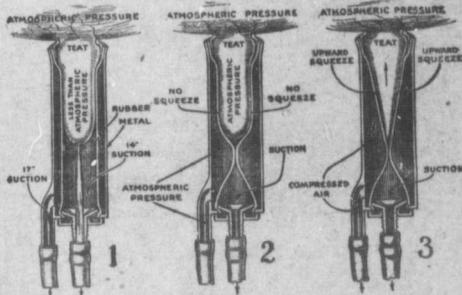


Keeps Cows Healthier and Increases the Milk Flow

Diagrams Explain Sharples' Superiority



- (1) SUCTION draws the milk from the udder of the cow. This principle is employed by every mechanical milker on the market as well as by the calf when sucking from its mother.
- (2) Suction is shut off. Atmospheric pressure inside and outside teat, consequently NO SQUEEZE or massage can result. This is as far as other milkers go, because Sharples' basic patents control use of compressed air.
- (3) COMPRESSED AIR gives the "Upward Squeeze" which massages the teats and thus keeps them in perfect health. This action also insures faster milking and thus increases the milk flow. Found ONLY in the Sharples Milker.

Experience has shown that a milker cannot be truly efficient without the compressed air line—an exclusive, patented Sharples feature. This scientific principle is responsible for the great success of the

SHARPLES MILKER

THE ONLY MILKER WITH POSITIVE SQUEEZE

You can readily understand that drawing the milk from the udder down thru the teat also draws blood from the veins of the udder down into the smaller veins of the teat. To keep the teats in a natural, healthy condition, and to avoid congestion, this blood must be continually massaged back from the teat. That is the important function of the Sharples "Upward Squeeze."

As a direct result of using compressed air, Sharples is the world's fastest milker. Official tests prove this; ask for Bulletin. Fast milking increases the milk flow. That is why the Sharples Milker, with its healthful massage and faster milking, makes every cow more valuable. With a 3-unit Sharples outfit one man can easily milk 30 cows an hour, get more milk and in one-fifth to one-half less time than with any other machine. In daily use on half a million cows.

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Tuberculosis of Cattle and Tuberculin Test

A Simple Explanation of the Disease and Its Detection.

Prof. D. H.

Jones, B.S.A.

THE tuberculin test of cattle is for the purpose of determining whether or not an animal is suffering from tuberculosis. The test, when properly employed, while not absolutely infallible, has shown itself to be reliable in ninety eight per cent. of cases in many thousands of tests in Europe, the United States, Canada and other countries. It is the only reliable means of determining whether or not an animal is tubercular, and the animal is very far gone with the disease or has only very recently become infected.

Tuberculin is a brown-colored liquid obtained by growing *Bacillus tuberculosis* in specially prepared beef broth. After the bacilli have grown in the broth for a sufficient length of time, they are killed by the application of heat. The broth is then filtered and condensed and a preservative is added. This product is known as tuberculin. This tuberculin is to be tested and established at a proper strength before being used.

Application of the Tuberculin Test. In order to tell whether or not the temperature of an animal rises following an injection of tuberculin, it is necessary first of all to find out what is the normal temperature of the animal. In doing this, it is necessary to have the cattle quiet in their stalls. If the cattle are feverish from any cause, or have just calved or are just about to calve, the test should not be made.

The temperature is taken by inserting a clinical thermometer in the anus or rectum, allowing it to stay there for two or three minutes, and then taking the reading. At least three temperatures of each cow should be taken at intervals of two hours before injecting the tuberculin.

The tuberculin is then injected beneath the loose skin near the shoulder by means of a hypodermic syringe. After about eight or nine hours from the time of injection, it is necessary to begin taking temperatures again. These should be taken about six times at intervals of two hours. If the animal is tubercular there will be a gradual rise of temperature of from two to five degrees above the highest temperature reached before the tuberculin was injected, then the temperature will gradually fall again to normal. If the animal is not tubercular, the temperature recorded after the injection of the tuberculin will be approximately the same as those recorded before the injection. The tuberculin has no effect, either good or bad, on cattle that are not tubercular.

Reasons for Making the Test. Tuberculosis is a disease that is widely spread in all civilized countries. It is common in cattle, swine, birds and human beings. The disease is usually slow in developing, so that an animal may be infected for months or even years without showing any marked symptoms of the disease.

There are three recognized strains of tubercle bacilli: the Bovine, affecting most readily cattle and swine; the Avian, affecting most readily poultry, particularly domestic poultry, and the Human, affecting most readily human beings.

