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August 1, 1935

Interesting Facts Regarding Bovine Tuberculosis

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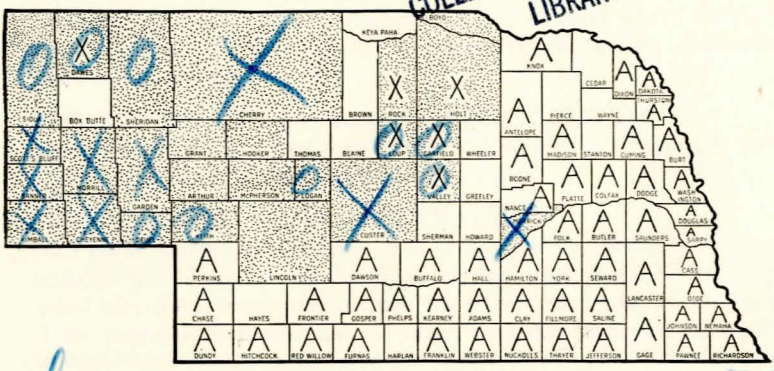
Map of Nebraska Showing Extent of Tuberculosis Eradication Work Under the County Area Plan to Date of August 1, 1935



0 and White Area—County testing areas established under statutes—Total 66 75
A-Counties—Certified Modified Tuberculosis-free Areas—Total, 54
X-Counties—Where area work is being conducted

The following questions and answers, revised by Dr. J. S. Anderson, State Department of Agriculture, and Dr. J. O. Wilson, U. S. Bureau of Animal Industry, have been approved by Dr. L. Van Es of the Nebraska College of Agriculture and are submitted for the information of all those interested in the eradication of tuberculosis of livestock from the farms and ranges of Nebraska

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Interesting Facts Regarding Bovine Tuberculosis

1. **WHAT IS TUBERCULOSIS?**
   Tuberculosis is a transmissible disease of man and animals caused by the presence and vital activities of the bacillus tuberculosis.

2. **CAN TUBERCULOSIS BE BROUGHT ABOUT IN THE ABSENCE OF THE BACILLUS TUBERCULOSIS?**
   Tuberculosis can be produced in no other way except by the presence and vital activities of the bacillus tuberculosis.

3. **IS TUBERCULOSIS HEREDITARY?**
   Tuberculosis is not hereditary. A few cases are on record where animals were born with tuberculosis but only in cases where the reproductive organs of the mother are diseased, the young contracting tuberculosis through contact.

4. **WHAT IS MEANT BY BOVINE TUBERCULOSIS?**
   Bovine tuberculosis is that type of tuberculosis that is common to cattle and is probably the most virulent type known.

5. **HOW IS TUBERCULOSIS CONTRACTED?**
   The germ bacillus tuberculosis is incubated in the bodies of diseased animals and disseminated by them through the manure, milk, and other excretions which contaminate the food, water, and dust-laden air This contaminated material is taken into the bodies of susceptible animals where the bacillus tuberculosis frequently gains a foothold and by its presence and vital activities produces tuberculosis.

6. **IS BOVINE TUBERCULOSIS TRANSMISSIBLE TO MAN?**
   Yes, particularly to young children through drinking milk from tuberculous cows.

7. **CAN BOVINE TUBERCULOSIS BE CONTRACTED BY OTHER ANIMALS?**
   Yes, hogs, dogs, cats, and even sheep and goats may contract bovine tuberculosis. Practically all of the hogs condemned on account of generalized tuberculosis under Federal meat inspection regulations have the bovine type.

8. **IS TUBERCULOSIS READILY DETECTED ON PHYSICAL EXAMINATION?**
   No. Infected animals in many instances appear to be in good physical condition, but at the same time may be dangerous spreaders of the disease. Only in the latter stages is the presence of tuberculosis even suspected by the veterinarian making a physical examination.

9. **HOW CAN TUBERCULOSIS IN CATTLE BE DETECTED?**
   The most practical and efficient method is by the proper application of a tuberculin test.

10. WHAT IS A TUBERCULIN TEST?

It consists of introducing into an animal a small amount of material called tuberculin. In the healthy animals it produces no effect whatever, but in tuberculous animals a reaction follows.

11. WHAT IS TUBERCULIN?

Tuberculin is a sterile product prepared from the liquid upon which tubercle bacilli have been grown under properly controlled and supervised laboratory conditions.

12. CAN TUBERCULOSIS OR OTHER DISEASES BE PRODUCED BY TUBERCULIN?

No. Tuberculin does not contain the bacillus tuberculosis or germs of any kind and has no effect whatever on healthy animals.

13. IS THE TUBERCULIN TEST RELIABLE?

Yes, when applied by a trained and experienced operator.

14. WHAT IS A REACTOR?

Any animal which responds by a recognized physical or tissue reaction to tuberculin properly applied is referred to as a "reactor".

