

**The Cure and Prevention
of
Mastitis and Contageous
Abortion**

**New Light Derived from Prompt
Successful Results Obtained
Through the Use of The
Koch Treatment**



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The Cure and Prevention of Mastitis and Contageous Abortion

NEW LIGHT DERIVED FROM PROMPT SUCCESSFUL
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It is natural that cows which have been given proper surroundings, pure water, food sufficient in variety and quantity should remain healthy; should at regular intervals, give birth to healthy calves; and should produce milk fit for human consumption sufficient in amount to make a good dairy herd the basis of a sound, profitable industry.

In reality the very severe aggregate loss of potential supplies of commercial milk, and of the number of living calves necessary for adequate maintenance of the herds, which has been brought about by the widespread destructive ravages of mastitis and contagious abortion, has caused a situation to arise which gravely menaces the dairying industry; and the welfare of the public in need of the milk and meat supplies which otherwise would be obtained from this source.

As the result of extensive field work in treating these conditions during more than two years we now are able to report that both mastitis and contagious abortion can be controlled, cured and prevented. The research has been carried out through the hypodermic administration of certain carbon compounds which were discovered and developed by Dr. Wm. F. Koch, of Detroit, Michigan.

This method of treatment is easily applied; has been proved safe to employ; and in an important percentage of cases has been quickly successful.

So many bacteria, differing in kind and in degrees of virulence, have been regarded as causative agents in the production of mastitis and contagious abortion, that one would not expect there could be dis-

covered a single serum or bacterial vaccine which would prove specific for these diseases. It is obvious therefore we must go elsewhere in search of a remedy with which both to treat and to prevent these conditions.

While the diseases under consideration are all too common, nevertheless many cows resist them successfully over considerable periods of time. In other words, the cow has inherited powers which effectively protect it from disease, just as the ability to produce milk has been inherited. The Koch treatment is administered for the purpose of arousing to a vigorous normal the natural inherited resistance to disease.

Life is promoted, sustained and reproduced by the use of food. For good health, the supply must be adequate in amount and in variety. For the best normal results, it is necessary that the food be well digested, and also that the potential energy contained therein be transferred into living energy throughout the body at a vigorous rate, burning the food properly in each individual cell, where it unites with oxygen for this purpose.

It is upon the degree approaching perfection with which food is turned into living energy consistently, that the numerous balanced functionings necessary for normal good health of the body are best maintained; among them are those by which disease is resisted, and recovered from, should it have become established.

It is Dr. Koch's belief that certain carbon compounds perform an important intermediary step in the living chemistry by which food is turned into life itself; and should the supply of these compounds fall below that requisite for the best conditions, life may continue, but vigorous good health may be lost.

It is his belief, that these compounds themselves are maintained in adequate amount by the vigor of the essential oxidation reaction when it takes place normally. However, where the supply of these carbon compounds has become depleted and has remained so, and the animal thus affected has become sick, it often is possible by the hypodermic administration of the reagents produced by Dr. Koch, to set up a vigorous natural oxidation reaction which may continue indefinitely, because the injections renew and help to maintain an adequate supply of these natural body compounds required for the transmission of the potential energy which is contained in the food eaten, into that of living energy.

Where the remedy has been applied successfully, therefore, there is re-established a vigorous resistance to disease, and a strong natural recovery process may be instituted through which a notable degree of good health may be recovered.

The use of a ration high in protein content will increase the yield of milk, but many veterinary authorities are convinced the practice

may help provoke the development of mastitis. We are in accord with these views, not only in connection with mastitis, but also for contagious abortion. Prolonged overfunctioning of the lactation powers with closely spaced pregnancies may deplete the efficiency of the natural resistance to any infection.

Mastitis has been treated in over one hundred separate herds. At no time had we control of the feeding or of the ownership of the animals treated. In many herds the owner, with two others made written record of the condition of the animals at time of treatment and at frequent intervals subsequently. The information does not rest upon the word of a single observer.

