

The behaviour of pigs during loading, transport, unloading and lairage

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### Why behaviour?

- Non-invasive way to assess welfare
- Tells us about pig comfort, stress
- Correlate with physiological measures:
  - Lying, standing, running, fighting
    - Relationships with heart rate, body temperature
  - Fighting, slips/falls
    - Relationships with injuries, carcass quality

### Methodology

- 11 weeks (6 summer, 5 winter)
- 1 truck (pot belly)
- 8 hr transportation
  - Saskatoon, SK to Brandon, MB
- Observed pigs during loading, transport, unloading and lairage

### Pot belly truck

### Behaviour methodology

- Loading-
  - All pigs moved to load-out pen
  - Segregated into groups of 4 or 5 pigs
  - Electric prod used (standard practice)
  - Live observations by two trained observers
- Duration (along alley, up chute, up ramps)
- Slips, balks, vocalizations
- # electric prods necessary

### Behaviour methodology

- On truck- by compartment
- Behaviour recorded using still image digital cameras in protective boxes
  - Observed at 5 minute intervals
- Standing, sitting
- \*\*Data pending

## Behaviour methodology

- Unloading- by compartment
- Live observations by two trained observers
- Electric prods used



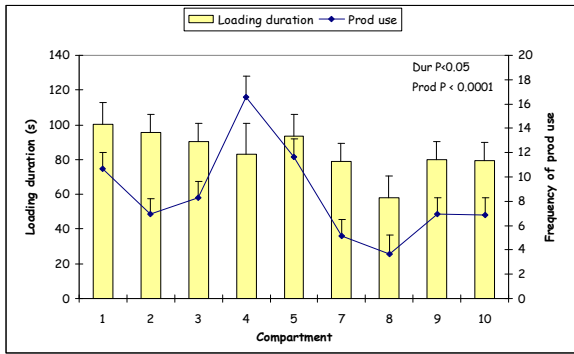
- Duration
- Slips, falls, piling up, turning

## Behaviour methodology

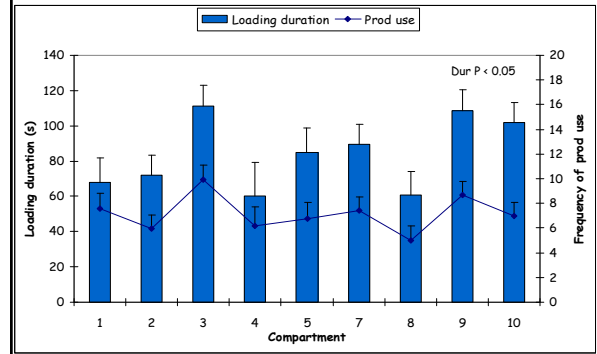
- Lairage- mixed compartments into 4 pens
- Live observations by one trained observer
  - Sequential scan sampling of lairage pens for 1 hr at approximately 5 min intervals

- Recorded total # of pigs lying
- Latency to rest (> 75% of pigs lying)

