

floor pails per man and no more than three pipeline units per man—and that should be an ordinance! I'm going to tell you that today there are two dairies that I am well aware of where one man is going to be milking with 24 units and putting 500 cows through the one parlor. Another man will handle 800 cows through his parlor with 24 milking units, unassisted in the cow traffic to the parlor. Now if we are going to start putting in ordinances that restrict us to two to three units per man, milk is going to be \$40 a quart! The industry has the capability and certainly it is going to become

more reliable, but I would guess that five years from now the fellow will not be using 12 units—he isn't warming up! So we better be careful when we talk about restrictions we are going to place on this industry because there is a lot of efficiency that can be gained—I don't think we want to lay it on the dairyman and say to this point he has been inefficient—and we don't want to start building ordinances which will restrict possible efficiencies. They are not just possible—they are a reality right now.

## Economic Benefits of a Complete Mastitis Survey

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During a period from January 1971 through September 1974, 23 herd owners in our area came to us with mastitis problems that were about to cause them to be degraded from the milk market. In all the herds, except one, leukocyte counts were as high as 1½ million or more.

A complete mastitis survey covering machine function milking technique, sanitation, and control was conducted on the 23 herds. Recommendations for control were made from the survey's findings, which are tabulated in the accompanying three charts.

Chart I shows the results of the machine function survey. Six different makes of machines were checked. Minimum machine performance standards were taken from the publication, "Milking Management and Its Relationship to Milk Quality," (University of California Agricultural Extension Service AXT 94.) See Chart IV. The herds are listed "A" through "W" and the size of each is shown. All figures in the following discussion are based on the number of herds out of the total of 23 that were listed in the survey.

Twelve of the herds were milked by their owners, but only seven were on any type of individual cow milk weighing program. Sixteen of the herds had adequate vacuum pump capacity of at least 6 CFM (American Standard) per unit at 15 inches vacuum. Reserve vacuum of 3 CFM per unit was adequate in only fourteen herds. Vacuum recovery was checked by allowing air to enter the system for three seconds, then closing the air source. Ten herds had recovery time of less than three seconds.

Vacuum controllers were functioning properly in 14 herds and pulsators were considered acceptable in fourteen. Pulsator speed was between 45 and 60 per minute in 20 herds.

### Milking Cycle Graphed

A dual-channel recorder was used to graph the

milking cycle. Milk rest ratio (M/R) was between the recommended 35-65 and 65-35 in only ten herds. Twelve had adequate milk line size and only seven had teat-end vacuum within one inch of the recommended 12 inches. Thirteen herds were using narrow bore liners and only six had weigh jars, or low level lines. Fourteen herds had claw flooding problems. Teat-end vacuum fluctuations were found to be more than three inches in eleven herds.

Chart II covers six categories of milking technique that were evaluated. It shows that, in fourteen herds, there was proper pre-milking stimulation and thorough washing of udders. In 17, the unit was being applied at the time of milk let-down. In fourteen herds, the unit was being left on the cow for the recommended five minutes or less, which meant that cows were being overmilked in nine herds. Fifteen of the dairies were machine stripping their cows for 20 seconds or less and 17 were removing the unit in the proper manner. The number of units per man varied from one and one-third to four.

### Sanitation Findings

Chart III reflects sanitation and control procedures. In only six of the herds were individual paper towels used for washing and drying the udders. Iodine, chlorine, or chlorhexadine teat dips were being used in only eight herds. There was a mud and manure build-up problem in nine herds. None were using strip cups while milking. All but two were doing an adequate job of post-milking equipment cleaning.

In only one herd was there dry cow treatment in all quarters, although sporadic dry treatment was used in five.

The California Mastitis Test was run on 17 herds and the results were graded: Negative, 1, 2, 3, or 4. The percent of cows showing a 3 or 4 in one or more quarters is shown at the bottom of Chart III. Quarter,

Chart III  
Sanitation and Control

Herd	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Total
Udders Washed & Dried w/paper towels		*			*							*				*					*	*		6/23
Teat Dip Used		*		*	*										*	*	*		*		*			8/23
Manure or Mud Buildup			*		*	*			*			*		*				*	*				*	9/23
Strip Cup Used																								0/23
Proper Equip. Cleanup	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	21/23
Dry Treat All Qtrs.																					*			1/23
% Cows with CMT 3 or 4	62	80	"	"	"	77	"	27	63	46	70	62	"	66	"	30	20	60	70	70	48	45	83	
% Cows with Strep	7	23	65	30	25	33	47	27	20	0	28	27	24	12	5	0	31	0	22	61	5	30	6	
% Cows with Staph	20	25	34	7	5	15	50	3	6	46	57	-	15	16	25	18	No	31	8	20	5	30	15	

" CMT Not Figured

Chart IV  
Machine Function Minimums

	Old Installation	New Installation
Vac Pump CFM/unit	6 A/S <sup>1</sup>	8 A/S
Vac Reserve CFM/unit	3 A/S	4 A/S
Recovery	< 3 sec.	< 3 sec.
Pulsator Speed	45-60	45-60
M/R Ratio	65-35/35-65	65-35/35-65
Milk Line Size	*See AXT-94	
Teat End Vac	12" + 1"	12" + 1"
Vac. Fuc.	< 3"	< 3"

<sup>1</sup>A/S - American Standard

increase is already evident. Although increases after starting a control program can only be measured in long term improvement, it is significant that some of the early herds on the program have increased up to 17 pounds per cow per day over the production level at the time of the survey. Over a year's time, this increase could amount to as much as \$434 per cow at \$7 CWT. Of course, it is difficult to attribute this solely to the mastitis program, since nutrition and other factors are usually improved when any phase of herd health programming is conducted.

#### Practice Benefits

Practice income can also be increased by mastitis control programs. Charges in our practice for this work are made on an hourly basis. Additional income is derived from mastitis treatment formulations made in our clinic and used for treatment of the herd at the time of the survey and also for any future clinical cases that arise.

All of the herds were in trouble when they came to us for help. Thus, many of them would not be good candidates for a complete herd health program, as they would be unlikely to manage their herds for optimum production. These herds can be kept on a semi program by doing a machine function and milking

time survey every six months. Some of the herds on the original survey are now doing routine sterility work, which provides additional practice income for the veterinarian.

#### References

Detco Recorder - Dairy Equipment Testing Co., Box 881, Whittier, Calif. 90608. Air Flow Meter Stability Gauge Inflation Plugs - Dairy Equipment Co., Madison, Wisconsin 53701. Clear Inflatons - Transflow, Meyer-Blanke Co., 430 N. Front Street, Memphis, Tenn. 38103. Squeezejets - Schneider Veterinary Supply, 4721 Femrite Drive, Madison, Wisconsin 53716. Excellent Reference - U. of Cal. Agric. Ext. Service AXT-94.

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