

BRUCellosIS IN NORTH DAKOTA DEER¹—A SURVEY

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Stockmen commonly believe that deer act as reservoirs of infection and spreaders of infectious and parasitic diseases common to deer and other animals. One of the diseases which would be important, if of frequent occurrence in deer, is brucellosis. Because all mammals apparently are more or less susceptible to infection by the brucella organism, the disease could be spread by an infected animal that moves from farm to farm.

For this study brucellosis was chosen as the first infectious disease to be considered because there is a very satisfactory laboratory test for determining brucellosis infection in animals. The standard test is the plate agglutination test for which 1 to 50, 1 to 100, and 1 to 200 dilutions were made, using the Bureau of Animal Industry *Brucella abortus* antigen.

The deer studied were the plains white-tailed deer, *Odocoileus virginianus macrourus*. All samples were collected in that portion of North Dakota east of the Missouri River. The blood samples tested were collected by the hunters at the time they bled their deer.

Preliminary work on this project was started in 1947. Representatives from this department worked with the members of the Federal Aid Division of the North Dakota Game and Fish Department collecting blood samples in the Lower Souris Refuge. At this time 90 blood samples were obtained with one sample giving a positive reaction to the test for brucellosis. The cooperation of the hunters was so satisfactory that plans were made to collect blood samples in all parts of the state having an open deer season in 1948.

Members of this department and members of the Game and Fish department contacted various hunter groups over the state and solicited their aid in collecting blood samples and viscera to be used for the brucellosis, food habit and internal parasite studies.

In the two year study, samples were obtained from 118 adult bucks, 136 adult does, 24 fawns and 158 of unknown age and sex. In 1948, 346 blood samples were collected from 29 counties and in 1947, 90 samples were obtained from McHenry and Bottineau counties. The total for the two years was 436 samples with only one reactor. Thus the incidence of infection is 0.22%*.

Based on the estimated deer population of the portion of

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*Dr. J. D. Rutten of Devils Lake has reported the finding of one reacting sample in four samples tested for brucellosis.

the state under consideration this survey includes one sample from every 53 deer. The distribution of the samples is shown in Figure 1.

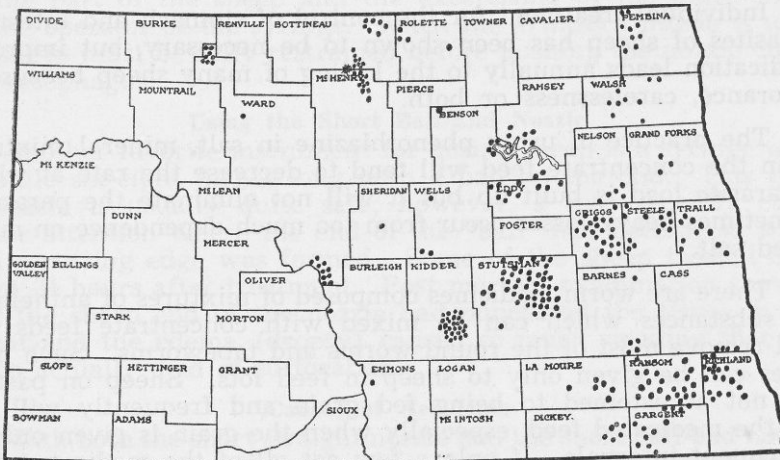


FIG. 1
DISTRIBUTION OF BLOOD SAMPLES COLLECTED FOR BRUCELLOSIS TESTS

*90 blood samples were taken in this area during the 1947 deer season

The results of this survey show that from practical considerations brucellosis is not a disease of significance to the state white-tailed deer herd and that these deer need not be considered of importance in the program directed against brucella infection of farm animals.

In studies from other states and Canadian provinces it has been shown that bison are frequently infected with brucellosis while elk are rarely if ever infected. Our findings show that the deer behave in much the same way as the elk in being more or less resistant to brucellosis.

Summary

Agglutination tests for the detection of brucellosis have been made on 436 North Dakota deer with the incidence of infection found to be 0.22%.

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