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Congress:
Porc Show

Research domain: (1 word)
Transport

Title: (short)
Risk factors for weaned piglet mortality during transport

Short description: (60 words)
Submission language: English
This poster descriptively explores and identifies risk factors for increased mortality during weaned piglet transport events using records from over 6,000 trips provided by 5 Canadian production companies. The average percent of shipped piglets found dead on arrival for all trips was <0.03%. Mortality rates by trailer type, trip duration, exterior environment, and other variables are presented.

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Summary: (3000 characters including spaces)

Transporting piglets at weaning is a common practice in the Canadian swine industry. However, few investigations have examined what factors are associated with increased piglet mortality during transport. Analysis of transport records can identify risk factors associated with increased numbers of piglets found dead on arrival (DOA) and therefore contribute to development of strategies to reduce these risks. The objective of this research is to identify which trip features are associated with increased piglet mortality. Over 6,000 transport records were provided by 5 Canadian swine production companies, representing approximately 6.9 million piglets transported between 2014 and 2018. The average weight of piglets was 5.7kg (min: 4.1, max: 7.9). Transport events originated mostly in Ontario (61%), followed by Saskatchewan (33%) and Alberta (6%). Trips were classified mostly as domestic transport events (71%), with export events occurring less often (29%). Just over one third of the transport events used a potbelly-type trailer (37%), with the remainder involving different trailer types (63%: straightdeck or other). Considerable variation in average environmental temperatures of the trips (-30.3 to 28.5°C) and trip duration (<5min to 32.6h) were present. Most trips (71%) were less ≤5h in duration followed by 5-16 h (14%), and >16-28h (14%). Very few trips were >28h (1%). The average

percent of piglets found DOA for all trips was 0.027% (min: 0.0, max: 6.2%). Only 8% of shipments had DOAs recorded. The mortality rates of multiple trip factors were compared numerically. Trips that included more than one loading stop had greater average mortality recorded (0.064%, SD: 0.30) than those that did not (0.017%, SD: 0.15). Export trips had greater average mortality (0.080%, SD: 0.33) than non-export trips (0.005%, SD: 0.07). Trips using potbelly trailers had greater average mortality (0.055%, SD: 0.27) compared to trips using other trailers (0.010%, SD: 0.12). The greatest average mortality rate occurred at temperatures between -30.3 and -7.0°C (0.058%, SD: 0.28) and during winter months (Dec-Feb: 0.042%, SD: 0.23) compared to other temperature and month categories. Regarding trip duration, moderately long trips experienced the highest DOA rate (>16-28h: 0.144% DOA, SD: 0.45), followed by long trips (>28h: 0.086% DOA, SD: 0.22). These results suggest that stopping events, potbelly trailers, cold environmental temperatures, and long trip durations are risk factors for increasing weaned piglet mortality and potential areas for strategies to reduce the risk of DOAs occurring during transport.