

Effects of Fungi on Animals

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Fungi are organisms that can spread in many different habitats around the world and directly or indirectly affect living and non-living presences. Fungi live as symbiotic, parasitic (mostly plant pathogens) and saprotrophic [1-3]. The fungi, which are thought to be around 140.000 on Earth, play an important role in the global ecosystem. The decomposition of organic matter in the ecosystem occurs as a result of the conversion of nutrients, the formation of soil, and the activities of the promoting fungi of plant development [4,5]. Fungi are formed by spores and these spores can spread too many different parts of the world through meteorological activities and can cause negative effects on living and non-living organisms in the areas they spread [6,7].

Animals from living organisms that fungus adversely affects are directly affected by fungi and sports. In addition, fungi can affect humans through animals, as well as adverse effects on animals. These diseases are called zoonotic diseases. For example, in South America, an epidemic called valley fever or desert fever occurred. It has been determined that the cause of this outbreak in armadillo hunters and hunters' dogs is caused by Armadillo and *Coccidioides immitis* fungi living in the soil of the nests [8].

In addition to zoonotic diseases, fungi also cause disease in animals. For example, more than 100.000 turkeys died from food contaminated with *Aspergillus flavus* in the UK in 1960 [9]. *Coccidioidomycosis* is also a fungal disease caused by *Coccidioides* species that cause respiratory, dermatological, musculoskeletal, neurological and ophthalmologic infections. Also, *Coccidioides immitis* and *Coccidioides posadasii* fungi found in California, Central and South America have caused the case of *Coccidioidomycosis* on many horses [10].

Another case of fungus was identified in March 2007 as the result of mass deaths during routine census of hibernating bats in New York. Many bat deaths occurred as a result of 'white nose syndrome' (WNS) caused by the *Geomyces destructans* fungus developing in the mouths and wing membranes of the clustered wounds in the cave [11].

Another pathogenic fungus, *Batrachytrium dendrobatidis*, is a highly dangerous pathogenic fungus that has been infected over more than 500 amphibian species in 54 countries. *B. dendrobatidis* caused measurable changes in the ecosystem, causing more than 40% of the amphibian species found in some parts of Central America to die [12]. On the other hand, fungi such as *Exophiala pisciphila* and *E. salmonis* cause a wide variety of infections in many fish species such as catfish, trout, and sea horse. In addition, *Paecilomyces* species, another pathogenic fungus, often pollute water resources, although they usually

develop in the soil. These fungus species cause many infections in cold-blooded organisms. Infection is particularly common in reptiles and amphibians. For example, it has been reported that infectious diseases of Aldabra tortoise are caused by *Paecilomyces fumosoroseus* and *P. lilacinus* species, and that of green sea turtle is *P. lilacinus* [13].

In this context, it is very important to determine the fungal spores and determine their concentration in terms of preventing fungal infections that can lead to lethal levels in wild, domestic animals.

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