RISK FACTORS FOR WEANED PIGLET MORTALITY DURING TRANSPORT

Swine Innovation Porc

MILLIONS of weaned piglets are transported within & outside Canadian provinces annually

BUT, RECORD-BASED INVESTIGATIONS OF WEANED PIGLET MORTALITY DURING TRANSPORT ARE RARE

Identifying potential risk factors associated with DOA can help identify strategies to reduce these risks

Previous research found higher DOA rates when average daily temperatures were above 25℃ & trip distances >1,500km[1]

RESEARCH OBJECTIVE: WHAT TRIP FEATURES ARE RISK FACTORS FOR INCREASED MORTALITY DURING WEANED PIGLET TRANSPORT?

TRANSPORT RECORDS & ANALYSIS:

~6,200 weaned piglet transport records from 5 Canadian production companies, representing 6.9 million piglets transported from 2014-2018

Descriptive analysis was used to explore effect of trip & environment characteristics on %DOA.

Average piglet weight:
5.7 kg (4.1-7.9 kg)
Load weight/# of piglets

Median load size:
1,112 piglets
(29-3,433 piglets)

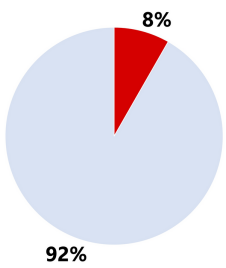
Transport event types:
Domestic: 71%
Exports: 29%

Median transport duration:
0.5 hr (<5 min-32.6 hr)

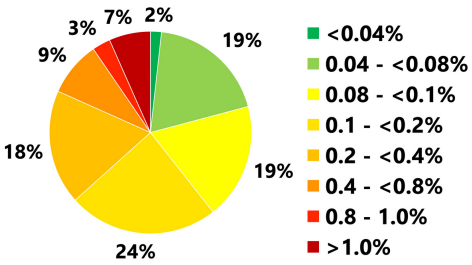
Trailer types:
Potbelly: 37%
Straightdeck: 51%
Other: 12%

Origin farm locations:
ON: 61%, SK: 33%,
AB: 6%

WEANED PIGLET MORTALITY DURING TRANSPORT WAS UNCOMMON:



1a. *Percent of shipments **with** and without DOAs.*



1b. *Proportion of mortality rates for shipments with 1 or more piglets recorded DOA.*

Average %DOA for all transport events was 0.027% (min: 0.0, max: 6.2%).

Most transport events had no mortality occur (Fig. 1a). When mortality did occur, rates of 0.1 to <0.2% were most represented in the dataset (Fig. 1b).

TRANSPORT FACTORS & MORTALITY:

TRAILER TYPE

Greatest %DOA found with:

Potbelly trailers: 0.055%

TRIP FACTORS

Greatest %DOA found with:

Durations 16-28h: 0.144%
Multiple pick-ups: 0.064%
Export events: 0.080%

EXTERIOR ENVIRONMENT

Greatest %DOA found with:

Months Dec-Feb: 0.042%
Temps -30.3 to -7.0℃: 0.058%

Information that was not available from all records: Driver ID; stocking density/space allowance; actual duration of transport (including stops); loading & unloading durations.

Next steps: *Regression analysis to quantify the relationships between these variables on %DOA, while controlling for interactive and confounding effects.*

Value of this research to the Canadian swine industry:

- ☑ Helps understand which transport factors increase piglet DOA rate
- ☑ Informs future research on transport best practices for weaned piglets
- ☑ Demonstrates the industry's commitment to swine welfare

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References: 1. Zhao *et al.* (2016). *Trans ASABE.* 59*(4)* 943-948.

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