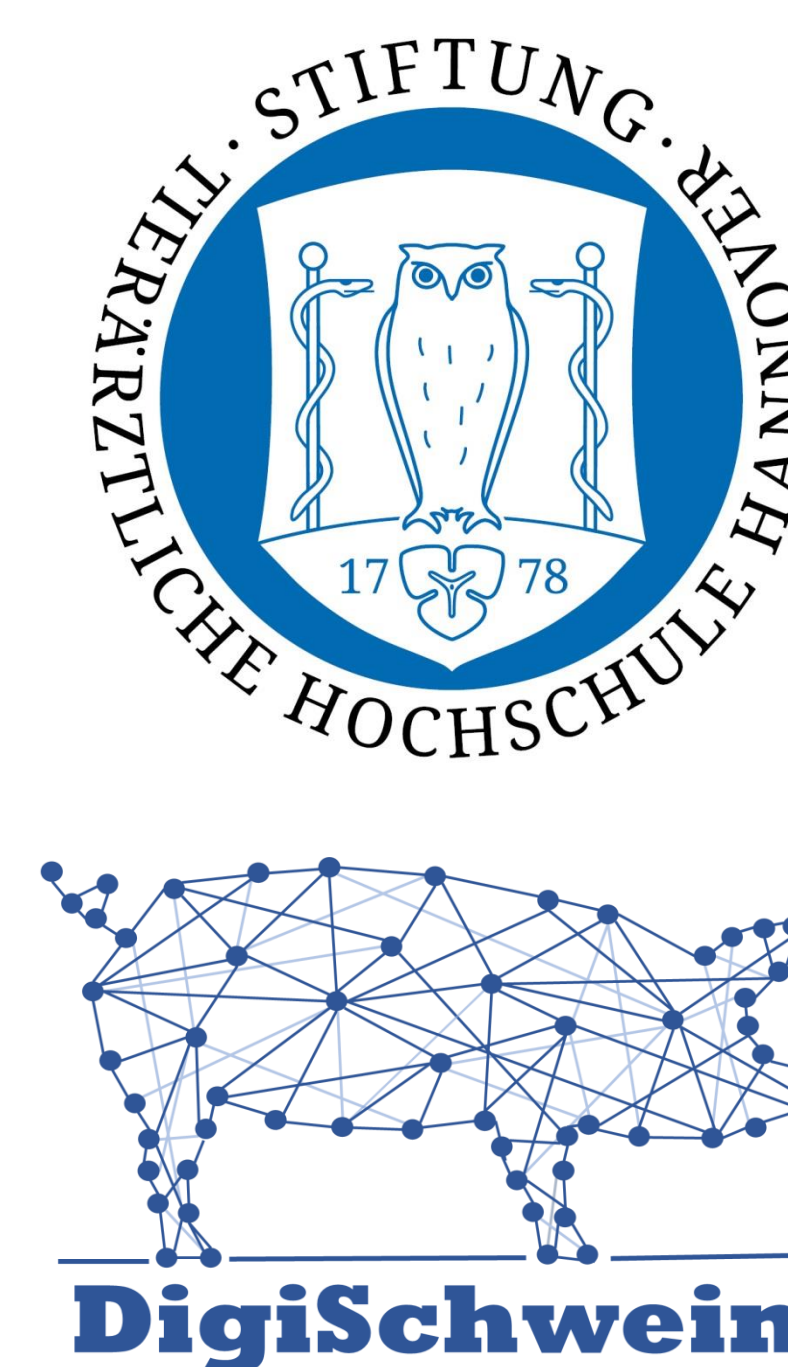


Automatic detection of lame weaner pigs by evaluating their drinking behaviour

J. Probst¹, P. Hesecker¹, N. Volkmann¹, G.-F. Thimm², U. Hartmann³, N. Kemper¹

¹Institute for Animal Hygiene, Animal Welfare and Farm Animal Behaviour (ITTN), University of Veterinary Medicine Hannover, Foundation, Germany
²Johann Heinrich von Thünen Institute, Braunschweig, Germany
³Chamber of Agriculture Lower Saxony, Oldenburg, Germany



Introduction

The early detection of lame pigs in a large group can help to

- decrease the severity of the lameness by timely medical treatment and separation
- improve healing process and prevent chronic damage
- reduce long treatment periods and the use of antibiotics
- enhance welfare and economics by keeping optimal performance and receiving less complains at the abattoir

and is time-consuming when carried out by staff.

Objective of the study:

Can a RFID-based drinking-monitoring identify lame weaner pigs within a group?



Fig.1: Lame weaner pig in a group.

