SPORE PRINTS

BULLETIN OF THE PUGET SOUND MYCOLOGICAL SOCIETY
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ORIGIN OF THE IRISH POTATO FAMINE SETTLED

Tibi Puiu

https://www.msn.com/, Feb. 14, 2025

In the mid-19th century, a microscopic invader swept across Ireland, leaving a trail of devastation in its wake. The potato blight, caused by the fungus-like pathogen *Phytophthora infestans*, triggered a famine that killed over a million people and forced millions more to flee. For over a century, scientists have debated where this deadly organism first emerged. Was it the rugged Andes, where potatoes were first domesticated? Or was it the highlands of Mexico, a region teeming with similar pathogens?

Now, a team of researchers claims to have settled the question. In one of the largest genetic studies of its kind, they have traced the origins of the potato blight to the Andes. The findings not only settle one of the darkest long-standing debates but also reveal a complex web of evolution, migration, and hybridization that shaped the history of one of the world's most infamous plant diseases.

USDA

Potato infected with Phytophthora infestans,

A Pathogen's Journey

Even today, *Phytophthora infestans* continues to wreak havoc on potato and tomato crops worldwide, causing billions of dollars in losses each year. Learning where it originates could help scientists predict and combat future outbreaks.

The debate over its birthplace has been fierce. Some researchers argued for a Mexican origin, pointing to the pathogen's sexual reproduction in the region. Others, citing genetic evidence, proposed an Andean origin. The new study, led by Allison Coomber and Jean Ristaino of North Carolina State University, brings a wealth of genomic data to the table.

The team analyzed whole-genome sequences from *P. infestans* and six closely related species, including *P. andina* and *P. betacei*, which are found in South America, and *P. mirabilis* and *P. ipomoeae*, native to Mexico. They also included historic samples of *P. infestans* collected during the Irish Potato Famine.

The results were clear. The Mexican species, *P. mirabilis* and *P. ipomoeae*, formed distinct genetic groups, separate from *P. infestans*. In contrast, *P infestans* was closely intertwined with the Andean species *P. andina* and *P. betacei*. These latter three species form a complex with indistinct boundaries. They're more like siblings than distant cousins.

"This is how science works," said Jean Ristaino, a co-author of the study and a professor at North Carolina State University. "There's a hypothesis, people question it, test it, present data. But over time, the evidence is really weighted in favor of the Andes, because the DNA doesn't lie. The genetics show ancestry in that region."

Historical records also point to the Andes. "In 1845, when this blight hit Europe and the U.S., people were immediately trying to figure out where it came from," Ristaino added during an interview with *The Guardian*. "There were reports that the disease had occurred and was known among the indigenous Andean Indians who grew potatoes."

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SCIENTISTS DISCOVER A FUNGUS TURNING SPIDERS INTO ZOMBIES

Jess Cockerill

https://www.sciencealert.com/, Feb. 6, 2025

A new species of fungus straight out of a nightmare has been found lurking on the ceiling of an abandoned gunpowder storeroom in Northern Ireland, enmeshed in the body of an unlucky spider host.

Evans et al., Fungal Systematics and Evolution, 2025

Photo of an infected Meta menardi spider on the ceiling of Whitefathers' Caves, Republic of Ireland.

Beneath a crown of coralline protrusions, the disfigured carcass of a usually reclusive orb-weaving cave spider *Metellina merianae* was barely recognizable when a BBC documentary crew first encountered it while filming the series *Winterwatch*.

The gnarly specimen was sent to a team led by mycologist Harry Evans from the Centre for Agriculture and Bioscience International. With extra specimens collected from caves across the Irish isle, the team have identified the fungus as a new species they've named *Gibellula attenboroughii* after Sir David Attenborough, a pioneer of BBC natural history programs,".

In each specimen, the fungus was enmeshed with a carcass of either *M. merianae* or another orb-spider species host, the European cave spider *Meta menardi*. Both of these spiders are "sit-and-wait predators," usually concealing themselves close to their webs. They don't linger out in the open, yet each unlucky spider appears to have been steered against its nature to the exposed surfaces of cave ceilings.

