

**Golden State Dairy Management Conference is March 23<sup>rd</sup> in Modesto!**



Don't miss out! Join us on March 23<sup>rd</sup> in Modesto for the latest in California dairy research. Held in even years, this is the University of California's fourth research conference. We've designed the conference with the producer in mind, delivering information in a "news you can use" format. Our speaker line-up includes University of California Farm Advisors, Specialists, and Dairy Faculty on topics relevant to California dairying. Most importantly, the research presented is derived from California data.

The meeting starts at 9 a.m. with a conversation with California Dairy Research Foundation's Denise Mullinax and the California Almond Board's Josette Lewis. Denise and Josette will highlight their organizations' research outlook for the next five years and how producers' dollars are being put to work to reach environmental stewardship and production goals.

Breakout sessions start at 10am. With six different sessions and 12-minute talks, there's surely something for everyone. Room one will focus on nutrition and herd health, while room two has manure/nutrient management and agronomy. Both rooms will have "hot topics" sessions covering a variety of up-and-coming research topics.

For more information, check out the program: <https://ucanr.edu/sites/CA dairy conference/> or contact Jennifer Heguy (contact info below). See page five of this newsletter for the full agenda.

**We hope to see you in Modesto on March 23<sup>rd</sup>!**

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## Every Point Counts: Attention to Details Important on AMMP Applications

*Deanne Meyer - UC Davis & UCANR, Randi Black, Betsy Karle & Jennifer Heguy – UCCE Farm Advisors*

It's that time when CDFA opens the brief AMMP (Alternative Manure Management Plan) applications. Scan the QR code or visit <https://www.cdfa.ca.gov/oefi/AMMP/> for information about applying.

If you're applying, you'll want to be sure you cross your t's and dot your i's. The application requires detailed information to compete with other projects and be successful. In 2020, 11 of 79 projects received funding. The focus of AMMP is to fund approved practices believed to reduce volatile solids loading to manure lagoons and therefore reduce methane (greenhouse gas) emissions.



Each submission requires attention to detail! All 7 sections of the application need to be filled in completely. Any blank or incomplete answers take away points from your project total. You need every point possible to be competitive.

You may complete the application yourself or choose to work with either a technical service provider or UC ANR Climate Smart Agriculture Community Education Specialist. Most producers appreciate the chance to work with a consultant to be sure the application is completed and no answers are left blank. (It's possible to include allowable consultant costs in the budget!) Projects should be shovel ready (all required permits in place at time of application). Properly entering information in the calculator spreadsheet is essential. Lining up financing and factoring in inflation are both important in this process. Remember, the application is likely due at end of March and projects won't start until late in the 4<sup>th</sup> quarter of this year or early next year.



Information is available to help you better understand some of the management implications of different project types. Factsheets, producer interviews, and webinars related to use of vacuums, mechanical separators, and compost bedded pack barns are available. Visit <https://cdqap.org/ammp-outreach-project/> or scan the QR code (left) to find these useful materials.

Good luck with your application!

## California Dairy Sustainability Summit: April 12-14, a Virtual Event

The next virtual California Dairy Sustainability Summit will take place online, April 12-14. The summit hosts important and timely discussions, as dairyfarmers and organizations around the world partner to reduce climate emissions and improve overall sustainability. Speakers will highlight innovative technologies, partnerships, and projects on California dairy farms and other global efforts. The program will promote education and collaboration to ensure that dairy farms can continue to meet customer and policy maker expectations. Tune in to see new technology demonstrations relevant to California's environmental challenges, and learn what leading consumer brands and retailers are doing to support dairy farmers as they work to reduce GHGs. Expect four hours of educational sessions each day. Visit [www.cadairysummit.com](http://www.cadairysummit.com) for more info.

## Evaluating Antibiotic Resistance of Intrauterine *Escherichia coli* in Cows with Metritis

*Richard Pereira, Carl Basbas, Adriana Garzon Audor - UC Davis Veterinary Medicine, Noelia Silve del Rio - UC Davis & UCANR & Betsy Karle- UCCE Northern Sacramento Valley*

Metritis is one of the most common health disorders in post-partum cows. It is characterized by the presence of fetid, watery, reddish-brown, and foul-smelling vaginal discharge. Metritis infection can result in reduced milk production and reproductive inefficiency as lactation progresses. Previous studies estimate the economic impact of metritis at \$511 per case. We evaluated cows with and without metritis (across 25 California dairies) to determine the presence of intrauterine *E. coli*, a widely recognized bacteria causing metritis in cows, and its associated antibiotic resistance.

