Introduction

Mastitis has been and continues to be the most costly dairy cattle disease confronting the dairy farmer. This is true in spite of a large amount of research and extension effort that has been directed towards solving the problem.

A true mastitis control program must be directed towards the prevention of the disease.

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Methods and Progress

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When a disease does exist on the farm, as it does with mastitis, the control program must be directed towards eliminating the existing problem and preventing further problems.

Today we want to look at the components of a mastitis control program. This will include an over-all view of developing a mastitis control program, followed by a discussion of the individual components of the program, which include sanitation, management, therapy, and vaccination. This will be followed by a discussion of the Interstate Milk Shippers’ Abnormal Milk Control Program.

Mastitis—The Strategy of Control

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At the present time we cannot conceive of any system of completely preventing all udder disease; therefore, the object of a control must be to reduce udder infection to a low level. Because at least 80% of infection is due to staphylococci, Streptococcus agalactiae, Streptococcus dysgalactiae, and Streptococcus uberis, the reduction of infection by these pathogens must be the main aim. This does not conflict with the farmers’ requirement that a control should reduce clinical mastitis, since this mastitis is nearly always preceded by subclinical infection. To be accepted, a control must cost much less than the losses caused by the disease, it must be relatively simple to carry out, there should be good experimental evidence that the control works under a range of conditions, and it must be obvious to the farmers who adopt the method that clinical mastitis is much reduced. At the present time none of the control systems that have been proposed or are in operation fulfill these requirements.

In practice, a control depends on selecting from the many factors which have been found to influence the incidence of disease those, if any, which will reduce new infection or eliminate established infection sufficiently to greatly reduce the incidence of the disease. This paper is not concerned with this selection; rather, with the strategy with which the chosen techniques can be used to give the greatest reduction in disease. The strategy of control of a disease situation as complex as bovine mastitis is not a matter of guesswork, but will be determined by measuring or calculating the effects on the rates of new infection and elimination of infection of variation in specific environmental and physiological factors. From this study of a changing system, factors will be determined which, operating singly or jointly, will give the greatest reduction in infection immediately, and in the long term. Ultimately, when we have such a strategy it will be a biological model expressed mathematically. The study reported here is the first step, mostly descriptive, but with some quantitative relationships.

Source of Data

The data used for this analysis are a complete record of the subclinical infection and clinical mastitis that occurred in 721 cows in 14 herds during 12 months (1). The clinical mastitis was detected by the stockmen using foremilk cups and subclinical infection by accepted bacteriological tests on aseptically drawn foremilk samples taken at four monthly intervals and at drying-off, calving, and before and after antibiotic therapy was given. A new infection or a recovery was always confirmed by further tests. During the year seven of the herds practiced a hygiene system and seven did not. Hygiene influenced the infection rate, but for simplicity in most of these analyses no distinction has been made between the results of the two groups of herds. A brief summary