



Securing the Future of California Dairy Forage Production is Critical to Protecting Rural Communities

For dairy farm families, animal feed is a critical part of their work to ensure optimal cow care, produce more nutritious milk using fewer resources, and make sure their farms remain economically sustainable. Animal feed comprises about 60 percent of a California dairy farm's operational costs. Dairy farmers and their nutritionists work hard to ensure cows receive balanced meals each and every day. Forage production is an increasingly challenging yet critically important part of a California dairy farm's resiliency.

California dairy cow rations include a mixture of crops grown at the dairy (primarily corn and cereal silages), imported grains, and locally available byproducts from other crops. There are many reasons why California dairy farmers produce their own silage, which is a fermented form of plants that is high in moisture and nutrition. To make silage, the entire plant (stalk, husk, and kernels) is harvested while still green, chopped into pieces, and stored in airtight conditions. Minimizing transportation of the high-moisture feed is critical to both feed quality and farm economics. Importantly, growing feed on nearby fields is how dairies recycle manure nutrients and water.

This model has served California dairy farms well for decades, and advancements in feed production are largely responsible for improving dairy farm economics and helping shrink the environmental footprint of California milk over the past 50-plus years—**reducing the amount of water needed per glass of milk produced by more than 88 percent**. However, navigating increasing water scarcity, the implementation of the Sustainable Groundwater Management Act (SGMA), and new water quality requirements present significant challenges for dairies in the Central Valley.

“Dairy farmers are looking for a cost-effective way to get more water efficient... It's really about economics and technology that works,” said David De Groot, a California dairy farmer and Civil Engineer/Partner at 4Creeks, Inc. and the Chief Operating Officer of California Bioenergy. De Groot shared this perspective during a breakout session at the 2026 [California Dairy Sustainability Summit](#). Through an engaging [panel discussion](#), dairy farmers shared their experiences with adopting more water-efficient practices. The session also included preliminary results from a soon-to-be-released study funded by the USDA Natural Resources Conservation Service that measured water use on three Central Valley dairies over the course of three years. The study documents how most water used on dairy facilities is recycled for use as irrigation rather than consumed, and it helps identify strategies that dairy farms can explore as they aim to further improve water use efficiency.



Dairy forage production is critical to California's rural economies. Above is a corn silage field being harvested.



A panel of dairy farmers discusses water-use efficiency strategies.

Water-savings strategies are becoming increasingly important for dairies and other agricultural operations, particularly for those located in groundwater sub-basins that have been experiencing subsidence. The Tule Subbasin and Greater Kaweah Subbasin lie within one such critical agricultural region, which is one of the most productive dairy-farm areas in the world. This region relies heavily on groundwater, and clay formations make it difficult to recharge the deep aquifer. Reducing deep-well groundwater pumping is needed to meet SGMA requirements and reduce land subsidence.

Shifting irrigation strategies to boost water-use efficiency is one of the greatest opportunities to reduce groundwater pumping while preserving forage production in the Central Valley. Experts have estimated that hundreds of millions of dollars will be needed to convert flood-irrigated forage cropland to either pivot or subsurface drip irrigation. Investing in other advanced water and manure management technologies and strategies will also be needed. Improving irrigation efficiency is helpful in boosting the protection of groundwater quality by reducing nitrogen losses to the environment. However, improved irrigation techniques will need to be combined with other key practices, such as denitrification and/or export of surplus dairy manure nitrogen, and more precise nutrient testing and measurement at the time of land application. Given the implementation of SGMA, finding ways to better manage manure nutrients will be increasingly difficult.

California's water scarcity challenge is impacting other farmers too, and dairy farms are closely linked to other local agriculture and food production. More than 40 percent of feed ingredients used on California dairies are agricultural byproducts, such as almond hulls, tomato pulp, cotton seed, citrus pulp, and brewer's grain. California dairies' byproduct use is nearly double the national average, due to the wide variety of crops that are grown year-round.

California's world-class food production system is expected to continue undergoing massive shifts including significant land fallowing as SGMA is further implemented. According to analysis from the Public Policy Institute of California (PPIC), irrigated farmland in California's San Joaquin Valley is expected to contract by as much as 900,000 acres—a full 20 percent of irrigated agricultural land. The [PPIC's research](#) suggests that dairy forage production could have a role in minimizing land repurposing impacts.

Growing winter grain crops using best practices for water-limited conditions can be more beneficial than land fallowing without compromising groundwater sustainability goals. The PPIC also recognizes that supportive public incentives and program guidance are needed to reduce risks from crop transitions and improve economic and environmental outcomes.

Maintaining a strong dairy sector in California should not be taken for granted as dairy farms support hundreds of thousands of jobs, drive an estimated \$87.5 billion in annual economic activity, and provide local families with wholesome, nutritious, and affordable milk and dairy foods. Partnership is needed as California dairy farms continue to invest in meeting today's challenges, aiming to boost resiliency, and ensure that they remain a key, interconnected part of California's rural communities and world-class food system.

California dairy forage production is a modern marvel of farm resiliency; however, significant coordination and investments are needed to further innovate and meet evolving water challenges.



Where soil type allows, some farmers are growing sorghum as a more drought-tolerant form of dairy silage.

Dairy Cares is a statewide coalition supporting economic and environmental sustainability and responsible animal care. Our members include Bar 20 Dairy Farms, Clover Sonoma, California Dairies Inc., California Dairy Campaign, California Dairy Research Foundation, California Farm Bureau Federation, Dairy Farmers of America, Dairy Institute of California, F & R Ag Services, Hilmar Cheese Company, Joseph Gallo Farms, Land O'Lakes, Inc, Milk Producers Council, Valley Milk, LLC, Yosemite Farm Credit, Zenith Insurance Company, and others. For information, visit DairyCares.com. To subscribe to the newsletter, contact news@dairycares.com.

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