MUCOSAL DISEASE IN NORTH DAKOTA

By I. A. Schipper[1] and D. F. Eveleth[2]

The term mucosal disease refers to a condition of cattle characterized by inflammation and ulceration of the digestive and respiratory systems.

The term mucosal disease was first applied to this condition by Dr. Ramsey of Iowa State College. Like or similar disease conditions have since been described by workers in most of the midwestern states. The first diagnosis of this condition was made in North Dakota in January of 1954. Veterinary diagnosis laboratory reports at North Dakota Agricultural College indicate this disease condition to have probably existed in North Dakota as early as 1945.

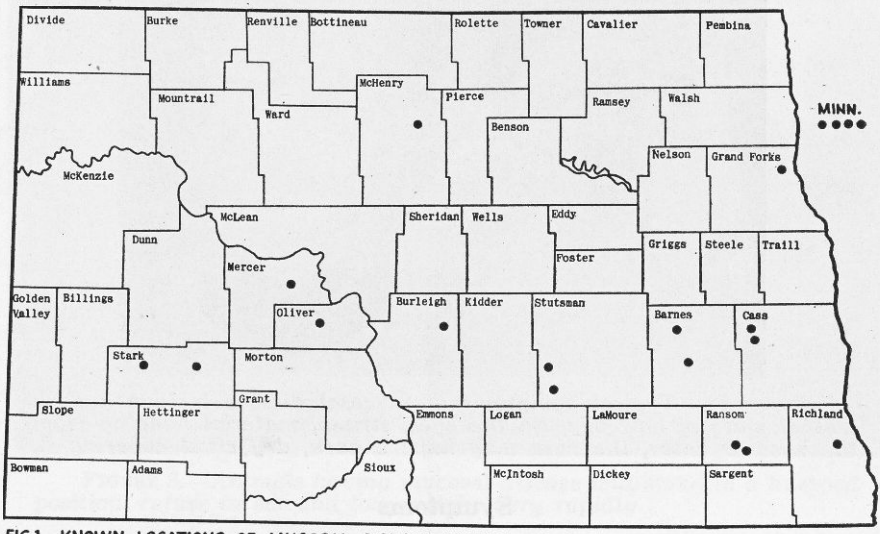

FIG 1. KNOWN LOCATIONS OF MUCOSAL DISEASE IN NORTH DAKOTA

Affects All Breeds

Mucosal disease has been diagnosed in all breeds and ages of cattle. However, it occurs most frequently in animals one year to 18 months of age. The majority of cases brought to our attention have been in the beef breeds, usually yearlings being wintered on non-legume hay only.

Animals first showing symptoms usually are the smaller, less vigorous members of the herd. The highest incidence has been in

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the months of January through May. However, sporadic cases have been diagnosed throughout the entire 12 months of the year. One to 50 per cent of the herd may become infected. Animals showing typical symptoms of mucosal disease usually die.

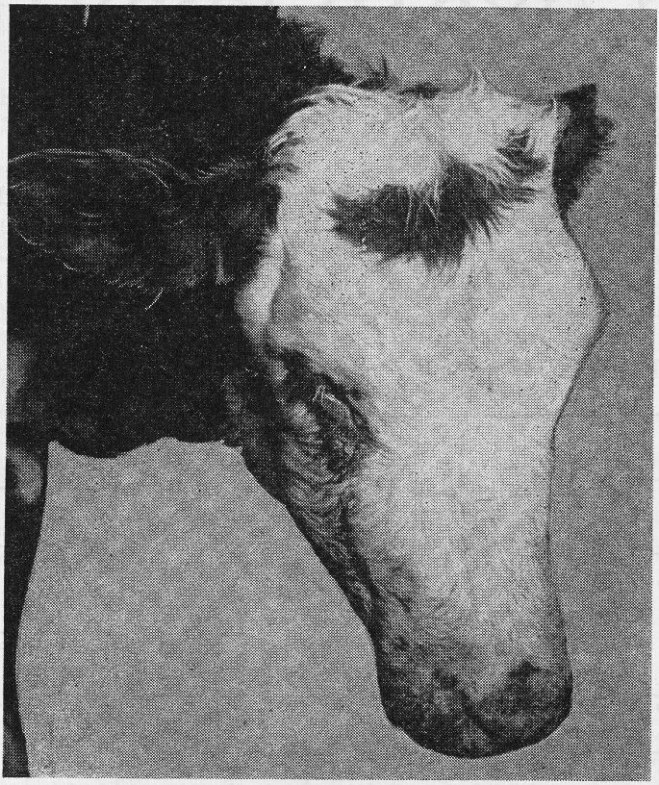

FIGURE 2.—*Typical symptoms of mucosal disease include a dark matted mass of hair beneath the eyes, stringy material hanging from the nose or, later, the nose may have a dark, dry crust covering it.*

Symptoms

Preliminary observations of mucosal diseased cattle often have led farmers and veterinarians to believe the sick animal has shipping fever, Vitamin A deficiency or coccidiosis. In several instances, a preliminary diagnosis of rabies has been made.

