

TECHNICAL NOTES

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CLOSE GRAZING AND GRASS TETANY

Grass tetany, also called wheat poisoning, is not common but has occurred when cattle grazed young annual grass in San Diego County.

The following abstract of a University of Nevada publication was submitted by E. W. Anderson, Range Specialist, Eastern Oregon. This abstract clearly indicates the value of proper range use in preventing grass tetany.

Additional information about grass tetany can be found in the 1942 Yearbook of Agriculture, "Keeping Livestock Healthy," pages 653-654.

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Grazing too close last fall may cause grass tetany this spring. While this relationship has not been confirmed experimentally, it seems worthwhile to examine the evidence bearing upon this probability.

Cattle suffering from grass tetany, or wheat sickness as it is called in the Southern Great Plains, show a variety of symptoms as described by H. E. Redmond, "Wheat Poisoning in Cattle," Journal of American Veterinary Medical Association, Vol. 117, December 1950. Symptoms may include lack of coordination, champing and grinding of the teeth, twitching and jerking, rapid pulse, head-back paralysis, and blueness. Milk fever displays similar symptoms.

Grass tetany has long been a serious hazard in the Southern Great Plains, in Northern Europe, and wherever stock have grazed young, tender, succulent grass as a total ration. In the evolution of ruminant animals, it seems unlikely that there was ever a need to adapt to such a succulent diet, since bison and other wildlife were not confined exclusively to areas of young grass.

On the basis of symptoms and response to treatment, it is assumed that it was grass tetany that struck cattle in a few eastern Nevada herds in the spring of 1959. According to Andre Voisin, in "Grass Productivity," Chapter 6, pp. 123-6, Lockwood and Son, London, 1959, the symptoms of grass tetany are associated with an abnormal excess of sodium and

potassium over calcium and magnesium in the blood. Blood sugar is also low. For these reasons, gradual injection of calcium gluconate and ganesium chloride, while the animals are still up, is an effective treatment.

An increase in the ammonia content of the rumen and of the blood furnishes a further clue to the cause of grass tetany. Chemical analysis of young grass leaves will show 3-1/2 to 4 per cent nitrogen, which has been interpreted as 22 to 25 per cent crude protein. As much as 50 per cent of this nitrogen, however, may be present as potassium nitrate or other non-protein nitrogen. Young grass leaves are also too low in fiber and carbohydrates to promote normal rumination.

Cattle suddenly turned on succulent grass from dry forage are at a disadvantage. The micro-organisms in their rumen require time to adjust to the new ration. High non-protein nitrogen, low carbohydrate, and low population of the proper micro-organisms together produce the excess ammonia. Ammonia lowers blood calcium and magnesium and acts to paralyze the respiratory center. These events can be brought on by experimental injection of ammonia.

Damaged livers or kidneys, a condition more common among older animals, predispose them to grass tetany because they cannot eliminate ammonia rapidly. Pregnant and nursing cows are more susceptible than steers because of the higher calcium demand.

Feeding of some hay to cattle being shifted from dry, mature feeds to early pasture has prevented grass tetany. Leaving a good three inch grass stubble should serve the same purpose because cattle on spring range will be forced to ingest more fiber and carbohydrates.

This is why we say, "Grazing too close last fall . . ." and the rest of it.

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