

# Hemp, The Real Fabric of Our Lives: Why hemp fabric makes cotton look so last season



You guessed it - we're back with another reason to love the cannabis plant, and this time it's for one of the seemingly infinite useful applications of industrial hemp: spinning high quality fabrics out of the strong, sustainable fibers naturally produced by the plant. Read on to learn why this fast-growing (literally!) fabric may be here to stay, how it disappeared in the first place, and why hemp is better than cotton in almost every way.

## **Environmental Impact**

As agricultural crops go, industrial hemp has many benefits and few downsides. Relatively fast-growing and high-yielding, hemp practically defines "renewable resource" in most climates, producing 5-10 tons of cellulose fiber pulp per acre in four months - more fiber per acre than trees!

The fast rate of growth creates a dense canopy that helps shade out weed competition, and the same compounds that make cannabis a powerful plant medicine also make it relatively resistant to pests and diseases, as compared to other field crops. Its long root system allows it to thrive on less water, all while helping to improve soil structure, retain topsoil and even remove pollutants from deep within the soil. These characteristics, along with the plant's ability to absorb carbon dioxide (also at a greater rate than trees) will become increasingly important as we confront the reality of our changing climate. In fact, hemp is one of the only carbon-negative crops, meaning that it sequesters more carbon than it generates per growing cycle. If that weren't enough, it's also an extremely versatile crop, with a high diversity of usable material yield with each harvest. The "hurds," or tough inner parts of the hemp stem, can be used to make a variety of biocomposites and building materials — in fact, hemp "plastics" are already widely utilized in the automotive industry, as its high tensile strength and scratch resistance

make it an ideal material for auto body paneling and interiors.

You have to admit that hemp is outstanding in its field (pun most definitely intended), but what about cotton – the so-called “fabric of our lives”? In terms of environmental impact, there is no comparison — cotton production requires a longer growing season, twice the land, and four times the water as the same amount of hemp. In fact, manufacturing one cotton shirt uses 2,700 liters of water, which is equivalent to the amount an average human drinks in two-and-a-half years! Furthermore, cotton’s susceptibility to pests and diseases creates another ecological problem – in the United States alone, cotton crops occupy 1% of farmland, but account for 50% of all pesticide use (per the Stockholm Environment Institute). With most of our country currently either on literal fire or experiencing excessive heat and drought, it’s pretty clear that we need to actively protect the clean water we have left, as well as reducing water use overall. If hemp production is superior to cotton in all of these ways, why is hemp fabric still so rare in the fashion industry? And why are we still so comfortable wearing cotton? Comfort is certainly one reason, but turns out there are a few factors at play when it comes to the battle of the fine fabrics.

## **Woven into History**

Since the first hemp stems were processed by humans more than 10,000 years ago, the resulting high quality fiber has been used for food, rope, oil, paper, and various textiles for domestic and industrial use. Hemp was spun into cloth around 8,000 BC, and until the 1920’s (when the prohibition of cannabis began), 80% of clothing was made from hemp textiles ([hempfoundation.net](http://hempfoundation.net)). Since then, there has been a significant decline in both production and demand for hemp-based fabrics and other products, at least in the United States. The majority of industrial hemp grown and sold today is from Europe, China, and Russia, although the 2018 federal legalization of hemp in the United States should help bolster our domestic hemp fiber market.

Cotton also has “deep roots” in the United States. The so-called “Cotton Belt” – a line of southern states stretching coast to coast – still produces 16 million bales a year, second only to China, and generating the greatest revenue of any United States crop. As the transatlantic slave trade and its associated industries spread their ugly tentacles across the nation, RI’s textile mills became instrumental to the flourishing cotton economy. Over 167 textile mills were producing goods from cotton by 1815, and the quaint villages and townships that popped up around them are still admired today ([worldhistory.us](http://worldhistory.us)).

## **Fiber Quality Over Quantity**

Due to the natural length of the fibers (up to 5 ft!) hemp fabric boasts three times the tensile strength of cotton, meaning it won’t stretch or lose shape — in fact, hemp fabric gets better over time! Its longer lifespan (20-30 years as compared to 10 years for cotton cloth) allows hemp clothing to be worn for far longer before it is recycled — a far cry from the “fast fashion” fabrics that can become literal trash after just a few wears. In addition, hemp fabric is naturally UV and microbe resistant (thanks again to the antimicrobial nature of the terpenes and cannabinoids in the plant) making it ideal for those with sensitive skin or allergies. It’s also lightweight (weighing one third less than cotton or wool, which makes it more sustainable to transport as well) and breathable, due to the natural thermoregulating properties of the fiber network of hemp. Because hemp can absorb up to 20% of its own weight in water while still feeling dry to the touch, the fabric retains less moisture and less odor-causing bacteria, meaning more wears between washes. Lastly, because it is not made from petrochemicals, hemp fabric is biodegradable and will not shed microplastics like other modern fabrics.

The long history and economics of cotton are not the only reasons it remains so popular today. Cotton fabric is known to be soft, comfortable, easy to dye, and relatively resistant to wrinkling. Processing hemp fiber into fabric does not yield the whiteness and softness of cotton fibers, so it tends to wrinkle a bit more easily, and colors may be slightly less vibrant. These perceived disadvantages, alongside decades of anti-cannabis stigma and the limited availability of the fabric, have resulted in lower demand from consumers for hemp fabric, at least in the United States. Couple that low demand with a limited supply chain due to the prohibition of marijuana, and it's no wonder the hemp fabric market is so behind the times.

On the other hand, our well-established cotton infrastructure allows a large amount of domestic production of cotton fabric, which keeps the price low, and that doesn't even begin to account for the economic impact of hundreds of years of "free" agricultural labor by enslaved peoples. Despite being less expensive and resource-intensive to farm, the cost of hemp fiber is still twice that of cotton, and American consumers are often hesitant to pay a higher price point, even if the quality is superior.

The good news is that as demand for hemp fabric (and our ability to produce more of it) increases, the price will inevitably come down for consumers. The legalization of industrial hemp in 2018, coupled with increasing awareness and social pressure, has resulted in more brands than ever before offering hemp-based fabrics and fashions. Fortunately, the versatility of hemp fiber also means that it is easily blended with other fabrics like cotton and silk, so consumers hoping to reduce their fashion footprint can actually have the best of both worlds. Plus, because hemp fabric is basically a stronger version of linen (a similarly sustainable fabric made from flax fiber), so if you don't mind dropping a little extra dough on higher quality fabrics to stay cool, comfortable, and climate-friendly this summer, consider choosing hemp fabric for your family, and make the comparison yourself!