



CDQAP Quality Assurance Update - March 2022

Planning for Unexpected Mortalities

Dairy and poultry producers join with state and federal responders to plan and train for disaster.

By Dr. Michael Payne, UC Davis, School of Veterinary Medicine; Director, CDQAP

Whether due to catastrophic disease, loss of rendering service, or natural disaster, periodically livestock and poultry producers face the tragedy of unexpected mortalities. How to deal with those carcasses, in a way which prevents disease transmission and protects the environment, was the subject of a unique three-day training in Tulare March 15th through the 17th. The event brought together about 30 participants including industry field staff and veterinarians, state and federal animal health officials and academics.



The training is spearheaded by Dr. Mark Hutchinson, Extension Professor and part of the [University of Maine's Compost School](#). While rendering remains an environmentally friendly method of managing routine mortalities, disease outbreaks or natural disasters may tax rendering and landfill capacity. Transportation of mortalities to such central sites also increases the risk of disease spread. That's where on-farm composting comes in.

Hands-On Training

The Tulare training was designed to start participants down the path of obtaining a credential as a composting Subject Matter Expert. These SME's serve as resources to assist industry and animal health responders with carcass mortality disposal during large and small events. More than a dozen hours of classroom lecture and formula calculations with field exercises were conducted throughout the three-day training. In the field participants, critiqued demonstration piles set up earlier in the week, examined carcasses interned one month ago, and created their own compost pile recipes. Students trained in Personal Protective Equipment (PPE), which would prevent disease transmission during a real outbreak. At the end, participants created disposal plans for real farms based on satellite images and completed a ten-page written exam.

"With this training I'm confident I can assist any dairy farmer with carcass disposal, whether it was due to a foreign animal disease or interruption of rendering service," said Betsy Hunter-Binns from Milk Producers Council. "And I can do it efficiently while minimizing environmental impacts," she said.

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Be Ready When It's Your Turn

CDQAP Environmental Stewardship Evaluation

By Deanne Meyer, Ph.D., Livestock Waste Management Specialist, UC Davis, Department of Animal Science, UC ANR

Do you need to recertify in CDQAP? Are you interested in becoming a **certified dairy**? Part of CDQAP certification is an on-farm evaluation. Call early and get ready for your on-farm evaluation.



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California Dairy Sustainability Summit: April 12-14, 2022

The virtual California Dairy Sustainability Summit is coming up soon on April 12-14. Registration for dairy farmers is \$25. Talk to your trade organization or field representative about potential opportunities for complimentary registration. Check out [full agenda](#) and register at [cadairysummit.com](#).

Highlights Include:



- Food and beverage leaders from **Starbucks and Nestlé** will join the CEO of California's largest dairy cooperative, **California Dairies, Inc.**, to discuss how they are working together to support dairy farmers and reduce emissions throughout the supply chain.
- A former dairy farmer, economist, and civil engineer will talk about California's significant **water scarcity** challenge, potential implications, and strategies for navigating the road ahead.
- Dairy farmers and a leading UC expert will discuss achievements and ongoing progress in improving sustainability through **genomic strategies**.
- And much more from 50+ expert speakers!

AMMP Resources Available

By Deanne Meyer, Ph.D., Livestock Waste Management Specialist, UC Davis, Department of Animal Science, UC ANR, dmeyer@ucdavis.edu

The [AMMP application window](#) is open! Up to \$750,000 per application awarded, can be used to fund implementation of an alternative manure management practice. Manure collection and or separation categories include pasture-based management, alternative treatment or storage (including compost bedded pack barns), solid separation with subsequent management of solids and conversion of flush to scrape with subsequent management of solids.



AMMP
Application
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Planning for Unexpected Mortalities *continued*

On-Farm Composting Options

“Surprisingly, it’s not simply the heat generated in a compost pile that kills pathogens,” explains Gary Flory, a [consulting researcher and trainer](#) who works with the Main Composting School. “Rather it’s a combination of factors including the enzymatic action of the composting microbes that inactivates dangerous bacteria and viruses.” Knowing this, different types of composting piles can be constructed, all of which achieve the same goal.

To compost carcasses of large livestock such as cattle or hogs there are several options:

Traditional Composting – Carcasses are laid on an 18-inch bed of absorbent material and covered with two feet of cover material such as wood shavings, poultry litter, manure or silage. Using composting [thermometers](#), the pile or windrow is monitored to ensure microbial activity and the windrow is turned about five weeks after construction. After an additional 5 to 7 weeks of composting all the tissue and pathogens will be gone, leaving only the larger brittle bones. Total time from construction to compost land application: about 12-13 weeks.

Grinding & Blending – The carcasses and compost feedstock are blended using a horizontal tree/stump grinder, equipment readily available in areas with commercial forests or orchards. The piles or windrows are constructed in a manner similar to traditional composting, but are turned after only two weeks. After an additional two weeks of composting any tissue and pathogens are gone. Total time from construction to compost land application: about 4-5 weeks.

Shallow Burial on a Carbon Bed – When composting feedstock material is scarce, a new methodology may be potentially useful. Carcasses are placed in a trench two feet deep and half-filled with an absorbent carbon material, and covered with only the earth from the trench. Unlike deep burial where anerobic conditions prevent carcass decomposition, shallow burial allows microbial decomposition, just at lower temperature and over a much longer period of time. Total time from construction to tilling: about 9-12 months.

What does emergency composting on a dairy look like?

