

Bolt Threads: mushroom leather for eco-fashionistas

CASE STUDY | Dec 9, 2022

Under public fire for polluting the planet, the fashion industry is embracing renewable solutions like Bolt Threads' mushroom leather. Backed by major designers crafting eco-friendly bags, shoes, and apparel, this textile innovation is signaling that when it comes to fashion, green is the new black.

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LOCATIONS:
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EXPERTS

Stephanie Ostler



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HIGHLIGHTS

- 01** Bolt Threads' mushroom leather is emerging as an eco-friendly textile alternative – one that's becoming widely available through partnerships with major fashion brands
- 02** With its climate impact widely exposed, many consumers are turning away from fast fashion and toward more sustainable apparel
- 03** As consumer pressure mounts, fashion brands face higher expectations to make a 'net-positive' climate impact throughout their entire production process

DATA

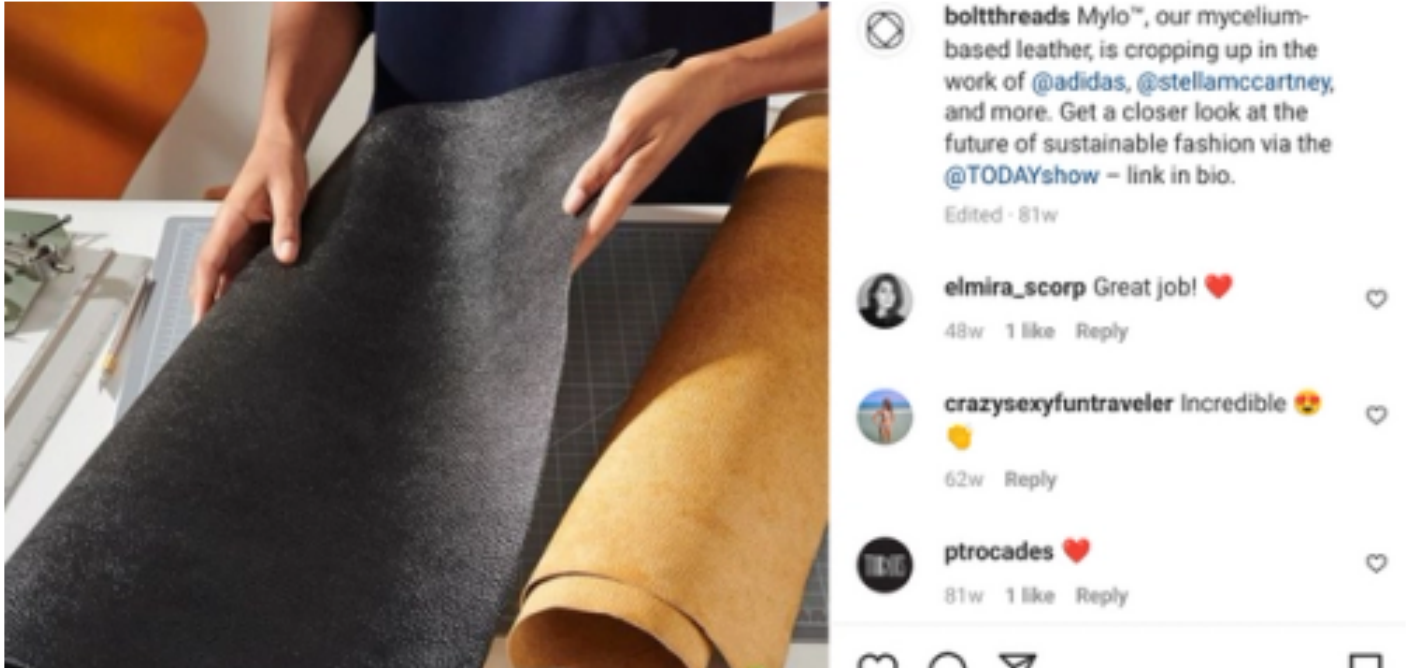
- 67% of consumers consider the use of sustainable materials to be an important purchasing factor
- 55% of Americans prefer animal-free leather for environmental and ethical reasons
- 65% of consumers plan to purchase more durable fashion items and 71% plan to keep the items they have for longer