This is very similar to the behavior of ants infected by *Ophiocordyceps* fungi in the Brazilian Atlantic rainforest, a cerebral

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CALENDAR

Mar. 11 Membership meeting, 7:30 pm, CUH and virtual via Zoom

Mar. 17 Board meeting, 7:30 pm, CUH board room and virtual via Zoom

Mar. 18 *Spore Print* deadline

BOARD NEWS

Carolina Kohler

Hello and happy March, fellow PSMS members!

At the February board meeting Monday the 19th, the board was joined by Milton Tam and Will Lockmiller, of the Sno-Valley Mushrooms company. Will had contacted Milton expressing an interest in partnering with PSMS to revive our Mushroom Mayn-ia, which has been on hiatus for a while. The timeline would not be favorable for this year, but the board will study the idea and see if 2026 could be feasible.

Next, Vice President Joe Zapotosky presented a proposal to join forces with other local organizations such as the Kitsap Mycological Society and the Cascade Mycological Society to help cover the airfare cost to bring Kate Mohatt (co-author with Steve Trudell and Noah Siegel of *Mushrooms of Alaska*) to our area to speak at the Ben Woo Foray and other local events. The board gave Joe the go-ahead to work on this and fine-tune the details.

The following item was an update on the work of the Strategic Planning Committee, which has received the requested feedback from the committee chairs on ways to modernize and/or standardize their operations. A special thanks to Megan Brewster, Peg Rutchik, and Colin Meyer, who have devoted their time and energy to this massive endeavor, and to Cindy Brewster who has been assisting with all the financial aspects of this analysis. This is work in progress, and will be part of the board meeting agenda for the next several months.

This was followed by a discussion brought up by Joe on the possible role that PSMS could play in selecting Washington's state mushroom and lobbying for this in Olympia. This sparked a very juicy conversation on what an appropriate representative for our state would be. Edibles? Non-edibles? What would your choice be?

Joe also spearheaded the next agenda item: a potential art/design contest for a poster (and related swag) for the 2025 mushroom show and/or the Ben Woo Foray. This got the board excited, and announcements will be coming out soon. Get your creative juices running!

The evening's last topic was PSMS's potential interaction with the Burke Museum and its research mycologist and the different approaches between a research vs a teaching role. You will likely find a very interesting article on this by Wren Hudgins in the next month's *Spore Prints*. Meanwhile, a group has formed consisting of Wren, Sandra Ruffner, Joe Zapotosky, and Colin Meyer to work on the complexities and possibilities of this cooperation.

And that was all for the February board meeting! We will be seeing you all again in March. Until then, stay safe and warm and remember to vote!

MEMBERSHIP MEETING

Joseph Zapotosky

Ellen King Rice

The Ides of March is historically a day associated with death, doom, and ill will. Fortunately, the PSMS meeting is set for Tuesday, March 11, so you can safely join the fun as Ellen King Rice tells us about writing and publishing her collection of "Mushroom Thrillers." Ellen has written five books set in the woods of the Pacific Northwest, each of which includes illustrations of local fungi by Olympia artist Duncan Sheffels.

How much does it cost to publish a novel? Can you make much money at it? As mushrooms are portrayed in art, film, and fiction, what can scientists do to promote accuracy? What do gardeners and bad guys have to do with book sales and mycological research? Ellen has data and some insights to share.

Please join us Tuesday evening, March 11, to hear Ellen spin her tale of "Villainy in the Forest: Mixing Mycology and Mayhem For Fun, Fame, And Fortune."

This will be a "hybrid" meeting both in-person at the Center for Urban Horticulture and virtual on Zoom. Doors open at 7:00 pm. The lecture will start around 7:30 pm.

Learn more about Ellen at her website
www.ellenkingrice.com

PSMS MEMBER TO BE FEATURED ON CASCADE PBS

Keep an eye out for PSMS member PeiPei Sung sharing her experiences and connection with nature through the lens of mycology in the Pacific Northwest. She'll be featured in Season 3 of *Out & Back with Alison Mariella Désir* on Cascade PBS, a show that explores the PNW outdoors from a BIPOC* perspective.

