



**ARIZONA AND NEW MEXICO
DAIRY NEWSLETTER**

**COOPERATIVE EXTENSION
The University of Arizona
New Mexico State University**

AUGUST, 2003

This month's article:

**“Surviving A Mycoplasma Outbreak:
Step by Step”**

by

Allan Britten

Udder Health Systems, Inc.

Bellingham, Washington

(reprinted from National Mastitis Council, Inc. ,2003 Regional Meeting
Lansing, MI, August 6-7, 2003)



UPCOMING:

**ARIZONA DAIRY PRODUCTION CONFERENCE
PHOENIX, ARIZONA
OCTOBER 16, 2003**

New Mexico State University Extension Dairy Website:
<http://www/nmsu.edu/~dairy>

The following videos are available for checkout from New Mexico State University. To obtain a video call Kathy Bustos, (505) 646-3326 or kbustos@nmsu.edu and the video will be sent in the mail, pending availability. There is only one copy of each video available, so we request that videos be returned within two weeks. Note that four of the videos contain an English and Spanish version.

1. The Milking School. Utah State University. Spanish and English. 30 minutes
2. Fitting and Showing Your Dairy Animal....A Winning Experience. Department of Dairy Science, University of Wisconsin. 20 minutes
3. Proper Milking Procedure. University of Florida. Spanish and English. 12 minutes
4. Milking Machine Maintenance. University of Florida. Spanish and English. 16 minutes
5. The Basics of Vacuum and Milking Systems. DHIA Services, 1991. 53 minutes
6. Understanding Dairy Cattle Behavior to Improve Handling and Production. Livestock Conservation Institute, 1992
7. Managing Milking/Ordenar Lecheria. Spanish and English. 1999. 33 minutes
8. Get Milk! Joining A Dairy Crew. University of New Hampshire, 1999. 45 minutes

Need to Calculate Production Costs?

University of Wisconsin dairy farm management specialist, Gary Frank, has developed a Excel spreadsheet to calculate variable cost of production and total cost of production. To access the spreadsheet, go to <http://www.wisc.edu/dairy-profit>, click on Decision Making Tools, then go to costcwt.xls.

Issued in furtherance of Cooperative Extension on work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of agriculture, James A. Christenson, Director, Cooperative Extension, College of Agriculture, The University of Arizona. The University of Arizona College of Agriculture is an Equal Opportunity Employer, authorized to provide research, educational information and other services only to individuals and institutions that function without regard to sex, race, religion, color, national origin, age, Vietnam Era Veteran's status, or disability.



University of Arizona
Department of Animal Sciences
P O Box 210038, Shantz Bldg, Room 205
Tucson, AZ 85721



New Mexico State University
Extension Animal Resources
Box 30003 Dept. 3AE
Las Cruces, NM 88003

SURVIVING A MYCOPLASMA OUTBREAK: STEP BY STEP

Allan Britten
Udder Health Systems, Inc.
Bellingham, Washington

The first notification most dairy producers get that there is mycoplasma in their herd is a call or a report from a laboratory that the organism is present in their bulk tank milk. When you do find out that you have mycoplasma, you need to understand what the test means, the nature of mycoplasma in the dairy industry, and what steps you can take to minimize losses from this disease causing organism.

There are a number of reasons why it is important to keep this organism in mind. It is one of the three major contagious mastitis organisms. It merits this classification because as a major pathogen, it will cause major damage to the mammary gland. Signs of clinical mastitis will likely be detected in over 80% of the cases. The cow will drop in milk production and the gland may only produce a severely abnormal stringy or granular thick secretion. It may affect all four quarters at once and milk production may drop to zero although this happens in probably less than 20% of the cases. Typically, it will be unlike acute coliform mastitis as there is little or no swelling in the gland and the cow usually does not appear toxic. Mycoplasma may sneak up on you as milder cases may look like any other chronic or subclinical mastitis. With some cases the cows may never have been known to have clinical signs. Also it can be highly contagious and has the reputation of causing explosive outbreaks where large numbers of animals become infected in a short period of time. Fortunately, in areas where the disease does frequently show up, it does not result in explosive outbreaks in the majority of herds. It is bad enough when you lose one or two cows to this disease, but sometimes it will get much worse. You may be so unlucky as to have one of the bad outbreaks. Large numbers of cows can become infected and the cost of the disease could skyrocket from the tens of thousands to the hundreds of thousands of dollars.

