University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Historical Materials from University of Nebraska-Lincoln Extension

Extension

1-1935

# EC218 Revised 1935 Interesting Facts Regarding Bovine Tuberculosis

Follow this and additional works at: http://digitalcommons.unl.edu/extensionhist

"EC218 Revised 1935 Interesting Facts Regarding Bovine Tuberculosis" (1935). *Historical Materials from University of Nebraska-Lincoln Extension*. 4478.
http://digitalcommons.unl.edu/extensionhist/4478

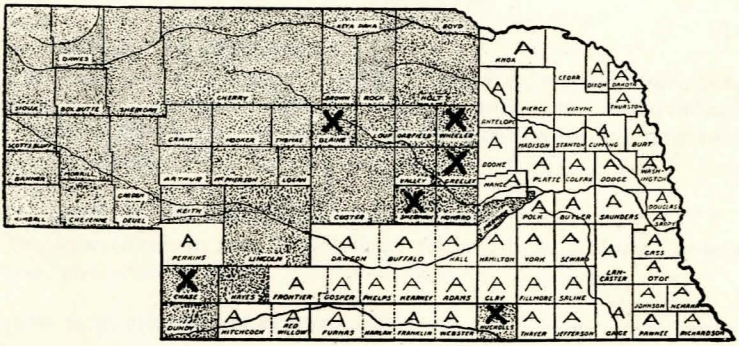
This Article is brought to you for free and open access by the Extension at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Historical Materials from University of Nebraska-Lincoln Extension by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

EC 218-35
O.P. 5-18-59
all copies destroyed

Extension Circular 218, Revised January, 1935

# Interesting Facts Regarding Bovine Tuberculosis

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




**White Area**—County testing areas established under statutes—Total, 54
**"A" Counties**—Certified Modified Tuberculosis-free Areas—Total, 49
**X**—Counties where area work is being conducted

Inasmuch as the State Department of Agriculture under state laws has declared more than fifty counties as areas for the eradication of bovine tuberculosis, the following questions and answers, compiled by Dr. A. H. Francis of the U. S. Bureau of Animal Industry and approved by Dr. L. Van Es of the Nebraska College of Agriculture, should be of interest to every resident of Nebraska.

UNIVERSITY OF NEBRASKA-LINCOLN
R02378 93444

The University n Service and
The Un erating
W. H. Brokaw, Director, Lincoln

# Interesting Facts Regarding Bovine Tuberculosis

1. **WHAT IS TUBERCULOSIS?**
   Tuberculosis is a transmissible disease of man and animals.

2. **WHAT IS THE CAUSE OF TUBERCULOSIS?**
   Tuberculosis is caused by the presence and vital activities of a specific microparasite or germ known as the bacillus tuberculosis.

3. **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.

4. **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 productive organs of the mother are diseased, the young contracting tuberculosis through contact.

5. **IS TUBERCULOSIS KNOWN BY OTHER NAMES?**
   Yes, tuberculosis in man is sometimes referred to as scrofula, consumption, and white plague.

6. **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.

7. **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.

8. **IS BOVINE TUBERCULOSIS A NEW DISEASE?**
   No, bovine tuberculosis was first described in the 18th century. History shows that this disease was prevalent more than 3,000 years ago.

9. **CAN BOVINE TUBERCULOSIS BE CONTRACTED BY MAN?**
   Yes, about one-third of the tuberculosis that exists in children is contracted by the consumption of products of the tuberculous cow.

10. **CAN BOVINE TUBERCULOSIS BE CONTRACTED BY OTHER ANIMALS?**
    Yes, hogs, dogs, cats, and even sheep and goats may contract bovine tuberculosis. Many of the hogs condemned for tuberculosis under Federal meat inspection have the bovine type.

**11. IS TUBERCULOSIS READILY DETECTED ON PHYSICAL EXAMINATION?**

In most cases infected men, or animals, are in good physical condition and 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 physician or veterinarian making a physical examination.

**12. HOW CAN TUBERCULOSIS IN CATTLE BE DETECTED?**

The most practical method is by the proper application of a tuberculin test.

**13. WHAT IS A TUBERCULIN TEST?**

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

**14. WHAT IS TUBERCULIN?**

Tuberculin is a product prepared by sterilizing, filtering, and concentrating the liquid upon which tubercle bacilli have been grown under properly controlled and supervised laboratory conditions.

**15. CAN TUBERCULOSIS BE CAUSED BY TUBERCULIN?**

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

**16. IS THE TUBERCULIN TEST RELIABLE?**

Yes, when applied by a trained and qualified veterinarian.

**17. 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".

**18. CAN IT BE DETERMINED BY THE PHYSICAL OR TISSUE REACTION TO WHAT EXTENT THE DISEASE HAS DEVELOPED IN AN ANIMAL?**

No. A reaction indicates the presence of the disease but does not show the progress which the disease has made in the body.

**19. ARE LESIONS OF TUBERCULOSIS DISCLOSED IN ALL REACTORS ON POST-MORTEM EXAMINATION?**

No. The incidence of so-called "no-visible-lesion" cases based on the cattle tested throughout the United States is 0.2 per cent, or two animals out of every thousand tested. In a high percentage of these, tubercle bacilli were disclosed on microscopic examination of the tissue.

