

An experimental pig truck in France : Objectives and first results

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Objective 1 : comparison of 3 airing systems



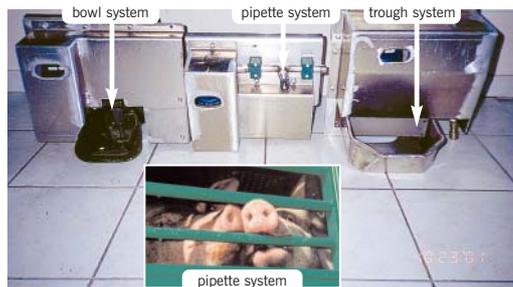
Material and method

- 132 pigs transported during 10 hours on 3 levels (44 pigs per tier)
- Comparison of 3 types of ventilation
- 2 repetitions during summer 2001 and 2 repetitions during winter 2002
- The quality of ventilation on pig welfare is analysed with 4 measures:
 - Measures of atmosphere: temperature, hygrometry, CO² rate, air speed
 - Measures of behaviour by video monitoring
 - Physiological measures (salivary cortisol)
 - Measures of meat quality and carcass presentation (haematoma)

Results

- In summer conditions (temperature more than 25°C), ventilation by lateral sliding shutters is satisfactory. Ventilation by fans improves thermic comfort only when the truck is stopped the days without outside wind. A combination of both systems is a good solution in summer.
- In winter (temperature below 15°C), with automatic regulation by lateral sliding shutters or fans, the minimal metabolism zone is reached (20°C) when the truck moves or stops. The welfare of pig is improved in comparison to a fixed lateral sliding shutter.

Objective 2 : comparison of 3 watering systems



Material and method

- 44 pigs transported during 24 hours (11 pigs per pen)
- 3 watering systems tested – a control pen without water
- 2 repetitions during summer 2001 at different ambient temperatures (20 and 30°C)
- Measures:
 - Water consumption every 4 hours
 - Weight loss
 - Carcass yield
 - Concentration of proteins and osmolarity
 - Pig behaviour (video monitoring)

Results

- Pigs use in average 2,1 to 5,0 litres of water according the ambient temperature (20 or 30°C during a 24-hours transport).
- At 30°C ambient temperature, weight losses are lower when pigs have water at their disposal (4,2 % against 5 % for the control group without water). At 20°C, there is no significant difference.
- The carcass yield (concentration of proteins and osmolarity) is not different between pigs whith water and those without.
- Water is more used to play and refresh than to drink (video recording).
- The watering by pipette system seems to be the best.

Objective 3 : comparison of different types of floor and sawdust thickness



Material and method

- 132 pigs transported during 16 hours (44 pigs per tier)
- Comparison of 3 floor types - a control pen without sawdust
- 2 repetitions during autumn 2001 and winter 2002
- Measures:
 - Pig cleanness (scale 1 to 4)
 - Meat quality and carcass presentation (haematoma)
 - Pig behaviour (video monitoring)
 - Heart rate level (polar system)

Results

- Concerning cleanness of pigs during a 16-hours transport, 1 cm of sawdust (5 litres per pig) or perforate plastic floor gives good results.
- The sawdust is more comfortable during winter because of its isolating role. Conversely, in summer with high temperatures, the sawdust tends to stress the animal (higher heart beating).
- Perforate plastic floor gives good results but the cleaning-disinfection is difficult.
- The rubber floor with sawdust is less noisy and sliding.