Episodes will continue to be released on Thursdays through March, then streaming at cascadepbs.org. Be on the lookout for this exciting feature on fungi, identity, and the outdoors.

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*Black, Indigenous, and People of Color

Origin of Irish Potato Famine, *cont. from page 1*

The Andean Crucible

According to the genetic analysis, the common ancestor of *P. infestans* and its Andean relatives diverged from the Mexican species around 5,000 years ago. Over time, *P. infestans* spread from the Andes to other parts of the world, including Mexico and Europe, thanks to increased overseas trade and globalization.

The study also revealed surprising levels of gene flow between *P. infestans* and its Andean relatives. Migration rates between these species were much higher than those involving the Mexican species. This suggests that the Andean region is not just the birthplace of *P. infestans* but also a hotspot for ongoing evolution.

One of the most intriguing findings was the blurred line between *P. infestans*, *P. andina*, and *P. betacei*. These Andean species are so closely related that they often hybridize, creating new genetic combinations. It's like a melting pot with all these microbial species swapping genes, which could lead to new strains with different virulence traits—some of which could overcome plant resistance.

Understanding where the devastating potato blight originated has major practical implications for managing this disease, which remains a global threat.

Potato blight continues to wreak havoc worldwide. In Europe, fungicide-resistant strains have emerged, forcing farmers to seek new chemicals and methods. New breeding and gene-editing methods could offer a long-term solution.

"When you know the center of origin of a pathogen, that's where you're going to find resistance to it," Ristaino said. "In the long run, the way to manage this disease is through host resistance. This work shows the focus on breeding efforts needs to happen back in the Andes."

As the world grapples with the challenges of food security and climate change, studies like this one are more important than ever.

The findings appeared in the journal *Plos ONE*.

GET YOUR CREATIVE JUICES RUNNING!

Brenda Fong

The PSMS Board of Trustees is excited to announce
a *Call for Art* from our talented members!

We wish to showcase your mushroom-inspired creativity!

Finalists will be chosen by your fellow PSMS members and featured in upcoming PSMS projects, with opportunities to celebrate all submissions.

Stay tuned for details, guidelines, and prize info to follow in emails and on the PSMS website.

Follow us on Facebook and Instagram as well.

WINDSOR, CANADA, POLICE BUST DOWNTOWN MAGIC MUSHROOM DISPENSARY— FOR THE SIXTH TIME

https://ca.news.yahoo.com/, Feb. 14, 2025

Windsor police say they have seized magic mushrooms from a downtown dispensary for a sixth time since the summer of 2023.

On Feb. 12, members of the Drugs and Guns Unit executed a search warrant in the 300 block of Ouellette Avenue, which is where a dispensary known as FunGuyz is located. Officers charged a 22-year-old employee with drug possession for the purpose of trafficking.

They allegedly found $17,514 in illegal drugs during this search, including psilocybin capsules, dried mushrooms, vapes, and infused products like chocolate bars and candy.

The Windsor Police Service says officers have seized more than $180,000 worth of psilocybin-infused products in the six raids at the Windsor location, including last month.

Dan Janisse /Windsor Star

FunGuyz, which once had dozens of illegal storefronts in Ontario, had announced in November it was closing its locations.

FunGuyz dispensary in downtown Windsor on Jan. 8, 2025, before police raided the business—for the sixth time.

NEW FRENCH POSTAGE STAMPS SHOW WINTER FUNGI

Brian S. Luther

Just released on Jan. 2, 2025, by the French postal authority are two stamps illustrated with mushrooms that fruit in winter (Champignons d'hiver). These include an unidentified species of *Pleurotus* (most likely *P. ostreatus*) labelled "Pleurote" and *Flammulina velutipes*, labelled "Collybie pied veloute." Both are lignicolous fungi, i.e., inhabiting and growing on wood. Only the common names in French are given on the stamps, and this is self-stick postage. Both are valued for letter rate. These stamps have been issued so recently that Scott Catalogue numbers have not yet been assigned to them. So far I have not yet seen either an FDC (first day cover) or a maxicard issued for this set, but they may be offered in the future.

