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**Newsletter Editors:**

**Jennifer Heguy**  
UCCE Dairy Advisor  
Merced/Stanislaus/San Joaquin  
jmheguy@ucdavis.edu  
(209) 525-6800

**Noelia Silva-del-Rio**  
Dairy Production Medicine  
Specialist, VMTRC  
nsilvadelrio@ucdavis.edu  
(559) 688-1731

**\$99 Million Available in 2018 for  
Changes in Manure Management!**

Deanne Meyer, Livestock Waste Management Specialist

This year there’s \$50 million available to reduce methane emissions from manure. Methane can be made in situations where manure is anaerobic (no oxygen). There are two simple ways to reduce methane emissions from manure. The first is to not make the methane. Simply stated, get the solids out of liquid systems. The second is to make the methane and then use it so it’s not released to the atmosphere. Anaerobic digesters allow the formation and capture of the biogas.

In 2017, \$45 million are available as direct cost share money (California Department of Food and Agriculture) to offset some costs associated with installation of anaerobic digesters or alternative manure management practices (AMMP). Thirty six (36) applications were received for a total funding request of \$75.7 million for anaerobic digesters; CDFA awarded \$35.2 million to 18 dairy digester projects.

It’s important to review the application process if you’re thinking about submitting an application for either of these programs in the year ahead. Much detailed information is needed to calculate the volatile solids flow through your facility and to estimate greenhouse gas reductions from a specific project. There is value in getting your project team together and identifying needed components for successful application submission, as the application process requires specific information. Your dairy trade association or milk processor can help you identify existing project developers. There is a link on the digester page (listed below) to a list of currently submitted projects for the digester program. Once the AMMP applications are submitted and a first level review is conducted, a link will likely be provided for that as well.

Recently, \$99 million were approved for the 2018 cycle for digesters and AMMP. These funds originate from the carbon cap-and-trade auctions. More information will be posted on the CDFA website when it is available. You may sign up for email notifications regarding these future updates from a link on the dairy digester page (see figure).

CDFA Websites

Digesters: <https://www.cdfa.ca.gov/oefi/ddrdp/>

AMMP: <https://www.cdfa.ca.gov/oefi/ammp/>



## Ed DePeters, UC Davis Award of Distinction

Ed DePeters, professor of animal science, has impacted the California dairy industry tremendously by inspiring UC Davis students to become involved in dairy production and directly engaging the state's dairy producers. Ed was the recipient of the College of Agricultural and Environmental Sciences' Award of Distinction for UC Davis faculty.

The Award of Distinction is the highest recognition presented by the college to individuals whose contributions and achievements enrich the image and reputation of the college and enhance its ability to provide public service.

Raised on a small farm in the state of New York, DePeters became interested in animal agriculture and worked hard to achieve his goals. He earned a B.S. at Cornell University and his M.S. and Ph.D. at The Pennsylvania State University, where he focused on dairy science. Ed began his career at UC Davis in 1979.

Much of his research focuses on dairy nutrition, evaluation of byproduct feedstuffs, and enhancing the nutritional profile of milk, specifically milk proteins and fatty acids. If you happen to see Ed, be sure to congratulate him!

More information on the Award of Distinction can be found at:  
<http://www.caes.ucdavis.edu/connect/events/college-celebration>



**Save the Date!**  
**March 29 & 30, 2018**  
**Stockton, CA**

California Topics for California Dairies

Dairy producers, nutritionists, veterinarians, and other members of allied industry who are interested in topics related to dairy production in California should plan to attend this one-of-a-kind conference.

Be on the lookout for more information in the January 2018 edition of the UCCE California Dairy Newsletter, or contact your local dairy advisor to be placed on the conference mailing list.

For sponsorship opportunities, please contact Jennifer Heguy at [jmheguy@ucdavis.edu](mailto:jmheguy@ucdavis.edu) or (209)525-6800.

## Welcome Randi Black, UCCE Dairy Advisor in Sonoma, Marin and Mendocino Counties



Randi was born and raised in Versailles, Kentucky, where she grew up in the heart of horse country and always had a love of working with thoroughbred horses. She spent much of her time in high school and undergraduate work working with race horses, thinking she would pursue them as a career. However, during her senior year of undergraduate work, Randi took a dairy science class and participated in the Intercollegiate Dairy Challenge. Meeting dairy producers and working with dairy cattle enlightened her to the dairy industry and gave her a passion to help solve the challenges faced within.

