Story by Kathy Wythe

Making water work

Program trains farmers on latest irrigation tools' techniques

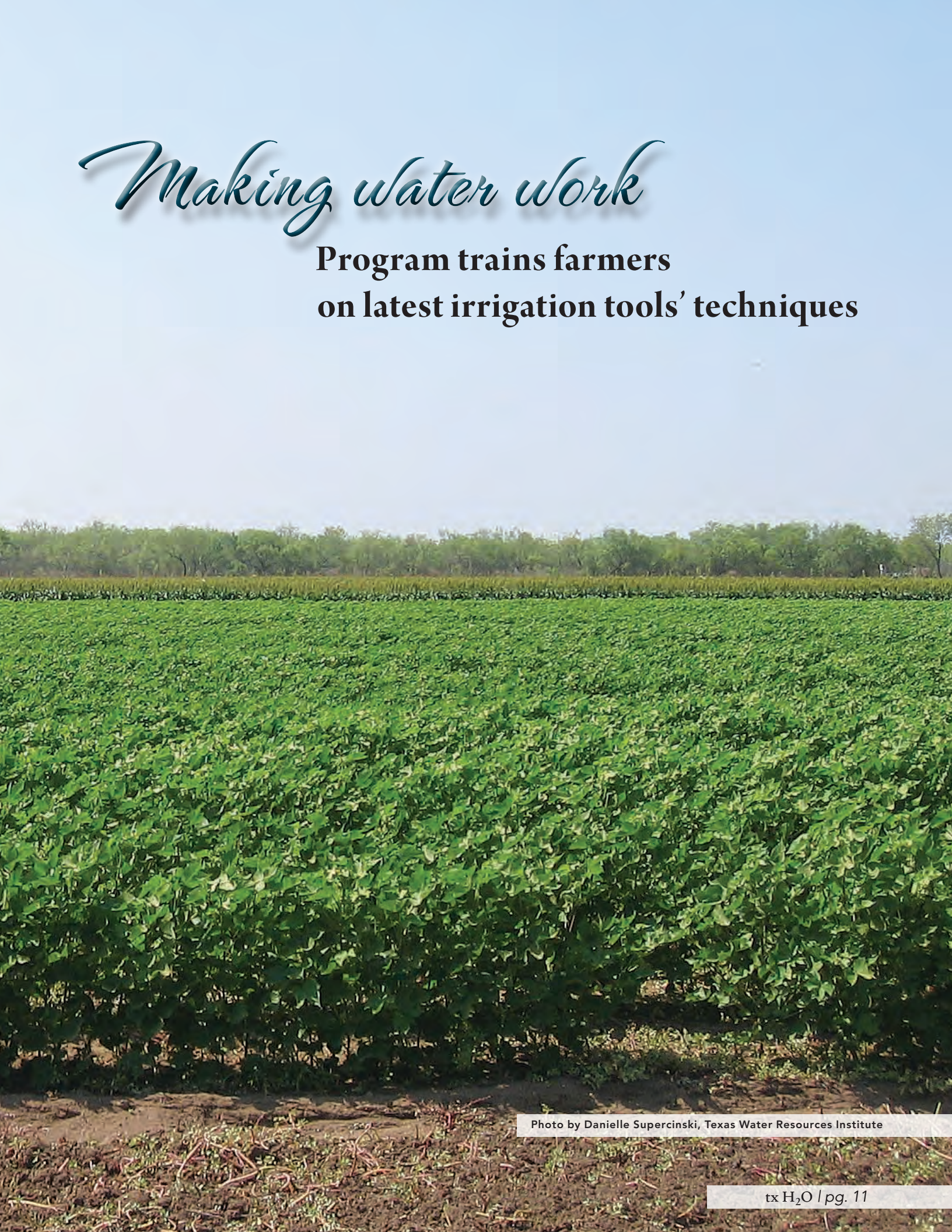

Photo by Danielle Supercinski, Texas Water Resources Institute

Program trains farmers on latest irrigation tools' techniques

Every year farmers on the Texas High Plains hear how the Ogallala Aquifer underneath their cultivated acres is slowly being depleted. They know that to continue farming they must use the best, most efficient irrigation methods to make this water last.

That is why earlier this year, 40 of these farmers, Texas AgriLife Extension Service specialists, crop consultants and irrigation industry professionals attended the "Making the Most of Irrigation" event in Lubbock. This one-day training, part of the Irrigation Training Program, was the first of six that will be held in different regions of the state during the next two years to help farmers and others learn about efficient tools and techniques of irrigation management.

