Int. j. adv. multidisc. res. stud. 2022; 2(5):174-176

Received: 23-07-2022
Accepted: 03-09-2022

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Reishi Mushrooms Love Neighbours

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Abstract

Ganoderma mushroom finds a mention in the historical record that dates back to 2000 years. However, very few attempts have been made to scientifically evaluate the medicinal properties of Ganoderma mushrooms found in India. It is commonly called as Reishi or mannentake (10,000-year mushroom) in Japan and Ling Zhi (mushroom of herb and immortality) in China and Korea. The mushroom is known by many in North America and Europe as one of the "artist's conk" fungi. An interesting observation was many leaves of nearby creepers and grass blades were seen emerged out of this mushroom-like Ikebana arrangement A long term observation from the time the fruiting body emerged out of the soil till it became woody. Of the approximately 10,000 known species of mushrooms, about 300 of them possess medicinal properties. Captured through camera in a series of photographs revealed that when a leaf or a grass blade come in contact with, the mushroom would embrace it by growing around Though, no explanation was found in literature to this rare sight, the possibility is that both, mushroom and leaf/grass are mutually benefited as both were flourishing equally According to Wasser and Weis mushrooms represent a major and as yet, largely untapped source of potent pharmaceutical products. Some of them are edible whereas some are known for their medicinal properties, yet others are poisonous in nature. Ganoderma has also been found to occur widely in India, particularly in tropical areas.

Keywords: Ganoderma, Reishi Mushroom, Mutually Benefited, Pharmaceutical Products

Introduction

A rare mushroom with magnificent look in the wilderness of Jnanabharathi campus of Bangalore University with a white fruiting body and a dark brown shiny keratinized stalk having an appearance of varnished artefact is *Ganoderma lucidum*. An interesting observation was, many leaves of nearby creepers and grass blades were seen emerged out of this mushroom like Ikebana arrangement (Fig 1) and continued to grow day by day. A long-term observation from the time the fruiting body emerged out of the soil till it became woody (Fig 2) captured through camera in a series of photographs revealed that when a leaf or a grass blade come in contact with, the mushroom would embrace it by growing around (Fig 3). Though, no explanation was found in literature to this rare sight, the possibility is that both, mushroom and leaf/grass are mutually benefited as both were flourishing equally (Fig 4).

Mushrooms are broadly defined as *macro fungus with distinctive fruiting body which can be either epigenous or hypogenous and large enough to be seen with the naked eye and to be picked by hand* [1]. The mushrooms in general come in different colour and shapes. Some of them are edible whereas some are known for their medicinal properties, yet others are poisonous in nature.

According to Wasser and Weis [2] mushrooms represent a major and as yet, largely untapped source of potent pharmaceutical products. Of the approximately 10,000 known species of mushrooms, about 300 of them possess medicinal properties. Around 2000 species are safe for human consumption which needs to be explored further. Though mushrooms have been found to be effective against several ailments [3] their use is till recently limited to folklore medicines especially in some of the Asian countries such as China, Korea and Japan and mushrooms belong to Ganoderma genus ranks first in their traditional medicines.

Ganoderma extracts are used as ingredients in health food, herbal medicines and dietary supplements and have been used as anti-cancer and antioxidant agents and for prevention and treatment of various other diseases, such as hypertension, bronchitis, arthritis, neurasthenia, chronic hepatitis, nephritis, gastric ulcer, tumorigenic diseases, hypercholesterolemia, immunological disorders, scleroderma, cardiovascular disease, AIDS and cancer [4]. However, no molecules or active compounds have been

isolated from these mushrooms till date except an antifungal protein called Ganodermin active against some of the phytopathogenic fungi.

About *Ganoderma* mushrooms, which are also known as Reishi mushrooms, the legend is that it promotes calmness, improves meditative practices and above all helps to attain s long and healthy life hence, it was extensively used by Taoist monks in China. It is commonly called as Reishi or mannentake (10,000-year mushroom) in Japan and Ling Zhi (mushroom of herb and immortality) in China and Korea.

Ganoderma mushroom finds a mention in the historical record that dates back to 2000 years. The earliest mention of Ling Zhi was in the era of the first emperor of China, Shing-huang of the Ch'in Dynasty (221-207 B.C). Subsequently, depictions of this fungus proliferated through Chinese literature and art. Beginning with the Yuan Dynasty (1280-1368 A.D), *Ganoderma* has been endlessly represented in art - in paintings, carvings of jade and deer's antlers, furniture and carpet designs, balustrades, jewellery, women's hair combs, perfume bottles- in short, wherever an artistic urge found an outlet. The mushroom is known by many in North America and Europe as one of the "artist's conk" fungi [5].

