

# Calves Can Be Taught To Urinate In A Specific Place

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The accumulation of faeces and urine in dairy barns is a cause of cattle and human health issues and environmental problems. It is usually assumed that cattle are not capable of controlling urination and defecation. We tested whether cattle could be taught, using operant conditioning, to urinate in a specific location. Six experimental female Holstein calves, each with a yoked control, (31-68 days of age), were habituated to a treatment and test pen. On day 1 experimental calves were injected IV with a diuretic (Salix at 0.5ml/kg BW) and rewarded immediately upon urinating by release from the stall into a sawdust bedded reward pen where they received approximately 250 mL milk. On subsequent 16 days calves were held until urination occurred, where upon they received the reward. Calves failing to urinate within 15 minutes exited the stall into a small unbedded "time out" pen, were held there for 5 minutes and received the diuretic the following day. Yoked control calves were never given diuretic but held in the stall for the same amount of time and received the same reward or punishment as their matched treatment animal had been the previous day. We recorded if animals urinated within the stall. Experimental calves urinated more than their yoked controls (mean $\pm$ SE = 5.25 $\pm$ 0.95 vs 2.32 $\pm$ 0.52; matched pairs t test p=0.02). There was no difference in the frequency of defecation between treatment calves and their yoked controls. The results of our experiment show it may be feasible to train cattle to urinate in specific areas of the barn.

Implications: Training cattle to urinate and defecate in strategic places within the barn (e.g. prior to entering the milking parlour, a small area of the home pen, etc.) could allow for improved cleanliness, more efficient manure management and a reduction in volatile emissions.