



# SUPERIOR CALIFORNIA

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# DAIRY REVIEW

Sacramento Valley

December 16, 2003  
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## 12th Annual North Valley Dairy Day January 27, 2004 Kountry Kitchen 10:00 a.m. to 3:00 p.m.

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North Valley Dairy Day

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Barbara Reed  
Farm Advisor

- 9:30 a.m. Registration
- 10:00 a.m. Welcome - Barbara Reed, UC Farm Advisor
- 10:10 a.m. How to Control Insect Pests On Your Cows and Your Dairy  
*Alec Gerry, Ph.D., Extension Veterinary Entomologist, UC Riverside*
- 10:40 a.m. Update on Air Quality Issues Related to Dairies  
*Frank Mitloehner, Ph.D., Extension Environmental Quality Specialist, UC Davis*
- 11:10 a.m. Update on Water Quality Control Board Conditional Waiver Process  
*Barbara Reed, Extension Dairy Farm Advisor, UCCE Glenn County*
- 11:40 a.m. Break
- 11:50 a.m. Risk Factors for Environmental Strep., Questionnaire Results  
*John Kirk, DVM, Extension Veterinarian, Veterinary Medicine Teaching and Research Center, Tulare*
- 12:20 p.m. Dairy Quality Assurance - What Consumers Want To Know-  
*Carolyn Stull, PhD., Extension Animal Welfare Specialist, U.C. Davis*
- 12:45 p.m. Industry Sponsored Lunch
- 1:45 p.m. - 3:00 p.m. Getting Your Opinions on the Confined Animal Operations Element for Glenn County, What Should It Contain? (Facilitated small group discussion)  
*Gene Smith, Quad Knopf Consulting*

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Region 5-Water Quality Control

Board Still Working on the

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Cooperative Extension Work in Agriculture and Home Economics, U. S. Department of Agriculture, University of California and County of Glenn Cooperating

## Conditional Waiver/Permitting Plan for Dairies

*From Deanne Meyer and Barbara Reed*

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At the Region 5 Board (RB5) meeting on December 5<sup>th</sup>, the board indicated that it will have a draft National Pollution Discharge Elimination System (NPDES)/Waste Discharge Requirement (WDR) permit available for public input/comment sometime in early January 2004 and that they hope to have it available for adoption at the March meeting. Remember, the NPDES rules will bring California into compliance with federal regulations, and the WDR will meet state requirements. This has been “under construction” since last year! Hopefully RB5 will come up with something workable so dairy operators don’t have to live in limbo. Until there is a new permit, dairy operators are operating without a permit. However, the Regional Board has written a letter of protection that allows dairies to continue to operate until the permitting process is finalized. This letter was distributed directly to dairies in May of 2003.

As far as the Confined Animal Feeding Operations (CAFO) rule is concerned--RB5 has until April 13, 2005 to get a permit issued (1 year for the permit and 1 year for public input since we do not require legislative review). All producers will need to comply with the requirements in the CAFO rule by Dec. 2006 (this is develop and implement a nutrient management plan as defined in the CAFO rule).

Things are still progressing slowly on the Certified Nutrient Management Plan (CNMP) side. This is being develop by the Natural Resource Conservation Service with assistance from Cooperative Extension, but is not yet finalized. There was a comparison between the CNMP guidance document and RB5 draft permit from last January. The analysis concluded that the CNMP guidance would not be effective at meeting regulatory requirements. Simply stated, if a person did all of the stuff in the CNMP it would not be enough to meet their legal requirements for their permit. So this will have to stay on the drawing board for some time to come if it is going to be a useful and meaningful tool for dairy operators.

## Mycoplasma Shedding Patterns: Implications for Detection of Infected Cows by Culture

*John H. Kirk, DVM, MPVM UC Extension Veterinarian*

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A recent research report clearly shows that many cows with mycoplasmal mastitis will shed the mycoplasma inconsistently in their milk at irregular intervals. They studied 10 dairy cows that were known to have mycoplasmal mastitis. Milk samples, both composite and quarter samples, were taken from each cow for 28 consecutive days for culture. In nearly 30% of the composite milk samples of all four quarters, mycoplasma was not recovered from the infected cows. However, large quantities of mycoplasma at over one million Colony Forming Units(CFU)/ml. were found in over 50% of the composite milk samples.