During a disease outbreak, depopulation of infected herds or flocks may be required. On those premises manure and feed will also be considered contaminated and so it makes sense to use those materials as composting feedstock. Research in California and elsewhere has proven that corn silage, separator solids and dry-lot scrapings are good compost materials for heavy livestock. While disease containment and cost considerations always promote the use of materials already on the farm, availability may dictate that addition off-site material need to be brought in. If the available material is too dry, sump pumps can be used to moisten it with lagoon water.

To compost 1,000 adult dairy cows about 7,200 cubic yards of composting feedstock will be required for both the base and cover material for piles or windrows. An additional 1,700 cubic yards of clean feedstock may have to be brought in to “cap” the windrows, in order to mitigate odor, scavengers and disease dispersal by the wind. The material and carcasses are constructed into rows approximately six feet high and twelve feet wide. The total length of the combined windrows will be some 4,800 feet, roughly equivalent to the cumulative length of 16 football fields.

Animal Carcasses in the News

When discussing emergency disposal, livestock producers often remember the largest events, such as the [Foot and Mouth Disease](#) outbreak in the United Kingdom in 2001. During that event 10 million animals from 2,000 farms were burned and buried at a cost of some \$13 billion. The largest Foreign Animal Disease outbreak in U.S. history however occurred in 2015 when [Avian Influenza](#) swept through fifteen midwestern states. That outbreak resulted in the death of 50 million chickens and turkeys at a cost of about \$3.3 billion.

Closer to home, in 2020 California dairy producers were faced with finding legal methods to dispose of routine mortalities when two of the state’s three major rendering companies experienced unrelated [equipment failures](#) during the same week. Even more recently much of the nation is currently experiencing an [outbreak](#) of the highly pathogenic H5N1 strain of Avian Influenza, requiring the destruction of a growing number of flocks. The outbreak in commercial flocks started in Indiana in February and has spread through 18 states, reaching as far west as Colorado. The poultry industry has had to kill more than 17 million chickens and turkeys since Jan. 1.



Grinding carcasses and blending with feedstock can reduce time to composting completion from about three months to one month.

CDQAP Environmental Stewardship Evaluation *continued*

Why be CDQAP certified? For many, buyers of milk are looking for evidence that dairies are operating with environmental sustainability practiced on-farm.

As you prepare for your evaluation you'll focus on environmental stewardship and think about improved ways to manage manure. Your benefit when certified is you'll have "peace of mind" that your facility is compliant with current local, regional, and state water, and air quality regulations. Additionally, you'll receive a 50% reduction in annual water quality permit fees (2021 value \$338- \$9,014 per facility depending on size).

Your evaluation will use a checklist specific to your area. A few important reminders as you prepare for your evaluation:

- Certification is good for 5 years.
- Certification saves you 50% of annual water quality fee.
- Complete all paperwork for Annual Reports.
- Have current year's crop information up-to-date.
- Be sure you have records for all manure, water, and fertilizer applications.
- Work with your environmental consultant to prepare for the evaluation.



CDQAP certification is easy and voluntary. It's a simple three-step process:

1. Complete educational classes (6 hours of water quality and 2 hours of air quality).
2. Complete required record-keeping documentation for water and air quality.
3. Complete an on-farm, third-party evaluation. The educational component is available online.

These courses provide current, useful information, to help you understand your water quality regulations and how to be compliant. A detailed analysis of manure management is shared to help spark thoughts and ideas for manure management.

Dairies remain certified for five years with annual monitoring and reporting check-ins. Evaluations cost \$550 per facility. To learn more about CDQAP Environmental Certification, your class completion status, or to schedule an evaluation, call (530) 574-0524.

Evaluations are scheduled on a first-come-first-served basis. Call immediately to schedule your evaluation. You'll want your evaluation scheduled before September 1 to ensure that it can be completed before the deadline. The deadline for certification is September 30th to be eligible for a 50% discount on water quality fees for 2022- 2023.

AMMP Applications *continued*

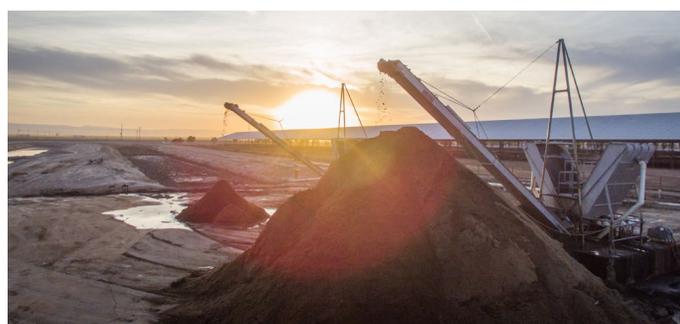
If you're interested in the previous practices a new [resource webpage](#) is available through a joint effort of UC Cooperative Extension and California Dairy Research Foundation. Read AMMP practice factsheets. Watch recorded webinars about different practice categories. Hear and see videos to hear producers' own words about technologies and AMMP process.

New this year under solid separation are two new categories. Advanced separation assisted by bed filters and/or flocculation and vermifiltration.

If you have questions about specific technologies don't hesitate to reach out to your dairy trade organization staff or UC Cooperative Extension Dairy Advisor.



AMMP Resources from CDQAP



California Dairy Sustainability Summit
Virtual Event
April 12-14, 2022
CADairySummit.com

Addressing Water Scarcity
April 13 | 12:25 PM PT

Dr. Michael McCollough
Professor of Agribusiness
Cal Poly, San Luis Obispo

David De Groot
Principal Civil Engineer
4Creeks, Inc.

Geoffrey Vanden Heuvel
Director of Reg. & Economic Affairs
Milk Producers Council