Randi completed her M.S. in animal science at the University of Kentucky. Her thesis focused on management practices for compost bedded pack barns to improve cow health. She then pursued her Ph.D. in animal science at the University of Tennessee. Her dissertation delved into the importance of exercise during late gestation as a means to improve postpartum health in confined cows.

During her graduate career, Randi was involved in extension education and developed an enthusiasm for practical, applied research. Randi enjoys research and problem solving using a multi-systems approach to more dynamically resolve issues with long-term success. Randi's expertise lies within animal health, animal behavior and well-being, dairy systems management, and milk quality. However, she is always ready to learn and problem solve when new issues arise outside her areas of expertise.

Randi is based out of the University of California Cooperative Extension Sonoma County office and will be assisting dairy producers throughout Sonoma, Marin, and Mendocino counties. She is looking forward to working with dairy producers, industry professionals, and UC academics alike. Randi hopes to contribute to the dairy community through on-farm visits, practical and valuable workshops and trainings, and beneficial tools and publications to continually improve the productivity, health, and competitiveness of the California dairy industry. Please do not hesitate to contact Randi with questions or suggestions.

Randi Black  
133 Aviation Blvd., Suite 109, Santa Rosa, CA 95403  
(707) 565-2648  
rablack@ucanr.edu

### **Fires Devastate the North Bay**

October 9, 2017 will be a lasting memory for many of us, as fires broke out in the North Bay. These fires spread at exponential speed. Fire, combined with huge fuel loads from last winter's rain and hurricane force winds resulted in catastrophic and historic losses for California. Many dairies were on 24/7 evacuation watch and a few did have to evacuate. Our thoughts remain with those individuals working to overcome the fire associated losses.

## Use of Antibiotics for California Livestock

*Rosie Busch, DVM, Veterinarian Specialist, CDFA Antimicrobial Use & Stewardship*

The new California law states that as of January 1, 2018, over the counter injectable and all other medically important antibiotics must be administered with a prescription or veterinary feed directive (VFD) ordered by a California licensed veterinarian through a valid veterinarian-client-patient relationship.

### Current Availability

Currently there are 12 different classes of medically important antibiotics available for use in livestock. Only half of these have labeled indications for use in lactating dairy cows. While recently the FDA approved a new class of antibiotic for use in human medicine, it is safe to say that new classes of antibiotics may not be available for use in livestock any time soon. All antibiotic use can lead to the development of antibiotic resistance, making it important to recognize and eliminate unnecessary or inappropriate uses of antibiotics. Take charge by implementing an antibiotic stewardship plan with your veterinarian in order to preserve the efficacy of these medications that are essential to animal health.

### Limitations on Preventative Use

According to the Livestock: Use of Antimicrobial Drugs law (FAC § 14400 – 14408), as of January 1, 2018, a medically important antimicrobial drug (MIAD) can be used to prevent disease in livestock if, under the professional and clinical judgment of a veterinarian, there is an increased risk of developing an infection, as long as the MIAD is not given in a “regular pattern.” A few examples of “regular pattern” use may include giving MIADs solely based on the animals’ age or weight, the calendar date, or a life stage event of the animal without further justification for treatment by a licensed veterinarian within a valid veterinarian-client-patient relationship. Support for the decision of treatment may include, but is not limited to, the clinical experience of the veterinarian, historical herd health data and supportive diagnostic testing.

### Access to Veterinary Care

Your industry representatives worked very hard to make sure that increased regulations on antibiotic use would not have a negative impact on animal health. As of January 1, 2018 veterinary oversight will be required with the use of medically important antibiotics. Veterinarians are dedicated to safeguarding animal health and welfare needs, and making sure that necessary medications are available and administered in a timely manner for treating, controlling, or preventing disease in livestock. Cattle will still receive antibiotics when there is a clear indication. Establish a relationship and work with your veterinarian to ensure that the animals under your care receive the medical attention they need, when they need it.