15. CAN IT BE DETERMINED BY THE SIZE OR CHARACTER OF THE REACTION TO WHAT EXTENT THE DISEASE HAS DEVELOPED?

No. A reaction indicates the presence of tuberculosis but does not determine to what extent the disease has developed.

16. IF AN ANIMAL SHOULD REACT TO A TUBERCULIN TEST WOULD IT BE ADVISABLE TO RESORT TO FURTHER TESTS?

No. When an animal reacts to a tuberculin test properly applied, that is considered positive evidence that it is tuberculous. Nothing can be accomplished by a retest except possible confusion in the mind of the owner, as an animal that has reacted may not react to a subsequent test but at the same time may be a dangerous spreader of tuberculosis.

17. WHY IS IT THAT MANY ANIMALS CONDEMNED IN THE FIELD AS REACTORS ARE PASSED FOR FOOD UNDER FEDERAL MEAT INSPECTION REGULATIONS?

The disposition of tuberculous animals under Federal meat inspection regulations depends on the amount of disease found on autopsy and its location. If the disease is localized the diseased part is condemned and the healthy parts passed for food. This can be compared with a rotten spot on an apple, after the rotten spot is removed the healthy part may be used for food. In all cases where tuberculosis is found to be generalized, the entire carcass is condemned and not used for food.

18. ARE STABLES PREVIOUSLY OCCUPIED BY TUBERCULOUS ANIMALS SAFE FOR HEALTHY ANIMALS?

Not until after they have been thoroughly cleaned and disinfected.

19. IS IT PRACTICAL TO CLEAN AND DISINFECT PASTURES?

Experiments have proven that sunlight will destroy the exposed germs in a short time. Water holes should be drained and exposed to the sunlight, or fenced.

20. IS A RUNNING STREAM A POSSIBLE SOURCE OF EXPOSURE TO TUBERCULOSIS?

It may be if the water in the stream is contaminated by drainage from premises harboring tuberculous animals, as the tubercle bacilli may be carried a considerable distance before being destroyed.

21. HOW CAN THE RISK OF INFECTION FROM STREAMS BE OVERCOME?

By eradicating tuberculosis from all herds under the county area plan.

22. DOES TUBERCULOSIS AFFECT CHICKENS?

Yes. Surveys conducted in several districts in eastern Nebraska show that in some precincts 75 per cent of the flocks were infected.

23. IS FOWL OR AVIAN TUBERCULOSIS TRANSMITTED TO OTHER ANIMALS ON THE FARM?

Yes. Avian tuberculosis is responsible for more than 50 per cent of the tuberculosis found in hogs in Nebraska, but rarely infects cattle.

24. ARE MANY OF THE HOGS AFFECTED WITH AVIAN TUBERCULOSIS CONDEMNED UNDER FEDERAL MEAT INSPECTION REGULATIONS?

No. Avian tuberculosis in hogs is usually localized and the affected parts are removed and condemned. Most of the generalized cases in hogs are of the bovine type.

25. HOW CAN TUBERCULOSIS IN FOWLS BE DETECTED?

The older birls may develop lameness and gradually lose flesh. On post-mortem examination of advanced cases tuberculous nodules may be readily observed in the liver, spleen, and intestinal lymph glands. Infected fowls may also be detected by means of a tuberculin test.

26. HOW CAN AVIAN TUBERCULOSIS BE ERADICATED?

In most cases it is advisable to properly dispose of the entire flock, clean and disinfect the chicken house, troughs, etc., and move equipment to clean ground. A new start should be made by the purchase of eggs from known healthy flocks or of day-old chicks which should be raised on clean ground. Further literature on this subject may be had free of charge from the State or Federal Bureau of Animal Industry at Lincoln.

27. WHAT IS THE LOSS TO THE LIVESTOCK INDUSTRY FROM TUBERCULOSIS IN LIVESTOCK?

At the time when systematic eradication of tuberculosis was inaugurated it was estimated that the disease caused an annual loss of 50 million dollars. This has been gradually reduced as the eradication program has progressed and will eventually be reduced to a negligible figure.

28. WHAT IS THE EXTENT OF BOVINE TUBERCULOSIS IN NEBRASKA?

Less than 3 per cent of the cattle are tuberculous. However, this disease has been found in cattle on more than 20 per cent of the farms in some counties where area work has been done.

29. HOW DID BOVINE TUBERCULOSIS FIRST GET STARTED IN NEBRASKA?

No doubt it was introduced by importing tuberculous cattle before the interstate movement of this class of animals was prohibited by Federal and State regulations and before wide use of the tuberculin test was taken advantage of to prevent such importation.

30. IS BOVINE TUBERCULOSIS AS PREVALENT IN OTHER STATES AS IT IS IN NEBRASKA?

In some sections where this disease has been of long standing the percentage of infection runs much higher than in Nebraska. In most of the southern and western states there is less bovine tuberculosis than there is in Nebraska.

31. CAN BOVINE TUBERCULOSIS BE ERADICATED FROM THE UNITED STATES?

Yes, by strict attention to details governing testing, sanitary precautions, and introduction of new stock from healthy sources.

