



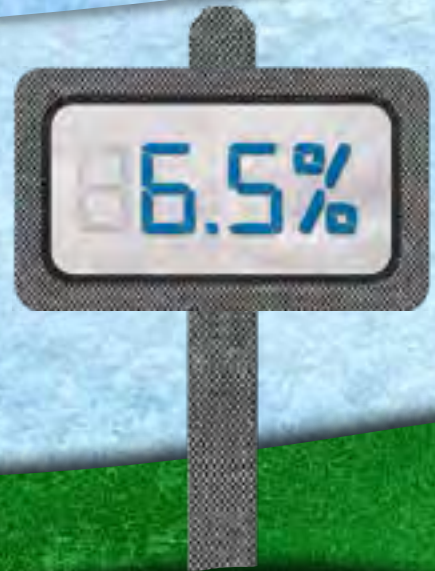
U.S. COTTON
TRUST PROTOCOL®
Trust in a smarter cotton future

The MOST INNOVATIVE INDUSTRY you would never expect



When you think of innovative industries, you probably think of computers, smartphones, and automobiles.

What you likely wouldn't expect is that the U.S. cotton industry is one of the most high-tech industries around, and it has used the advancements at its disposal to become continuously more sustainable.



Growers made much progress through innovations like windbreaks, contour farming and conservation tillage, which have been widely adopted across the U.S. to prevent soil loss.

During the past 35 years, U.S. cotton growers have made huge strides to improve the sustainability of their farms. They have improved soil health, reducing loss and erosion by 37% per acre all while increasing soil carbon levels, according to the 2016 national indicators report from Field to Market: The Alliance for Sustainable Agriculture.

Additionally, they have used 79% less water and 54% less energy, reduced greenhouse gas emissions by 40% and land use by 49%, all while increasing yield by approximately 42%.

As technology has improved, growers have utilized emerging innovations to grow cotton more efficiently. According to a study from Duke University and Cotton Incorporated, in 2015, 51% of U.S. growers used GPS-enabled swath control to ensure they were not overlapping crop practices such as planting, fertilize applications, and crop protection applications. In fact, nearly 7 in 10 growers used GPS auto-steering

functions on their tractors, tillers, pickers, and more. Now, 63% of U.S. cotton growers use precision agriculture technologies including GPS receivers, multi-spectral images and ground-based sensors to further improve their sustainability.

Precision agriculture technology gathers farm-specific parameters including soil conditions, nutrients and water availability. It can assess the farm to deploy site-specific crop management practices to maximize yields and minimize crop input requirements. U.S. growers use precision technology throughout the cotton season. Consulting real-time weather radar improves the efficiency of farm activities by allowing growers to avoid activities that would be affected by weather such as nutrient and herbicide applications getting washed off by thunderstorms. Yield maps show the site-specific yield within a field and are extremely useful to understand which areas of a field need different management. Precision farming technologies also have the potential to reduce GHG emissions from optimized nutrient management and water use efficiency.

U.S. cotton growers utilize precision agriculture to reduce land use through expanding irrigation and fertilization techniques based on in-field measurements. They use analytics and automation to better increase efficiency and improve soil health.



Varying soil conditions affect nutrient requirements, so soil testing is used to determine optimum nutrient requirements allowing the precision application to change rates within the field. According to the Duke-Cotton Incorporated study, 86% of U.S. cotton growers apply fertilizers based on soil testing and analysis. Most growers reported higher yields and improved resource efficiencies based off better testing.

In terms of water use, growers use computer-driven moisture sensors, soil moisture probes, real-time weather forecast and evaporation weather stations to understand how much water is in their soil and in the skies. With this information, they can better understand how much water they need to replace. Drip irrigation technologies can help growers improve crop productivity and water efficiency, while reducing nitrous oxide emissions from soils and GHG emissions. Based on the NC State study, 59% of growers in the U.S. used these flow measuring devices to track the water consumption per acre, regulate water flow and ensure the functioning of irrigation systems, thereby improving water management.

Now, growers are adding an innovative program to better measure their sustainability progress. The U.S. Cotton Trust Protocol underpins and verifies U.S. cotton's sustainability progress through sophisticated data collection and independent third-party verification. Brands and retailers will gain access to U.S. cotton with sustainability credentials proven via Field to Market: The Alliance for Sustainable Agriculture, measured via the Field Calculator and verified with Control Union Certifications.



Thanks to significant adoption of precision agriculture, the Trust Protocol helps growers easily measure their progress towards targets aligned with the UN Sustainable Development Goals for six key sustainability metrics including soil loss, soil carbon, water use, soil carbon, energy use, and greenhouse gas emissions.

All this innovation has been useful in helping the U.S. cotton industry provide brands and retailers the confidence that U.S. cotton is more sustainably grown. Choosing Trust Protocol cotton will give brands and retailers the critical assurances they need that the cotton fiber element of their supply chain is more sustainably grown with lower environmental risk. The Trust Protocol will also enable full supply chain transparency through its Protocol Credit Management System (PCMS) using a powerful combination of the Trust Protocol Platform and the TextileGenesis™ platform. It uses blockchain technology to record and verify the movement of U.S. cotton fiber along the entire supply chain. Starting from the initial fiber sale, every transaction recorded in the PCMS is double verified.

The PCMS will provide critical information about Trust Protocol cotton throughout the member's supply chain. Once brands and retailers have received their finished products, they can claim data-backed, verified Trust Protocol credits based on their individual consumption. The total number of Protocol Credits a brand has consumed during the Protocol Year will determine its environmental performance data, which the brand or retail member can communicate through its own sustainability claims.

U.S. cotton growers have evolved their sustainability practices by incorporating cutting-edge technology. The U.S. Cotton Trust Protocol joins a long line of advancements that will allow them to continuously improve the sustainability of their operations.

Become a
member today at
TrustUSCotton.org



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