The inside of the stamp booklet asks those buying the stamps the question, in French: "Which edible mushrooms survive best in winter without fear of frost?" and then gives the answer written upside down.

Brian S. Luther

Front side of stamp booklet.

Brian S. Luther

Back side of stamp booklet.

Brian S. Luther

Flammulina velutipes.

Brian S. Luther

Pleurotus species.

Brian S. Luther

Inside of stamp foldout booklet.

Brian S. Luther

There are a number of species of *Pleurotus* worldwide and they're all edible, with a few species available as growing kits. *Flammulina velutipes* is a widespread species, but we also have *F. populicola* and the two are quite similar. The caps of both species of *Flammulina* are edible, but in the wild the stems are too hairy and tough for eating and should be discarded.

Flammulina velutipes mycelium that's raised in the dark produces fruiting bodies that are tall, thin, and whitish. For these, the stems are totally edible. These cultivated mushrooms are called Enoke or Enokitake and are often served with Japanese or other Asian foods. Enoke can easily be grown in the dark at home from spawn kits on a variety of substrates, but it does have temperature requirements. The wild and cultivated forms look unrelated.

Here in Central Washington I often find *F. velutipes* in the wild on the dead wood of two native Dogwoods, *Cornus stolonifera* and *C. occidentalis* (both Red Osier Dogwoods), often in our riparian creek woods. Both of the species of mushrooms shown on the stamps can also be found during other seasons, not exclusively in winter.

For a number of years I've been working on an article documenting all of the stamps issued by France showing fungi. It's too extensive to appear in a *Spore Prints* article, so when I complete it soon I'll post it on the PSMS homepage website under "Education."

Zombie Spider, *cont. from page 1*

takeover in which dopamine seems to play a role. "The fact that *Gibellula*-infected spiders are found in prominent positions on the roof or ceiling of their subterranean habitats indicates a behavioral change, possibly manipulated by the fungus," the authors write.

"The sporulating cadavers would be exposed to the air currents circulating through the caves promoting the release and subsequent dispersal of the dry spores through the system."

While genetic analysis shows the cave and gunpowder room specimens are all one species of fungus, you wouldn't know from looking. Evans' team suspects the variety of forms this species takes could be a result of the different environmental conditions where it grows.

In the underground gunpowder store, for instance, the complete absence of air movement may explain why the spores adhered in column-like forms to the fungal surface, and without light, underwent a loss of pigment.

"Within the cave system, especially in the threshold zone favored by *Metellina merianae*, there would be both diffuse light and air currents to dislodge and disperse the [spores] resulting in a decreased incidence of long chains or blocks of spores," the team writes.

The discovery has also led scientists to suspect the same fungus might be behind infected *M. merianae* specimens in Wales, which live in the entrances of rock fissures or similar man-made niches around a lakeside locality where there are no caves. There, they seem to have moved from these safe crevasses to the surrounding or overhanging sphagnum moss, perhaps puppeteered by the fungus.

Delving into herbarium and literature archives, the team found illustrations and other records of similar fungi that may in fact be *Gibellula.* "There is a hidden diversity in the British Isles and many more species of *Gibellula* remain to be discovered," they note.

MAJOR BRITISH SUPERMARKET INTRODUCES "FUNCTIONAL JUICES" CONTAINING MUSHROOMS TO HELP BOOST OUR BRAINS—AND FANS CAN'T GET ENOUGH

Poppy Atkinson Gibson

https://www.dailymail.co.uk/, Feb. 10, 2025

A major supermarket has introduced new super food juices designed to boost the brains of its customers—and they're flying off the shelf.

Marks & Spencer is now offering "functional juices" alongside its bottles of water, orange juice, and fizzy drinks.

Filled with supplements and nutrients to help improve concentration, sleep, and general well-being, the new drinks range is already a hit with customers.

On offer are Lion's Mane lattes and "reishi shots" with nutrients distilled into juices or added to cold coffee.

And the key ingredient—mushrooms, known as adaptogens—are designed to help with stress, tiredness, and anxiety.