We wish no one to infer there has not been failure to deal successfully with individual instances of these diseases, but a few failures should not detract from the very great importance of the general statement that mastitis and contagious abortion can be relieved, cured and prevented by the use of the Koch treatment.

BY WAY OF ILLUSTRATION

(1) Cow with all four quarters swollen, hard, red in appearance, hot and tender on being touched, had given only thick jelly-like material since freshening three months previously.

While it was in this state, the owner bought the animal at auction, much to the unconcealed mirth of many present. However, the purchase was made because the buyer had seen several severe examples of mastitis recover after they had been given the Koch treatment.

The cow in question received one treatment on March 3rd, 1943, and produced commercial milk on March 7th. Some small white flakes were observed in the milk on March 8th, and the treatment was repeated, whereupon there resulted a complete disappearance of all signs of disease in the milk. The animal thrived and remained well since the second treatment, producing commercial milk continuously till allowed to go dry about September 1st, and remains well at time of writing.

(2) Cow milking for three months during the last three weeks of which period the milk had become worthless, owing to the development of severe mastitis. The milk was grossly stained with blood. Two quarters were affected. The animal was given a Koch treatment on February 1st, 1943, whereupon there resulted a prompt recovery, and commercial milk was obtained. She was allowed to go dry six months later. There has been no sign of any trouble since the one treatment was administered.

(3) Heifer had first calf and produced a daily yield of 50 lbs. of commercial milk for over two months when suddenly, on April 23rd, 1943, the production of milk ceased entirely in all four quarters.

No more milk had been obtained from the sick animal when she was given the Koch treatment on the evening of April 26th, 1943. A daily yield of 25 lbs. was obtained on April 28th, and the full 50 lbs. normal yield appeared on May 1st, 1943. At that time some white flakes were observed in the milk and the treatment was repeated with prompt restoration of normal conditions which continued at last report, September 1st, 1943.

(4) Cow with severe mastitis in left front and rear quarters was secreting nothing but a scant amount of watery material from the affected quarters; had stopped eating, and was running a temperature of 105 degrees when treated August 9th, 1942. Milk was restored in the front quarter in four days, and two days later it came into the rear quarter. In a short time commercial milk was again obtained from the diseased quarters equal in amount to that gathered from the quarters which had not been affected. The cow remained well.

(5) Heifer with one calf showed typical signs of severe mastitis in one quarter and was running a temperature.

Following one dose of the Koch treatment given on July 30th, 1943, evidence of marked improvement was present within 24 hours, and in a few days satisfactory secretion of milk was restored. All signs of the disease disappeared with no recurrence when last reported six weeks later.

(6) During July, 1943, four cows in one herd presented marked clinical signs of chronic mastitis. In each instance only one quarter was affected. One Koch treatment was administered to each animal, and an examination made two weeks later revealed normal lactation had been restored; and no evidence remained at that time of fibrous lesions which had been found in the teats and udders when the Koch treatments had been injected.

(7) Two herds were being ravaged with severe mastitis early in 1943. All clinical evidences of the prevalence of the disease disappeared following the injection of the Koch reagents except for the loss of but one quarter in one cow.

In an attempt to stamp out the epidemic, thirty-one cows in the two herds were each given one injection during the dry period. One heifer was so exhausted by a difficult parturition, that she was unable to get to her feet for four days, during which time it was impossible to reach two quarters to milk her. These parts flared up but subsided entirely a few days after another Koch treatment had been injected. The other thirty cows in this group freshened and have developed no signs of mastitis.

(8) In Louisiana, U. S. A., a veterinary surgeon treated fourteen cows suffering from mastitis using as a routine two treatments spaced a week apart. He reports all cows normal when examined at the end of fourteen days.

CONTAGIOUS ABORTION

The successful active medicinal treatment of Contagious Abortion has three main objectives:

(1) Where the number of animals in the herds normally maintained through breeding has been lessened owing to the destructive effects of Contagious Abortion, the Koch treatment is given to attempt to re-establish and to hold the normal reproduction of healthy living calves.