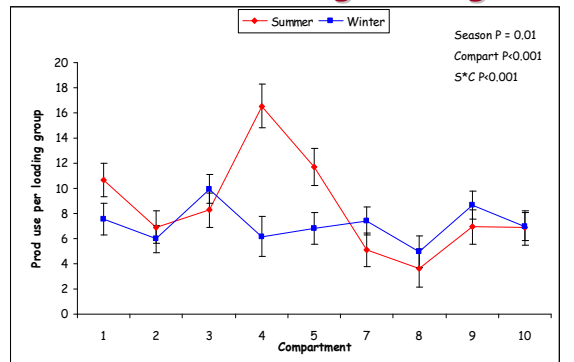
## Loading in summer



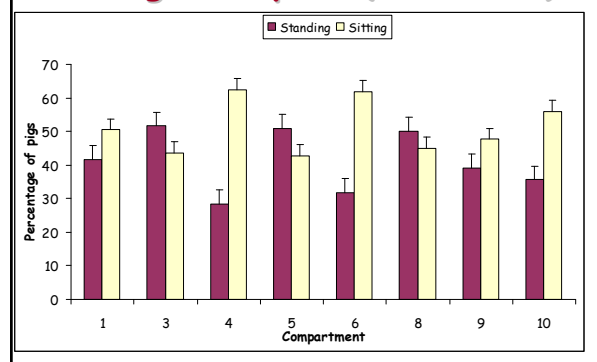
## Loading in winter



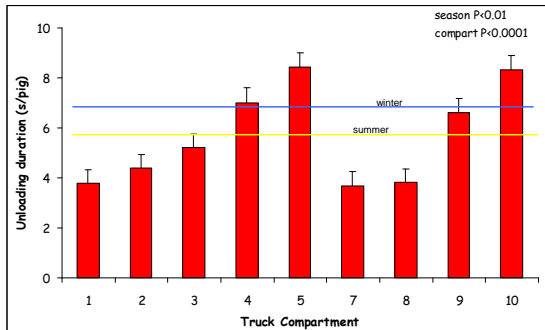
## Prod use during loading



## During transport (\*\*eastern)



## Unloading duration



## Behaviour during unloading

	Slips	Overlaps	Backwards
Season			
Summer	2.17 ± 0.41	1.52 ± 0.24	1.26 ± 0.25
Winter	1.69 ± 0.44	0.29 ± 0.26	0.18 ± 0.26
Compartment			
1	1.69 ± 0.68	0.81 ± 0.40	0.24 ± 0.43
2	3.42 ± 0.60	0.43 ± 0.36	0.77 ± 0.38
3	3.09 ± 0.58	1.10 ± 0.35	1.54 ± 0.36
4	1.02 ± 0.95	0.45 ± 0.57	0.34 ± 0.61
5	2.59 ± 0.95	1.06 ± 0.40	0.33 ± 0.42
7	0.79 ± 0.58	0.60 ± 0.35	0.24 ± 0.36
8	0.59 ± 0.71	0.63 ± 0.42	0.52 ± 0.45
9	2.32 ± 0.59	1.88 ± 0.35	1.24 ± 0.37
10	1.82 ± 0.58	1.20 ± 0.35	1.24 ± 0.36
P values			
Season	0.0318	< 0.0001	< 0.0001
Compartment	< 0.0001	0.0906	0.0159

## Latency to rest in lairage

- Effect of season (P<0.0001)
  - Summer latency: 15.60 ± 2.13 min
  - Winter latency: 29.89 ± 2.31 min
- No effect of compartment
- No interaction



## Summary

- Loading in summer longest for top level
  - Climbing a ramp
    - physical exertion
  - Most prod use for compartments 4, 5
    - ramp + 180° turn, 2 ramps
- Loading in winter longest for pot belly
  - Descending a ramp (cold?)

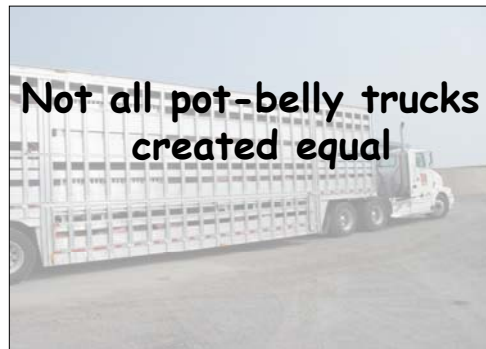


## Summary

- Seasonal effects on unloading behaviour related to speed?
- Unloading longest when involved climbing a ramp (from pot) or making 180° turn
- Ramps associated with behaviour that could lead to injuries
  - Both for climbing, descending ramps
  - Slips, overlaps, unloading backwards

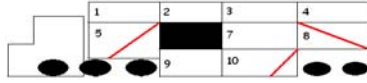
## Caveat

Not all pot-belly trucks created equal

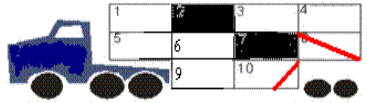


## Different pot belly trucks

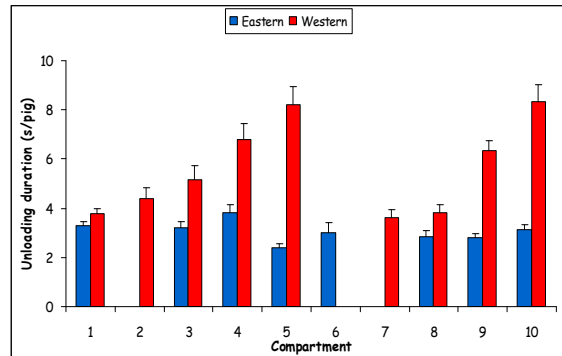
Western trials



Eastern trials



## Comparison with eastern trials



## Conclusions and future research

- Ramps and turns negatively impact pig welfare during loading, unloading
  - Alternative- hydraulic floors
- Need to better understand impact of:
  - Angle of ramp
  - Alley width for ramps
  - Space available for turns
  - Handling methods