Animals, Materials & Methods

- 714 weaner pigs with RFID-eartags from five batches
- Modified drinking stations with RFID-antennas and magnetic-inductive waterflow meters in the waterpipe recorded the individual water consumption (WC) and number of drinking events (NDE)
- 38 pigs were treated medically because of lameness
- WC and NDE of the treated animals were compared with the group mean on seven days prior to the day of the first treatment
- Effects of lameness and day before treatment (DBT) on WC and NDE were statistically analysed using linear mixed models

Results

- Treated pigs had a significantly ($p < 0.05$) lower WC than their penmates during the observation period (mean: 2.04 vs. 2.42 l/pig/day) (Fig.2)
- Significant interaction between treatment group and DBT ($p < 0.05$) with a significantly reduced NDE for treated pigs on treatment day (DBT 0) compared to group mean (Fig.3)

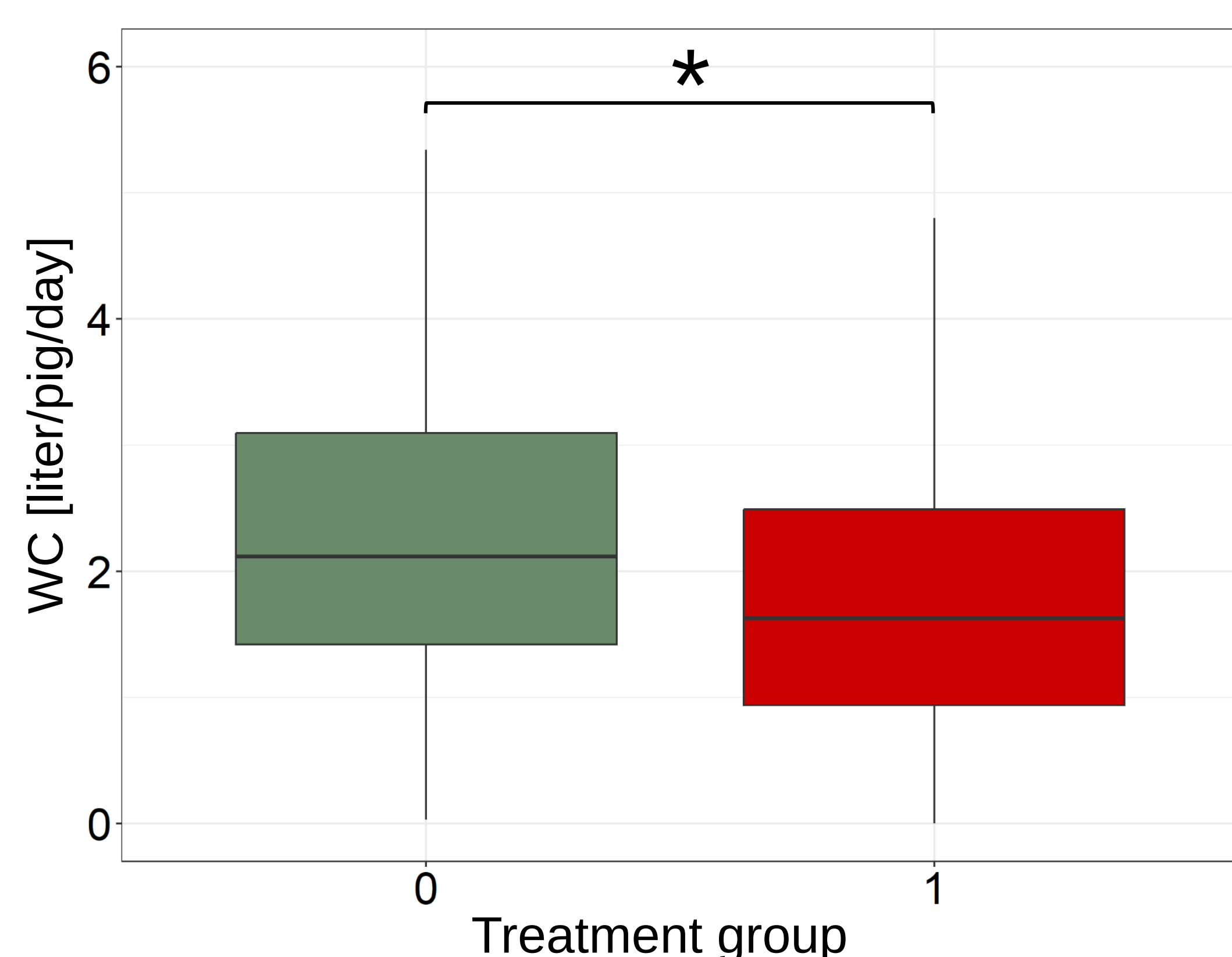


Fig.2: Water consumption (WC) [liter/pig/day] of group mean (treatment group 0) and pigs treated because of lameness (treatment group 1) over an eight day observation period. * = $p < 0.05$

