

# Identifying starving piglets in litters with 18 piglets

V.A. Moustsen<sup>1</sup> and T.F. Pedersen<sup>1,a</sup>

<sup>1</sup>Department of Livestock Innovation, SEGES Innovation P/S, 8200 Aarhus N, DK

<sup>a</sup>Present address: Department of Animal and Veterinary Sciences, Aarhus University, 8830 Tjele, Denmark

## Background

The main causes of piglet mortality are crushing by the sow, weakness, or starvation. Piglets being crushed and weakness can be related to starvation and at the time of death most piglets have an empty stomach.

## Objective

The aim was to develop two methods for identifying starving piglets.

## Materials and Methods

Two studies were conducted.

**Study 1:** 240 piglets (120 1-day old and 120 4-days old)

- Three groups;
  - No milk: piglets with no access to milk for 4 hours
  - Sow milk: piglets fed sow milk every 50 min for 4 hours
  - Milk replacer: piglets fed milk replacer every 50 min for 4 hours.

After four hours ten trained examiners evaluated, by palpation, piglets' stomach as empty (no milk) or filled (with milk).

**Study 2:** 40 sows with 18 piglets in each litter.

- Piglets and sows were monitored by video-surveillance
- The cause of death was determined by autopsy.
- The behaviour of piglets dying with an empty stomach, were analysed during the last 48-hour before time of death and around three nursing every second day until death.

## Results

**Study 1:**

- Effect of Day ( $P=0.05$ ) and Groups ( $P<0.01$ )
- No significant difference between milk replacer or sow milk in terms of correct evaluation of empty or filled stomach ( $P=0.72$ )
  - so the two groups were merged and are referred to as milk.
- Tendency to an effect of bodyweight (BW,  $P=0.08$ ) of correct evaluation of empty or filled stomach.
- 1-day old piglets
  - 65% with an empty stomach was evaluated as having an empty stomach and 71% of milk piglets was evaluated as being filled with milk.
- 4-days old piglets
  - 60% with an empty stomach was evaluated as having an empty stomach and 83% of milk piglets was evaluated as being filled with milk.
- It was more likely to evaluate if piglets stomach was empty or filled if piglets had lower BW.
- There was a significant difference ( $P=0.01$ ) between the ten examiners and their OR varied from 2.3 to 16.7.



**Study 2**

- The behaviour of piglets with an empty stomach at the time of death started to deviate from the behaviour of litter mates at litter equalization.
- In the last 48-hours before death, piglets gradually missed more nursing's, visited the milk cup more often and gradually spend more time in the creep area.

## Conclusion

- Palpation of piglet's stomach is not a valid method for identifying starving piglets in practice.
- Large variation between the trained examiners.
- The behaviour of piglets with an empty stomach at the time of death can be used to identified starving piglets.

## Acknowledgements

We gratefully acknowledge business partners, technicians, farm owner and farm personal for contributing to this project.

CONTACT: Vivi Aarestrup Moustsen | Livestock Innovation | SEGES Innovation | +45 4062 3885 | vam@seges.dk



SUPPORTED BY  
**Danish Pig Levy Fund**

**SEGES**  
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