Chief product development manger Claire Richardson told *The Guardian* that the new range is geared towards a greater concern over brain health.

BEAUTIFUL HAIR ICE SPROUTING FROM WOOD CREATED BY FUNGUS

Paul Simons

https://www.thetimes.com/, Feb. 10, 2025

ALAMY

Hair ice found in Washington State.

In the recent biting cold weather, beautiful silky blond hair appeared sprouting out from a piece of dead wood in the Highlands. But the "hair" was actually fine strands of ice called "hair ice" and it was created by a particular fungus.

The fungus called *Exidiopsis effusa* makes the hair ice by colonizing rotting wood from a broadleaf tree. As temperatures hover just below freezing in humid air, ice can form on the surface of the wood but water remains liquid inside the pores of the wood. This liquid can then be sucked up to the surface where it freezes into fine strands of hair ice. The hairs of ice can be churned out at up to 20 cm (about 8 in) long, although each strand is less than 1 mm in diameter, and can even curl up into attractive waves.

Without the fungus, the ice forms into larger crusts of ice instead of fine filaments, but the phenomenon still remains something of a mystery, and there is a thought that the fungus may add an antifreeze that keeps the ice crystals in their shape even as temperatures vary.

Hair ice has been known about for a long time but its formation was a puzzle. In 1918, Alfred Wegener—best known for his theory on how continental plates move around—looked at hair ice and realized that the thread-like cells of a fungus were needed for the ice to form in cold, calm air. But it was only ten years ago that the fungus *Exidiopsis effusa* was pinpointed as the key to hair ice.

WHEAT CROPS ARE DYING, AND SCIENTISTS JUST FOUND OUT WHY—HERE'S WHAT IT MEANS FOR OUR FOOD SUPPLY

Mandy Carr

https://www.thecooldown.com/, Feb. 17, 2025

Researchers have found a protein that causes disease in wheat crops and is one the most significant contributors to crop yield declines.

Rothamsted Research

Fusarium-infected wheat.

According to Phys.org, fungal diseases are among the five contributing factors to yield and quality loss. The protein Knr4 is a key component in making these diseases so deadly.

A research team at Rothamsted Research, the University of Bath, and the University of Exeter looked at the most present genes during infection. To identify the protein Knr4, they looked at 14,000 genes.

Phys.org relayed that the team identified "Knr4 as a critical driver of infection for Fusarium Head Blight (FHB) and Septoria Tritici Blotch (STB)—two of the most common diseases of wheat."

Study lead Dr. Erika Kroll said, "This protein is only found in fungi, not in plants or animals,"

The team found that removing Knr4 from *Fusarium* took away its ability to spread in wheat.

Phys.org noted the protein could be removed by developing "chemical fungicides that disrupt the protein's function or through the application of RNA interference techniques that would reduce fungal gene expression."

Kroll said that targeting Knr4 would reduce the fungi's effectiveness while not "harming the wheat crop, ourselves, or other animals."

The team's findings were published in *BioRxiv*.

Fungal diseases can cause toxins that harm humans. According to the University of Bath, this is a growing European problem. The fungus causes mycotoxins.

The university noted, "Eating products contaminated with mycotoxins causes sickness in humans and livestock, such as vomiting and other gastrointestinal problems."

It can also cause problems for farmers because the crop loses its value. It's a concern for the global food supply, so finding a way to eliminate the fungus would help with food security.

Kroll said, "This could be a game-changer for controlling these serious pathogens."

U.S. LEGAL ISSUES SURROUNDING USING PSYCHEDELIC MUSHROOMS FOR PALLIATIVE CARE

Benjamin Hatten, MD, MPH

https://news.cuanschutz.edu, Feb. 4, 2025

There is a growing body of research on psilocybin containing mushrooms (magic mushrooms) combined with psychotherapy in the palliative care population. These studies suggest positive effects on end-of-life related anxiety treatment, related depression, somatic complaints, and existential distress with a favorable adverse event profile. Consequently, providers caring for patients with serious illness may receive inquiries regarding access to such therapies. This blog post reviews the legal structure surrounding the use of psilocybin for palliative care.

