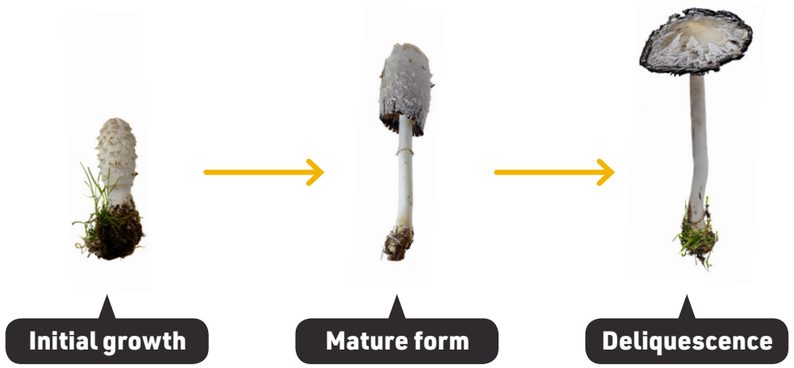
Inkcaps: Self-digestion, inks, and poisoning

COMPOUND INTEREST

Inkcaps' self-digestion

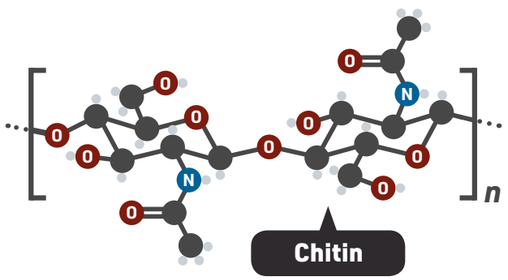
The inkcap life cycle is an unusual one. Most species of these mushrooms appear only fleetingly before self-digesting themselves into a black liquid. They do this to spread their spores.

Shaggy inkcap (*Coprinus comatus*) life cycle



Inkcaps break themselves down by producing the enzyme chitinase in their cells. Chitinase breaks down chitin, the sugar in fungi cell walls that holds them in shape, causing the mushroom to disintegrate into a black goo. This process is called deliquescence.

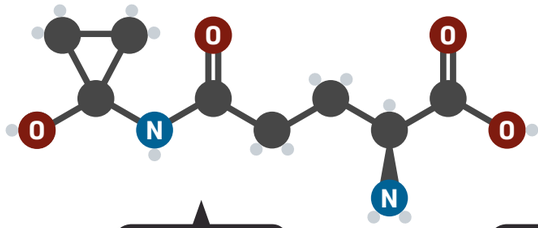
Key
- Carbon
- Oxygen
- Nitrogen
- Hydrogen

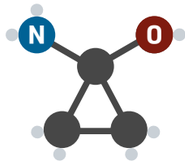


The black liquid produced by inkcaps' self-digestion can be used as an ink due to the melanin pigment that it contains.

Inkcaps and alcohol

Coprinus comatus, the shaggy inkcap, is edible before it starts self-digesting. However, *Coprinopsis atramentaria*, the common inkcap, is not considered edible due to the presence of coprine, which can cause unpleasant symptoms if it is consumed with alcohol. For this reason, it is also known as "tippler's bane".





Our bodies metabolise coprine into aminocyclopropanol and glutamic acid. Aminocyclopropanol interferes with alcohol metabolism. It inhibits the aldehyde dehydrogenase enzyme, inhibiting the breakdown of the acetaldehyde that is formed from ethanol.

Alcohol metabolism

Acetaldehyde build-up causes a flushed face, racing heart rate, nausea and vomiting. These effects can last for a few hours and recur for up to 48 hours if you ingest alcohol again.