It was thought at one time that the bovine strain of the tubercle bacillus could not establish tuberculosis in human beings, and that the human strain could not infect cattle; and that the avian strain could not affect either cattle or men. It has since been demonstrated, however, that the bovine strain can and does readily establish the disease in human beings, particularly in the case of infants whose diet, of course, is mainly milk. It has been proven that a considerable percentage of tuberculosis in children is due to infection from milk that has been obtained from tubercular cattle. One reason, then, for having cattle tested for tuberculosis is that we may prevent infants from contracting the dread disease that causes so much misery in our midst. Any town or city that wishes to control its milk supply so far as tuberculosis is concerned,

can demand that those who supply it with milk shall have their cattle tested under government supervision and all tubercular animals excluded from the herds from which the milk is obtained. Any town or city wishing so to do should state the case to the Veterinary-General at Ottawa.

Financial Loss to the Farmer. Another reason why farmers should have their cattle tested is the financial loss which the sufferer by having tubercular animals in their herds. As the disease is at first slow in development, it does not induce sudden death, like anthrax, black leg, or hog cholera, the farmer does not realize the loss that he endures by having tubercular cattle until he has lost a considerable number of the disease in an advanced degree and die or are slaughtered, when they are at once seen to be rotten with the disease.

When the tubercle bacilli get lodged in the animal's body from contaminated food, water or atmosphere, they begin to multiply and produce growths which attack locally, killing the tissues where they are located and causing the development of tubercles. These tubercles may develop in any part of the body where the bacilli get located. When they develop in the lungs, the lungs are gradually destroyed, the animal gets chronically coughed, and large numbers of the bacilli are coughed up into the mouth and are either drooled out with saliva or are swallowed and then either excreted in the droppings or they set up further infection in the intestines. When there is tuberculosis of the intestines, the animal is likely to die from the effects of the droppings and so large numbers of the bacilli are thus thrown off.

When tuberculosis gets established in the udder, the udder will become tender and large numbers of tubercle bacilli will be given off in the milk. When the disease has developed to such an extent in the animal's body as to show any of the above conditions in other parts of the body, such as the heart, liver, stomach, lymph glands, uterus and peritoneum are most likely affected, and this is the most serious condition of the disease. The animal is very much of a losing concern, either as a producer of milk or beef. But the loss to the farmer is not necessarily confined to this extent. For long before the disease has reached this extent, the animal has been a source of infection for the rest of the herd, and in all probability a number of the herd have contracted the disease from it.

Eradicating the Disease. The tuberculin test will indicate whether or not an animal is tubercular long before any clinical symptoms are visible, thus enabling one to deal with such an animal before it becomes a dangerous spreader of the disease. When an animal is shown to be tubercular, it should not be allowed to mix with the rest of the herd. If the disease is in an advanced stage its removal should be thought of. The internal organs of such an animal may be badly tubercular, but the muscle meat scarcely affected, so that its value of the animal, so far as its eating value is concerned, could be recovered. If the disease is not in an advanced stage the animal should be separated from the rest of the herd and kept separate. Its milk should be pasteurized before use. After the cow cedes the calf should be at once removed and fed milk from healthy cows, or its own mother's milk after pasteurization.

It has been demonstrated again and again to be possible thus to gradually eradicate tuberculosis from a herd. Of course it means a little more work and the exercise of care, which may seem to be too much bother to some farmers. But we cannot get much good in this way without a reasonable amount of effort being put forth, and to have a herd of cattle which are known to be free from tuberculosis is most certainly worth the trouble to detect and remove the disease.

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W. W. W. Trade Increase VOL. XXXVI

NO one appreciates the value of the laborer until he implements situation the way of "normal" and which generally are taken in their efforts to the best use of what is keeping up as production.

In studying out occurred to me that the labor at hand land, but rather, by the acre of ground would a point past which force yields, but Ontario which could produce larger crops fertilizer, whether or the commercial.

I have been looking in this connection endeavor to find out most profitably one strikes me that per found of interest in fellow farmer, who had a section of his farm. One of the plans land which was a "Illinois way" to use legume manure to the soil, once in four or five acid soils, previous about two tons per acre of the manure manure with rock fertilizer, the amount of manure used. The application shows phosphate ever flows.

Essence. The essential food to be lacking in soil is calcium. The constituent of plant the yield of crops, if these crops for as heavily by growing taken to see that it does not become if it is the soil is of or alfalfa. It is also and from such Phosphate fertilizer grain crops. They or plowed under with of grain crops. It of manure favors the Good results are when applied alone, surveys have been found most deficient, made by treating the seed. This makes available for plant the price of sulphuric made this form expensive.

Potash is essential its presence in a soil the necessary strength