You may wonder though if it is likely to be problem on your herd. Maybe you have not heard about it in your area, or you think those dairies that got the disease must have done something to deserve it. Maybe you feel you have a closed herd and your biosecurity measures will keep it away. Well don't rest too easy. There is reason to think that the face of the disease is changing. It's not just a California problem. This state has a longstanding awareness of this disease going back to the 70's. California dairies probably have the most extensive network of diagnostic services for this organism with many university, processor and veterinary laboratories offering mycoplasma culture as part of routine Bulk Tank Culture programs. Laboratory services in New York have also detected the organism as a cause of contagious mastitis outbreaks for as many years. In the past the organism had been detected in tanks in Washington only infrequently, but clearly detection is now on the upswing. In recent years about 20% of Northwest herds show the organism in the bulk tank at some point or other during the year. Similar increases in frequency of detection have been reported in testing laboratories in the Midwest. The situation today is that it has been reported in every state of the country. It is likely that although it is a relatively rare form of mastitis, it would be detected in more areas of the country if more dairies ran

mycoplasma culture. It's not just a large herd problem. Yes larger herds can have larger problems, but this organism does not care about herd size. Is your herd really closed? The organism is finding a way into many herds that thought they were "closed". Every year we get calls from producers that complain "I don't know how it got in here. I haven't bought a cow for years."

Submit a Bulk Tank Culture

Mycoplasma is a microscopic one celled organism but is not like other bacteria as it never shows on your Standard Plate Count and won't show up on a routine mastitis bacteria culture. In order to find out if you have mycoplasma mastitis, it needs to be diagnosed with a special separate mycoplasma culture. Mycoplasma culture is typically not offered as a routine part of bacterial analysis for individual cow milk. Similarly, mycoplasma culture may not be part of routine bulk tank culture. In 1998 the milk quality monitoring committee of NMC did a survey of laboratories offering Bulk tank culture services. We found that 25% of the laboratories did not have mycoplasma culture as part of the service. If you want to test your individual cow or bulk tank milk for this organism, you must specifically look for a laboratory that offers this culture and specifically request the test. Mycoplasma culture is different from regular bacteria culture as this is a slow growing organism requiring seven to ten days of incubation to confirm a negative sample. Also mycoplasma growth in the laboratory may not be impeded by the presence of antibiotics. This is one situation where it is appropriate to consider sampling cows even after treatment has been initiated.

Most cows with intramammary mycoplasma infections will shed billions of organisms in each milliliter of milk at least for a period of time in the early course of the disease. Because of these high shedding rates, it has been known for many years that mycoplasma from even one high shedding infected quarter of one cow in a thousand cow dairy, is likely to be detected with bulk tank culture. This gives us an opportunity to take advantage of the single most important tool to protect your herd from this organism. Routine bulk tank culture is a powerful early warning tool to help you detect the beginning of an outbreak. Make sure this test is done on your herd at least once a month. Some larger herds may wish to test weekly to keep up with the changing status of the herd. This is not a test where you get your negative test result and say "Well, I don't have a problem so I don't need to run that test again". The purpose of routine testing is to put a vigilant monitoring system in place so you are likely to catch that first case whenever it comes – next week, next month, or next year. Just be happy if all the test results come back negative. Fortunately most positive tanks don't result in a herd outbreak but specific steps should be taken immediately after the tank goes positive to make sure the disease doesn't spread. So when you get a positive tank, you may be thinking, "I may have a problem and I need to jump on it." The question is how high to jump? This is when I recommend we go to a Phase 1 response

Phase 1 Response

1. If your tank is reported positive, request that the isolate be typed to verify it is a mastitis causing strain. The special media used to screen for mycoplasma in the Bulk Tank culture

may grow some strains that don't cause serious herd problems. The most frequently identified mastitis causing strain in the west is *Mycoplasma bovis*.

2. Repeat the tank culture immediately to see if the problem is persisting. Try to isolate individual strings and do a composite string sample to see which groups of cows are affected. A composite string sample is a pooled sample from a pen of cows. If this pooled sample goes positive then there must be a positive animal in that group. Try to freeze all cow movement between strings until these results are complete and positive animals isolated. Switch to weekly bulk tank testing to get more frequent updates on the status of the herd.
3. Submit individual cow milks for mycoplasma culture from recently or currently treated clinical mastitis cows, recently fresh cows, especially heifers, and new herd additions.