### Three C’s of Antibiotic Use in California

## Connect – Conserve – Collaborate

**Connect.** Establish or maintain a working relationship with your local livestock veterinarian.

**Conserve.** Keep medically important antibiotics effective through diligent animal stewardship and judicious use of these valuable tools.

**Collaborate.** You deserve a program to address your needs. By participating in our voluntary surveys and studies, we can help you address use, resistance and husbandry practices.

For additional information, please visit: <https://www.cdfa.ca.gov/ahfss/AUS>

Please email questions to: [CDFA\\_AUS@cdfa.ca.gov](mailto:CDFA_AUS@cdfa.ca.gov)

## **Innovative Dairy Cow Cooling Technologies Tested at UC Davis**

*Alycia Drwencke and Cassandra Tucker – Department of Animal Science, Theresa Pistoichini – Western Cooling Efficiency Center*

With this summer having been one of the hottest in California history, the term heat stress is all too familiar around dairy farms. As the ambient temperature climbs, cows experience increased stress as they break down feed and produce milk, which both generate heat and make it difficult for them to handle the weather. Heat stress will lead to drooling, open mouth breathing, increased respiration rates, decreased fertility and milk production, and in severe cases, mortality.

Often, California dairy farms use soakers over the feed bunk and fans over the freestalls to keep cows cool. However, this method of cooling can lead to an average water use of 40 gallons of water, per cow, every day, which raises concerns about using this limited resource for cooling cows (values based on 10 dairy farms in Tresoldi et al., *California Agriculture*, in press). That amount of water use can be a substantial portion of input costs and can still result in yearly production losses that surpass \$800 million across the nation. With the California dairy industry bringing in \$6.23 billion in cash receipts in 2015, and housing 1 in 5 dairy cows in the country, the economic losses caused by heat stress are extensive.

Two new and innovative methods of cooling are currently being evaluated at the University of California, Davis. These technologies are designed to reduce water use by up to 86% and energy use by up to 38%, which could potentially result in sizeable economic and resource savings for the dairy industry. The two technologies were tested in comparison to the traditional soaker and fan combination at the university dairy this summer. The researchers are now in the process of analyzing data to determine which technology was the most effective and efficient when cooling the cows. One of these technologies will be tested on a commercial scale in the Central Valley, next summer. Water and energy use, as well as production, will be quantified in this test to evaluate cost effectiveness.



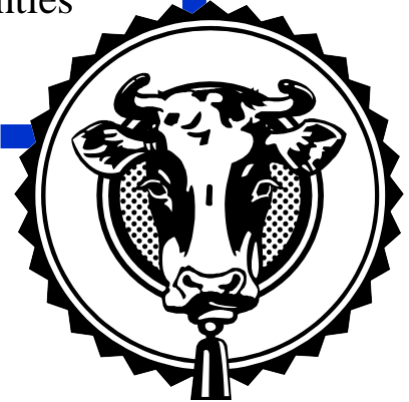
Cows line up to receive cooling from innovative direct evaporative coolers at the UC Davis dairy.

One technology utilizes a Sub-Wet Bulb Evaporative Chiller (SWEC) to cool water that flows through mats buried ~4 inches beneath the sand beds, where cows spend an average of 10-14 hours per day. Heat dissipates from the cow, into the sand and mats, where the heated water is returned to the chiller. The water is then cooled again by the SWEC, and flows back to the mats, to remove more heat from the cows lying in the beds.

The second technology uses targeted, direct evaporative cooling and cloth ducts to blow cooled air on to the cows. These ducts and high efficiency evaporative coolers were placed both at the feed bunk and above the freestalls.

A combination of respiration rates, body temperature, cow behavior, milk yield, weather, energy and water use data are all being evaluated to determine the effectiveness and efficiency of each cooling method. This research is well timed with the extensive heat California has been experiencing and could lead to important changes and economic savings for the dairy industry in the near future.

University of California Cooperative Extension  
**California Dairy Newsletter**  
Merced, Stanislaus & San Joaquin Counties  
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A handwritten signature in black ink that reads "Jennifer". The signature is written in a cursive style and is positioned above a horizontal line.

Jennifer Heguy, Dairy Advisor  
Merced, Stanislaus & San Joaquin Counties

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