SCOPE

Fashion has a pollution problem. In the US alone, 2,150 pieces of clothing are discarded every second, and popular textiles like polyester make up 15% of all petrochemical products. [1] "We've got a massive problem with waste and overconsumption, chemical use, and egregious unethical behavior in the fashion industry," says sustainable fashion designer, Stephanie Ostler – and consumers are very much aware of it, with 67% considering the use of sustainable materials to be an important purchasing factor. [2] [3]

Thankfully, eco-aware fashionistas can put down their 'ethical' (but plastic) pleather in favor of a new alternative: [Mylo](#) by [Bolt Threads](#). Mimicking the look and soft feel of animal leather but without the same planetary damage, the mushroom-based 'unleather' is a bright light for fashion brands grappling with the industry's major carbon footprint by re-examining their materials and backing the [mushroom movement](#). [Stella McCartney](#), [Ganni](#), and [Lululemon](#) have emerged as early adopters of Mylo, using it to create anything from bustiers and trousers to designer bags and yoga mats. In fact, Stella McCartney's [Frayme Mylo bag](#) made history as the first mycelium bag to walk a major runway and make it to market.

Though mushroom leather put Bolt Threads firmly on the fashion map, it wasn't their first textile innovation. The nature-inspired material solutions brand made a name for itself by producing Microsilk – an eco-friendlier thread that imitates spider silk – and then by extending that technology into skincare. But the silks didn't take off quite like Mylo, because they're not commercially viable enough to compete with textile mainstays like polyester. As consumer awareness of fashion's grim eco-footprint grows, so too does consumer interest in sustainable fabric alternatives. But fabric is only one piece of fashion's environmentalism conundrum. How can brands step up to the sustainability plate and turn a greener leaf?



Mylo is grown in vertical farming facilities powered by 100% renewable energy

Bolt Threads | Instagram (2021)

CONTEXT

READY-TO-WEAR RENEWABLES

The 54% of consumers opposed to fast fashion are looking for green alternatives, and 90% are willing to pay 10% more for them. [4][5] Their concern translates into textiles and materials, with over half (55%) of Americans preferring animal-free leather for environmental and ethical reasons. [6] It's no surprise then that Mylo is on the rise, as mycelium – fungi's underground root system – uses [half the volume of water needed for cotton production](#), while being certified bio-based as well as animal, chromium, and DMFa-free. Fashion brands like [adidas](#) are bringing Mylo to the climate-conscious masses with the [first-ever mycelium shoe](#), while [Ganni](#) is galvanizing more systemic change through their [Greener Pastures Pledge](#). In partnership with Bolt Threads, the brand is phasing out animal leather by 2023 and encouraging other designers to do the same.

GOODBYE GREENWASHING

“As consumers become more informed and sceptical of ‘surface-level’ marketing initiatives, they will be looking for brands to have a net-positive – rather than a net-zero – impact in the fight against climate change,” says Dana Thomas, a fashion journalist and author. [7] For the 37% of consumers who want to see fashion brands become more transparent about their environmental impact, greenwashing isn’t going to cut it. [3][8] If retailers are “outright lying” about their eco-credentials, Thomas says they can expect to see “more climate-justice-driven boycotts”. [7] Bolt Threads takes this seriously, explaining how Mylo is grown in vertical farming facilities powered by [100% renewable energy](#), demonstrating that sustainable fabrics are only one part of the story. “We also need to create completely circular systems,” says Ostler. [2] That’s why brands like [Christy Dawn](#) are launching initiatives like the Land Stewardship programme, where consumers can ‘buy’ plots of land dedicated to regenerative cotton farming.