If the mycoplasma typing comes back that you have a mastitis causing strain and if your repeat bulk tank culture is also positive then you must prepare for more aggressive action. If you have isolated it from any of your composite string samples or from individual cows, you need to go to a Phase 2 response. In Phase 2, we begin the chase. This is a contagious organism. Our goal is that we have to find and eliminate the cows that are shedding the organism faster than the organism is spreading. It is an awkward chase because when we culture a group of cows, it is like taking a snapshot of the herd infection on that day. But because of long incubation times for this type of culture, it will be days before we start getting results. So we also have to simultaneously increase frequency of detection (hence more samples) and also take steps to lower the new infection rate with superior sanitation steps (use of gloves, single towel per cow, sanitizer in drop hoses, generous application of effective pre and post dips, and cluster disinfection).

Phase 2 Response

1. Culture all the cows in any positive strings. Consider the value of a whole herd culture to identify all infected animals. Sample all cows and heifers at calving.
2. Get advice on milking time sanitation and begin backflushing after every cow.
3. Get advice from your veterinarian on sanitation in the hospital string. Spread of this organism in the hospital is a big problem in many herds. Start sampling all cows that enter the hospital and also as they leave the hospital. They may have entered the hospital with only a bad foot, or uterus problem but they may leave with a mycoplasma infection.
4. Sample bulk tank once a week for mycoplasma culture for at least four months after the last positive cow.

I recommend repeating the composite string samples and culturing all cows in positive strings until all the cows in that string culture negative. Do not fail to culture every cow in the hospital and every cow that leaves the hospital even if she did not go in there for mastitis. The hospital is a very dangerous place for a cow during one of these outbreaks. The evidence is in a lot of outbreaks, that transmission in the hospital is playing a major role in the problem. To cool off an

outbreak you must sample very frequently in this group and get the positive cows out of the herd. Don't get your fresh cows mixed up in the hospital. Milk fresh cows and heifers in a separate group and do not even handle them in the parlor at the same time you are working with the hospital cows.

It should not go without saying that you shouldn't be buying replacement cows for you herd without culturing them first. Sometimes an outbreak will be traced to a purchased cow. But don't forget the heifers. A far greater number of outbreaks are likely to be traced to heifers that show the disease at calving. Some of these are heifers that have recently been purchased. Some times the heifers are those that were raised at the dairy and it is unclear when or how they came to be infected. There is one view of this disease organism that it is primarily a respiratory pathogen and it is almost a mistake if it ends up in the udder. It is known that this organism will cause disease in many other organs of the cow's body. For most dairymen we only worry about the disease of the udder. Don't count on being spared from having to deal with this organism. Even dairies that say they don't buy any cows are occasionally getting into trouble with this pathogen.

This disease is not treatable. Don't even think about living with this organism. Cull these mycoplasma mastitis cows immediately. Progressive herd managers everywhere should test the bulk tank for this organism at least once a month. An even better plan is to also routinely culture all new additions and all fresh cows and heifers, to get an early warning for this dangerous and potentially expensive mastitis organism.

HIGH COW REPORT

July, 2003

MILK

Arizona Owner	Barn#	Age	Milk	New Mexico Owner	Barn #	Age	Milk
* Mike Pylman Dairy	5185	4-10	39,780	* Hafliger Dairy	7352	4-03	39,660
* Mike Pylman Dairy	4284	5-09	37,820	Pareo Dairy	1567	8-00	38,172
* Mike Pylman Dairy	5342	4-06	37,760	* Hide Away Dairy	4417	4-03	37,460
* Stotz Dairy	11920	5-11	37,080	Pareo Dairy	436	5-05	37,013
* Mike Pylman Dairy	4730	5-04	36,960	Breedyk Dairy	7109	6-06	36,790
* Mike Pylman Dairy	192	2-02	36,790	* Providence Dairy	4312	3-09	36,620
* Stotz Dairy West	19742	3-05	36,670	Breedyk Dairy	6921	6-06	36,560
* Stotz Dairy West	13799	4-06	35,210	Pareo Dairy	620	4-06	36,397
* Stotz Dairy West	14644	3-10	35,140	Pareo Dairy	85	7-01	35,896
* Stotz Dairy West	12751	5-05	35,110	Pareo Dairy	9083	5-10	35,884

