The influence of manure scrapers on the behaviour and health of fattening pigs and breeding sows

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Key words
Pig, manure scraping system, animal welfare

Aim of the study
The study consisted of two experiments. The aim of experiment 1 was to investigate the reaction of growing pigs and sows on manure scraping systems in use on pig farms. In experiment 2, two newly developed manure scraping systems designed according to on the results of experiment 1 were tested to identify their effects on the animals' behaviour.

Material and methods
Experiment 1: The behaviour was observed in both fattening pigs and sows in four situations with different types of manure scraping systems in use on pig farms: in the standard situation as found on the farm, after a modification of the speed of the scraper to 3 m/min and 5 m/min, and an increase in the cleaning frequency to four times per day. In each situation, data were recorded over a period of one week, separately for a habituation period of three days and a test period of two days.
Experiment 2: Data on animal behaviour in relation to the two newly developed manure scraping systems (tilting and V-shape) was recorded during two fattening periods each with 2 groups of 27 pigs in the growing phase and 2 groups of 27 pigs in the finishing phase. Each group was tested with both manure scraping systems.

Results and significance
Experiment 1: Fattening pigs as well as breeding sows showed more often "crossing" during the forward movement of the scraper compared to the backward movement. In fattening pigs, this difference was less pronounced in the standard situation than in the other experimental situations. The frequency of "avoiding and crossing without contact" did not differ between the experimental situations neither for fattening pigs nor for breeding sows. Both fattening pigs and breeding sows showed this behaviour more frequently during the forward movement of the scraper than on the way backwards. Our results indicate that the dimensions of a scraper do affect the behaviour of pigs.
Experiment 2: It was found that the type of the manure scraper and the age of the pigs had a significant influence on the occurrence of the two behavioural elements "avoiding the scraper sidewards" and "crossing the scraper in the middle". A higher proportion of pigs crossed the V-shape scraper in the middle compared to the tilting scraper. During the growing phase of the fattening period, a higher proportion of animals tended to avoid the scraper sidewards compared to the finishing phase of the fattening period. The results indicate that the dimensions of a scraper (height + depth) do have an influence on the behaviour of the pigs and that manure scraper systems should be designed such that they are even more slim than the newly developped ones.

Publications, posters and presentations
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