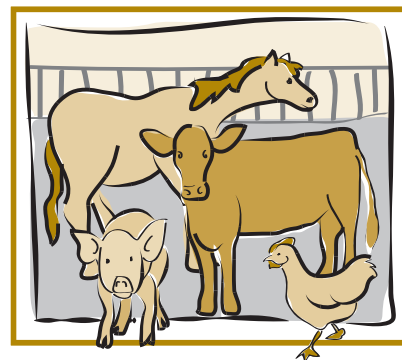


Urinary Calculi in Wether Lambs/Kids

Fact Sheet No. 1.629

Livestock Series | Management



S. LeValley and B. Kirch*

The formation of calculi (stones or crystals) in the urinary tract of sheep and goats and is considered a metabolic disease. Commonly calculi are found in lambs or kids on a high concentrate diet. The mineral composition of drinking water in conjunction with mineral imbalances in the diet tends to contribute more to the formation of calculi than lack of water itself.

Signs of Urinary Calculi in Lambs and Kids

- Wethers are restless, kick at the abdomen and make frequent attempts to urinate. Animals may tend to be disinterested at feeding time.
- When the animal attempts to urinate there may be rapid twitching of the tail. Animals may also show discomfort while attempting to urinate.
- Urine may dribble from the urethra and dry on the preputial hair and leave mineral deposits.
- If the penis or urethral process is palpated there may be sensitivity, distension or swelling.
- Ulcer on prepule or vulva that looks like brown malodorous scab.

Prevention of Urinary Calculi in Lambs and Kids

Prevention of the condition is much easier and more effective than attempts at treatment.

- Delay castration of young lambs/kids as long as possible.
- Clean/cool water in the summer is vital.
- Feed a ration where the ratio of calcium to phosphorus is 2:1.



- Top dress rations with 3 to 4 percent salt to stimulate water intake.
- Ammonium chloride should be added to the ration at the rate of 0.5-1.5 percent.
Note: if wethers or kids are being fed a commercially mixed/bagged ration, **READ THE INGREDIENTS CAREFULLY.** Calcium, phosphate and ammonium chloride are often included at the proper rates.

Treatment

- If urine flow is completely blocked consult your veterinarian.
- If obstruction of urine flow is not completely blocked (i.e., animal is still passing small amounts of urine):
- Smooth muscle relaxants in combination with anti-inflammatory agents – under the supervision of a veterinarian may be helpful.
- Remove feed from the lambs or kids for 24 hours and apply oral doses of ammonium chloride (1 oz per .5 lbs of body wt) can acidify the urine and dissolve the crystals. The oral treatment should be continued for at least a week due to probability that there are multiple calculi in the bladder.

See Tables,
page 2.

Quick Facts

- The formation of calculi (stones or crystals) in the urinary tract of sheep and goats and is considered a metabolic disease.
- The mineral composition of drinking water in conjunction with mineral imbalances in the diet tends to contribute more to the formation of calculi than lack of water itself.
- Prevention of the condition is much easier and more effective than attempts at treatment.

©Colorado State University
Extension. 8/10.

www.ext.colostate.edu



*Colorado State University Extension sheep specialist; assistant professor and Extension youth livestock specialist, animal sciences. 8/2010

Table 1. Ammonium Chloride as a Feed Additive (Preventative)

Ammonium Chloride	To mix, add lb/ton	For top-dress, add g/lb
0.50%	10	2.27
1.00%	20	4.54
1.50%	30	6.81

Table 2. Mixing Instructions for Ammonium Chloride Solutions (Oral Drench)

Ammonium Chloride Dose, g/kg BW	Animal Weight lb	Volume of Dose, cc		
		20	40	60
		Mix lb NH ₄ CL/gal H ₂ O		
0.20	30	1.20	0.60	0.40
	45	1.80	0.90	0.60
	60	2.40	1.20	0.80
0.26	30	1.56	.0.78	0.52
	45	2.34	1.17	0.78
	60	1.98	0.99	0.66
0.33	30	1.98	0.99	0.66
	45	2.97	1.49	0.99
	60	3.96	1.98	1.32

Might experience difficulty in dissolving this amount of ammonium chloride per gal. of water. Will depend on salinity of water being used.
Doses were selected assuming a 20 cc drench gun would be used to administer the ammonium chloride solution.
Caution: Ammonia toxicity could be a potential problem if the higher doses of NH₄Cl are chosen. However, treatment of urinary calculi is a desperation effort. Therefore, the risk of ammonia complications may be tolerable in light of impending death if urine flow is not re-established.