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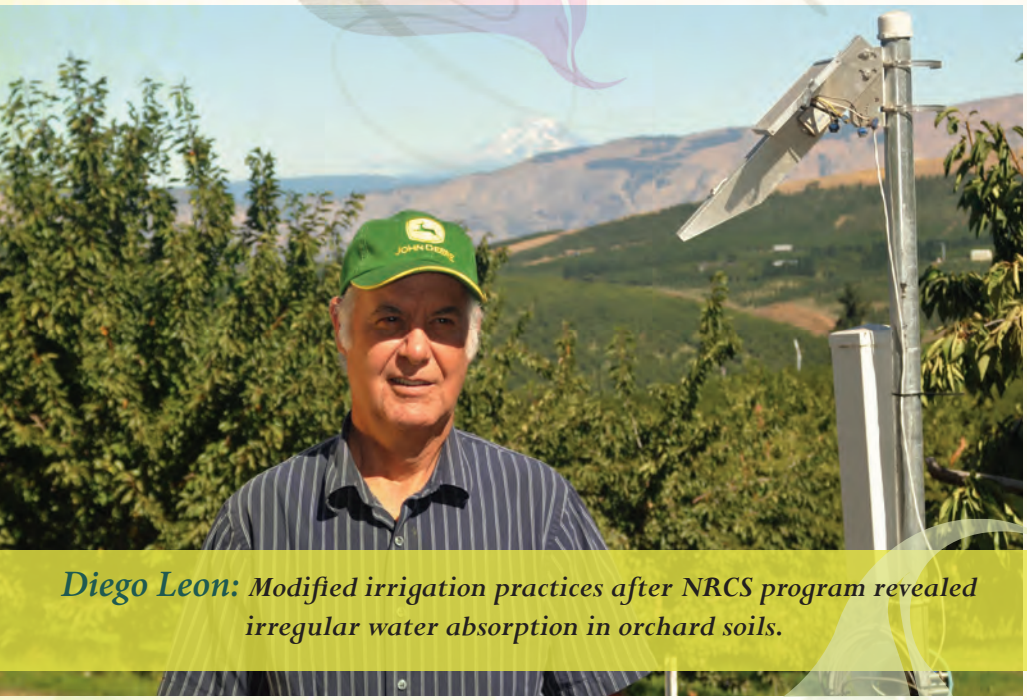
OREGON Conservation showcase



Diego Leon: ***Modified irrigation practices after NRCS program revealed irregular water absorption in orchard soils.***

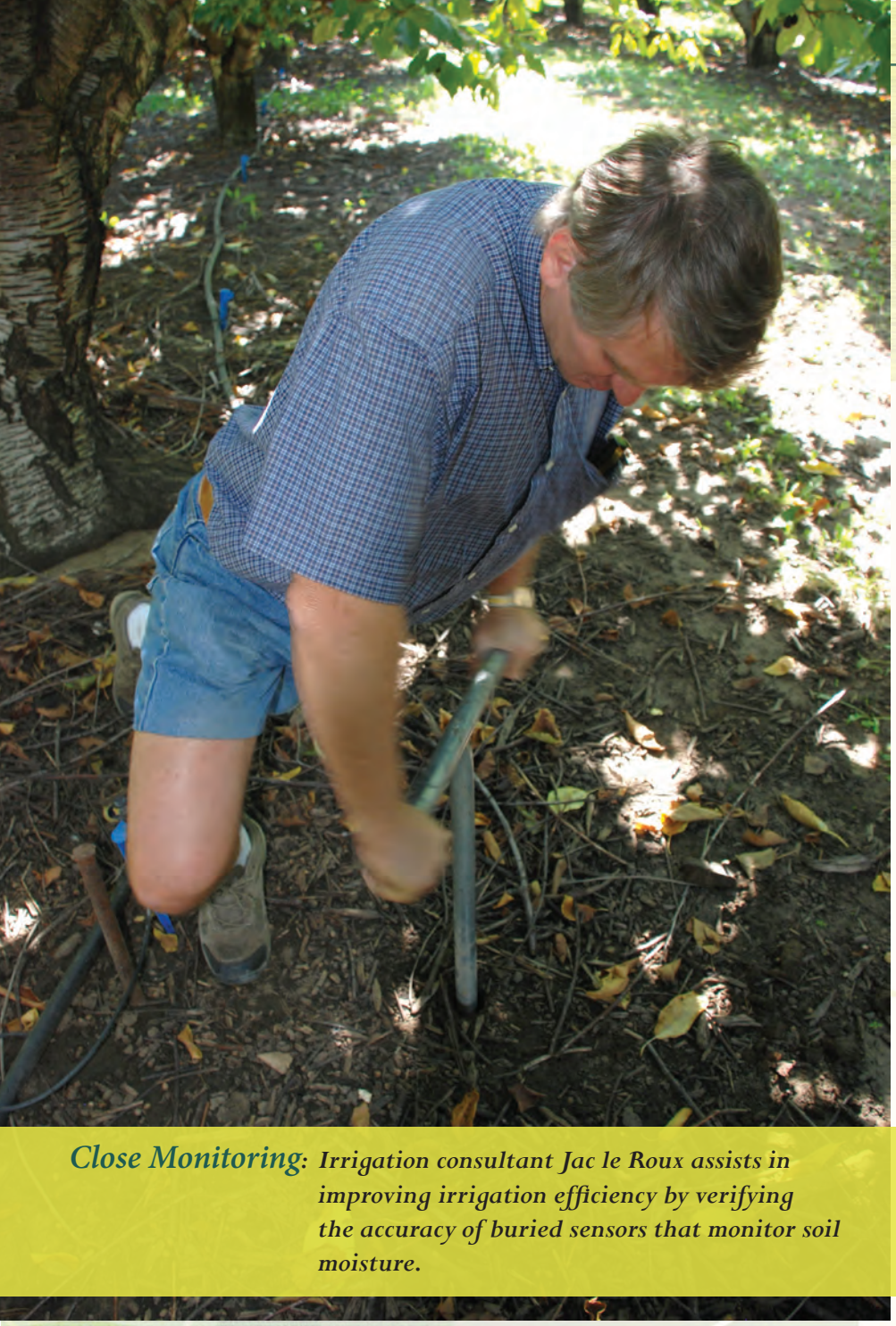
Scientific Irrigation Scheduling saves precious water and energy.

