

A REVIEW ON MORCHELLA ESCULENTA

BISHAM THAKUR, NISHANT GUPTA

SWAMI VIVEKANAND COLLAGE OF PHARMACY, BANUR , PATIALA

Abstract: This article is tell us about the fungus “*Morchella Esculenta*.” This fungus is from family 'Ascomycota' and commonly used for Asthma. It has a Antiasthmatic activity and known for so many uses .e.g. stomach problems, heal the wound and for general weakness . It may be used as purgative ,laxatives, body tonic and emollient. Sometimes it can be poisonous if eaten raw and can produce ADR.It is edible mushroom and contain pharmacological properties which generally include antioxidant, antitumour and antiviral properties. It is one of the most important and beneficially plant to study.

Keywords:

Esculenta, Mushroom, Guchhi, Morchella, Antimicrobial, antioxidant , antiviral, antitumour

Introduction:

Morchella Esculenta is species a of fungus in the Morchellaceae and the family Ascomycota^[1].

It is locally called as ' Guchhi '. The kingdom of the Moerchella Esculenta is Fungi . The active constitute of Morchella Esculenta are: Carotenoids ^[2]

contain beta-carotene. Organic acid contain oxalic acid, citric acid, quinic acid. commonly known as Guchhi is nutritionally and medicinally important and most expensive fungus of *Morchellaceae*. ^[3]

Morchella Esculenta is well known throughout the world due to its nutritional aspects. It contains carbohydrates, proteins, fibers, all important vitamin. ^[4]

Identification: Cap:-The cap is conical, but more often globular or vertical oval. And the cap of *Morchella Esculenta* have waxy flesh. The cap are hollow and covered in array of its separated by narrow ridges. The color varies from pale cream, mid brown, yellow brown. The cap margins are enrolled.



Figure 1: Cap of *Morchella Esculenta*.

Stem:-Pale cream or white sometimes brown blotches near the base 3 to 12 CM tall and 1.5 cm to 6cm diameter to the base.



Figure 2:-Stem of *Morchella Esculenta*.

ASCI : Cylindrical 8 spores per ascus, hyaline.

Spores: Ellipsoidal, Smooth.

Spore print: Creamy white or pale ochre.

Taste/ Odor :Not distinctive.

Season:- March to early June in India, Ireland, Britain.

PHYSICOCHEMICAL PROPERTIES :-

HEALTH BENEFITS OF MOREL

In the world of mushrooms, the morel stand out among the rest of it's delicious taste and it's amazing health Benefits.

The popularity of morel can be attributed to the fact that they are simply delicious to eat.

Morel can be considered the rock stars of the mushroom world as they are expensive, hard to find and look very exotic. ^[5]

HEALTH BENEFITS:

Type 1 & type 2 diabetes

1. Great source of antioxidants: Morel contain lots of antioxidants that are good in protecting your body from free radicals. Which help to prevent heart disease, Parkinson's disease.
2. Heart health: Morels contain high amount of potassium, copper and vitamin E that are important in keeping your heart healthy.
3. Protect your liver : Extract of morel mycelium was found to provide protection against liver damage from carbon tetra chlorine. ^[6]
4. Healthy source of vitamin D:- you can get 34% of daily required levels of vitamin D from 100 grams. Some studies show that it could strength in your immune system and immune function as well. They have oblong the bulbous shape with color ranging from grey to blonde. You can grow them in backyard with a grow kit. You can buy them in supplement form or dried out. You can go hunting for them in the woods from April to June.

These are thousand of enthusiasts waiting for them so it can get pretty competitive.



Figure 3:- *Morchella Esculenta*.

To easily gather morels, you can trim them at the base of the cap. You will notice significant ‘pop’ sounds of you choose to break them at the base. It is important that you hear this ‘pop’ sound because that means they are hollow in the inside and are a true morel. If they are not hollow the inside that means you have found a false morel. False morels are not good to eat because they are mildly toxic.

CARTENOID STRUCTURE [7]



α -carotene



β -carotene



γ -carotene



δ -carotene

Figure 4:- CAROTENOID STRUCTURES

PHYTOCHEMICAL SCREENING OF AQ. ETHANOL EXTRACT OF *M.ESCULENTA*: [8]

| Class of compounds | Extract |
|--------------------|---------|
| Polysaccharides | + |
| Terpenoids | + |
| Steroids | - |
| Alkaloids | - |

| | |
|------------|---|
| Saponins | — |
| Tannins | — |
| Flavonoids | — |

Table1:- Phytochemical screening of Aq.ethanol extract of *Morchella Esculenta*
[9]

+ indicates presence of compound.

-indicates presence of compound.

The cap of the “Guchii “ is pale brownish cream , yellow or tan or pale brown to greyish brown.

Traditional use : commonly used for the treatment of indigestion , excessive phlegm and to treat asthma, used as emollient, antiviral, immune modulation.

