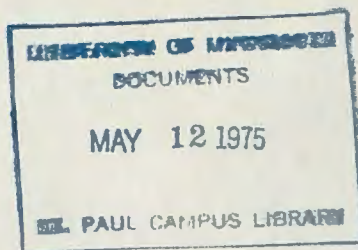
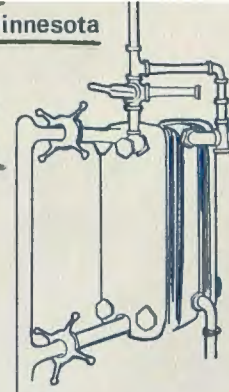


# MINNESOTA DAIRY PRODUCTS PROCESSOR



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## MASTITIS, ANTIBIOTICS, AND THE DAIRY INDUSTRY

Two events give impetus to this issue of MDPP: the National Mastitis Council (MNC) meeting recently in Minneapolis and at about the same time, the tightening of regulatory control of antibiotic residues in dairy products (primarily nonfat dry milk).

### RELATED PROBLEMS

Though we tend to treat antibiotic residues and mastitis as separate problems, with separate controls, the two are related issues. To the extent that mastitis occurs on dairy farms, so does drug use. One will not go away without attention to the other.

### WHAT'S NEW IN MASTITIS CONTROL?

Perhaps the best answer to that question is nothing. If any significance can be distilled from two days of discussions at the NMC meeting, it is that nothing new has been added to generally recognized procedures for mastitis control since introduction of teat dips. New dips have been added, some good ones, some useless ones, but those management practices known to lower to a minimum the incidence of mastitis are the same now as they were 10 or more years ago. So there was something to be learned at this year's meeting.

### WE KNOW ENOUGH

That's the essence of what was said. We know enough--to significantly reduce the incidence of mastitis on dairy farms. Clearly then, we fail to apply that knowledge.

### MASTITIS ON THE INCREASE

According to the NMC meeting, we can be certain that, as time goes by and herd size increases, mastitis will increase. This stems from the tendency to pay less attention to individual cows as numbers increase, both because of lack of time and simple human frailty. As well, hired herdsmen may lack the incentive of owner-milkers, and cow management suffers. In states

where herd size numbers in the hundreds, test results in the Abnormal Milk Control Program in grade A milk tend to bear out this prediction: mastitis incidence will continue to rise.

#### WHAT ELSE DID WE LEARN?

We picked up other insights, too. In times of economic stress, dairy-men are apt to cut expenses that can be seen--such as detergents, sanitizers, teat dip, and machine maintenance costs. At the very time when production maintenance and improvement ought to be strengthened, dairymen are most apt to quit the practices which assure positive production benefits. In those countries--England primarily--where a national effort has been made to create producer awareness and implement a full-scale mastitis control program (a truly comprehensive program), the national average somatic cell count while falling initially, eventually returned to the pre-program level. Of course some benefits were observed, but, overall, considering what the program was intended to do, it failed. And in this country we can point to similar, though less comprehensive efforts, which likewise failed. As long as the incidence of mastitis continues at its present high rate, as long as projections for the future give any reason to doubt our ability to stem the tide, we ought to admit failure and give thought to trying something different.

#### WHAT'S THE PROBLEM?

Most action programs fail due to lack of incentive--lack of motivation. This has certainly seemed true with past mastitis control efforts. Well-intentioned, well-researched and thought out as they may have been, efforts here and abroad are failing from lack of producer motivation. Even the Abnormal Milk Control Program, touted and intended to help dairymen by providing routine screening of bulk supplies, is looked upon primarily as a penalty program, with real or implied threat of exclusion from market. And penalty or threat of penalty is not a prime motivation force. That is, long-term improvement in basic cow management practices can not be expected through regulatory action alone.

#### IS IMPROVEMENT WORTH THE EFFORT?

Here are figures often quoted--and with reasonably good documentation--for the cost to dairy farmers (and industry) of mastitis: (1) national loss of \$255-\$500 million/year, (2) 10 percent of dairy farm income, (3) \$40-\$60/cow/year, (4) 1,200-1,900 pounds of milk/cow/year in cows of 15,000 pound annual production rate, (5) 640 pounds of milk/cow/year gain in production under good mastitis control and (6) loss of 11 percent solids not fat, 12 percent decrease in fat yield and 20 percent decrease in production/quarter with a staph pyogenes infection. Other figures could be grubbed out of the literature, but these make a point.

Using these figures, mastitis costs the Minnesota dairy industry somewhere around \$45 million annually (over 150,000 per plant or between 6 and 7 percent of the present price of milk). Or to state the case positively, Minnesota stands to gain some 576 million pounds of milk annually on a good mastitis control program.

#### WHAT TO DO?

Perhaps what we need are incentives. Perhaps the dairy industry ought

to consider use of a premium, or teat-dip give-aways or rebates or other such schemes--there has to be dozens of possibilities--for dairymen producing non-mastitic milk--say milk of cell count under 500,000/ml. With the right incentive(s) dairy farmers might be more anxious to acquire and put into practice--and stick with the practice through good and bad times--control procedures which are already well researched but have received only token acceptance. Since the problem is getting worse, perhaps now is the time to try a different approach.

#### ANTICIPATED BENEFITS

Many dairymen would be favorably inclined to work harder at control efforts under an incentive program. They would be more apt to seek out knowledge; the job of sanitarian-educator should be greatly eased. Teaching against indifference is futile.

Perhaps dairymen might be more inclined to hold on to approved practices during times of economic hardship. Management efforts require 2-3 years to prove themselves. There is some pretty fair evidence that the dropping of one or more items of a program, once started, leaves cows somewhat more vulnerable to infection. If we know anything at all about mastitis control, it is that a total management program is essential.

We've mentioned some benefits to industry, but should mention dairy farmer dropouts--people leaving the business. A positive mastitis control program could provide incentive to "stick with it."

Dairymen with the poorest control have the most to gain from a control program. Production increases in poorly managed herds (the majority) are generally higher than for well-managed herds. But the production increases in those well-managed herds, when speaking of 1,200-1,900 pounds of milk per year gain in a cow averaging 15,000 pounds of milk are significant--and ample reason for undertaking a control effort.

#### PUBLIC HEALTH?

Perhaps bacteria counts have been emphasized too much, and mastitis control too little. Lowering the grade A standard from 200,000 to 100,000 bacteria count, as was done some time ago, is difficult to justify from a public health standpoint. And with pasteurization temperatures creeping up (to the point where minimum pasteurization temperatures are commonly exceeded by ten or more degrees, and without major objections to the cooked flavor), even shelf-life is not endangered. The primary problem (in grade A supplies, at least), would appear to have shifted from bacteria count to mastitis and drug residues--where quality control and public health are related issues. Possibly producer recognition programs ought to focus on mastitis--on those producers doing the best job of mastitis control, with at least equal visibility being given this as bacterial count.

#### MASTITIS--A MARKETING PROBLEM

If, as many say, we know enough to effectively control 95 percent of the mastitis problems in dairy herds, then we ought to view mastitis not so much as a technical problem, but as a marketing problem. If we marketed mastitis control in the same positive way we market dairy products, our efforts might prove more effective.

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