

Can Tech research product help soak up Gulf oil spill?

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While BP continues trying to cap an offshore well and people are wondering what's going to happen next, Dr. Seshadri Ramkumar, associate professor of the Texas Tech Institute of Environmental and Human Health, may have a solution.

Through his research with nonwoven cotton, he may have found an all-natural way to absorb oil from spills such as the one currently contaminating the Gulf of Mexico off the coast of Louisiana and threatening its marshlands and fishing industry, among others.

Rather than spending money and effort on containment structures and synthetic materials, he recommends utilizing cotton.

Professor Ramkumar, who creates rolls of nonwoven cotton at his Nonwovens & Advanced Materials Laboratory at Reese Center, was surprised cotton had not been considered earlier, reported the A-J's Alyssa Dizon.

"We are the only ones ... to my knowledge ... focused on taking cotton to oil absorption using nonwoven technology," he said.

The chemistry of cotton makes it the ideal material for oil absorption with its waxiness, strength when wet, absorption capacity and ability to biodegrade, explained Professor Ramkumar, who described his discovery as "a blessing in an ironic situation." Cotton fiber contains 0.5 percent wax, which enables it to soak up 40 times its weight, he said. Add chemicals and it could absorb up to 70 times its weight, he said. Unlike apparel production, there is no need to go through the expensive processes of dyeing, bleaching and weaving the cotton.

Since the explosion of an offshore rig more than a month ago, scientists and London-based BP oil company have been trying various methods to contain or soak up as much oil as possible, largely with limited or no success.

One cotton product Professor Ramkumar invented last year was Fibertect, a commercially sold nonwoven decontamination wipe that absorbs toxic chemical substances. This is significant because now that the oil has reached the coastline, the nonwoven cotton technologies potentially could be doubly beneficial.

"Any wildlife rehabilitation that will occur we believe could be assisted with the Fibertect invention as well as other nonwoven applications from his lab," said Ronald Kendall, founding director of Tech's environmental institute. "There are just so many applications of Dr. Ramkumar's technology to take cotton and turn into products that we never even thought of before."

The potential benefits of Dr. Ramkumar's research stretch far beyond helping preserve the environment from natural and man-made disasters and raising Texas Tech's reputation in the higher education community nationally and internationally. New opportunities for cotton are always good news for producers, especially if it will help them sell low-quality cotton, said Shawn Wade, director of communications for Plains Cotton Growers.

Several million feet of booms, lightweight tubes used to recover oil, have already been tossed into the ocean, according to the National Oceanic Atmospheric Administration.

"Those synthetic booms soak up only a third of what cotton absorbs and are not biodegradable," said Dr. Ramkumar. "You take those plastics and where do you put them? In landfills. They will stay put forever."