

Need to recycle water? Give the ground first shot at it

September 11 2014, by Robert Burns

The key to solving some of Texas' water shortage problems may be as simple as teaching homeowners and cities how to efficiently and cleanly return wastewater to the ground, according to a Texas A&M AgriLife Extension Specialist.

"To me, having a long-term positive impact on our [water](#) supply is to put the treated effluent back in the ground safely," said Dr. Anish Jantrania, AgriLife Extension specialist, Temple. "And if cities and towns start doing that, it will stabilize the groundwater supply because you're putting millions of gallons back in the ground. And the ground holds water a lot longer than reservoirs."

Jantrania is the new wastewater specialist at the Blackland Research and Extension Center in Temple. His emphasis, according to his website bio, will be to develop "a statewide AgriLife Extension education and research program related to surface and groundwater quality protection, with specific emphasis on non-point sources and other environmental issues."

His appointment is 70 percent AgriLife Extension, and 30 percent Texas A&M AgriLife Research.

Although Jantrania is new to Texas A&M AgriLife, he has more than 25 years of experience working in the wastewater industry, both in public and private sectors, with a focus on on-site sewage facilities and home [septic systems](#), according to his vitae. Before coming to Texas, Anish

has worked in Virginia, Massachusetts and West Virginia.

He received his bachelor's from Udaipur University, India in 1982, a master's from Ohio State University in 1985 and a doctorate from Clemson University in 1989 – all in agricultural engineering. He also earned a master's in business administration from West Virginia University in 1993.

Jantrania said that conservation methods such as rainwater harvesting are good, and he'll be working to promote those efforts too, but conventional conservation measures only go so far when there's no rain.

"The current infrastructure is dependent upon rain," he said. "Lakes, reservoirs and groundwater supplies are all dependent upon rain. Whatever is happening in nature, the rainfall pattern is changing."

There are options, such as pumping water in from other sources and desalinization, but currently they are very expensive, though research is ongoing to find ways to lower the cost.

"Conservation is always step No. 1, and the second thing is reuse or multiuse," he said.

Imagine, Jantrania said, a typical water cycle of a city. If the city is drawing water from wells or from a reservoir, it is using most of it only once. Some water is used to irrigate lawns and athletic fields, and may quickly return to the watershed, but much of it is treated and then released into a river or stream.

"The water will go down the stream, hit the bay, and it may or may not come back in the form of rain to the same city; that's the natural hydrological cycle," he said. "But what if you can keep the water where it's being used more effectively and efficiently?"

He said there are different ways to do this, including treatment plants using several levels of filtering and disinfection, which involve high-energy and operation costs.

"But with the proper soil, technology and management, the same disinfection and cleaning can be done at a fraction of the cost. This is what small private septic systems and large decentralized systems can do," Jantrania said.

Jantrania will be working with homeowners, landowners and municipalities to make better use of what water they have, he said. He will also be involved in developing training programs for homeowners in better managing their home aerobic and trench-style septic systems. He also plans to be involved in research for other means of reclaiming water.

Provided by Texas A&M University

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