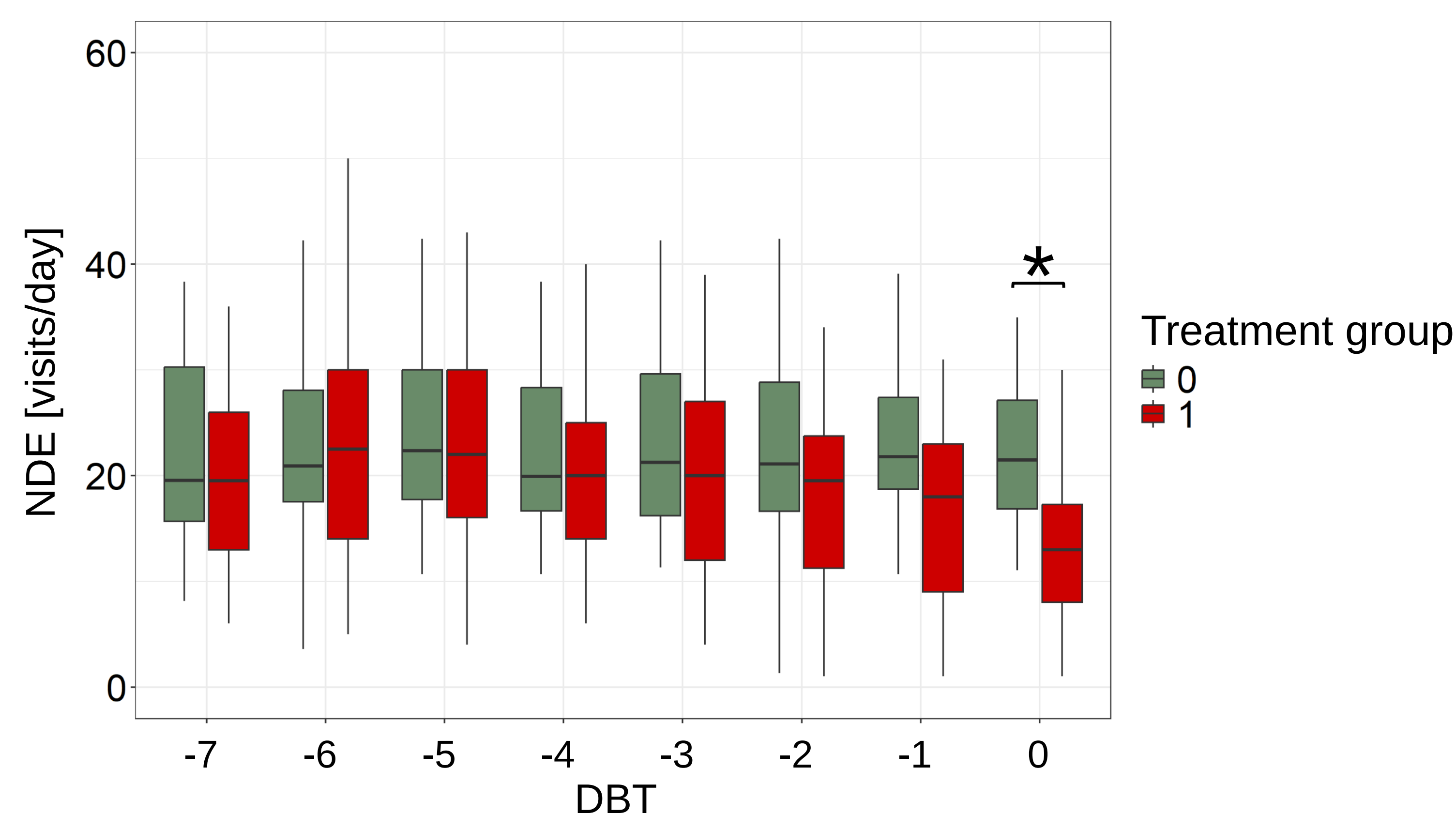


Fig.3: The number of drinking events (NDE) of pigs treated because of lameness (treatment group 1) and the group mean (treatment group 0) on the days before treatment (DBT). * = $p < 0.05$

Take home messages

- Drinking behaviour of lame pigs differed in comparison to the group.
- Lameness was detected by reduced NDE and the farm staff on the same day.
- Next steps: analysis of the reduced WC of lame animals including early clinical signs to evaluate benefits of an automated monitoring of drinking behaviour compared to human observation.

With support from



Project manager



by decision of the German Bundestag

Contact: Jeanette.Probst@tiho-hannover.de