Cattlemen, who observe their animals closely, will probably first see one of the less vigorous animals approach the feed trough at a normal pace but when at the trough, not eat. Large quantities of water may be consumed at this time. Should the animal's temperature be taken, it would likely be above 103°F. Within 12 to 36 hours a profuse diarrhea will likely be observed. On the basis of histories, the diarrhea is usually the first symptom noted by the owner. The feces usually are dark, contain large amounts of mucous

and often blood. After passage has been completed, the animal will continue to strain and small quantities of fecal material and fluid may be passed.

Infected animals exhibit lacrimation (tears) and later a dark stained area of matted hair appears below the eyes. Large quantities of thick clear secretion will pass from the nose and adhere to the nose, appearing in the form of icicles. The inner surface of the nasal cavity will become red or may be ulcerated. Later dark crusts will form on the nose.

Quantities of saliva may pass from the mouth and the animal may grind its teeth. Examination of the mouth will usually reveal

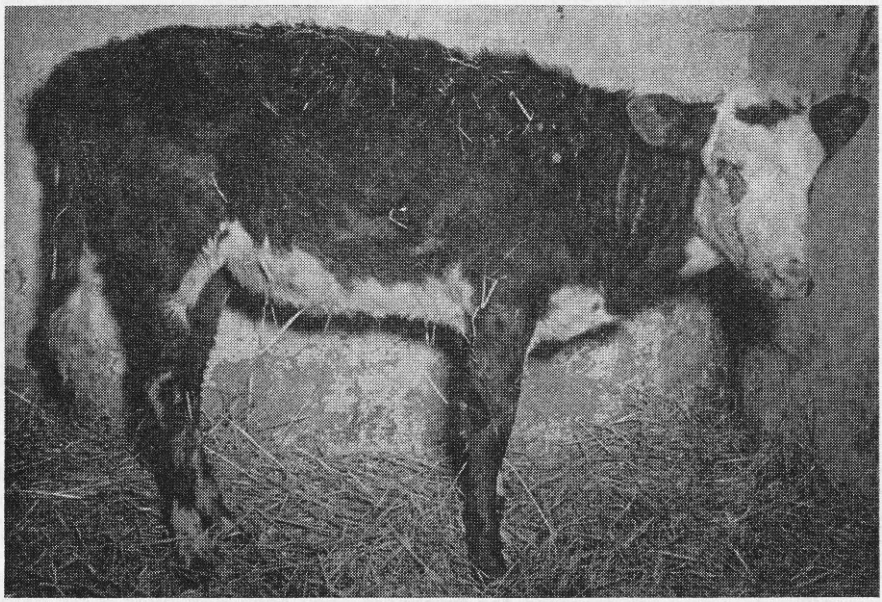

FIGURE 3.—*Animals having mucosal disease will stand in a humped position, refuse to eat and lose weight very rapidly.*

ulcerations and hemorrhages on the tongue, lips and upper surfaces of the oral cavity. The mucosal diseased animal will stand in a humped position, is depressed and completely off feed. Lameness may be observed. Some sick animals will pick up hay, chew it several times and hold it in their mouth for extended periods. Cattle exhibiting the typical symptoms of mucosal disease may live from three to 50 days.

Treatment

No known means of treatment is available today for mucosal disease. The antibiotics and sulfonamids have been of no value even

if administered in high dosages. Available vaccines or bacterins have not been proven of value to date. Good nursing and care appear to be the only means of treatment of value.

Research on Mucosal Disease

At present an extensive research program is under way to determine the cause of mucosal disease and to develop a means of preventing or treating this condition. In the past 15 months, mucosal disease has definitely been diagnosed on 18 North Dakota farms involving 1,562 head of cattle. One hundred ten of these cattle have definitely been diagnosed as having mucosal disease and have died. These represent a conservative estimated loss of $8,000. It is felt that many cases of mucosal disease in North Dakota have not been brought to our attention or have been diagnosed as other forms of disease. There is little doubt that mucosal disease is costing the cattlemen of North Dakota each year two to three times the authenticated loss cited above.

High Protein Bread Remains Fresh Longer

By Rae H. Harris[1]

Recent experiments reported in Baker's Digest by W. G. Bechtel and D. F. Meisner of the American Institute of Baking laboratories show that bread made from high protein flour remains fresh longer than bread from lower protein flour. Synthetic loaves were baked from blends of three proportions of wheat gluten and starch to secure a wide range of protein content without varying the baking quality of the gluten and starch components. The range in protein content was from 11.0 to 17.2 per cent. The loaves were assessed for freshness once each day over a six-day period by a sensory test panel of judges.

During the first three days of storage the loaves lost freshness, or staled, at the same rate. After one day they were judged to be between "very fresh" and "fresh." By the second day they were judged to be between "fresh" and "slightly fresh," while on the third day they were judged as "slightly fresh." After the third day of storage great differences in staling rate developed. The bread from the 17.2 per cent protein mix was judged not to stale between the third and sixth day. Bread from an intermediate protein mix of 12.9 per cent staled to some extent, while the loaf from a mix of 10.8 per cent protein content staled rapidly. It was also found that bread of higher moisture content did not stale as rapidly as bread of lower moisture content.

These results corroborate the belief of many commercial bakers that bread made from high-protein flour, such as is milled from hard red spring wheat, has the best keeping qualities. This is further proof of the value of our spring wheats for the production of high quality flour.

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