Likewise, mycoplasma was not isolated from over 40% of the quarter milk samples collected from the known mycoplasma infected cows, but it was found in another 40% of the quarter milk samples at levels exceeding one million CFU/ml.

These findings indicate that cows infected with mycoplasmal mastitis shed varying amounts of organisms on different days and that the amounts they shed are not always detectable by our current laboratory methods for culturing milk samples.

Of the 10 cows tested, 6 cows had large quantities of mycoplasma in nearly 80% of their milk samples. At this level, a mycoplasma infected cow can easily be detected by laboratories that routinely test milk samples for mycoplasma. Two other cows had detectable amount of mycoplasma in less than 20% of their milk samples. The remaining two cows were only detected to be shedding when enrichment of the samples was done prior to direct plating. Most of the cows that could be detected as shedding mycoplasma were infected with *M. bovis* or *M. californicum*. The two cows that were very difficult to detect were infected with *M. bovigenitalium*. While the number of cows in the study was small, this may indicate that different mycoplasma are shed at differing rates and amounts by infected cows. It certainly underscores the need to speciate the

mycoplasma that are isolated from the milk samples of infected cows.

Milk samples from these cows were tested by direct plating and enrichment prior to plating. It is generally thought that enrichment prior to plating is a more sensitive method that will detect mycoplasma in smaller quantities than by direct plating. However this was not the case with this study report. Some milk samples were found to be positive by the direct method, that were not found on the supposedly more sensitive enrichment method. So while enrichment may detect some cows shedding small quantities of mycoplasma, enrichment is not always 100% accurate. Direct plating is also not 100% as there will be samples with less than the detectable amounts of mycoplasma that will not be detected.

While it was not clearly stated as to the length of time these study cows had been infected with mycoplasmal mastitis, it is clear that they shedding at varying rates and that the amount they shed may be below the level of detection by most milk quality laboratories. It might be speculated that had these cows been tested early in their infections that the detection rate might have been higher. In some cases, enrichment techniques will improve the detection rate. However, this is not always the case.

The take home message from this report is that milk samples from multiple sources should be routinely tested to insure the maximum chance of detecting cows with mycoplasmal mastitis infections. Indeed, many suggest that milk from the bulk tank should be sampled at least monthly and perhaps more often in larger herds.

In addition, samples should be submitted from all cases of clinical mastitis, from each recently calved fresh cow and new herd additions. For a truly aggressive detection program, cows with elevated somatic cell counts could also be tested because most mycoplasmal infected cows will have an elevated cell count. Speciation of the mycoplasma isolates is strongly encouraged.

If undetected, cows with mycoplasmal mastitis serve as a very contagious source of infection for other cows in the herd and they may possibly continue to do so for an entire lactation. In the absence of a consistent routine detection program, it is not unusual for over 10% of the herd to become infected with mycoplasma before it is discovered resulting in severe deterioration of milk quality and increased treatment failures.

Ref: Biddle MK, Fox LK, Hancock DD. Patterns of mycoplasma shedding in the milk of dairy cows with intramammary mycoplasma infections. JAVMA 223(8):1163-1166, 2003.

## DHIA Data for November

### November DHIA Averages for N. Sacramento Valley Herds

ROLLING HERD AVERAGE	BREED				Overall Average
	Brown Swiss	Holstein	Jersey	Other	
# of Cows	51	331	291	125	302
Lbs Milk	22629	20250	14502	15547	18350
% Fat	3.92	3.60	4.54	4.37	3.93
Lbs Fat	887	729	661	677	710
% Protein	3.32	2.89	3.62	3.45	3.16
Lbs Protein	752	605	528	534	581
Somatic Cell Count (1,000)	374	359	334	356	352
% CULL	34	31	23	43	30
Calving Interval	13.9	14.6	13.7	14.6	14.3
Average Services/Conception	5	3	3	2	3
Percent conception at 1 <sup>st</sup> service	30	31	38	33	33
Average days open	200	156	143	160	154
Average Days in Milk at 1 <sup>st</sup> service	67	82	77	88	81

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