(2) Where Contagious Abortion has affected one or more individual members of the herd, to prevent the further spread of the disease in that herd.

(3) To change positive blood tests for Contagious Abortion to negative tests in order to meet present-day legal restrictions regarding the sale of surplus stock.

For these three purposes the Koch treatment should be used before the animals are bred, or as early in pregnancy as possible.

Some of us have found one injection given at the proper time seems to have been highly effective in protecting against loss.

For the purpose of changing a positive blood test to a negative one, we recommend the use of three injections given one week apart.

Where it is particularly important to change a positive blood reaction test for Contagious Abortion to a negative finding, the treatments should be given during the dry period and the animal should not be bred for three months subsequent to the treatment being administered.

Under these special conditions the supply of living energy is not expended for temporary immediate gain which would accrue from continued lactation and frequent breeding, but the entire action of the inherited powers of natural immunity to disease may be made available and thus provide the best possible conditions for control of the disease.

We would expect the treatment would prove of little use when employed only after and because of clinical signs indicating abortion already was impending.

BY WAY OF ILLUSTRATION

(1) An experienced herdsman who has been in charge of an infected herd over a period of years may estimate in advance the approximate loss which will eventuate, but in general there can be no accurate prediction. We are able to report that following the injection of one dose given to every member of three herds experiencing serious

loss from the trouble, a highly satisfactory degree of protection was gained. This impression came from the experiences which surrounded this plan being used on 55 individual animals in three herds where the loss from Contagious Abortion had been rather serious previous to the use of the Koch treatment. Two animals were sold and lost sight of, and no effort was made to trace them; but there was no loss among the remaining fifty-three.

(2) Two animals in one herd blood tested, April 13th, 1943, were reported as positive for Contagious Abortion. The Koch treatment was injected on April 28th, May 7th, and May 15th.

No treatment other than the Koch injection was employed.

On June 26th, another sample was taken from each animal and these both were found to be negative.

All blood tested was taken by a registered veterinarian and both findings were made by the Laboratory of the Ontario Veterinary College, Guelph, Ontario, Canada.

(3) A herd of ten cows was segregated by the owner from all other animals on the farm because the ten had been reported positive for contagious abortion on blood testing.

Following the administration of the Koch treatment, the blood picture improved in nine of the ten treated, five of them going negative.

In a separate herd, thought by the same owner to be free from contagious abortion, one cow did abort. Examination of her blood was made without delay and found to be positive for contagious abortion. This animal was given the Koch treatment at once, and a blood test done thirty days later gave a report as negative to the disease. All blood tests were done by a State Laboratory, of the State of Michigan, U. S. A.

INSTRUCTIONS

How To Apply The Koch Treatment

- (1) Plans should be made to lessen the amount of protein in the feeding. This diet should be put into effect and maintained till the disease has been controlled.
- (2) Acute mastitis should be treated without delay.
- (3) Chronic mastitis might have the change of diet in effect for 2 or 3 days before giving the injection.
- (4) To prevent the spread of mastitis in the herd, those not affected should be treated also—preferably during the dry period.

- (5) Treatments come in glass ampules together with a specially prepared hypodermic syringe and needle, all ready for use and must be used as received, because of the chemical problems involved.
- (6) The treatments and syringes should be stored in a place free from smells of cooking, tobacco smoke, drugs, or other strong odors; or great extremes of heat and cold.
- (7) The material should never be exposed to strong direct daylight.
- (8) Unwrap carefully and fit the needle to the syringe and place on a clean towel within easy reach.
- (9) See that no liquid remains in the neck of the ampule which then should be opened only in clean, pure air, free from dust or strong smells that arise from manure, tobacco smoke, liniments or antiseptics.

