



Dairy Cares Newsletter, October 2019

New incentive opportunity helps conserve water and boosts environmental performance

New irrigation and fertilization technology, which conserves water and reduces environmental impacts, could soon spread to many dairies. After a successful trial run of the new system on three California dairies, the U.S. government has decided to include the new technology among a list of practices for which financial incentives are offered. In California, cost-share funding is currently available, and is expected to cover about 75 percent of the typical installation costs.



“I enjoy talking to other farmers about my experience with the manure drip system because of its potential impact on our industry and the potential for solving issues related to long-term sustainability,” said Richie Mayo, Farm Manager at De Jager Farms.

Richie Mayo of De Jager Farms shares his experience using manure subsurface drip irrigation technology on the corn field behind him.

This new manure subsurface drip irrigation (manure SDI) practice is important because it can help dairy farmers further reduce water use. For the past three years, three unique California dairy farms have been demonstrating its success. Results show that the system can use up to 35 percent less water than traditional flood irrigation. That’s almost 40 percent more crop per drop while maintaining, and in some cases even slightly increasing, crop yields. This increase in water-use efficiency is critical as farmers across the state are exploring difficult options for reducing water use, in order to meet requirements of the Sustainable Groundwater Management Act (SGMA). The system provides an option to help dairy farmers cope with reduced water allocations, while still growing high quality silage corn to feed their cows.

While the manure SDI approach boosts water conservation, it also helps make efficient use of manure nutrients, improving groundwater protection and reducing reliance on synthetic fertilizers derived from fossil fuels. Traditionally, dairy farms with flush manure management systems apply a mixture of water and manure nutrients to crop fields at the surface level, via flood irrigation. By using underground drip lines—following a filtration and mixing process—farmers can more precisely measure and ensure that the right amount of manure nutrients is applied where plants need them. Results show an increase in nitrogen use efficiency of up to 47 percent, meaning that more of this organic fertilizer is being taken up by the plant, preventing the leaching of excess nutrients from the soil to the groundwater below. Additionally, the technique helps decrease the emission of nitrous oxide—a greenhouse gas.

These benefits could not have been accomplished without years of tremendous hard work and collaboration. In 2014, De Jager Farms began working with partners, Sustainable Conservation and Netafim to pilot the first project. In 2016, the partners began implementing a three-year demonstration program on three dairy farms—De Jager Farms, McRee Dairy, and West Star Dairy—each growing corn in the summer and wheat in the winter. This effort was funded by a United States Department of Agriculture, Natural Resource Conservation Service (NRCS) grant. The systems were built customized to serve each farm's needs, considering farm size and layout. The farmers worked with partners to manage the technology, flushing the lines to prevent clogging and monitoring nutrient levels.

Thanks to this success, the manure SDI system was approved by NRCS West Region as an official conservation practice. As of October 1, NRCS California is now offering cost share for up to 75 percent of the expected expense to implement the system, available through the Environmental Quality Incentives Program (EQIP). This significant incentive opportunity is a testament to the value NRCS sees in the new farming practice.

“Our EQIP financial assistance program has a great track record for helping farmers protect natural resources and improve the environment,” said Greg Norris, State Conservation Engineer for NRCS California. “We look forward to incentivizing the adoption of manure subsurface drip irrigation systems, as this practice has demonstrated strong potential to improve the protection and conservation of our limited water resources.”

The three demonstration farms were proud to welcome guests and share their results at a recent series of educational field days. Attendees saw the system in use and heard directly from the farmers, as they shared their experiences, describing the benefits they've seen, as well as some of the challenges.

“I tell farmers that my experience with the manure SDI system has been great, but the decision to implement it on their farm is still a decision that the producer must be prepared for because it is a different way to farm than many are used to,” Mayo said. “Most of the questions I get are regarding costs. The incentives and potential savings are driven by the individual farmer and their own water availability/price, nutrient efficiency, yields, and regulatory compliance factors. Each situation is unique and has to be considered independently.”

Currently, Sustainable Conservation is aware of five California dairy farms that are developing applications for the incentive funding, with more interested. They are hopeful that more farmers will take advantage of the opportunity. This higher-than-usual cost-sharing financing is expected to decrease over time, so representatives are urging dairy farmers to apply right away. Applications will be accepted on an ongoing basis. To learn more and to apply, farmers can contact NRCS at their local USDA Service Center.

The proven manure SDI practice will be discussed the [California Dairy Sustainability Summit](#) in March 2020, along with other innovative and newly developing technologies and strategies for manure management. California dairy leaders recognize that multiple technologies and approaches will continue to be needed to serve the needs of individual farms, as they work to further improve environmental sustainability. The manure SDI system will certainly make a positive impact on a growing number of California dairies—helping farmers to meet challenges and improve their water-smart practices.

California dairy farmers continue pioneering and adopting new technologies, leading the world in planet-smart dairy farm practices.

For more information about the manure SDI system, contact Project Manager John Cardoza at Sustainable Conservation, jcardoza@suscon.org, 209.576.7731. For more information about the available funding:

- [EQIP Overview](#). [Practice Information](#): See Irrigation System, “Microirrigation (Ac.) (441)”
- [How to Apply](#)
- Contact your local NRCS office for more details – [Northern California](#) | [Southern California](#)

Dairy Cares is a statewide coalition supporting economic and environmental sustainability and responsible animal care. Our members include Bar 20 Dairy Farms, California Cattlemen's Association, California Dairies Inc., California Dairy Campaign, California Dairy Research Foundation, California Farm Bureau Federation, Dairy Farmers of America-Western Area, Dairy Institute of California, F & R Ag Services, GHD, Inc., Hilmar Cheese Co., Joseph Gallo Farms, Land O'Lakes, Merck Animal Health, Milk Producers Council, Ruan Transport Corp., Yosemite Farm Credit, Zenith Insurance Company, and others. For information, visit DairyCares.com or call 916-441-3318. To subscribe to the e-newsletter, contact news@dairycares.com.