

Growing Hemp for the Future



Since hemp's recent legalization in countries around the world, the global textile industry is increasingly using hemp fibers¹ for a variety of products from apparel to non-wovens. At the same time, agencies and universities are scaling up research into agricultural best practices – including which pesticides could be applied.²

At this nascent stage there are several important environmental issues to consider.

Biologicals now, conventionals in the future?

While the crop has relatively few pests currently, there's a risk of increased pest pressure as more of the crop is grown – from diseases and insect pests³ to weeds.⁴ This could potentially result in the expanded use of conventional pesticides (including herbicides, insecticides, fungicides, among others) which can cause a range of health and environmental issues. Indeed, while hardy, the plant may not be immune from problems that plague other natural fiber crops such as cotton, potentially leading to extensive pesticide use.⁵

Currently, only biological pesticides are permitted for use on hemp in several countries such as the US,⁶ Estonia,⁷ and the UK.⁸ China – the largest producer of hemp fiber in the world⁹ – hasn't registered any.¹⁰ However, conventional pesticides – including several considered "Highly Hazardous"¹¹ – have been approved for use on the crop in France (tefluthrin)¹² and the Netherlands (aluminum phosphide, deltamethrin, glyphosate, tebuconazole, and tefluthrin).¹³

Nitrogen rates and environmental impacts

Hemp thrives off nitrogen in the soil, and grows poorly otherwise.¹⁴ This could pose risks given the use of fossil fuel-based synthetic nitrogen fertilizer on other crops has resulted in ground and surface water contamination¹⁵ as well as greenhouse gas emissions that can have long-term impacts on the climate.¹⁶

Recommended rates for hemp fiber are up to 112 kg/ha (100 pounds/acre) of nitrogen alone in North Carolina,¹⁷ the leading US state for hemp fiber grown in the open by total production volume in 2021.¹⁸ This is equal to or more than the state's

nitrogen use per land unit recommendations for cotton (50-70 pounds per acre (or 56-78 kg per hectare) and soybeans (80-100 pounds/acre or 90-112 kg/ha). It's also almost the level recommended (120-160 pounds/acre or 135-179 kg/ha) for conventional corn (grain) production in that state.¹⁹ Pennsylvania's fiber hemp nitrogen use recommendations are even higher at 150 pounds/acre (168kg/ha),²⁰ and some recommendations go as high as 200 pounds per acre (224 kg/ha).²¹

Growing hemp right, right from the beginning

These concerns indicate the need to prevent health and environmental risks that could accompany hemp's expanded production.

Some farmers are growing hemp in an organic manner. Other farmers as well as brands indicate they are growing hemp in a "regenerative" manner. However, without there being a clear definition of the term "regenerative," or the farmer (or company) being certified to a particular standard, farmers and brands alike risk not only making claims that could be considered "[greenwashing](#)" but also contributing to the expanded use of synthetic fertilizers and hazardous pesticides, if and as they become permitted for use.

Textile Exchange believes hemp should be grown using best management practices that address both growing and processing the fiber such that it meets our definition of "[preferred](#)." This would allow us to avoid lessons learned from the production of other fiber crops and to meet our [Climate+](#) goals that call for the reduction of greenhouse gas emissions by 45% by 2030 while improving soil health, water, and biodiversity.

Hindsight is foresight

We have already seen commodity crops turn to using billions of pounds of pesticides and fertilizers every year.²² Is that what we envision for hemp?

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Building a commodity intentionally

We may not have the opportunity again in our lifetime to build a commodity “intentionally” – anticipating problems that could have been avoided and bringing measurable, beneficial impacts to soil health, water, and biodiversity in a manner that meets Textile Exchange’s definition of “[preferred](#)” practices from the start.

About Textile Exchange

Textile Exchange is a global non-profit driving positive impact on climate change across the fashion, textile and apparel industry. We guide and support a growing community of over 850 brands, retailers, manufacturers, farmers, and others committed to climate action toward more purposeful production, right from the start of the supply chain.

At the heart of our strategy is helping the fashion, textile, and apparel industry to reduce greenhouse gas emissions that come from fiber and raw material production by 45% by 2030. We call it [Climate+](#).

To get there, we are keeping our focus holistic and interconnected, accelerating the adoption of practices that improve the state of our water, soil health, and biodiversity too.

Learn more at: TextileExchange.org

Contact

Sandra Marquardt
Sandra@TextileExchange.org

Note: The information in this document may change as we finalize a report on the subject for publication this summer.