FAT

* Mike Pylman Dairy	4152	5-08	1571	Pareo Dairy	8325	5-11	1474
* Stotz Dairy West	19306	6-11	1530	Pareo Dairy	9407	5-01	1395
* Stotz Dairy West	7002	8-11	1500	Pareo Dairy	9083	5-10	1365
* Mike Pylman Dairy	4987	5-00	1445	Pareo Dairy	1376	5-07	1364
* Mike Pylman Dairy	6317	3-03	1393	* Hide Away Dairy	3687	4-03	1361
* Stotz Dairy West	8346	3-08	1385	Pareo Dairy	8893	5-03	1359
* Wigwam Dairy	329	5-06	1382	Pareo Dairy	1567	8-00	1356
* Mike Pylman Dairy	2626	8-07	1367	* New Direction Dairy	28	---	1354
* Mike Pylman Dairy	4284	5-09	1366	Pareo Dairy	1110	5-04	1328
* Del Rio Holsteins	3782	4-01	1364	Pareo Dairy	436	5-05	1323

PROTEIN

* Stotz Dairy West	11998	5-10	1055	Pareo Dairy	620	4-06	1119
* Mike Pylman Dairy	5185	4-10	1048	* Hafliger Dairy	7352	4-03	1112
* Mike Pylman Dairy	4284	5-09	1045	* Hide Away Dairy	4417	4-03	1101
* Mike Pylman Dairy	4273	5-08	1043	Pareo Dairy	85	7-01	1089
* Mike Pylman Dairy	4796	5-04	1034	Pareo Dairy	436	5-05	1087
* Mike Pylman Dairy	5963	3-07	1031	Pareo Dairy	1110	5-04	1081
* Stotz Dairy West	11920	5-11	1027	* Hafliger Dairy	8013	3-04	1071
* Mike Pylman Dairy	3112	6-11	1026	Pareo Dairy	417	6-00	1068
* Mike Pylman Dairy	4152	5-08	1023	* Milagro Dairy	8648	3-04	1068
* Danzeisen Dairy, LLC	3359	5-05	1020	* Providence Dairy	4097	4-03	1066
				Pareo Dairy	8121	4-02	1063

*all or part of lactation is 3X or 4X milking

ARIZONA – TOP 50% FOR F.C.M.^b
JULY, 2003

<u>OWNERS NAME</u>	<u>Number of Cows</u>	<u>MILK</u>	<u>FAT</u>	<u>3.5 FCM</u>	<u>D.O.</u>
* Stotz Dairy West	1979	28,205	1039	29,046	175
* Red River Dairy	4466	27,350	976	27,655	123
* Triple G Dairy, Inc.	4115	25,572	949	26,448	138
* Mike Pylman Dairy	2511	25,199	897	25,443	150
* Danzeisen Dairy, LLC	1297	25,146	894	25,371	129
University of Arizona Holsteins	177	25,334	882	25,289	150
* Arizona Dairy Company North	2280	25,806	881	25,128	153
* Stotz Dairy East	1288	24,349	877	24,751	160
* Arizona Dairy Company South	3451	24,647	854	24,500	138
* Wigwam Dairy	1483	23,622	859	24,145	156
* Zimmerman Dairy	1217	23,406	853	23,954	178
* D C Dairy, LLC	1098	23,171	838	23,609	132
University of Arizona Brown Swiss	104	22,284	855	23,502	138
* Del Rio Holsteins	901	23,190	830	23,481	123
* Treger Holsteins, Inc.	504	23,258	826	23,452	138
Rio Blanco Dairy	1792	23,235	817	23,296	126
Paul Rovey Dairy	416	22,467	812	22,883	126
* Dairyland Milk Company	2681	22,272	782	22,312	126
* Saddle Mountain Dairy	1234	22,816	738	21,832	129
* RG Dairy, LLC	2134	21,474	756	21,545	138
* Butler Dairy	566	21,379	748	21,369	153
* Del Rio Brown Swiss	177	20,170	766	21,297	98
Lunts Dairy	556	20,467	765	21,257	153
* Caballero Farms LLLP Holsteins	1526	21,135	740	21,140	158
Shamrock Farm	7750	21,172	735	21,074	138
Goldman Dairy	2019	20,809	742	21,031	135
Mountain Shadow Dairy	1207	17,277	831	20,948	138