The program is a collaboration with the Texas Water Resources Institute (TWRI), AgriLife Extension, Texas State Soil and Water Conservation Board and its network of local soil and water conservation districts, and the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS). The Texas Water Development Board (TWDB) funds the project through its Agricultural Water Conservation Grant program.

Dr. Bill Harris, TWRI's associate director and developer of the project, said this program is important because the amount of water used for irrigating crops is more than the amount of all other uses combined. According to the TWDB's state water plan, 60 percent of water used in Texas goes to irrigating crops and this percent will decline to 42 percent by 2050.

"Conservation-based water management practices are essential to meet that decline," Harris said. "Efficient use of irrigation water through the training of agricultural irrigators has the potential to yield large dividends in water savings."

Although numerous irrigation programs are scattered across the state, "this course creates a cohesive program of information so that agents and specialists can use a common program," said Cecilia Wagner, TWRI project manager.

Photo by Danielle Supercinski, Texas Water Resources Institute

One of the practices taught in the Irrigation Training Program is the use of Evapotranspiration (ET) networks. Researchers at the Texas AgriLife Research and Extension Center at Uvalde have installed field lysimeters like the one shown to quantify crop water use for further development of ET networks.

Planned Irrigation Training Programs

Central Great Plains (Chillicothe)	August 19, 2008
Rio Grande Valley (Mercedes)	October 27-28, 2008
Coastal Bend (San Patricio County)	November 2008
Wintergarden (Uvalde)	TBD (Fall 2008)
Panhandle (Amarillo)	January 14, 2009

The course uses a manual of Extension and related agencies educational materials, presenting information about such principles as determining crop water needs, using climate data for irrigation scheduling, improving on-farm water management, increasing application efficiency, economic comparisons for different systems and application techniques, and reducing losses in water conveyance systems.

At each training location, the instructors will tailor the curriculum specifically to that

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—Cecilia Wagner, TWRI project manager

Photo by Shelby Axtell, Texas Tech University

region, including region-specific irrigation practices, cropping systems, and climates, Wagner said. The next one-day program is scheduled for August 19, 2008 at Chillicothe with Drs. John Sij and Dana Porter serving as coordinators.

At the Lubbock program, held in conjunction with the Southwest Farm and Ranch Classic Trade Show, the attendees learned about optimizing irrigation scheduling using evapotranspiration networks and soil moisture management from Porter, an AgriLife Extension specialist at Texas AgriLife Research and Extension Center at Lubbock.

"We're really promoting optimizing management of advanced irrigation technology," Porter said. "We have some really neat technological tools and are trying to increase ⇨

people's familiarity with these tools and improve the proficiency with which they are used to improve water management."

Porter added that there has been training for High Plains irrigators in the past, but the Irrigation Training Program is more comprehensive. "We have done commodity specific programs, but this is putting it all in one place," she said.

Jay Yates, Extension risk management specialist, presented information about the economics of rotation strategies for water conservation; Randy Underwood of NRCS gave an update on NRCS's cost-share programs; and Jim Conkwright, High Plains Underground Water Conservation District general manager, gave a legislative update on water issues.

Edwin Smith, Farris Hightower, and Jerry Funck from the Texas Agricultural Irrigation Association discussed specific irrigation technologies, including center pivot irrigation and subsurface drip irrigation. Extension agronomists Drs. Calvin Trostle and Randy Boman spoke about management of forage and grain crops and cotton, respectively.

Photo by Shelby Axtell, Texas Tech University

Certified crop consultants and certified irrigation designers who attended received continuing education credits.

These individuals are targeted, Porter said, because "they work with key growers, so they can really have an impact."

Wagner said the hands-on training program is targeted toward producers who are already practicing efficient irrigation but want to refine their systems. "The instructors are teaching them the tools and techniques that allow them to be more efficient irrigators," she said. The project team plans to train more than 200 people over the next two years.

Although predicted water savings from the program are difficult to measure at this point, Harris said, measured and demonstrated water savings from implementation of precision irrigation technologies have shown up to 30 percent savings in total water use in the Uvalde area and savings of 1 million acre-feet of water per year in the Amarillo area.

"We believe conservative estimates of water savings possible with well-trained irrigators are 10 percent to 25 percent," Harris added.