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COOPERATIVE EXTENSION

Animal Health
Fact Sheet

AMMONIA TOXICITY IN A HERD OF BEEF CATTLE

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A Utah producer lost 22 out of 50 head of cows in May, due to ammonia toxicity. He used a liquid fertilizer tank to haul water to the cattle. He had done this for two years previously, and with washing out thoroughly, there had been no problem. But this time some fertilizer was evidently left in, mixed with the water and resulted in the toxicosis. He was just certain that it had been well cleaned out even this time (but there had to have been a significant amount of fertilizer still present to result in this severe of a toxicosis). Finally someone admitted that perhaps the hoses had not been flushed out—but even this would probably not have been enough to cause such an extensive loss.

The fatal load of water was hauled to the cattle at 4:30 p.m. and they had been out of water since about 11 a.m. When he returned at about 8:30 there were three down. The signs he described were kicking, shaking and sweating. Only about 100 gallons of the water had been used.

He called a veterinarian, who came immediately and based on the signs and history given to him. Then, he treated them for grass tetany. He soon recognized that he was not getting the expected response, so he took some blood samples to his clinic and checked for magnesium levels. They were normal. He returned to the cattle and pressed the owner for more history—learned about the water and promptly dumped it. Further testing later confirmed the high ammonia levels in one cow that died. The cattle were scattered on the range in the dark, so many of those affected were not even found until daylight the next morning.

The fertilizer contained in the plastic “tank on wheels” was 38% nitrogen, which is almost equivalent to feed grade urea (45%). The acute lethal dose of urea is approximately 1 gram per Kg of bodyweight. But this would mean that each cow which died would have received about one pound (454 g) of the fertilizer, contained in the water they drank at one time (5 gal. ??). That is pretty concentrated stuff, so some just had to be left in the tank and the water mixed with it.

Just a sad reminder for all to be careful !!!

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