liquid that releases carbon dioxide and ethanol into any pre-existing air bubbles in the dough. (Any ethanol will evaporate off during the cooking process).
- If the dough has been well-kneaded, the gluten in the dough will be strong and elastic enough to inflate with the released carbon dioxide, similar to a balloon being able to inflate without popping.
- These air pockets inflating and enlarging causes the dough to rise – in order to maximise the production of CO₂, the dough will be left to prove at around 35°.
- Often commercial kitchens will have a specialised 'proving drawer' – in the right conditions, bread dough can more than double in size during proving, making the eventual loaf soft and aerated.



Some Things You Might Miss If We Stopped Using Fungi

Commercially:



Fungi are used to ferment cheeses, and the distinctive blue veins in cheeses such as Stilton are lines of mold.



Fungi are used in the fermentation and brewing processes of alcoholic drinks.



Fungi are used to ferment foods in order to preserve them, they are often then canned.

Soybeans are fermented with *Koji* mold to create soy sauce's distinctive flavour.



Yeast is used to make bread rise – it creates bubbles of carbon dioxide which create the bubbles of air.



Penicillin is derived from the *Penicillium chrysogenum* mold and is used to treat bacterial infections.



Did you hear the joke about the fungus?

I could tell you it, but it might need time to grow on you!