

Clever cattle to resolve "Klima Killer" conundrum

Initiative: Außergewöhnliches

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Dairy cow cubicle barns combined with access to outdoor yards or pasture is considered the optimal housing system with respect to economics and animal welfare in Germany. However, the larger space allowance per cow in these systems creates a bigger emission surface for, and potential pollution from, ammonia. Cattle void urine and faeces throughout the barn floor resulting in optimal conditions for the formation of ammonia which is catalysed from the urea in urine by the enzyme urease present in the animals' faeces. If faeces and urine could be separated at the moment of excretion it would be possible to reduce ammonia emissions from dairy housing. This would require cattle to void at a specific location (latrine), whereupon the urine and faeces could be collected and separated. However, cattle do not have a natural propensity to excrete at specific locations, thus, this behaviour would need to be trained. In a 'proof of concept' a highly innovative approach will be tested using the cognitive abilities of cattle to help resolve the apparently intractable conflict between the needs for high animal welfare and ammonia gas pollution control. In a stepwise approach the concept will be tested that cattle can be trained to use a latrine for voiding faeces and urine. If the approach is successful, training of cattle to use a latrine can not only resolve the conflict between animal welfare and ammonia emissions. In addition, the welfare of animals can be improved by 'cognitive enrichment' from being rewarded for completing tasks and by better health status due to improved floor hygiene. Moreover, such an intelligent system which uses the animals' cognitive abilities to resolve the "Klima Killer" conundrum will help to raise society's acceptance of cattle housing systems.

Projektbeteiligte

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Conditionability of voluntary and reflexive-like behaviors, with special reference to elimination behavior in cattle.

How can Cattle be Toilet Trained? Incorporating Reflexive Behaviours into a Behavioural Chain.