Intrauterine samples were collected from cows in the first 21 days post-partum and divided into three clinical groups on each study dairy: **1) Clinical metritis** (fetid, watery, reddish-brown, foul-smelling vaginal discharge; **2) Pus discharge** (non-fetid, cloudy or white pus vaginal discharge); and **3) Healthy** (clear or no vaginal discharge). Of the three clinical groups, the cows in the clinical metritis group were, not surprisingly, much more likely to have *E. coli* from intrauterine samples when compared to cows in the healthy group. Cows in the pus discharge group had the same likelihood of having intrauterine *E. coli* recovered as cows in the healthy group.

All intrauterine *E. coli* samples recovered in this study were resistant to ampicillin, the second most commonly used antibiotic to treat metritis in California. However, this finding is different than what has been seen in other studies. Antibiotic resistance was 30% for chlortetracycline and 34% for oxytetracycline. Only 9% of *E. coli* isolates were resistant to ceftiofur. Dairies infusing intrauterine oxytetracycline as a treatment for metritis were more likely to have intrauterine *E. coli* resistant to chlortetracycline or oxytetracycline. Ceftiofur was the most common drug used to treat metritis in our study, but it had the lowest resistance for all drugs labeled for treatment of metritis. The high *E. coli* antibiotic resistance for ampicillin was unexpected and merits further study.

### BOTTOM LINE

- Intrauterine *E. coli* is highly susceptible to ceftiofur, suggesting that it is likely effective for treatment of metritis.
- Based on antibiotic susceptibility, injectable oxytetracycline can be reserved as a second option.
- Intrauterine infusion with oxytetracycline was suggested as a factor that could increase the likelihood of resistant intrauterine *E. coli* to oxytetracycline and chlortetracycline. This practice should be reconsidered on the basis of antibiotic stewardship, and the need for research with a focus on the impact of intrauterine use of oxytetracycline on antimicrobial resistance to evaluate this suggested concern.

## Are automatic milking systems right for you? A survey of producers' perceptions.

*Daniela Bruno - UCCE Fresno, Madera & Kings, Camila Lage – Cornell University & Fernanda Ferreira - UC Davis & UCANR*

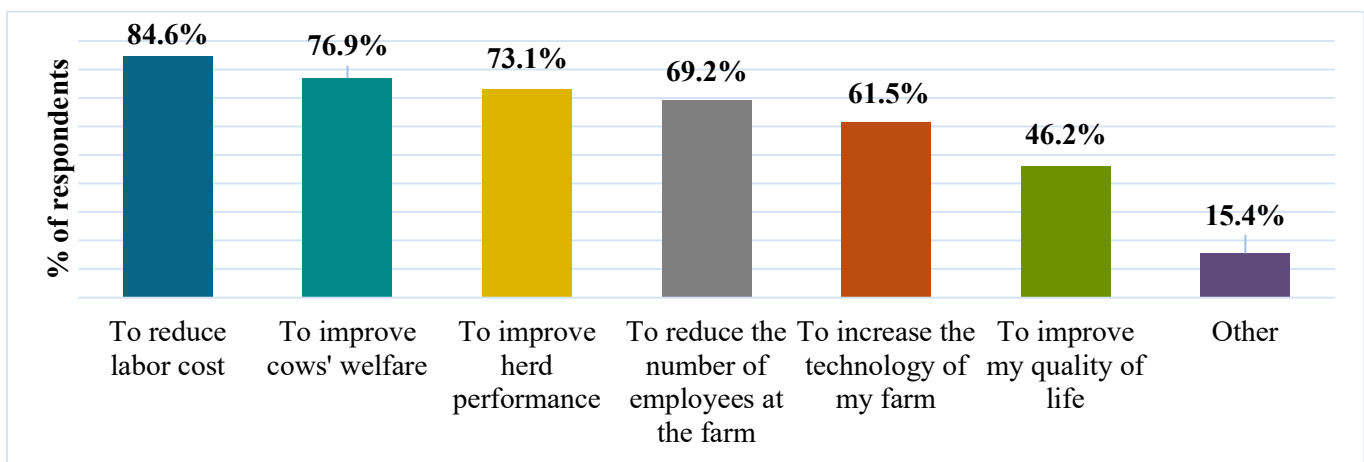
To understand motivation and evaluate potential risk factors of implementing automatic milking systems (AMS) on large dairies, we interviewed large dairy producers who have implemented the technology across the US ( $\geq 7$  AMS units installed). Animal welfare and labor-related reasons are the main motivations to adopt this technology (**Figure 1**). Some of the survey findings are highlighted below:

## Implementation

- Traditional milking parlors – Over 60% of respondents kept their conventional parlor after installing milking; not all cows are being milked in AMS and there is a need for a parlor to milk hospital and fresh cows.
- Installation – 57% of respondents would do something different during the installation process, including better training of employees before transitioning and modifications to barn design (i.e., adding more and bigger sorting pens, more water troughs and more people-passing areas).
- Employee adaptation - Most the respondents (63%) stated that the employees had no problems adapting to the new technology. However, 34% hired employees with different skills.
- Labor - Most of the respondents (77%) believe AMS reduced labor on their dairy, and half of the respondents reported a  $\geq 20\%$  reduction in the number of full-time employees after the transition.

