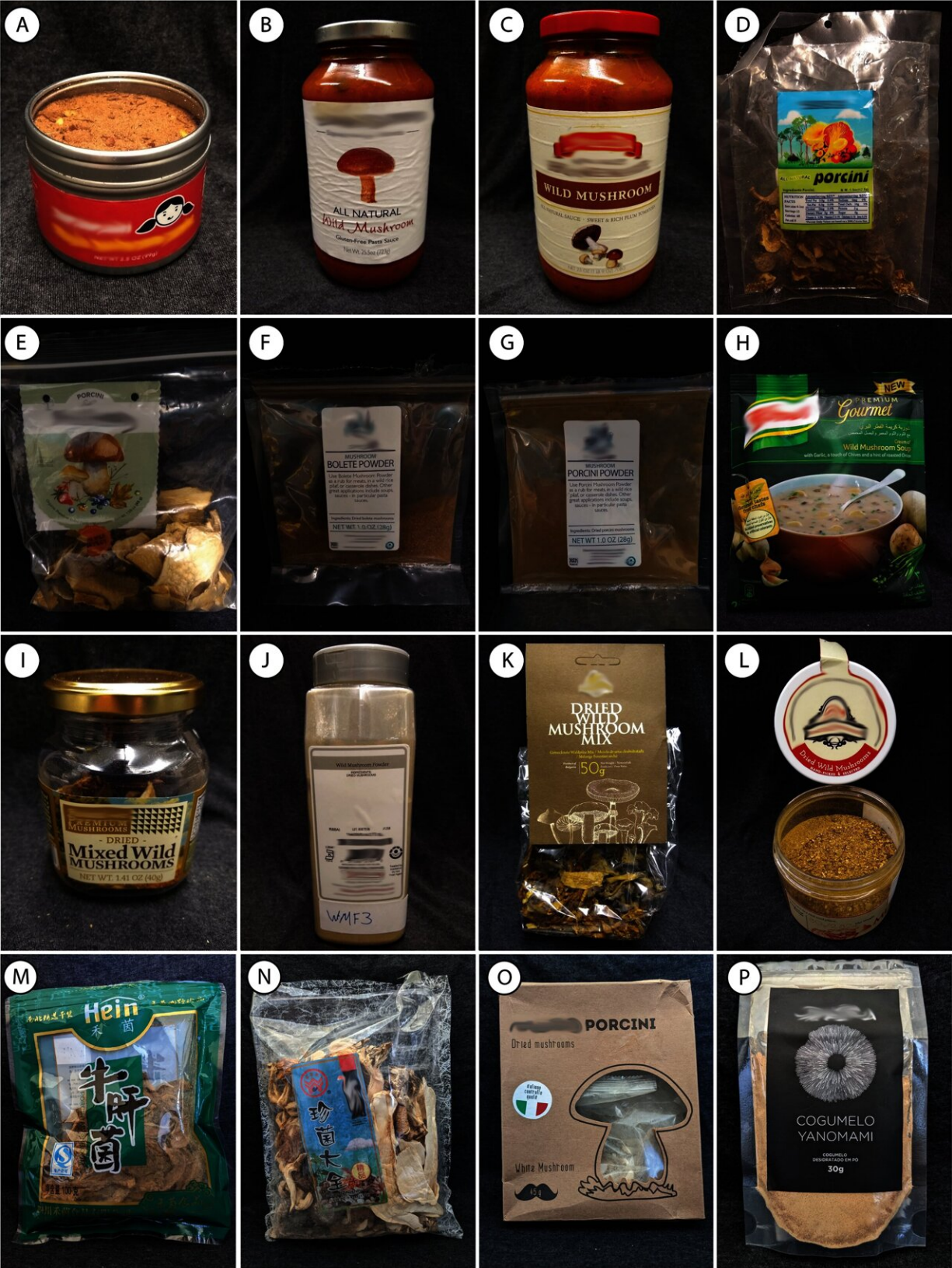


# Food claiming to have 'wild mushrooms' rarely do

August 20 2021, by Lisa Potter

---



Food products analyzed in study. The manufacturer names have been blurred to protect their identity. Credit: Cutler II WD et. al. *PeerJ* (2021)

Harvesting wild mushrooms requires an expert eye to distinguish between the delicious and the inedible. Misidentification can have a range of consequences, from a disgusting taste and mild illness to organ failure and even death. Culinary wild mushrooms staples, such as truffles or porcini, require symbiotic relationships with specific plants in the ecosystem that make it impractical or impossible to produce them commercially. This means they can only be harvested from their natural habitat, which is why porcini and truffles are often so expensive. Many food producers opt for common fungi that can be cultivated easily and grown in large quantities, such as oyster, shiitake, and portabella mushrooms.

