P195 Influence of salt water on rumen function of lactating dairy cows. A. Siuta*, A. Al-Dehneh, T.N. Wegner, R. Wanderley, J.T. Huber, University of Arizona, Tucson.

A study was conducted to determine the effect of drinking water containing 4500 ppm total dissolved salts (TDS) on protein and fiber digestion in the rumen of dairy cows. Two lactating Holstein cows fitted with duodenal cannulae, were fed a diet of 50:50 alfalfa hay:dairy concentrate for two 25 d periods in a cross-over design (fresh vs salt water). The salt water was prepared by adding a mixture of $NaCl$, $MgSO_4$, KCl, $NaHCO_3$, $CaCl$ and H_3PO_4 to fresh water. Water consumption and feed intake were monitored. Spot-samples of duodenal digesta were taken 4 times/d and blood samples once/d during the last 4 d of each period. No effect was detected on water consumption and feed intake. Minerals in blood serum for cows on control vs salt water were: Mg, 2.4 vs 2.3; Na, 294.6 vs 291.2; K, 20.3 vs 21.3, mg/dl. Data from duodenal digesta indicated that drinking salt water decreased rumen digestibility of dry matter (65 vs 53%), fiber (ADF = 65 vs 50%) and cellulose (70 vs 53%). Flow of protein in the duodenum, expressed as % of intake, was greater for cows drinking salt water than fresh water (72 vs 51%). Liquid turnover rate (based on CoEDTA) was similar for both treatments. These results suggest that drinking salt water decreases fiber digestion in the rumen.