

Feedlot cattle: Recent nephrosis cases at the ISU-VDL

Diagnosticians at the Iowa State University Veterinary Diagnostic Laboratory have recently identified cases of fatal idiopathic nephrosis/renal failure in several feedlots geographically dispersed throughout Iowa. In these cases, very few of the calves on feed are clinically affected at any one time and the group as a whole may look remarkably normal; however, increased death loss accumulates over time.

All known cases have originated from calves weighing more than 750 pounds (several near market weight) and have been from feedlot calves on feed for four weeks or more.

Clinical signs described in these cases include calves that abruptly go off feed, become markedly gaunt, and die within a few days despite therapeutic interventions. Other signs occasionally reported include trembling, seizure activity, and bloody feces immediately prior to death. Thus far morbidity is very low, often with just a single animal in a pen showing clinical signs at any one time. However, the clinical course in a group is cumulative with multiple animals sequentially affected over a period of weeks to months, and has approached 10% morbidity with up to 100% case mortality within a particular pen of cattle or within the same feedlot.

Necropsy findings identify enlarged and pale kidneys. Other findings are inconsistent and dependent on the calf's previous history and current condition. Microscopic lesions are indicative of nephritis with calcium oxalate crystals present in the tubules.



Figure 1: Capsular surface (left) and cut surface (right) of kidney from a nephrosis case have diffusely pale cortical tissue.

To date, no definitive cause has been identified in these cases. Site investigations are underway to identify potential predisposing factors common to those feedlots with confirmed cases. Additional testing also is in progress in an attempt to rule out known nephrotoxic compounds. Feedlots experiencing calves going off feed that are non-responsive to therapy are encouraged to contact their veterinarian to perform a necropsy and submit samples for diagnostic testing.