The United States has minimal regulations around the harvest and sale of wild fungi. Food products that tout "[wild mushrooms](#)" as ingredients are often vague and non-specific, making it impossible to know if the products are truly wild or just cultivated varieties, or even if they contain [poisonous mushrooms](#) harmful to humans.

In a new study, researchers from the University of Utah (U) and the Natural History Museum of Utah (NHMU) used DNA barcoding techniques to test what [mushroom species](#) made up 16 food products that listed "wild [mushrooms](#)" on their labels. The authors sourced soups, dried mushrooms, powdered mushrooms, pasta sauces, and flavor enhancers from local grocery stores around Salt Lake City, Utah, and a large online retailer.

They found 28 species of mushrooms across all 16 food products. Almost all products that claimed to have wild mushrooms consisted of

cultivated species, including oyster, shiitake, or portabella mushrooms. Only five products had contents that were accurately described on the label, and some included species that likely have yet to be described in academic literature. One packet of dried wild mushrooms from the online retailer contained a species from a group of fungi that includes the "Death Cap," a notoriously poisonous mushroom known to cause renal failure in humans.

"If you looked at the reviews on this product, a surprising number of people wrote that the mushrooms 'made me violently ill,' or that they had 'never been so sick in my life,'" said Dalley Cutler, lead author of the paper and a recent biology graduate at the U. "No one is checking if the mushrooms are what the labels say they are."

The authors contacted the online retailer to inform them of the potential dangers of the product. As of the paper's publication, the dried mushrooms are still for sale. The mislabeling across the wide range of products could be due of fraud, negligence, or just a lack of awareness.





Bryn Dentinger (left) and a graduate student collected 50 pounds of porcini mushrooms in southern Utah. Credit: Bryn Dentinger

"There's an ignorance about mushrooms in general—in [food products](#), museum collections, the definition for wild mushrooms are all over the place," said Alexander Bradshaw, co-author of the study and doctoral student at the U. "One package of dried mushrooms said it contained porcini, defined by a characteristic spongy texture underneath the cap. Just by looking at it, we knew it was untrue—the mushrooms had gills underneath their caps. It seems like if you can dry it down, you can just slap a porcini label on it."

The authors say their results are inevitable partly because policies that regulate the international food supply chain vary wildly. Some parts of Europe require a license to collect edible wild mushrooms, but the guidelines differ between countries. In the U.S., state governments are responsible for regulating commercial wild mushrooms sales, but only 31 states have any regulations at all, according to a National Survey of State Regulation of Wild Mushroom Foraging for Retail Sale.

Another reason for inconsistencies is because the field of mycology is vastly understudied.

"About 95% of fungal species on Earth are undescribed. Fungi are so poorly documented, how do you regulate something that is virtually unknown?" said Bryn Dentinger, senior author of the paper, curator of mycology at the Natural History Museum of Utah, and associate professor of biology at the U. "This puts human health at risk, but it also puts our ecosystems at risk. Around the world, unsustainable harvesting practices could put rare and threatened species at risk of extinction."

There are still safe ways to enjoy wild mushrooms, the researchers say. Just know who you're buying from.

"I don't want people to read this and be scared to eat porcini and other wild edible mushrooms, they are delicious," said Dalley. "This study looked only at packaged products, not locally harvested wild mushrooms. I would encourage people that enjoy porcini and other wild edibles to only purchase from local sellers that are qualified in the identification of wild mushrooms."

The study was published online in the journal *PeerJ* on Aug. 2, 2021.

**More information:** W. Dalley Cutler II et al, What's for dinner this time?: DNA authentication of "wild mushrooms" in food products sold

in the USA, *PeerJ* (2021). [DOI: 10.7717/peerj.11747](https://doi.org/10.7717/peerj.11747)

Provided by University of Utah

Citation: Food claiming to have 'wild mushrooms' rarely do (2021, August 20) retrieved 20 April 2024 from <https://phys.org/news/2021-08-food-wild-mushrooms-rarely.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.