Both Oregon (in 2024) and Colorado (upcoming in 2025) have established a framework of state distributed psilocybin with licensed growers, testing laboratories, facilitators, and consumption centers. No specific indication is required for patients to utilize this system, although high costs, need to travel to approved locations, and logistics provide barriers for some interested individuals. The statutes establishing these programs make it clear that psilocybin consumption via the program is not considered the practice of medicine and is separate from existing medical regulation and licensure. Additionally, any physician or other licensed provider seeking to work in the state distribution framework must "take off their doctor hat" during that period and follow the separate licensing scheme for psychedelic use.

Beginning in 2023, the Colorado statute also allows for any service provider, such as a massage therapist, yoga instructor, or death doula, to gift psilocybin containing mushrooms as an "add-on" to existing services. There is no required laboratory testing to evaluate contamination or potency of these gifted mushrooms, and no formal guidelines exist for administration outside of the state distributed program. Furthermore, under state law, patients may grow their own psilocybin-containing mushrooms or be gifted (but not sold) mushrooms from a Colorado grower.

However, it is important to emphasize that psilocybin containing mushrooms are classified as Schedule I controlled substances with no accepted medical use within the United States under federal law. Consequently, outside of a research study with a DEA waiver, there is no federally legal pathway for a medical provider to provide "psychedelic" treatment for a patient. Although complying with state law, providers in Oregon and Colorado may encounter legal prosecution, loss of DEA license, and termination of privileges at healthcare facilities if engaging in psychedelic-assisted therapy with their patients. Of note, both 41 states and the federal government have passed "Right to Try" legislation allowing terminally ill patients access to non-FDA approved therapies. Per the FDA (https://www.fda.gov/patients/learn-about-expanded-access-and-other-treatment-options/right-try), "a patient who is eligible for Right to Try is a patient who has

- been diagnosed with a life-threatening disease or condition
- exhausted approved treatment options and is unable to participate in a clinical trial involving the eligible investigational drug (this must be certified by a physician who is in good standing with their licensing organization or board and who will not be compensated directly by the manufacturer for certifying)
- has provided, or their legally authorized representative has provided, written informed consent regarding the eligible investigational drug to the treating physician

An eligible investigational drug is an investigational drug

- for which a Phase 1 clinical trial has been completed
- that has not been approved or licensed by the FDA for any use.
- for which an application has been filed with the FDA or is under investigation in a clinical trial that is intended to form the primary basis of a claim of effectiveness in support of FDA approval and is the subject of an active investigational new drug application submitted to the FDA.
- whose active development or production is ongoing, and that has not been discontinued by the manufacturer or placed on clinical hold by the FDA.

Psilocybin meets criteria as an eligible investigational drug per FDA regulations. Nevertheless, the DEA has not offered an acceptable pathway for a treating provider to provide their patients with the drug. Currently, a legal appeal from an oncologist in Washington State is pending before the 9th circuit (https://sps.columbia.edu/events/psilocybin-vs-dea-law-ethics-society-drugs; https://www.youtube.com/watch?v=yFi3GEewFpg) in an attempt to force the DEA to provide an exception within the context of Right to Try legislation.

To summarize, outside of an approved research protocol with a DEA waiver, there is no current federally legal pathway for licensed medical providers to provide a patient with psilocybin-containing mushrooms. However, in both Oregon and Colorado, there are state-approved pathways for patients to access such products. Consequently, providers treating patients with serious illness may receive inquiries regarding potential risks and benefits even if such therapies occur outside of a medical framework.

WANT TO SELL MOREL MUSHROOMS IN MISSOURI? THIS CERTIFICATION IS REQUIRED

Hunter Bassler

https://www.ksdk.com/, Feb. 7, 2025

Missouri's most famous mushroom season is right around the corner, and experts are holding a last call for any foragers hoping to sell wild mushrooms throughout the state in 2025.

KSDK

Morel mushrooms.

Morel mushroom season usually starts in April, but Missouri foragers were treated to an earlier-than-usual season last year. Morels popped out of the ground about a month ahead of schedule due to higher-than-average temperatures and precipitation, which the mushrooms tend to be very picky about, according to Native Landscape Specialist Alix Daniel at the Missouri Department of Conservation (MDC).