**20. ARE CASES WHERE NO LESIONS ARE FOUND ON POST-MORTEM EXAMINATION OF REACTORS TO BE REGARDED AS AN ERROR IN THE APPLICATION OR INTERPRETATION OF THE TEST?**

A thorough study of so-called "no-visible-lesion" reactors has shown that in most cases the disease actually exists in remote parts of the body.

Usually the disease affects a small number of organs, but it has been found in 57 different parts of bovine carcasses, including small lesions in remote places not commonly observed in routine post mortem examination. In the early stages of the disease it is possible for an animal which is actually infected with tuberculosis to show no visible signs on either ante-mortem or post-mortem examination. The best scientific evidence and observation of millions of carcasses indicate that the tuberculin test is more reliable than the post-mortem examination as a means of detecting tuberculosis.

**21. DOES A TUBERCULIN TEST IMMUNE AGAINST TUBERCULOSIS?**

No. A tuberculin test properly applied will tell whether the animals have tuberculosis at that time and will not cause immunity.

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

No. When an animal reacts once to a tuberculin test, that is positive evidence that it is tuberculous. Nothing could 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 be a dangerous spreader of tuberculosis. Once a reactor, always tuberculous.

**23. WHY IS IT THAT MANY ANIMALS THAT ARE 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 part 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.

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

Not until after they have been thoroughly cleaned and disinfected.

**25. 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.

**26. 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.

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

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

**28. ARE FOWLS OFTEN FOUND TO BE AFFECTED WITH TUBERCULOSIS?**

Yes, a large per cent of the flocks in Nebraska are diseased with tuberculosis. Recent experience has disclosed that in some districts more than 75 per cent of the flocks contain tuberculous birds.

**29. 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. Infection leading to lesion disease in cattle from the avian type of tubercle bacilli, however, is extremely rare.

**30. 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.

**31. HOW CAN TUBERCULOSIS IN FOWLS BE DETECTED?**

The older birds gradually lose flesh. On post-mortem examination a competent veterinarian can establish a positive diagnosis. Infected fowls may also be detected by a tuberculin test.

**32. 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 them to clean ground. A new start should be made by the purchase 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.

**33. WHAT IS THE ANNUAL LOSS IN THE UNITED STATES CAUSED BY TUBERCULOSIS IN LIVESTOCK?**

It has been conservatively estimated to be between 30 and 40 million dollars.

**34. 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.

**35. 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 regulations and before wide use of the tuberculin test was taken advantage of to prevent such importation.

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

In some of the eastern states where this disease has been of long standing the percentage of infection runs as high as from 30 to 40 per

cent. In some of the southern and western states there is less bovine tuberculosis than there is in Nebraska.

**37. CAN BOVINE TUBERCULOSIS BE ERADICATED FROM THE UNITED STATES?**

Yes, in states in which the infection is heavy it will take longer and be more costly.

**38. WHAT IS BEING DONE TO ERADICATE TUBERCULOSIS?**

Every state in the Union is actively engaged in the eradication of cattle tuberculosis 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 eight years.

In December, 1934, there were 1,931, or 62.9 per cent of the counties in the United States in which cattle tuberculosis was reduced to less than one-half of one per cent and these counties declared modified accredited areas. The District of Columbia and the following eighteen states are accredited areas: Idaho, Illinois, Indiana, Kentucky, Maine, Michigan, Minnesota, Nevada, New Hampshire, North Carolina, North Dakota, Ohio, Oregon, Utah, Virginia, Washington, West Virginia, and Wisconsin.

**39. WHAT ACTION IS NECESSARY FOR A COUNTY TO BE DECLARED AN AREA FOR THE ERADICATION OF TUBERCULOSIS?**

It is necessary that petitions be presented to the Nebraska Secretary of Agriculture requesting that a county be declared an area, which petitions must be signed by at least 60 per cent of the cattle owners representing at least 51 per cent of the cattle located there, according to the last assessment rolls.

**40. 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 semirange breeding females, and such other cattle as may be considered necessary by the State and Federal Department cooperating, 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 semirange breeding females.

In all cases where a reactor or other evidence of tuberculosis, including post-mortem reports, etc., is disclosed, then all the cattle in that herd or associated with the diseased animal will be tuberculin tested.

**41. 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.

**42. 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 $30 on grade animals and $60 on purebred animals. The first $20 on grade cows and the first $50 on purebred animals will be paid from Federal funds made available until December 31, 1935, by the Jones-Connally Cattle Bill. The State pays all the indemnity on grade bulls.

**43. 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 toll, etc., which expenses can not 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.

**44. 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 was found on the last test applied must be under quarantine and retested until free from tuberculosis.

**45. 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 for the eradication of tuberculosis, which includes modified accredited counties.

---

Distributed in furtherance of cooperative agricultural extension work. Acts of May 8, 1914, and June 30, 1914. The University of Nebraska Agricultural College and U. S. Department of Agriculture cooperating. W. H. Brokaw, Director, Agricultural Extension Service.

[7-29-50M]
[9-30-20M]
[4-31-50M]
[4-34-25M]
[1-35-40M]