Those giving the treatment should wash their hands in clean warm water, using no strong-smelling antiseptic soap, and no antiseptic in the water. The hands should be washed a second time in clean plain water to remove all smell from the hands.

To open the ampules, make a mark on the neck of the ampule near the shoulder with the file provided for this purpose. Guided by the thumb, press the file firmly against the glass, making three or four strokes in the same place. As soon as the file is felt to cut into the glass, a sharp tap on the upper part of the neck will open the ampule. The contents should be drawn into the syringe at once and injected without delay.

The treatment can be given conveniently in the neck. Thrust the needle in deeply enough to penetrate completely through the skin. The place selected should not be washed. Nor should alcohol, Tr. Iodine or other antiseptic be applied.

- (10) Where more than one cow is to be treated, this best can be done by dividing the work—let one person unwrap the syringe and needle, open the ampule and draw the contents into the syringe.
- (11) When all is ready, the syringe should be handed to another who will give the injection. The used syringe and needle then can be wrapped again by the first man and the cloth thus kept clean. The laboratory would appreciate having the equipment returned with as little marks of soiling as possible.

Before undertaking to treat several animals, one should have on hand a clean receptacle into which the used re-wrapped equipment can be placed and carried safely.

- (12) In cold weather the glass of the syringe becomes very brittle, and may break easily while disengaging the needle. At such times the used syringe should be dipped in warm water for a moment and as a result the needle can be detached safely and easily.

- (13) To wrap up the syringe, spread the cloth with the larger width to lie right and left. Place the syringe on the cloth parallel to the long side and about one-third way from the bottom. Then bring the lower edge up over the syringe, using a generous amount to overlap and on this part place the needle inserted in its separate patch of cloth. Fold one end and roll one-half turn; fold in the other end and roll to complete the wrapping. This will make a neat parcel which will tend to carry back to the laboratory safely.
- (14) When given during the dry period to prevent the spread of the disease, the treatment should be repeated without delay, if signs of the disease recur after freshening.
- (15) When an acute or chronic condition has been treated and there has been a good clearing up of signs and symptoms of mastitis, it is recommended that a second dose be given should there be any return of the disease observed unless these take a favorable trend in two or three days.
- (16) A separate specially prepared syringe is loaned for use with each individual ampule of the treatment. The prompt return of the syringes and needles is expected once the treatments have been given.

In concluding, we have thought it well to place on record here, authentic clinical data concerning an infectious, contagious disease for which to-day, except for the Koch treatment, "There is no known cure for this disease after symptoms develop, and there is no available method to immunize cattle against this infection. Treatment must, therefore, be restricted to preventive measures. It is consequently in the best interests of the owner to slaughter animals showing symptoms with the least possible delay." (Department of Agriculture, Dominion of Canada, Bulletin No. 167).

The disease now conquered for the first time in the history of veterinary surgery is known as Johne's Disease.

It is a chronic dysentery in cattle; a pseudo-tuberculous enteritis caused by mycobacterium paratuberculosis.

Mycobacterium is the term given to a genus of bacteria which includes tuberculosis, paratuberculosis and lepra.

Here is what happened:

An outbreak of a fatal unidentified disease in a herd brought an investigation by the staff of the Ontario Veterinary College. To assist this work they slaughtered another sick cow and the disease then was identified by post mortem examination to be Johne's Disease. Under supervision of a member of the staff of the Ontario Veterinary College, tests were made which revealed the presence of the disease in eight other cows.

The experts who had made the diagnosis of Johne's Disease advised the owner to dispose of all affected animals, to protect the rest of the herd. However, he decided to try the Koch treatment.

On April 19th, 1943, the Koch treatment was injected, and repeated twice, at weekly intervals.

No other treatment was employed, and nothing further was done.

Six weeks later the entire herd again was given the clinical test. Another animal was found positive to the test. Of the eight found positive at the first test, and subsequently given the Koch treatment, four were found negative, and therefore should be regarded as having been cured of the disease. They have improved in condition and are milking well.