Active constituents of *Morchella Esculenta* and their Pharmacological properties [10]

| Active constituents | Pharmacological properties | References |
|---------------------------|--|-------------------------------------|
| Phenolic compounds | Antimicrobial, Antitumour, Anti-inflammatory | Helenea 2013, Hali well, 2012, 2012 |
| Organic acid | Antioxidant, antimicrobial, Neuroprotective | Helenea 2013, Balti 2011 |
| Tocopherols | Strong Antioxidant | Helenea 2013 |
| Gala tom- an nan | Immunostimulatory | Duncan 2002 |

Table 2: Active constituents of *Morchella Esculenta* and their Pharmacological properties

Antitumour activity : ^[11]

The purpose of the study was to investigate the chemical structure and anti proliferating and anti tumour activity of *Morchella Esculenta*. The study provides more information on chemical structure of anti proliferating police are selected from *Morchella Esculenta*. The man 3 extract ethyl acetate methanol and aqueous of p. ramous were reported to be inhibit the Dalton's lymphoma ascites cell line induced solid tumour.

Antioxidant Activity : ^[12,13]

Antioxidant activity analyzed the cellular antioxidant and proliferative activities , as well as the phenolic composition of these *Morchella conic* pass cultures. The free phenolic extract exhibited higher cellular antioxidant activity then the bound phenolic extracts.

These are the various research established the antioxidant properties of mushrooms presented in India. The extracts from fruiting bodies as well as mycelia of *Gendarme lucidum* were found to have antioxidant activity with free radical property and the mycelium of *G lucidum* have a high range of anti per oxidative activity Result confirmed that *Morchella* antioxidant.

Antifungal activity : ^[14]

The study of antifungal extract of fruit bodies of *Trametes* selected four bacterial pathogens such as *Escherichia Coli*, *Bacillus substiles*, *Pseudomonas Aeruginors* *staphylococcus aureus* And four fungal strains *pointillism* sps, *A Niger* and *A flatus* , *A Aspergillus fumigatus* .

Antimicrobial activity: ^[15]

The mushroom is known for antimicrobial and cytotoxicity ,the six strain of bacteria viz. *Staphylococcus aureus* , *vibrio . Cholera* , *Klebsiella pneumonia* , *bacillus subtilis* , *Escherichia coli* and *Enterobacter aero genes* were utilized as test organism for determination of antibacterial activity . Only the 30 mg/ml concentration of extract was observed in antibacterial activity .The ethanolic extract showed higher bacteriosidal activity against *e coli*. But the selected mushrooms exhibited maximum inhibitory against *e coli*. But the selected mushrooms exhibit no significant antifungal activity against *Aspergillus fumigates* and *Aspergillus Niger* . The water extract of mushroom individual showed antibacterial property against vectors coted organisms & the results list of 231 mushrooms recorded for all regions of Maharashtra state .

Anti-inflammatory activity : ^[16]

The anti-inflammatory activities and properties of ethyl acetate and methanolic extracts from *G. Lucidum*. The ethanolic extract of culture mycelium of *Morchella escalator* for its various anti inflammatory properties the ethanolic extract of edible mushrooms were investigated for this anti inflammatory potential in lipopolysaccharides activated macrophages. The extract of *Boletus impolitus* and *Agarics Bosporus* elevated the strongest anti inflammatory potential.

Immunostimulatory activity : ^[17]

In this study, the Immunostimulatory properties of polysaccharides from *Morchella Esculenta* were investigated to identify the Immunostimulatory properties . The Immunostimulatory property of polysaccharides is isolated from the *Morchella Esculenta* know as galactomannan . This compound may work both innate immunity have show a variety of medical activities .

Neurologic activity : ^[18]Mushroom have become attractive as functional foods and as a source of physiologically beneficial medicine . The mushroom have been used as flavoring material in soup and also used as a food .These are three species mushroom mycelia are present in Taiwan , namely *Grifola frondosa* , *Termitomyces aluminous* ,*Morchella Esculenta* person . The researches of Taiwan research / conducted the antioxidant properties of the methanolic extracts .The leaf of the *Bryophyllum pinnatum* or popularly extracted with cold water and to reduce the blood pressure & Heart rate .

Conclusion:

We have come to the end of this project on the topic *Morchella Esculenta*. We would like to share our experience while doing this project. We learnt many new things about the *Morchella* and it was wonderful learning experience for us, while working on this topic *Morchella Esculenta* is one of the most beneficial plant have lot of properties. Mushrooms contain and mostly it is a boon in curing cancer. It is the beat plant for the study. Extract of mushroom have a anti microbial, anti inflammatory, antiviral and various properties make us to more study. And it is also used as treatment of indigestion and asthma. Mushrooms have been used in treating diseases of skin from common to complex disease like AIDS also be treated with mushrooms properties.

Here we review recent research progress in the genus *Morchella* and focus on its taxonomy ,species diversity and distribution, ecological currently, species delimitations of *Morchella* are defined using the criteria GCPSR, while the morphological characteristics of many phylogenetic species without Latin binomial need Deep and through investigation.

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