System for measuring the water consumption of individual grow-to-finish pigs at the Deschambault Swine Testing Station

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Introduction

- Studying water consumption would enable us to learn more about the behaviour, health status and feed intake of pigs.
- The Centre de développement du porc du Québec inc. (CDPQ) developed a system for measuring the amount of water consumed by individual pigs each time they accessed the automated waterer.
- Aim: To demonstrate the ability of the system to measure the water consumption of each individual pig on a daily basis.

Materials and Methods

- New system for measuring individual water consumption:
- Amount of water flowing into the bowl using a flow meter
- Amount of water the pig takes from the bowl (CDPQ design)
- System uses RFID to identify the pigs that access the waterer.
- Thirty-seven pigs in three pens, each housing 12 to 13 pigs, were monitored over a 25-day period (55-81 kg).
- Feed consumption data were collected using the IVOG® system (individual feed intake recording in group housing) from Insentec BV, NL.



Water delivery device - Deschambault

Results

- an average of 25.4 visits.
- per pig per day (CV 21.2%).
- finishing stage.
- greater accuracy than the single factor of the flow.
- partially blocked some nipple drinkers.
- three pens being studied.

Conclusion

- system using a flow meter only.
- around 700 pigs annually.

Daily visits to the waterer varied between 16 and 38 in 90% of cases, for

Duration of these visits and the water consumption per visit were an average of 27 seconds and 325 ml, respectively.

The amount of water consumed daily, as measured by the system, was 8.3 | per pig per day (CV 47.5%) while the amount of feed consumed was an average of 2.64 kg

Water:feed consumption ratio (l/kg) was 3.1. This is similar to the ratios of 2.5 to 3.1 observed by Shaw et al. (2006), for pigs weighing 34.3 kg at the start of the

The figures show the circadian profile (Figure 1) as well as the daily water consumption profile (Figure 2) matched with those observed for feed.

Daily feed consumption correlated better (P> 0.001) with the daily water consumption provided by the system (r = 0.40) than with the total of the daily flows (r = 0.33). Hence, considering the variation in volume in the bowl provides

Certain difficulties in reading the equipment were caused by food particles that

No flow was recorded for 20.8% of visits to the waterer, and in this situation only the water already in the bowl was consumed. This proportion was higher at the start of the period and decreased linearly (P < 0.001) afterward for each of the

- 800

∑ 8000 ex 2000

The system we developed provides more accurate measurements of a pig's daily water consumption than those obtained by a

The system has been installed in each of the 28 pens at the Deschambault Swine Testing Station and will enable us to monitor

Data from this system will improve our knowledge of pigs' drinking behaviour and enable us to detect changes in relation to it.

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