The Dalles, Ore. — A new technique in irrigation management is bringing impressive results to this fruit-growing region along the Columbia River in Central Oregon thanks to a program of USDA-Natural Resources Conservation Service (NRCS) known as the Cooperative Conservation Partnership Initiative (CCPI). The program is helping farmers help the land through the formation of partnerships, including one with Bonneville Power Administration (BPA). Matching funds from BPA and other natural-resource partners have leveraged the impact of the USDA-NRCS program, and resulted in the installation of Scientific Irrigation Scheduling (SIS) on 3,100 acres in The Dalles area, which has saved precious water and energy.

Diego Leon is one of the orchardists enrolled in the CCPI program here. He is applying SIS on 24 of the 160 acres of cherry orchards that he currently irrigates, and has saved 8-acre feet of water this year. "I thought we knew how to manage the water," says Diego. "When we set up this new system I found out the water didn't act as we thought. In some cases we put water on the cherry orchard and it didn't penetrate the ground, it would run off to another area. So, by knowing exactly what was happening to the water allowed me to modify the way I was farming," Diego adds with a nod of satisfaction.

Stunted cherry tree growth in some parts of his orchard was a mystery for Diego, and he suspected the application of irrigation water was in some way involved in the problem. "So this program came out where we could scientifically check the ground to find exactly where we put the water. I jumped immediately so I could find an answer to my questions. It has been very great," says Diego.

According to Merlin Berg, NRCS Coordinator of Wy'East Resource Conservation & Development



Close Monitoring: *Irrigation consultant Jac le Roux assists in improving irrigation efficiency by verifying the accuracy of buried sensors that monitor soil moisture.*

Council (RC&D), the 3,100 acres being managed by SIS are within The Dalles Irrigation District and involve a total of 34 growers. "This averages 91 acres per grower," says Merlin. "The estimated energy saved was 969,215 kWh or 312 kWh per acre. The estimated water saving for the total project area was 610-acre feet of water." This would equate to 2.4 inches of water spreading across the entire 3,100 acrea project area.

SIS works on improving the efficiency of irrigation scheduling by making use of the information collected; and tempering it with the advice of an irrigation consultant. On each 10-acres of orchard land, two probes are buried: one to measure soil moisture at an average 12 inches deep and a second to measure soil moisture at an average 36 inches deep. The sensors relay soil moisture information, while a weather station in the orchard relays wind and weather information, via radio to Integrated Fruit Production (IFP) Network (IFPnet) at Wy'East. IFPnet makes it possible for all the growers, the Irrigation District and others to access the information via internet.

The moisture sensor provides real time data on the water needs of the trees in each 10-acre plot so growers know immediately if they should increase or decrease the application of irrigation water. It also shows if there is a blow out from a leak in the irrigation pipes. The rate and amount of irrigation water flow is measured by automated telemetry flow meters that are located at each irrigation turnout. This flow information is also sent via radio to IFPnet.

Irrigation consultant Jac le Roux regularly tends each sensor station during the growing season. Jac uses a neutron tube to verify the accuracy of the buried sensor. With the first year of the program now complete, Merlin observes that the management of the irrigation water appears to be "part science and part art. Use of the neutron tube assures the grower that the information is accurate while use of the experienced irrigation consultant ensures the excellence," says Merlin.

Enrollment in CCPI has helped Diego better manage his farm. "Getting involved in this program has been very, very important to me," says Diego. "The whole idea is just trying to find more answers to our problems. All the help you can get from NRCS–especially

Tree Health: *Water deprivation caused stunted tree growth in cherry orchard. Newly-planted trees should thrive as a result of SIS irrigation program.*

grants and other information–has been just great. Getting involved with any of the NRCS programs is the easiest, most positive way to find the answer to your problem," adds Diego.

Diego was born and educated in Mexico City. After working for a time for the President of Mexico, he began traveling in 1974, when he found The Dalles area and began farming. "I didn't know much about farming, so I have had to work with anybody who wants to supply me with information for the farm. NRCS has been very great with information programs. I am very grateful to them; they have helped me tremendously – telling me what I needed to do here the past 30 years."

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>
> — ***Diego Leon***

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