Investigating the species of the Agaricaceae of McKean County, Pennsylvania

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Introduction

- There are 63 species of the Agaricaceae in McKean County (2).
- Coprinus comatas has a shaggy, white, cylindrical cap that turns black and inky near the end of its life cycle. Often described as having a “shaggy” texture, this fungus tends to grow in large numbers along roadsides and lawns. It commonly grows in late summer, to early fall (3).
- This fungus has been used a lot in scientific experiments in the last few years. There are many medical discoveries that are being uncovered using this fungus. From fighting cancer to helping people with Alzheimer’s, scientists from acrost the world are discovering more and more about this mushroom.

Hypotheses

While searching the woods of McKean County looking for mushrooms, I discovered the *Coprinus comatus*. When I saw the fungi, I began to get curious and wondered if it was edible and what other things this mushroom was capable of. Since it had an inky cap I thought that it was not edible. I also didn’t think that there would be many other uses because of how fragile it was. Once I realized that the other mushrooms beside them where the same species, just in a different age range, I began to think that this mushroom is capable of more than I thought.

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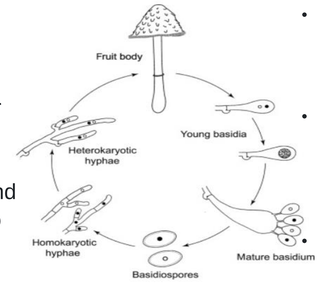
Life Cycle



- This species exists most of the time in the soil as a network of cells, taking nourishment from rotting wood and other decaying materials.
- When ready to reproduce, the mycelium develops mushrooms, which are reproductive structures that produce spores. The spores are released to begin new mycelia elsewhere.
- In inky caps, the spores are dispersed when the cap decays and liquefies(3).

The young fruit body at the edible stage

The old mushrooms beginning to autodigest

In-between the edible and autodigest stage

The bottom of the mushroom cap

Discussion

- Coprinus comatas is edible only when young, older ones undergo autolysis.
- These fungi can be used in a wide variety of dishes. They are said to have a “yummy mushroom flavor,” that is not overwhelming.
- Huge in antioxidant activity, which is closely related to other pro-health properties like anticancer, antiinflammatory, and antiobesity.
- Coprinus comatas extract can help proliferation cancer cells.
- Polysaccharides from Coprinus comatas have been reported to increase liver recovery after damage is caused by alcohol consumption.
- Extract from Coprinus comatas was also screened for acetylcholinesterase inhibitory potential. Progressive cognitive impairment in Alzheimer's disease is connected with neurotransmitter acetylcholine deficiency and synaptic failure. Inhibitors of cholinesterase stimulate the cholinergic receptors, increase availability of acetylocholin, and weaken Alzheimer's disease symptoms (1).

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References

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