32. WHAT IS BEING DONE TO ERADICATE TUBERCULOSIS?

Every state in the Union is actively engaged in the eradication of tuberculosis in livestock in cooperation with the United States Bureau of Animal Industry. An average of more than a million cattle have been tuberculin tested each month for the past nine years.

On July 3, 1935, 2,431 counties had been certified as modified accredited areas. This represents 79.1 per cent of all the counties in the United States and signifies that tuberculosis in those counties had been reduced to less than one-half of one per cent. The District of Columbia and the following twenty-two states have been certified up to July 3, 1935, as accredited states: Arkansas, Florida, Idaho, Illinois, Indiana. Kansas, Kentucky, Maine, Michigan, Minnesota, Missouri, Nevada, New Hampshire, North Carolina, North Dakota, Ohio, Oregon, Utah, Virginia, Washington, West Virginia, and Wisconsin. It is anticipated that Colorado and Wyoming will be added to the list shortly.

33. WHAT ACTION IS NECESSARY IN NEBRASKA FOR A COUNTY TO BE DECLARED AN AREA FOR THE ERADICATION OF TUBERCULOSIS?

It is necessary that petitions signed by at least 60 per cent of the cattle owners representing at least 51 per cent of the breeding cattle appearing on the last assessment rolls be presented to the Nebraska Department of Agriculture asking that all breeding cattle herds in such counties be tested for tuberculosis. Upon determination of the sufficiency of the petitions, the Department declares the county a legal testing area.

34. ARE ALL BREEDING AND DAIRY CATTLE TUBERCULIN TESTED UNDER THE AREA PLAN?

Yes, except in the range and semirange districts.

In the range and semirange districts all bulls, purebred breeding cattle, milk cows, barnyard cows and 10 per cent of the range or semi-range breeding females, and such other cattle as may be considered necessary by cooperating State and Federal Departments, are tuberculin tested. Properly identified post-mortem reports showing that at least 10 per cent and not less than 25 animals of the breeding herd have been slaughtered within the year, and such post-mortem examination failed to disclose lesions of tuberculosis, may be accepted in lieu of testing 10 per cent of the range or semi-range breeding females.

In all cases where a reactor is found or tuberculous cattle disclosed from post-mortem reports, then all the cattle in that herd or associated with the diseased animal must be tuberculin tested.

35. WHAT IS TO PREVENT BOVINE TUBERCULOSIS FROM AGAIN BEING INTRODUCED AND SPREAD IN A COUNTY AFTER IT HAS BEEN ERADICATED?

It is unlawful to introduce cattle that have not passed a tuberculin test into a county that has been declared an area for the eradication of tuberculosis unless they are steers or feeder cattle kept separate as to feeding, watering, and other association from tested cattle. With the full cooperation of the cattle owners a county can protect itself under the state law.

36. DOES THE OWNER RECEIVE ANY INDEMNITY ON REACTORS DISPOSED OF?

Yes, except in case of steers and spayed heifers. The Federal and State Governments pay two-thirds of the difference between the appraised value and salvage received, with a maximum of $35 on grade females as long as Federal emergency funds are available, and $60 on purebred animals. The first $25 on grade cows and the first $50 on purebred animals will be paid from the Federal funds made available until December 31, 1935, by the Jones-Connally Cattle Bill. The State pays all the indemnity on grade bulls but not to exceed $30 per head.

37. IN WHAT WAY IS THE COST OF TESTING UNDER THE COUNTY AREA PLAN PAID IN NEBRASKA?

All expenses, including indemnity to cattle owners, are paid from Federal and State appropriations. Under ordinary circumstances, there is paid into the State Treasury from the General fund of the County incidental expenses, such as transportation of employees conducting the work, telephone tolls, etc., which expenses cannot exceed fifteen cents (15c) per head for each bovine animal tested. The average cost to the county during the past two years was approximately 4½ cents for each animal tested. However, most of this expense will be paid from Federal funds provided in the Jones-Connally Cattle Bill during the calendar year 1935.

38. WHAT IS A MODIFIED ACCREDITED COUNTY?

It is a county in which bovine tuberculosis is less than one-half of one per cent as shown by an official tuberculin test. All herds in which infection is found on the last test applied must be maintained in quarantine and retested until free from tuberculosis.

39. WHAT ARE THE ADVANTAGES OF A MODIFIED ACCREDITED COUNTY?

(a) The establishment of a better market for the cattle and dairy products because of their freedom from tuberculosis.

(b) The Federal regulations do not require cattle from modified accredited counties to be retested before they are shipped interstate.

(c) Freedom of the milk supply from the dangers of tuberculosis.

(d) The Nebraska State Dairy Law requires that cattle from which milk or cream is sold, exchanged, or delivered for human consumption, be tuberculin tested within a year immediately prior thereto except cattle located in counties that have been established and are maintained as areas foı the eradication of tuberculosis, which includes modified accredited counties.

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