Science Societies

Impact of September cold fronts on cotton fiber quality in Texas

February 21, 2025



A cotton trial in Hale County, TX. Photo by Brooke Shumate.

Cotton (Gossypium hirsutum) is the number one fiber crop in the world. The United States is a top exporter of cotton worldwide with the state of Texas contributing 40% of the nation's crop. The Southern High Plains of Texas, a hotspot for cotton production in the state, experiences harsh weather conditions. In some years, a non-freezing cold front will move through the area in the late cotton season, followed by a warm period before the first freeze. This leads to crop management concerns in the area.
In a recent study published in Agrosystems, Geosciences & Environment, researchers investigated the impact of a cold front (<10°C) in September, which is a critical period for fiber maturation. The team took samples in two different locations before, during, and after one of these cold front events and evaluated their fiber quality. Results showed that cotton bolls continue to develop, despite the weather event, with fiber yield and quality continuing to improve.

This research offers valuable in situ observations that help improve our understanding of how cold weather events affect cotton production. However, more studies are needed to uncover the physiological mechanisms at play in cotton during these events.

Dig deeper

View the original article:

Shumate, B., Maeda, M., Bell, J., Wanjura, J., Ortiz-Pustejovsky, R., & Kelly, B. (2024). In situ impacts of late-season low temperatures on cotton (Gossypium hirsutum) fiber quality and yield on the Texas High Plains. *Agrosystems, Geosciences & Environment*, *7*, e20537. https://doi.org/10.1002/agg2.20537

Text © . The authors. CC BY-NC-ND 4.0. Except where otherwise noted, images are subject to copyright. Any reuse without express permission from the copyright owner is prohibited.