



FANTASTIC FUNGI - THE MAGIC BEYOND US

Arsha G* and CS Karibasappa

Assistant Professor (Plant Pathology), Department of crop protection, Palar Agricultural College,
Tamil Nadu.

*e-mail: Arshapadham95@gmail.com



Would you be surprised to learn there is an organism on earth that played a crucial role in the evolution of humankind. It is genetically close to people and has been helping them to cope with diseases for thousands of years moreover it appears on the planet one billion years before us. It holds the consciousness of nature's connection to all living things. In nature everywhere on earth there is the largest network of organism-to-organism communication., the natural Internet., we call it as fungi.

Fungi are the bulky organisms which are cosmopolitan in nature and composed of long threads called mycelium. In world there are around 4 billion species of fungi including yeast and mold. We quite literally owe our lives to one of them in 1928 microbiologist Alexander Fleming was running experiments

with various bacterial cultures, he noticed that mold contaminated one of the Petri dishes in his lab and killed all the microorganisms around itself. Fleming decided to put the mold colony into reservoirs with *streptococcus*, *staphylococcus* and the bacteria that caused diphtheria and anthrax the mold successfully destroyed all of them. Later on other experts continued the research and discovered that a genus of fungi named *penicillium* secretes a special substance able to kill pathogens of dangerous diseases. As a result in 1943 penicillin the first antibiotic in history appeared in drugstores starting from that day the death rate from bacterial infections and festering wounds began rapidly falling. But that wasn't the first case when fungi saved people from death.

There are some other category of fungi which can heal you, feed you or kill you. Yes we are talking about mushrooms. They can heal the planet, they can build our world as fantastic. They have long penetrated areas of human life from medicine to space travel. It seems they can solve absolutely any problems and fulfill our wildest dreams but we have got to be careful as these little things are not that simple.

For thousands of years, our ancestors have used mushrooms as drugs. Around 450 BCE, the Greek physician Hippocrates described the amadou mushroom, also known as *Fomes fomentarius*, as having strong anti-inflammatory properties and the ability to soothe wounds. Several medicinal mushrooms, such as ling zhi (*Ganoderma lucidum*) and zhu ling (*Dendropolyporus umbellatus*), were described by the 5th-century Chinese alchemist Tao Hongjing. It is said that Shennong used some of these mushrooms many centuries earlier. To help him survive in the northern Italian mountains, Ötzi, the Ice Man, carried a birch polypore tethered in a poke and amadou. He lived approximately 5300 years ago. *Calvatia* genus puffball mushrooms were used as crack healers by the indigenous people of North America. Though colorful societies have used mushrooms for a long time, ultramodern wisdom has only recently discovered what the elders knew.

Now a days modern day medicine considers fungi is a treatment for the most dangerous illness like anti-allergic, antimicrobial, anti-oxidative, anti-inflammatory, anti-cancer and immune-modulating properties. Now a days ultramodern day drug considers fungi is a treatment for the most dangerous illness like anti-allergic, antimicrobial, anti-oxidative, anti-

inflammatory, anti-cancer and vulnerable-modulating parcels. Additionally, some have been demonstrated to have a protective effect on the cardiovascular, cadaverous, liver, and brain systems, as well as on the metabolism of fat and glucose. This is due to the fact that medicinal mushrooms contain a variety of bioactive composites, such as lectins, lactones, terpenoids, alkaloids, antibiotics, and essence-chelating agents, that are comparable to polysaccharide β -glucan or polysaccharide-protein complexes. It is important to remember that magic mushrooms and medicinal mushrooms are not the same. Psilocybin is the name of the psychoactive substance that causes mild hallucinations, euphoria, and confusion; magic mushrooms typically fall into this genera. There is evidence that psilocybin affects the prefrontal cortex. This part of the brain is responsible for abstract thinking analytical skills mood regulation and perception. That's why some people took magic mushrooms later said they could see sounds and hear colors apart from that psilocybin boosts serotonin levels making a person hallucinate.

In conclusion, fungi play a pivotal and often underestimated role in our natural world and daily lives. fungi are vital organisms that deserve our attention and appreciation. Their versatility, adaptability, and unique biological properties make them indispensable for human well-being and the health of our planet. Understanding and harnessing the power of fungi can lead to innovative solutions to some of the most pressing challenges we face, from sustainable agriculture and waste management to novel drug discoveries and biofuel production. As we continue to explore the incredible diversity of fungi and unlock their potential, we are sure to discover even

more ways in which these remarkable organisms can improve our lives and the environment. Therefore, it is essential that we recognize and respect the importance of fungi in our world and invest in research and conservation efforts to ensure their continued role in shaping the future of science, technology, and the planet.