



COTTON

The Fabric of our Future

From four bales to a few billion each year, the cotton industry has rapidly grown in Lubbock County since the early 1900s. The county's first cotton crop was grown in 1902 with little technology compared to the present day. During the past century, cotton research has advanced the ability to grow cotton in larger amounts and of better quality. Those advances have allowed cotton to spread far beyond Lubbock County and now the High Plains region produces several million bales of the fiber each year and is the largest area of cotton production in the United States.

Seshadri

Ramkumar, associate professor of arts and sciences and faculty member at The Institute of Environmental and Human Health (TIEHH) at Texas Tech, has conducted cotton research since he came to the university in 1999. He got his doctorate in materials, textiles and fiber sciences, from the University of Leeds in England, where he explained that the climate was not adequate to grow cotton.

"As soon as I moved to Texas, I started seriously working on cotton research," Ramkumar said as he tapped his chest. "It is part of my blood now."

Ramkumar is the developer of a material used to find applications in disasters called Fibrertect®. He also explained the reasoning for the naming of the material; Fibrertect® is a fiber that protects. Originally developed to protect United States military from biological warfare agents, Fibrertect® contains carbon sandwiched by two layers of cotton. The material, made from raw cotton which contains natural waxes, can absorb oil up to fifteen times its weight. The carbon middle layer absorbs toxic vapors left behind by the oil.

"Our wipe material is unique from any others in that it easily absorbs liquids, and it has vapor-holding capacity. No product to my knowledge has the capacity to do both," he said.

Unlike any other product being used for this purpose, Fibrertect® is made from raw cotton and carbon, making it environmentally friendly.

Working in a multimillion dollar laboratory has helped Ramkumar realize that the world's cotton fiber research holds brainpower at Texas Tech. Not only in his research, but in the cotton research of so many others, cotton has transitioned from a general fiber to a smart fiber.

"Sometimes cotton will be flame retardant, cotton will be hydrophobic, which means it repels water, and

sometimes cotton can absorb water," Ramkumar said holding a sample Fibrertect®. "So the next phase of the cotton industry, in my view, will take cotton from a general fiber to a smart fiber."

Lubbock has taught Ramkumar a very important part of research. While explaining the importance of Lubbock being surrounded by more than one hundred square miles of farmland growing cotton, he described his experiences with the people involved in the cotton industry.

"You need have an environment that is more

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supportive, and I can vouch personally that if you are a cotton researcher, you need to be in Texas. More importantly, you need

to be in Lubbock," Ramkumar stated


Plains Cotton Growers, Inc. has played a vital role in helping Ramkumar complete his research, along with many others. Shawn Wade, communications director for Plains Cotton Growers in Lubbock has been in the cotton industry his whole life.

"My family has cotton farmland west of town," Wade said. "I've spent plenty of summers in the field."

Wade said that cotton research is important for its future. With the help of research and new legislative regulation cotton will continue to transform, he said.

"Cotton research is important for two reasons," Wade said, "first of all to keep moving forward toward to new, non-traditional uses and secondly to solidify its place in people's minds as a versatile, renewable choice for textile and other applications.."

Although the community of Lubbock may realize the importance of cotton on Lubbock's economy, researchers, professors and students will soon realize the importance of the research being conducted in Lubbock. Cotton research being done at Texas Tech University is catapulting the fiber into the future.

In the past century, cotton has primarily been used as a textile fiber. In the 21st century, cotton has become a fiber that people are experimenting with to help save the world. Fibrertect® began as a fabric made to protect soldiers in battle, but is now being used to help save the environment. No matter where future research leads cotton, it was once the "fabric of our lives" that is growing into the fabric of tomorrow. 

Danielle White | Amarillo, Texas

