

LEPA leaves extra cash in pocket

By JIM STEIERT

GLENN Shur, one of more than 20 co-operators in the Texas Alliance for Water Conservation project in Hale and Floyd counties, knows that water determines farming success. With less of it to work with as the Ogallala Aquifer declines, Shur is mindful of equipment and cropping choices that can keep his farming profitable while improving irrigation efficiency.

To maximize profit per inch of water applied, Shur grows seed millet, grazes millet residue and wheat with cattle, and plants cotton into the residue on farmland near Plainview.

He uses low-energy precision application sprinklers with bubbler nozzles in cotton production. To test the effectiveness of LEPA vs. spray applicators during the drought of 2011, Shur rigged the fourth span of his pivot with spray nozzles, leaving the other spans with LEPA drops on a circle divided between cotton and millet.

"Millet yield was 1,720 pounds an acre under spray application, and 1,950 pounds per acre under LEPA, a difference of \$70 more per acre for bubbler application. LEPA-irrigated cotton yielded 1,001

Key Points

- Low-energy precision application sprinklers improve returns on crops.
- Changing soil color is costly in water efficiency.
- Timing and application methods are vital to efficient water use.

pounds per acre, and spray-irrigated cotton yielded 880 pounds. At 85 cents a pound, the 122 extra pounds of cotton per acre under LEPA meant another \$100 an acre [in return]," says Shur.

In 2012, Shur grew 66 acres of cotton and 55 acres of seed millet in a TAWC test field, with 500 gallons per minute flowing into his sprinkler.

With drought continuing on the Texas High Plains, he concentrated on managing moisture in the top 8 to 12 inches of the soil profile, as no deep soil moisture was available.

"Based on work in the TAWC project by Dr. Jim Bordovsky at Halfway, I've learned pre-irrigation may not be the most profitable use of water. We put on 2 inches prior to planting, and all other water goes into growing-season irrigation at 4 gallons per acre per minute. I



EPA BELIEVER: Glenn Shur did his own experiment with LEPA irrigation and bubblers on drop hoses versus spray application on a farm near Plainview, Texas. He was able to pocket extra money using the water conserving technology of LEPA.

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get an early start on cotton irrigation, getting serious about irrigation by the second or third week of June. In a low rainfall year, we'll slow cotton irrigation down by mid-August, keeping a close watch on what we apply, usually irrigating for four weeks after cutout. Stopping irrigation two weeks after cutout is too early, and continuing six weeks after cutout is overkill," says Shur.

High Plains producers — particularly corn farmers — have learned the hard

way in 2011 and 2012 that crop planting must be adjusted to irrigation capacity.

Shur says, "It's easier to manage residue from millet or wheat than to grow a cover crop that uses a lot of water."

Another lesson learned through experience is "every time you change the color of the soil, you lose an inch of water.

"Any water we can conserve during the growing season is water we can save for another day," says Shur.

Steiert writes from Hereford, Texas.