



Water on demand

A center-pivot irrigation system operates over a field of alfalfa and grass mix east of Stanfield.

Precision irrigation gets technical

By **GEORGE PLAVEN**
EO Media Group

After spending three days at the 2017 Irrigation Show in Orlando, Florida — a sprawling exhibition of the latest and greatest farm technology — Fred Ziari observed just how advanced growers in the Columbia Basin are compared to the rest of the U.S.

Ziari, president and CEO of IRZ Consulting in Hermiston, said the sheer size and crop diversity of the region has helped growers to become early adopters of cutting-edge equipment such as real-time soil moisture monitors and flow meters. The rest of the country, meanwhile, is only now starting to catch up, he said.

“The demand for water is at an all-time high from all sources,” Ziari said. “To make every drop count is the trend these days ... This is something farmers and irrigators in Umatilla and Morrow counties have known for a long time.”

Precision irrigation tools and techniques will be the subject of a new session Thursday, Nov. 30 at the 44th annual Hermiston Farm Fair, including talks on soil moisture monitoring and how to avoid leaching water and nitrates below irrigated farmland, especially in an area of already elevated nitrates in groundwater.

The session will run from 1-5 p.m., moderated by Ruijun Qin, station agronomist at the Hermiston Agricultural Research and Extension Center.

Over the last decade, Ziari said advances in precision irrigation have helped to conserve about 100 billion gallons of water in the basin. Farmers also saved 35 million kilowatt-hours of electricity this year alone, or roughly the annual power consumption of Pendleton and Hermiston combined.



Fred Ziari at a Farmers Ending Hunger event at the 2017 Pendleton Round-Up.

The trend, Ziari said, is toward greater automation, monitoring and control. With the extensive use of sensors and computers, growers can be connected to what is happening in their fields from anywhere in the world and make management decisions at the swipe of a smartphone.

That online connection of physical devices, commonly referred to as the “Internet of things,” is becoming increasingly well-established in the industry, Ziari said.

“I want my data in real-time or near real-time,” he said. “All sorts of sensors are available now that allows you to communicate with inputs to the farm, so you can monitor, measure and gauge everything remotely.”

Anticipating the shift in the industry, Blue Mountain Community College opened its new Precision Irrigated Agriculture Center in July to begin training the next wave of farm professionals. The center is located on the campus of HAREC through a partnership with OSU, and classes began in the building this fall.

Ziari estimates three-quarters of farms in Umatilla and Morrow counties now use soil moisture monitors. More farms are also installing their own weather sta-

tions to measure precise micro-climates. Variations in temperature, wind, solar radiation and humidity can all impact how much a field needs to be watered, Ziari said.

“We can use that weather data and make it available to the farmers for spraying,” he said. “It’s just part of the service we provide.”

Looking ahead, Ziari said he is excited for the prospect of variable rate irrigation, where each nozzle on a pivot system is capable of applying different amounts of water and fertilizer to maximize crop production while minimizing cost and conserving resources.

The technology is still in its infancy, though Ziari expects it will become more prevalent within the next five years.

“Now, you have thousands of ways to irrigate more efficiently,” he said.

More than anything else, the demand for precision irrigation is being driven by the demand for more high-quality, nutritious food worldwide, Ziari explained. Of all agriculture in the Columbia Basin, he said about 75-80 percent is exported, much of it internationally.

“Agriculture has been the shining star when it comes to minimizing our trade deficits,” Ziari said. “So we need to do more, but find ways that are environmentally sound. Technology of all sorts are where we need to adopt more, but at the same time it has to be economical.”

To put it simply, Ziari said farmers can only manage what they can measure. Precision irrigation strives to make those measurements faster, easier and on-demand.

“It’s a game-changer that has become truly revolutionary,” Ziari said.

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