Ganoderma has also been found to occur widely in India, particularly in tropical areas. Investigations carried out recently revealed that *Ganoderma* occurring in tropical South India possessed significant antioxidant, anti-inflammatory, antimutagenic, anticarcinogenic, antitumor, hepatoprotective, nephroprotective, and cardio protective activities [6]. However, very few attempts have been made to scientifically evaluate the medicinal properties of *Ganoderma* mushrooms found in India.

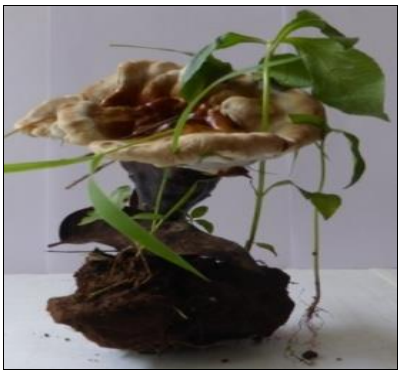

Fig 1: Reishi mushroom Ikebana

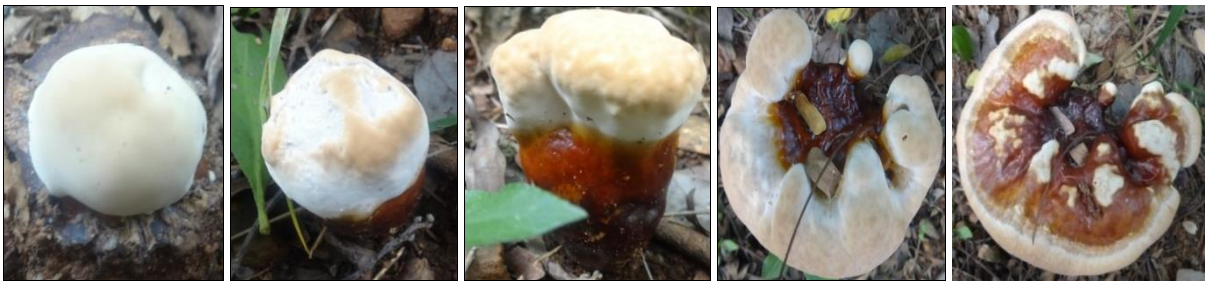

Fig 2: Mushroom from bud to matured stage

Fig 3: Gradual encircling of the plant growing adjecent by the mushroom

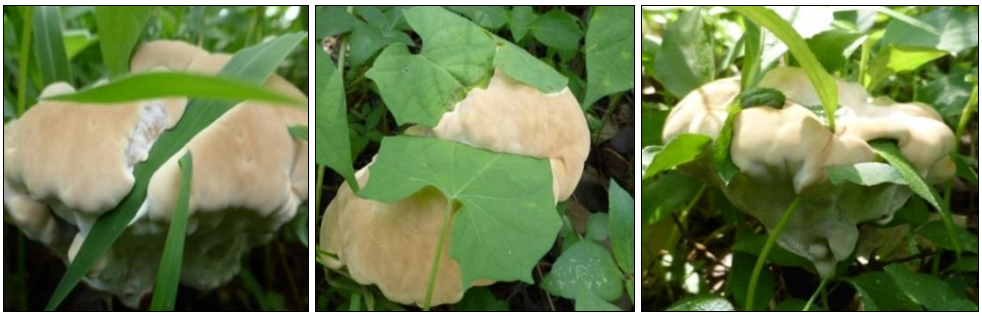

Fig 4: Plants growing close to the mushroom being encircled (photographed in the natural habitat at Jnanabharathi campus, Bangalore University)

References

1. Chang ST, Miles PG. Mushroom biology- a new discipline. The Mycologist. 1992; 6:64-65.
2. Wasser SP, Weis AI. Therapeutic effects of substances occurring in higher Basidiomycetes mushrooms: modern perspective. Crit Rev Immunol. 1999; 19:65-96.
3. Bahl N. Medicinal value of edible fungi. In: Proceeding of the International Conference on Science and Cultivation Technology of Edible Fungi. Indian Mushroom. Science, 1983, 203-209.
4. Sliva D, Sedlak M, Slivova V, Valachovicova T. Biologic activity of spores and dried powder from *Ganoderma lucidum* for inhibition of highly invasive human breast and prostate cancer cells. J Altern Complement Med. 2003; 9:491-497.
5. Solomon P. Wasser. Reishi or Ling Zhi (*Ganoderma lucidum*). Encyclopaedia of dietary supplements, 2005.
6. Sheena N, Lakshmi B, Janardhanan KK. Therapeutic potential of *Ganoderma lucidum*, 2005.