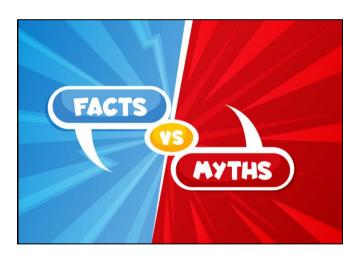


Fact vs. Fiction: Correcting Myths About California Dairy Methane Reduction Efforts

Over the past eight years, California's dairy farms have collectively achieved an annual reduction of 5 million metric tons of methane (CO2e) and counting. This is important, as scientists agree that reductions in methane emissions are critical to slowing global warming. The world-leading effort has drawn some well-deserved attention. Unfortunately, there are several common myths and misconceptions about California dairy's methane reduction programs. Let's explore the misnomers and the facts.



Myth #1: California's methane reduction efforts are focused on digesters.

One common misconception is that digesters are the primary strategy being deployed to reduce dairy methane emissions in California. There are in fact several strategies being deployed, which are all equally important to ensuring success across all dairy farms, large and small. Here are the main strategies in no particular order:

Strategy #1: Methane Avoidance - California dairy farms are avoiding the creation of methane via alternative manure management projects. This includes manure separators, compost pack barns, manure scrape and vacuum systems, conversion to pasture-based operations, and other practices. Through its Alternative Manure Management (AMMP) and Dairy Plus programs, the state has funded a total of 209 alternative manure management (methane avoidance) projects, more than the 142 state-funded digester projects. Estimated total annual reductions from alternative manure management projects operating to date are 252,000 MTCO2e, according to the California Department of Food and Agriculture (CDFA).

Strategy #2: Methane Capture and Utilization - California has 168 dairy digesters operating with about 75 more projects in development. 142 of these projects received funding from the state via the Dairy Digester Research and Development Program (DDRDP). Digesters capture methane from manure storage and put it to productive use as carbon-negative transportation fuel or other renewable energy needs. Estimated total annual reductions from operating California dairy digester projects to date are 2.53 million MTCO2e, according to information from CDFA and digester developers.

Strategy #3: Milk Production Efficiency/Herd Attrition - California dairy farms continue to shrink their environmental footprint by producing more milk (or consistent total milk volume) with fewer cows. Milk production efficiencies continue to be gained in many ways, including improved animal nutrition, selective breeding, and enhanced animal care and comfort. Overall, while total milk production has remained relatively stable, the number of dairy cows in California has continued to shrink since 2008, resulting in far fewer emissions. Estimated total annual reductions achieved to date are 2.13 million MTCO2e, based on herd numbers from the California Air Resources Board's California Dairy and Livestock Database. These reductions are from both manure management and enteric methane (methane emitted directly from cows).

Myth #1 continued: California's methane reduction efforts are focused on digesters.

Strategy #4: Methane-Reducing Feed Ingredients – Additionally, a newer strategy is now also being deployed to directly address enteric methane emissions. On a growing number of farms, methane reducing feed ingredients are included in feed rations, helping reduce enteric methane emissions.

Strategy #5: Ongoing Research – Perhaps the most important strategy continues to be research. The California dairy sector supports ongoing research efforts to validate practices and identify additional strategies for further reducing methane emissions.

Myth #2: Methane reduction policies are encouraging dairy farms to grow larger.

Another harmful myth is that California's methane reduction programs are incentivizing farms to grow larger. While it's true that digester projects are more financially viable on larger dairies (including those that have experienced consolidation), the financial benefits of having a digester do not incentivize growth. This myth is based on the flawed assumption that dairies receive *all* revenue generated by a digester and therefore increase cows to increase revenues. In practice, digesters are substantial capital investments that are not financed, operated, and owned by the dairy farm. Most digesters are owned by specialized companies and investors that have access to capital, technology, and current natural gas infrastructure.

<u>A 2024 analysis performed by ERA Economics</u> found there is <u>no</u> evidence that digesters cause consolidation. Additionally, econometric analysis of county- and state-level farm digester data provides empirical evidence that digesters are <u>not</u> causing consolidation. While the California dairy sector has consolidated over the last several decades, the underlying drivers for consolidation are broad and pre-date digesters. The report from ERA Economics confirms <u>analysis</u> performed by the California Air Resources Board, which shows <u>no</u> linkage between digesters and herd growth on dairy farms.

Myth #3: CA policies encourage the creation of more methane for digester capture.

A similar myth is that digesters encourage dairy farms to create more methane so that more energy can be created and sold. This claim is counter to how California's digesters are designed and operated. Nearly all California dairy digesters have a covered lagoon design. On a dairy with this kind of digester, manure is collected via flushing barn floors with recycled water that is sent to a storage lagoon before being used to irrigate forage fields. Manure stored without oxygen (in wet conditions) creates methane, which is why a plastic tarp is used to cover the lagoon, capturing methane for use as an energy source.

For best maintenance outcomes, there is a critical step that occurs before the stream enters the lagoon: separating out much of the solids via a manure separator. Installation of a mechanical separator is typically part of every farm's digester project investment. Reducing the amount of solids that enter the lagoon reduces the amount of methane that is created and available for capture. However, it also helps prevent solids from building up in



As solid separator (right) removes much of the manure solids before the stream enters covered-lagoon digester.

the lagoon, reduces odors, and minimizes the need for costly lagoon cleanouts. Therefore, digester projects technically use both the methane *avoidance* and methane *capture* strategies, to most effectively manage manure and reduce emissions.

Myth #4: California dairy farms operate without regulation.

A final myth is one that is sometimes claimed by opponents of dairy farming or uniformed media outlets: that California's dairies operate with little to no regulation. This could not be further from the truth. California dairies operate under the strictest environmental regulations in the nation and must comply with the nation's most stringent air quality protection rules. Dairies are already subject to multiple environmental permits and regular inspections by regional water quality authorities, regional air agencies, and county land use authorities. Each California dairy and cattle operation submits extensive, detailed reports on their operations to state authorities on an annual basis. While California's dairies are not currently directly regulated for methane emissions, they are doing their part to voluntarily meet the state's target for a 40% reduction by 2030. The state's dairy methane reduction programs (DDRDP, AMMP, and Dairy Plus) are persistently over-subscribed with farm applications.

Fact: Despite misrepresentations, dairy farmers remain dedicated.

Dairy farmers continue to participate in important conversations about the environment, and more importantly, they continue to take action to reduce emissions. By correcting misinformation and busting harmful myths, their world-leading efforts can be better understood and supported. Achieving the full 40% reduction in dairy methane emissions by the 2030 target is within reach if additional funding is made available to continue the state's successful programs.

California's dairy farmers are committed to doing their part to reduce methane in ways that benefit local communities.



Dairy Cares is a statewide coalition supporting economic and environmental sustainability and responsible animal care.

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