



Environmental performance and climate change:

What do sheep and goats contribute to climate change mitigation?



Oral presentations

Adaptation to saline drinking water in goats

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Abstract:

In the context of global warming, salinization of groundwater and soil is a prevalent global issue with serious consequences on animal health and production. Therefore, we investigated the capacity of goats to adjust their salt intake from saline drinking water in a free choice system. Twelve non-pregnant Boer goats were kept in individual pens for 4 weeks. In the control phase (1 week), only fresh water was supplied in five identical buckets for each pen. During the subsequent treatment phase (3 weeks), fresh tap water and four different concentrations (0.75, 1.0, 1.25, and 1.5% NaCl) of saline water were offered simultaneously in a free choice system. Hay, water and a mineral lick were provided ad libitum. Dry matter intake, total water intake and total sodium intake were significantly ($P < 0.001$) higher during the treatment phase. All goats had a significant preference for fresh (0% NaCl) over saline water. At the beginning of the simultaneous choice situation, animals did not differentiate between salt concentration of 0.75% and 1.0%. However, with successive treatment, animals distinguished more sensitively between saline water concentrations and preferred the 0.75% salt concentration. The total sodium intake of goats ranged between 0.37-0.55 g/kg BM^{0.75} per day during the treatment phase, being 8 to 11 fold higher than the daily requirements of sodium for body maintenance. The results suggest that goats are able to differentiate between saline water concentrations and adjust their sodium intake by quick adjustments in self-selection in a free choice system.