MINDFUL MANUFACTURING

“I think consumers will be made more aware of how their clothes are made and will make more informed purchasing decisions, with climate impact as a governing factor,” says Thomas. [7] Consumers are paying attention to the actual materials in their clothes more than ever before – not just because of the environment, but because of the [toxic chemicals](#) found in fast fashion. Their purchasing behaviors are shifting accordingly, with 65% planning to purchase more durable fashion items and 71% planning to keep the items they have for longer. [3] Notably, 71% also report consciously thinking about products and packaging made from plant-based materials when they shop. [9] To meet that demand, Bolt Threads isn’t the only bio-textile producer in the game. San Francisco start-up [MycoWorks](#) is making the [Hermès Victoria bag from mycelium](#), while [Pangaia](#) recently released a shoe made from grape skins.



San Francisco start-up MycoWorks made the Hermès Victoria bag from mycelium

MycoWorks (2022)

INSIGHTS AND OPPORTUNITIES

PUSH FOR GREEN TRANSPARENCY

Publicly sharing factually-accurate green credentials is a must for brands, with 60% of consumers trusting retailers to be transparent about their sustainability efforts. [5] Maintaining that trust is essential, as watchdogs like NGOs and journalists are calling out greenwashing, false statements, and unethical practices, which is increasing consumer awareness while swaying public opinion about the rise of [sustainable choices](#). Fashion brands shouldn't underestimate their influence on sustainable buyer behavior and can consider marketing an ecosystem approach to sustainability. "The best thing we can teach people is to buy high-quality items once and commit to them like a marriage. Make the shopping process long, indulgent and luxurious," says Ostler, so buyers can experience the same dopamine hit of a new purchase but without the high climate cost. [2]

INVEST IN A MATERIALS FUTURE

"We have to switch the fabrics. That's obviously a necessity. We don't have a choice," says Ostler, which opens up a major white space opportunity for brands to discover what's next in textiles – and not just in fashion, evidenced in Mylo mushroom seats in [Mercedes'](#) new all-electric concept car, or furniture made from Ananas Anam's [pineapple leather](#). [2] Ostler says that shopping is very "emotions-based", meaning brands can also inspire consumers by communicating the stories behind their natural textile selections, like Bolt Thread's self-penned definition of [unleather](#) as a "radical act of choosing products made sustainably". [2] There's a certain feel-good quality associated with responsible shopping, which brands can tap into with honest and accurate marketing to cater to the needs of [picky shoppers](#).

EMBED FULL-SPECTRUM SUSTAINABILITY INTO BRAND DNA

A major consideration for next-gen materials is how they're made, as Gen Zers increasingly expect sustainability throughout the entire production cycle. [5] Almost 30% of consumers say they want to improve the environment, with 23% wishing to reduce production waste, 22% wishing to reduce carbon footprint, and 17% concerned with animal welfare, meaning brands can take all of these interrelated factors into account in all that they do, even when it comes to manufacturing behind the scenes. [5] Brands that get the bigger picture of sustainability, from fabrics to shipping, labor, and manufacturing are likely to get ahead – think predictive analytics, testing 3D samples before production, and meaningful ESG policies. Looking at brands like [Reco](#), it's clear that upcycling initiatives will be another popular way forward.

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Ganni is testing a new tracksuit made from banana waste as an alternative to synthetic fibres usu-



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Mycel has raised \$10 million to fund the creation of fungi-based biomaterials as an alternative to leather.

SOURCES

1. Bloomberg (February 2022)
2. Interview with Stephanie Ostler conducted by the author
3. McKinsey & Company (July 2020)
4. SWNS Digital (September 2021)
5. Forbes (March 2022)
6. Green Queen (April 2021)
7. Interview with Dana Thomas conducted by Canvas8
8. Opinium (April 2022)
9. Industry Intelligence (July 2022)

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