

Water: OUR FUTURE DEPENDS ON IT

Dehydrated, cracking, scorching and starving for moisture, these are just a few descriptions used when referring to the drought and the impact it has had on farmers across the South Plains. Now imagine all of these things and not having the ability to quench the thirst. If water conservation isn't adopted by all, that is what will happen, affecting not only today but future generations.

Local alfalfa farmer from Idalou, Texas, Randy McGee, has taken this negative situation and turned it into something positive.

"The drought was a big learning curve I guess you could say," McGee said. "2011, I'd never seen anything like it. Our yields were way off, even with using the drip irrigation."

McGee was not alone. The drought in West Texas created problems for farmers and ranchers unlike anything they had seen in recent memory. Many found solutions from a demonstration project that started nine years earlier.

The Texas Alliance for Water Conservation (TAWC) project has helped farmers to succeed in water management and conservation by providing different technologies and methods for producers to use. The project began in the growing season of 2005 and it hosts demonstrations and field days to producers to show them research based water-saving techniques and technologies. It also provides farmers management tools that helps them to not only conserve water, but remain profitable.

Former Senator, now Texas Tech University Chancellor,

Robert Duncan is to thank for coming up with this project idea. Duncan had envisioned the water and drought issues Texans were about to face; and came up with the idea to use real information from producers through a demonstration project that would involve both producers and researchers.

"Water conservation is vital to the future of agriculture in West Texas," Duncan said. "With my background in agriculture, I knew we had to find the right solution for all producers."

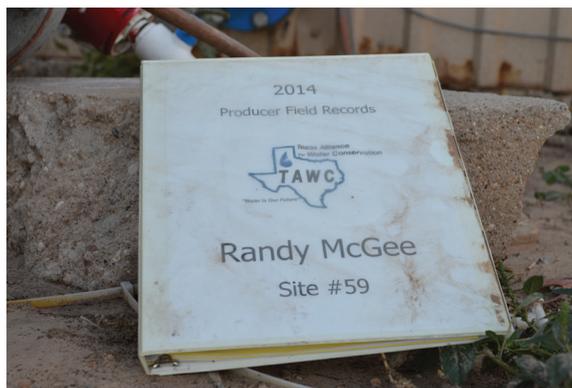
Working with the Texas legislature, a \$6.2 million grant was funded through the Texas Water Development Board to establish the TAWC project. The project is directed by a

board of area producers in Hale and Floyd counties and started with more than 4,000 acres that demonstrated diverse production and irrigation systems. The success of the project has led to similar activities in other counties and a second grant from the state.

"The last session of the legislature in Austin appropriated another \$3.6 million to carry the project for another five years, with 2014 actually being year one of Phase Two." Rick Kellison, the TAWC project director, said. "So, we will go through the growing season of 2019."

Initially the project was only in two counties, Floyd and Hale County. In 2014, the TAWC has added six more counties, six additional growers and added two more sites within Floyd and Hale counties. Currently that puts them at 23 growers, 33 sites, and about 6,000 acres.

There have been several outcomes resulting from the



Randy McGee refers to his TAWC folder often to follow the useful information provided.



McGee depends on equipment such as the water meter to monitor water use.



McGee takes pride in his crops and strives to conserve water using the TAWC techniques.



Producers learn hands-on about soil moisture testing through demonstrations on-site.

Photo provided by Samantha Borgstee

project, one of these being innovations that will provide farmers with ways to conserve water. These innovations are shown to farmers through demonstrations and field days that are held throughout the growing season. The TAWC goal is to demonstrate to producers ways in which they can be more conservative with the amount of water that they are using, but at the same time maintain an economic viability.

Demonstrations are a big part of the TAWC. Prior to 2013, they would host two field days per year, one in the winter time, normally in February, and they would have a field day late season about mid-August.

In 2013 field walks began, which are a series of meetings through the growing season. During these walks they bring growers to the field, look at the various crops, talk about the plant's current stage of growth and water demand, and how much water had been applied. As a crop progresses, subsequent walks allow them to estimate a potential yield, how much more water it is going to take the producer to finish out a crop, when peak water demands will be, and how much they may be. This education format gives the producers more of a hands on approach, rather than just giving them a book to read.

"It's amazing how much new technology is available to producers today that we didn't know anything about in 2005," Kellison said. "We are trying to keep it as simple as we can. Our goal is to expose growers to all of the different technologies available and let them pick and choose where their comfort zone is."

New technologies have also been tested on these demonstrations with the results being shared at field days and during field walks. One such technology is capacitance probes.

A capacitance probe is installed in the field and can have moisture sensors every four inches. Using mobile technology such as the iPhone, iPad or laptop, a grower can

pull up his real-time sensor in his field and be able to see how deep the crop is rooted and where that crop is pulling moisture from.

As that crop roots in the various zone profiles, a grower can see that crop pulling moisture from a deeper zone. Then when he makes an irrigation application, or he gets rainfall event, he can actually see how deep that moisture is moving in the soil.

Technologies such as this help farmers better manage their crops during times of limited rainfall which improves their bottom line.

"As far as net money at the end of the year, it has improved," McGee said. "You are able to fine tune your operation at the end of the year"

Rivers overflowing, drenched farm land, bountiful fields of cotton, outlandish amounts of alfalfa, copious corn fields, and lakes above normal water levels are the descriptors of an ideal and perfect world, which is almost unimaginable when we think about the past years and the drought that has affected so many.

"There were some good lessons learned," McGee said. "I think if anything like that ever happens again, we'll be prepared to address some of the issues that we had." **T**

"It's amazing how much new technology is available to producers today that we didn't know anything about in 2005."

Heather Wilson
IDALOU, TEXAS

