



A pivot might work well with your outfit.

Round and Round the Pivots Go

Idaho's high mountain desert Two Dot Ranch at Leadore, Idaho didn't voluntarily implement the use of pivot systems 25 years ago. They had to change irrigation routines because they could no longer find the necessary skilled manual labor to continue flood irrigation. What seemed like a roadblock at the outset actually turned into a blessing in disguise. The Two Dot has been able to increase forage production on 2,000 irrigated acres by as much as 50% because their 17 pivot systems are that much more efficient in applying water.

"The pivots apply the water more uniformly," Jordan Whittaker, Two Dot Ranch family member, says. "But it's much more than that. When we used flood irrigation, it took between two and three weeks to irrigate a 200-acre field after we took the first cutting of hay from it. Now we can get the bales off and use the pivot to apply an inch of water across that same field in just four or five days. It's a greatly improved turn-around time."

Two Dot never takes more than one cutting from their hay fields. They grow alfalfa, brome and orchard grass as well as some timothy and clover mixes. After harvesting that first cutting, they irrigate to stimulate regrowth and then use the pasture for grazing later in the summer. Thirteen of the ranch's pivot systems are about 30 years old. Most are T-L systems that operate with a continuous movement hydraulic drive.

"Our hydraulically driven center pivot system is a market exclusive," says Clark Bauer, U.S. Sales Manager for T-L Irrigation Company. "Our pivot systems continually move through the field. They never stop and start. The simplicity of operation, the low maintenance and virtually trouble-free operation makes them attractive to ranchers who need to irrigate pastures."

Across the board, demand for irrigation systems is strong. Growth in use of pivot systems to irrigate pastures has steadily increased in recent years.

"Irrigating pastures means ranchers don't have to move cattle as often, which reduces stress on the animals," Bauer says. "Cattle are the rancher's first priority. Because the beef industry has remained strong for some time, ranchers are investing in their operation. There's also a sense of



A pivot system may provide a quicker delivery method to get water back on the fields when you need it the most.

urgency in regard to water. As demand for water grows for both metropolitan areas and agricultural areas, it's wise to develop water sources that are available now while you still can."

None of the systems at Two Dot Ranch are equipped with remote control. The cost of setting up the wireless service isn't economically feasible. Whittaker says they also work to keep their irrigating system as simple as possible.

"We have some pivots that are on rather hilly terrain," Whittaker says, "and they do sometimes get stuck. But that's pretty rare. We don't have anything that's steeper than a 15 percent grade. When the pivots are running we check them at least once each day. Our motto is that the simpler you keep things the less chance that there are things that can go wrong."

No irrigation, no forage

At an elevation of 6,500 feet in the east central part of the state, Two Dot Ranch runs cattle on about 18,000 deeded acres of range and another 150,000 acres of public land. Approximately 2,000 deeded acres have always been irrigated.

"You wouldn't raise any forage here without irrigation," Whittaker explains "We have a full spectrum of soils across our rangeland. There is some deep loam, but not many acres of it. Most of our land consists of a few inches of topsoil overlaid on porous, gravelly ground. We never till any deeper than two or three inches because otherwise we'll bring up too many rocks."

Two Dot's irrigation water comes from several creeks that run through their property. Because they don't have enough water to keep all their

pivots running at one time after July 1, they maintain an aggressive irrigating schedule that puts water on the driest acres from July through August.

"We regularly monitor soil moisture and schedule irrigation accordingly," Whittaker says. "One other thing we have going for us is that we use gravity to operate our pivots, which means there's no pumping cost."

In a year with average rainfall, Two Dot will harvest 50% more forage from their fields irrigated with a pivot system than they were able to produce in the past with flood irrigation.

"If we have back-to-back dry years, we'll still produce about 30 percent more forage with the pivot systems than we could with flood irrigation," Whittaker says.

The Whittaker family wasn't the first in their neighborhood to utilize

pivot irrigation. Potato growers in the area have watered fields with pivots for many years. While some neighbors have followed Two Dot's lead, other ranchers have held back on installing pivot systems.

"Time will tell," Whittaker says, "but it appears that the ranches using a pivot system are more likely to survive over the long haul, just because they're able to produce so much more forage."

Irrigation a growing trend

Two Dot's production methods are hardly unique to their area or even to the United States. Lindsay Corporation in Omaha, Nebraska, offers Zimmatic irrigation systems which have a reputation for innovation and high performance. The company has grown to an international business over the past 55 years. Dirk Lenie, Vice President, Global Marketing at Lindsay, says there is a growing worldwide trend for livestock owners to irrigate pastures. Lenie notes that rising land costs are stimulating the use of irrigation to achieve better yields. Advancing technology is allowing farmers and ranchers to program pivot systems to reach corners and irregular areas of pastures and fields. They're also able to adjust watering activities to maximize water resources and customize application patterns.

"In some areas there are laws against putting irrigation water on roadways," Lenie says. "New technology makes it possible now to adjust pivot end guns so that doesn't happen. There are also areas where regulations prohibit putting irrigation water into streams or other areas where it isn't environmentally desirable. If irrigation is used to apply nutrients or herbicides, that application can also be customized to avoid violating regulations and making the most of those inputs."

Use of remote control technology is reducing the total manpower requirements for operating and monitoring central pivot irrigation systems. Lindsay's FieldNET allows irrigators to operate their systems with remote telemetry from any

type of electronic device, including laptops, iPhones, iPads, etc.

"Variable frequency drives (VFD) are also helping irrigators use energy and water more efficiently," Lenie explains. "With VFD the desired pressure and flow are produced by controlling the pump speed, rather than throttling the discharge flow or using a bypass to maintain target flow conditions. That can really reduce energy costs."

Maintaining pivot systems has also been made easier with advancing sprinkler head technology that makes sprinklers easy to switch out and adjust. A variety of sprinkler head designs also allow irrigators to customize systems to fit individual needs.

Lenie adds, "As more consumers ask for grassfed beef there will be a growing need for irrigating pastures to support beef demand." **WR**