"In our region, [morels] seem to be triggered from the shift of winter to spring," Daniel previously told 5 On Your Side. "They should be starting to pop when the night temps are in the 50s and the daytime temps are in the 70s consistently."

Ahead of the 2025 morel season, the Missouri Mycological Society is holding a virtual course to get certified to sell morels throughout the state. The certification is required under Missouri law for anyone wishing to sell wild mushrooms in the state.

The Missouri Food Code specifies that wild mushrooms can only be obtained by an approved wild mushroom identification expert who has inspected each mushroom individually and has found them to be safe.

The Missouri Mycological Society's Morel Certification Course is offered virtually on Saturday from 9 am to 12 pm. Interested participants have until 4 pm on Friday to register for the $75 course.

"This class is only for certification for morel mushrooms," the society said. "A separate class will be offered on March 15th, 2025, for certification of other select species of wild edible mushrooms, including chanterelles, chicken of the woods, lion's mane, oyster mushrooms, and others."

THIS DENVER BUSINESS OFFERS MAGIC MUSHROOMS IN LEGAL GRAY AREA

Alayna Alvarez

https://www.axios.com/, Feb. 6, 2025

Psychedelic healing centers may not be open just yet in Colorado, but at least one local business is already offering access to medicinal magic mushrooms.

Lyman Support Centers—a small studio tucked just off Denver's Santa Fe Drive—has been offering psilocybin mushrooms as natural medicine for roughly the past two years.

Owner Darren Lyman told Axios Denver he believes he's operating legally under Colorado's 2022 voter-approved Natural Medicine Health Act, which decriminalized psychedelics and legalized medical psilocybin, including personal cultivation, possession, and sharing.

Lyman customers get their 'shrooms from his facility after a "support" session but consume them elsewhere.

You walk in after buzzing a call box, show your ID (21+ only), and sit down for a chat with a staffer—10 to 30 minutes for first-timers, often less for regulars, Lyman tells us.

The sessions cover the basics: your intended use, what psilocybin does, and how to dose it properly.

They cost between $10 and $200 and include "free" mushrooms, ranging from microdoses to a full ounce—available in dried, chocolate, or capsule form.

Lyman sources his mushrooms from multiple Colorado growers and tests them at Tryptomics and Friday Ventures for potency and purity.

It looks and feels like a dispensary, though Lyman insists he doesn't "sell" 'shrooms.

Law enforcement has taken notice, and Lyman says he's been investigated for operating in what some see as a legal gray area—but so far, he's never been charged or forced to shut down.

Lyman says his business is "100% in the legal scope" and already attracting people "from all over the world."

Despite Colorado's push for regulated healing centers where psilocybin is consumed on-site, Lyman has no plans to convert his operation.

Instead, he's expanding his product line to include psilocybin-infused lotions, creams, and even lip balm.

He's also working on a psychedelic tourism initiative to put Colorado on the map as an alternative healing destination.

Lyman Support Center.

MAN THINKS THERE'S A LOOFAH IN HIS SHOWER, THEN HE LOOKS CLOSER

Brian Dillon

https://www.newsweek.com/, Feb. 17, 2025

A man noticed something unusual growing in his bathroom and was shocked by what it turned out to be.

On Reddit, user /u/This-Scratch8016 posted photos of a fungus growing in his bathroom, receiving 16,000 upvotes and hundreds of comments from fascinated users.

u/This-Scratch8016/Reddit

The photos show a spongelike fungus in a shower and a large mushroom growing out of a wall.

"At first, it started out looking like a loofah and then would eventually turn into a small mushroom, and it would change very quickly," the Redditor, who chose not to give his name, told *Newsweek*.

"At first, I moved the sponge thing, and it kept coming back, so I left it to see what it would do even though I know it's bad," he continued. "I just really was so interested."

In his post, the Reddit user explained that although it was interesting for a while, he eventually got the issue fixed.