## Production, health, and reproductive outcomes

- Milk production – 50% of respondents reported an increase in milk production.
- Milk quality – 64% reported no change in average bacterial count and somatic cell count (SCC), while 25% noticed a decrease in SCC; 33% of producers noticed an increase in milk fat and protein, while 61% noticed an increase in milk production since transitioning to AMR.
- Cow comfort – 65% of farmers reported an improvement of cow comfort after transitioning to AMS, as cows spend more time lying/resting.
- Health management – 90% of respondents believe it's easier to detect diseases with AMS due to sensors.
- Clinical mastitis – 39% of respondents reported reduction of clinical mastitis, and 62% believe that AMS implementation improved mastitis management.
- Lameness – 41% noticed a decrease in lameness rates, and 57% believe it was due to an improved detection after implementing AMS.
- Reproductive outcomes – 64% noticed an increase in pregnancy rate without changing reproduction protocols.



**Figure 1:** Reasons for transitioning to AMS.

Overall, producers reported that AMS have met their expectations of improving animal production and welfare and labor reduction. They emphasized that success depends on farm-specific factors, farmer expectations/mindset, and dealer proximity/relationship. However, the economic aspects of the investment would benefit further investigation. Adopting this technology is certainly not an easy decision, and farmers should take their time to explore the options, talk to fellow farmers and have a good plan before making the investment.



**March 23, 2022**  
3800 Cornucopia Way, Modesto

**Registration**  
8:30 – 9:00 a.m.

Opening Session, 9:00 – 9:45 a.m.

Your research dollars at work

*Denise Mullinax, California Dairy Research Foundation*

*Josette Lewis, Almond Board of California*

**CEUs requested:** ARPAS,  
CCA & CDFA-INMP

**Lunch provided**  
Stay for lunch, or grab a boxed  
lunch to-go!

## Room 1

### Nutrition, 10:00 – 10:50 a.m.

Almond hull usage on California dairies  
*Jennifer Heguy, UCCE Dairy Advisor*

Almond hulls for lactating dairy cows: feeding amounts  
and composition  
*Dr. Ed DePeters, UC Davis*

Rumen-protected amino acids: affect on milk yield and  
mastitis risk  
*Dr. Noelia Silva-del-Rio, UC Davis and UC ANR*

### Hot Topics, 10:55 – 11:45 a.m.

Water conservation benefits & environmental concerns  
of managed agricultural aquifer recharge  
*Dr. Helen Dahlke, UC Davis*

Health outcomes for calves housed in a small group  
system  
*Betsy Karle, UCCE Dairy Advisor*

Producer perspectives of automatic milking systems  
*Dr. Daniela Bruno, UCCE Dairy Advisor*

### Herd Health, 11:50 – 12:40 p.m.

Mitigating heat stress: insights & ideas  
*Dr. Cassandra Tucker, UC Davis*

Evaluation of tests to predict individual quarter SCC  
*Dr. Heidi Rossow, UC Davis*

Metritis in California dairy cows: antibiotic resistance of  
intrauterine *E. coli*  
*Dr. Richard Pereira, UC Davis*

## Room 2

### Manure Management, 10:00 – 10:50 a.m.

Manure technologies and pre/post greenhouse gas  
emissions  
*Dr. Frank Mitloehner, UC Davis*

Where to get AMMP resources  
*Dr. Deanne Meyer, UC Davis & UC ANR*

Nutrient management with digester effluent  
*Joy Hollingsworth, UCCE Farm Advisor*

### Hot Topics, 10:55 – 11:45 a.m.

Effects of the SLICK mutation to reduce the negative  
impact of heat stress in Holstein cattle  
*Dr. Anna Denicol, UC Davis*

Feeding and managing dairy cattle genetics for beef  
*Dr. Pedro Carvalho, UC Davis & UC ANR*

Improved cattle through genomic selection, assisted  
reproductive technologies and gene editing  
*Dr. Alison Van Eenennaam, UC Davis & UC ANR*

### Agronomy, 11:50 – 12:40 p.m.

Sorghum as a water saver  
*Nick Clark, UCCE Farm Advisor*

Irrigation of small grain forage in drought years  
*Konrad Mathesius, UCCE Farm Advisor*

Alfalfa irrigation strategies for drought considering  
groundwater recharge  
*Dr. Dan Putnam, UC Davis & UC ANR*

To register, visit:

<https://ucanr.edu/sites/CA dairy conference/ Register/>