NEW MEXICO TOP 50% FOR F.C.M.^b
JULY, 2003

<u>OWNERS NAME</u>	<u>Number of Cows</u>	<u>MILK</u>	<u>FAT</u>	<u>3.5 FCM</u>	<u>D.O.</u>
* Pareo Dairy #1	1359	26,831	958	27,137	175
* Hide-Away Dairy	2214	26,308	870	25,483	125
Providence Dairy	2748	25,383	844	24,662	139
* Pareo Dairy #2	2961	23,654	886	24,595	160
* Do-Rene Dairy	2257	24,241	862	24,460	174
Ken Miller Dairy	388	24,465	846	24,297	135
* Tallmon Dairy	483	24,570	825	24,002	144
* Goff Dairy	4392	23,850	839	23,918	156
Hafliger Dairy	1633	23,583	842	23,851	159
Butterfield Dairy	1610	22,668	840	23,423	136
* S.A.S. Dairy	2037	23,461	818	23,409	143
Vaz Dairy	1847	23,258	786	22,803	151
Breedyk Dairy	2795	23,129	745	22,082	138

^b average milk and fat figure may be different from monthly herd summary; figures used are last day/month

**ARIZONA AND NEW MEXICO HERD IMPROVEMENT SUMMARY
FOR OFFICIAL HERDS TESTED JULY, 2003**

		ARIZONA	NEW MEXICO
1.	Number of herds	53	27
2.	Total cows in herd	69,019	48,926
3.	Average herd size	1388	1812
4.	Percent days in milk	86	87
5.	Average days in milk	221	210
6.	Average milk – all cows per day	54	63.7
7.	Average percent fat – all cows	3.6	3.4
8.	Total cows in milk	60,043	42,058
9.	Average daily milk for milking cows	63.0	73.7
10.	Average days in milk – 1 st breeding	84	72
11.	Average days open	161	149
12.	Average calving interval	14.1	14.1
13.	Percent somatic cell – linear 0-4	87	80
14.	Percent somatic cell – linear 5-6	9	13.6
15.	Percent somatic cell – linear 7 & above	4	5.8
16.	Average previous days dry	63	65
17.	Percent cows leaving herd	33	31
		STATE AVERAGE	
	MILK	21,929	22,991
	Percent butterfat	3.55	3.57
	Percent Protein	2.91	2.97
	Pounds fat	785	813
	Pounds protein	628	677

2nd Annual University of Arizona Dairy Production Conference



October 16, 2003



**Mark your
Calendars!**

**Sheraton Phoenix Airport Hotel
1600 S. 52nd St.
Tempe, Arizona 85281**

**Masters of Ceremony
Dennis Armstrong & Matt VanBaale**

PROGRAM

<u>TIME</u>	<u>EVENT</u>	<u>SPEAKER</u>
9:00	Registration, Continental Breakfast — Graduate Student Poster Session in Lobby	
9:30	Welcome	Bob Collier , University of Arizona
9:45	Milking Frequency in Early Lactation: Effects on Persistency and Health	Geoff Dahl , University of Illinois
10:30	Milk Quality Issues in Transition Cows and Heifers: Beyond Just a Low Herd SCC	Leo Timms , Iowa State University
11:15	Environmental Mastitis Caused by Species of <i>Streptococcus</i> & <i>Enterococcus</i> : Risk Factors and Control	K. Larry Smith , The Ohio State University
12:00	Working Lunch	
12:30	An Overview of Factors Determining How Milk is Priced at the Farm	Matt VanBaale , University of Arizona
1:00	New Thoughts on Replacing Old Cows	Steve Eicker , Valley Agriculture Software
1:45	Dairy Industry Income and Expense Benchmarks	Wayne Cunningham , Genske, Mulder & Co.
2:30	Managing Energy Balance During the Transition Period	Lance Baumgard , University of Arizona
3:15	Adjourn	

**For further information or to register please call (520)
621-3375 or email arettig@ag.arizona.edu**



ARIZONA COOPERATIVE EXTENSION
U.S. DEPARTMENT OF AGRICULTURE
The University of Arizona
Tucson, Arizona 85721

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

PRESRT STD
POSTAGE & FEES PAID
USDA
PERMIT NO G-268



THE UNIVERSITY OF
ARIZONA®

COOPERATIVE EXTENSION
Department of Animal Sciences
P O Box 210038
Tucson, AZ 85721-0038

Phone: 520-621-3375

Fax: 520-621-9435

Email: arettig@ag.arizona.edu

Upcoming Events:
Arizona Dairy Production Conference
October 16, 2003
Sheraton Phoenix Airport Hotel
Phoenix, Arizona