

Don't Be Tempted to Graze Unharvested Soybeans

Ammonia toxicity is a threat to cattle that overconsume soybeans.

Producers should not introduce hungry cattle to unharvested soybean fields, according to a North Dakota State University Extension livestock specialist.

“Ammonia toxicity is a threat to cattle that overconsume soybeans,” says Karl Hoppe, livestock systems specialist at NDSU’s Carrington Research Extension Center. “Whether it’s a pile of harvested soybeans lying on the ground or an unharvested soybean field where cows have unlimited access, eating too many soybeans can lead to dead cattle.”

Ammonia toxicity has been seen in cows that found a pile of harvested soybeans and gorged themselves. Consumption of a large amount of whole soybeans and an active rumen, combined with the urease enzyme in soybeans, can lead to more ammonia production than the rumen microbes normally can use. Excess ammonia spills into the bloodstream, causing death.

“If you catch the toxicosis early enough, you can drench the cow with 1 to 2 gallons of vinegar (5% acetic acid) to change the ammonia to ammonium,” Hoppe says. “The ammonium ion won’t leave the rumen. Unfortunately, most producers don’t find the animal soon enough and don’t have enough vinegar on hand to deal with an outbreak.”

Cows can consume small amounts (2 to 4 pounds) of soybeans per day as part of a balanced ration. This would provide additional protein to the ration. After 4 pounds of soybeans in a mature cow ration, the oil content of the ration starts to interfere with digestion by the rumen microbes. When the oil content of the ration gets above 7% to 8%, the oil becomes toxic to rumen microbes.

Plus, when cows eat soybeans, they are eating the bean pod and stems. If the cows consume too much, ammonia toxicosis will lead to tremors and the cows will lie down and die. Treatment is generally unsuccessful.

The unknown is how many soybeans a cow will eat if she gets into an unharvested soybean field. If grass or corn stover is available, the cow might limit her soybean consumption.

“I usually associate raw soybean overload with death and would not recommend any grazing of a soybean field,” says Michelle Mostrom, a toxicologist in the NDSU Veterinary Diagnostic Laboratory.

Images



Grazing on unharvested soybeans can pose a health risk to cattle. (NDSU photo)

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