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Micro-irrigation System Conserves Water and Expenses for Vegetable Farm

Umapine, Ore.— Felipe Jimenez implemented an underground drip irrigation system that has revolutionized his production by reducing operating costs and conserving the natural resources on his vegetable farm near Milton-Freewater, Oregon.

Jimenez received both technical and financial support from the USDA Natural Resources Conservation Service (NRCS), through the Environmental Quality Incentives Program (EQIP). EQIP is a federal program designated to provide farmers and ranchers assistance to protect natural resources, and ensure sustainable production on their farm, ranch, or non-industrial private forestland.

While the soil in the region of Milton-Freewater is fertile, it also tends to be silty, resulting in reduced water-holding capacity. Moreover, the semi-arid farming region receives only 18 inches of rainfall in an average year. For that reason, micro-irrigation, a family of irrigation systems that spray, mist, sprinkle, or drip water onto the soil surface near the plant base or below the soil surface near the plant root, is a recommended conservation practice.

"The nice thing with the micro-irrigation system is you're targeting where you're putting the water, not just using broadcast delivery," Nick Sirovatka, a NRCS Soil Conservationist in Umatilla County, said. "It focuses the water in the seed row right on the plants."

Above: Felipe Jimenez kneels amidst his crops.

Farm fresh Walla Walla sweet onion from the Jimenez farm.

Felipe's newly installed irrigation system has helped him expand asparagus production.

When Felipe first started his operation, he produced top-quality Walla Walla sweet onions, a market favorite unique to southeastern Washington and northeastern Oregon.

Each year, Felipe has added to his business by planting new crops that he projects will pay off in the future. Asparagus is one such example.

"It came to my mind that someone around here was going to want fresh, local asparagus," Felipe said. "So, three years ago, I planted it."

The installation of a subterranean drip irrigation system is Felipe's latest improvement. With assistance from NRCS, the system was carefully installed in 2012 around 13 acres of asparagus crowns.

"I divided up the two fields and put 50 [drip] tapes on one side and 42 on the other," Felipe said.

Since turning on the new irrigation system, Felipe has been impressed with the results. "It's pretty easy," Felipe said. "You don't have to sprinkle on the top, you just turn the water on and it goes."

The new system has enough water pressure to water two fields simultaneously. The pump includes a flow meter that helps Felipe track his water use. It records the gallons of water used, as well as when the water is turned on and off. At the end of the year, NRCS will use this information, along with crop water use standards established by Oregon State University and the evaporation/transpiration rate for the county, to establish a customized irrigation plan for Felipe.

To ensure Felipe's crops always get the water they need, the new irrigation system has a built-in feature allowing it to switch to an overhead sprinkler should the drip system go down.

"Felipe will still have the ability to use overhead watering and not damage or lose his crop," Nick explained.

Benefits of the system extend beyond water conservation. Prior to its installation, Felipe used a hand line to water crops. Following water application, the field crew had to either work in the wet soil or wait for the field to dry. That all changed following the installation of the new system.

"I can keep my guys cutting asparagus and water at the same time," Felipe said. "Now it takes half the time to water, and since it is underground, my guys can work until 10:00 or 11:00 a.m. Then I can turn on the water, and it's dry by the time they come back the next morning," he explained.

Since implementing the new regime, Felipe has witnessed an increase in crop yield, as well as improvement in overall crop quality. The asparagus spears tend to be suppler with a less woody stem.

"This irrigation system is a lot better for my farm," Felipe said. "My asparagus is beautiful this year, and I packed it and sold it to local grocery stores and directly to customers. I will get 15 to 20 percent more production now."

The success of his first collaboration with NRCS provided Felipe the confidence to consider additional farm enhancements. "Next, I would like to drill my own well and add a packing shed," he said. "NRCS has been good to work with, and I am happy to get this help as it is not easy to save enough to do it myself."

Felipe exhibits his healthy onion yield.