Courtesy Bill Jepsen

Bill Jepsen, a dryland wheat farmer south of Ione, uses a direct seeding drill as part of his no-till operation. No-till helps to preserve soil organic matter and reduce erosion, he said.

FIGHTING FOR SOIL HEALTH IN ARID EASTERN OREGON

Dryland farmer uses no-till, reduces wind and water erosion

By GEORGE PLAVEN
EO Media Group

Dryland farming is challenging enough at Bill Jepsen's family farm outside of Ione, where it rains just about 12 inches per year on average, providing precious little moisture to grow a healthy crop.

Factor in poor soil health due to erosion that strips fields of organic matter, and the problem only worsens.

For years, Jepsen said conventional tillage left the farm wide open to water erosion washing down the open hillsides. Land that once held 3-4 percent soil organic matter was whittled down to 1 percent. Something had to be done to improve long-term sustainability.

"The erosion was just killing us," said Jepsen, who grows 5,300 acres of mostly wheat and barley 14 miles south of Ione.

Jepsen, who began his career as a veterinarian in Hermiston, eventually took over the farm from his father, Bob, who retired in 1991. Six years later, they converted entirely to no-till and direct seeding to stem the tide of erosion.

The recovery process has been slow, with most fields now containing somewhere between 1 and 2 percent soil organic matter. But Jepsen said he's never going back — that is, unless he's forced to.

"No-till has been the key to conservation," he said. "You don't need as much fertilizer. Your plants do better. Healthier soils will grow more. It's a lot of things."

One prickly issue, however, is putting no-till to the test in southern Morrow County.

Russian thistle, or tumbleweeds, continue to spread as they roll across the desert, depositing thousands of tiny seeds along the way. Invasive weeds like Russian thistle compete for limited moisture on farmland, lowering yields for Northwest soft white wheat that is already experiencing depressed market prices.

And, unlike other pesky weeds, Russian thistle has developed a resistance to glyphosate, forcing farmers to turn to more expensive herbicides.

"We've had to come up with a plan," Jepsen said. "How do you deal with resistant Russian thistles?"

The answer for many farmers, Jepsen said, has been to revert back to tillage. He, along with seven of his neighbors and Oregon State University Extension Service, did apply for a grant in 2017 through the USDA Regional Conservation Partnership Program to eradicate Russian thistles from approximately 100,000 acres, though the project did not receive funding.

George Plaven/EO Media Group

Bill Jepsen pokes his finger through stubble to find tiny green barley seedlings growing at his dryland farm south of Ione.

As for Jepsen, he has managed to maintain no-till farming practices by targeting Russian thistles using what is known as a WeedSeeker sprayer. The machine incorporates a series of infrared sensors which are able to detect the young green thistles among stubble. It then sprays only when it encounters those weeds, cutting back on the amount of herbicide needed.

"It allows you to use chemicals that kill thistles that you couldn't otherwise afford," Jepsen said.

Jepsen was recognized as a Pioneer Direct Seeder by the Pacific Northwest Direct Seed Association at the group's 2017 cropping systems conference, though his on-farm experimentation extends beyond just adopting no-till.

Jepsen has collaborated with OSU Extension Service on a multi-year trial examining the effectiveness of rotational crops for dryland wheat, including canola, garbanzo beans, lentils, flax and mustard. Ideally, Jepsen said the best thing for soil is to grow a crop on it every year, though the dry Eastern Oregon climate usually prompts farmers to go with a crop-fallow rotation to rebuild soil moisture.

"On dry years, every little drop of moisture counts," Jepsen said. "When you grow anything, it robs soil moisture."

At the end of the day, Jepsen said he always turns back to cereals like wheat and barley.

"For the climate we have here, those are the best crops," he said.

Mary Corp, regional administrator for OSU Extension Service in Morrow and Umatilla counties, described Jepsen as a creative, innovative grower and cooperator. The university has conducted a number of plot trials on Jepsen's land, from rotational crops to disease control.

"For extension, we rely on growers to be so generous with their land, and their time, and their equipment, in order to do those on-farm studies that provide the information farmers need," Corp said. "It's really critical to the success of the extension faculty that are based out in the counties."

Jepsen said he is always tinkering and adjusting his practices, and keeping a close eye on the latest technology. Five years ago, he hired Infrared Baron Inc., out of Hermiston, to fly over his farm and create zone map showing where wheat was growing well, and where it wasn't growing well, in each field.

The data allowed Jepsen to adjust his seeding and fertilizer rates to get the most bang for his buck, with export prices still hovering around $5.50 per bushel out of Portland.

"There's always a way to do something better," he said. "That's what makes life interesting."