

Neutralize high salt content, boost yields

Key Points

- Texas Panhandle grower is dealing with salinity issues.
- A new tool offers ionized water that helps solve the problem.
- Better water is boosting yields for the grower.

By **LARRY STALCUP**

TOO much salt is not a good thing, whether it's on your food or in your irrigation water.

Just ask Texas grower Rick Sander. He increased his corn yields by nearly 40%, up from 160 to 220 bushels per acre, by installing an Irrigation Enhancer system, which neutralizes the negative effects of excessive salinity.

Sander operates several farms in Hansford County in the Texas Panhandle. His crop rotation is normally corn followed by winter wheat grazed out by stocker cattle, followed by corn the next year. Cotton and sorghum have also been in the rotation. The soil is mostly clay.

A little salt

The operation runs 18 center pivots, all fed from the Ogallala Aquifer. Wells for 15 pivots have no salinity problems. But three others sometimes see excessive salt content.

"Corn grown under these pivots just wasn't yielding," Sander says. "After learning of the 'enhancer ionizer' attachment, I installed three of them in mid-season of my 2013 corn crop.

"Within a week, yellow, curled leaves flattened out. The crop looked much better in a short time. With improved water quality, my yields jumped from 160 bushels the previous year to 220 last year. At that rate of increase, the units will pay for themselves in about two years."

The Irrigation Enhancer is from Eco1st Technology Group. Units are available in 2-inch- to 12-inch-diameter sizes. They are normally attached at the wellhead. Water from the well flows through the unit to pivot towers (or other irrigation systems).

In simple terms, water flows through an ionization process. It allows water to flow more easily through the soil and into the plant's leaves. Chris Mann, Eco1st product specialist, says plants are able to divert all energy to healthy plant growth, rather than just for survival.

"When irrigating, the ionized water, unlike natural water, will no longer grab hold of any harmful contaminants in the soil or water," Mann says. "The ionized water will not channel, but move uniformly through the soil, down into the root zone and up into the plant more efficiently, regardless of the soil type."

Sander installed 8-inch units on two quarter-mile pivots. He also installed one 10-inch unit on a half-mile pivot. The wells pump water through the units and into the pivot at a rate of about 750 gallons per minute. Units operate without any power source, chemicals or operator adjustments.

The Zimmatic pivots feature drop tubes on 60-inch spacings. Due to the region's high winds and semi-arid, low-rainfall climate, low-pressure nozzles are set at about



▲ **LOW-SODIUM:** Rick Sander installed a new tool designed to deal with salinity issues with some of his irrigation water. The system ionizes the water, keeping salt out of the way.

◀ **IN-LINE AT WORK:** The Irrigation Enhancer is available in diameters from 2 to 12 inches, and is inserted in the water line leading to the pivot. The system requires no added power to work.

1.5 feet above the ground to improve watering efficiency.

Maximizing efficiency

In his regional water district, Sander is limited to 1.5 acre-feet of irrigation per year. That amounts to about 18 inches of irrigation water, so every drop counts. And high-quality water is a must.

"We had to get rid of the salinity problem," Sander says. "To assure that the enhancer units would help solve my problems with salinity, I wanted to install them in the middle of the growing season, when plants were already under stress. So we installed them in mid-July.

"We needed the plants to respond in order to obtain full benefits of pollination. Again, we saw immediate response to the conditioned water."

Units are heavy. The 8-inch enhancers weigh about 600 pounds. The 10-inch units weigh about 800 pounds. Special nylon gaskets are needed when attaching the units to lines to prevent grounding, Sander says.

Enhancers vary in cost. They can be bought outright, and there are also leasing and financing programs. "They appear to be expensive, like other irrigation equipment," Sander says, "but with that added 60 bushels of corn per acre and a corn price of \$5 per bushel, they'll pay for themselves in two years. I call that a good investment."

For more information, go to www.irrigationenhancer.com.

Stalcup writes from Amarillo, Texas.