According to property experts Kempton Carr Croft, mushrooms grow in areas where water has gotten in. Mold can then grow as a result of the water being where it shouldn't.

BETA-GLUCAN FROM FUNGI COULD HELP PROTECT AGAINST INFLUENZA

Keila DePape

https://www.msn.com/, Feb. 17, 2025

A component found in all fungi may provide a shield against flu-related lung damage, according to a new study.

A team of scientists led by Maziar Divangahi, a Professor in McGill's Faculty of Medicine and Health Sciences and Senior Scientist at the Research Institute of the McGill University Health Center, demonstrated that beta-glucan, administered to mice before their exposure to influenza, can reduce lung damage, improve lung function, and lower the risk of illness and death.

Beta-glucan is found in all fungi, including mushrooms and yeast, as well as grains like oats and barley. The scientists discovered that a unique structure of this component can boost defenses against pathogens.

While most research focuses on stopping the virus from replicating, this study explored how to regulate the body's immunity to infection, a concept known as "disease tolerance." The researchers discovered that beta-glucan significantly enhanced flu survival rates by modulating immune responses and preventing severe lung inflammation, a common cause of fatality.

These results, published in *Nature Immunology*, highlight beta-glucan as a promising therapy for influenza and other emerging viral pathogens, said the scientists, adding future research will explore whether the findings can be applied to humans.

"It is remarkable how beta-glucan can reprogram certain immune cells, such as neutrophils, to control excessive inflammation in the lung," said first author Nargis Khan, who conducted this research as a postdoctoral fellow at McGill and is now an Assistant Professor at the University of Calgary.

"Neutrophils are traditionally known for causing inflammation, but beta-glucan has the ability to shift their role to reduce it," added co-first author Kim Tran, who recently completed her Ph.D. at McGill.

Most flu-related deaths aren't caused by the virus itself, but by an overreaction of the immune system, said the researchers. This suggests the true danger lies in the host's own immune response. However, how the immune system becomes so imbalanced remains poorly understood.

"Beta-glucan is found in the cell walls of all fungi, including some that live in and on our bodies as part of the human microbiome," explained Divangahi. "It is tempting to hypothesize that the levels and composition of fungi in an individual could influence how their immune system responds to infections, in part because of beta-glucan."

With flu season underway and the looming threat of bird flu (H5N1), developing effective therapeutic strategies for respiratory diseases is more critical than ever, he added.

CHOCOLATE MUSHROOM COOKIES

Myron Cooley

Mixed Wild Mushroom Recipes
Cascade Myco. Soc., Nov. 2012

"This recipe is from my mother-in-law, Olive M. Florence, 1906–1983. She was the antithesis of all the mother-in-law jokes. She was a helpful friend."

Cream together:

- ½ cup Butter or Oleo
- 1 cup Brown Sugar
- Add:
- 1 Egg
- 1 tsp Vanilla
- 1 tsp Almond Extract
- 2 squares Unsweetened Chocolate, melted

Sift and add alternately with ¼ cup Sour Cream:

- 2 cups Flour
- ½ tsp Soda
- ¼ tsp Salt

Add last:

- ½ cup fine Macaroon Cookie Crumbs (can substitute vanilla wafers)
- ½ cup chopped Maraschino Cherries, well drained
- 1 cup fresh Mushrooms, chopped

You can add ½ cup chopped nuts if you want.

[Roll dough into balls.] Place 2 inches apart on cookie sheet. Bake at 350°F for about 12 minutes. Cookies will be almost 2 inches in diameter and ½ to ¾ inch high.

This recipe makes 40 to 50 cookies when the dough is made into 1 inch balls. Very moist and tender, will keep well. Takes about 1 hour. ENJOY!!

Mushroom Dance

Dancing on the mushrooms
Jumping on their hats
We are the faeries of the night
You can't see us if there's light

Can you see us as you're passing by?
We like to see our shadows when we dance
But only by candlelight!
We are the faeries of the night

And before daylight comes ....we're gone!
And though you'll never in this lifetime see us twice
You'll always remember us with an enchanted sigh
Dancing on the mushrooms at night
By candlelight!

—Daphne