



Better Training for Safer Food *Initiative*

Training course on “Animal Welfare in transport”

Practical strategies to improve
pre-transport handling and
transport conditions, and reduce
losses

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24 – 27 June, 2014



NAI

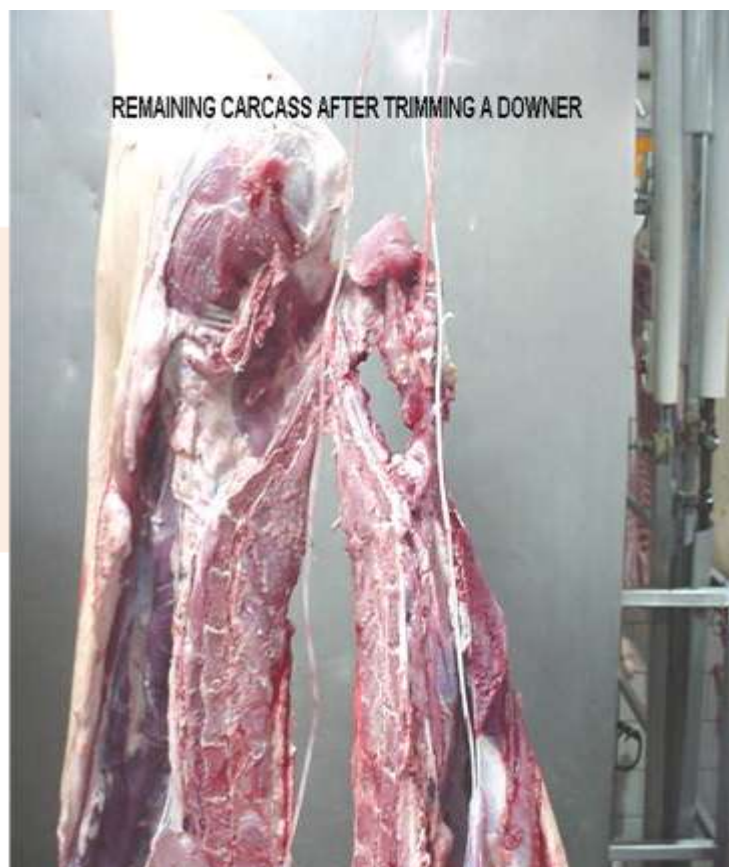


NANI

Incidence of “downers” at Canadian slaughter plants

- No official statistics available
- Data obtained in a survey of 104 transports (Sunstrum et al., 2006)

IMPACT OF THE FATIGUED PIG SYNDROME ON MEAT LOSSES



WHO IS RESPONSIBLE FOR PIG LOSSES DURING TRANSPORT???



25%



16%



16%



EFFECT OF THE FARM

Farm design

- Distance
- Alleys
- Lighting
- Air flow
- 90° corners

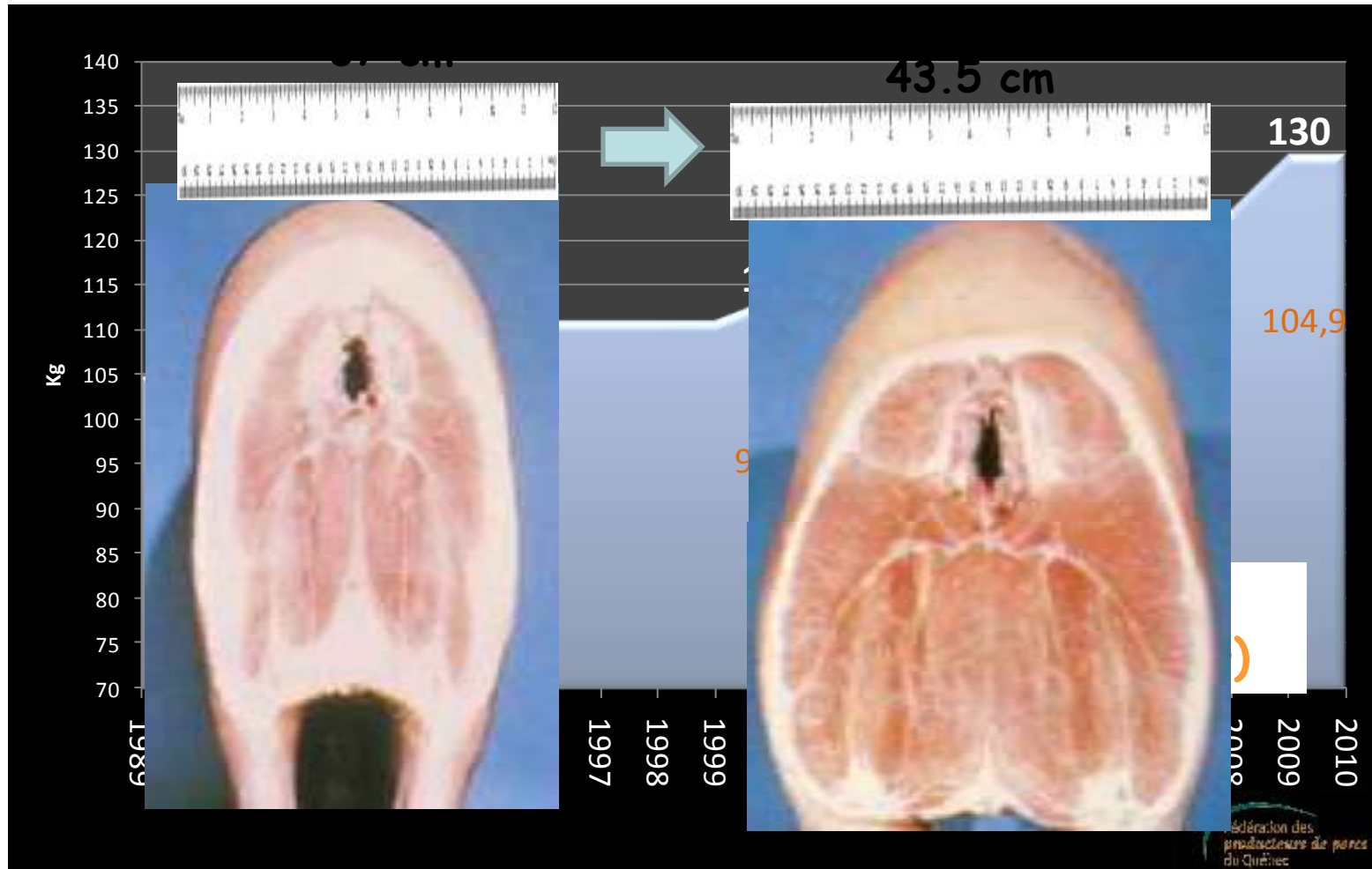
Preparation for transport

- Feed withdrawal
- **Handling at loading**
- Mixing unfamiliar groups





HOW PIG WEIGHT AND CONFORMATION CHANGED OVER THE YEARS



Farm design..as it was and it is now!



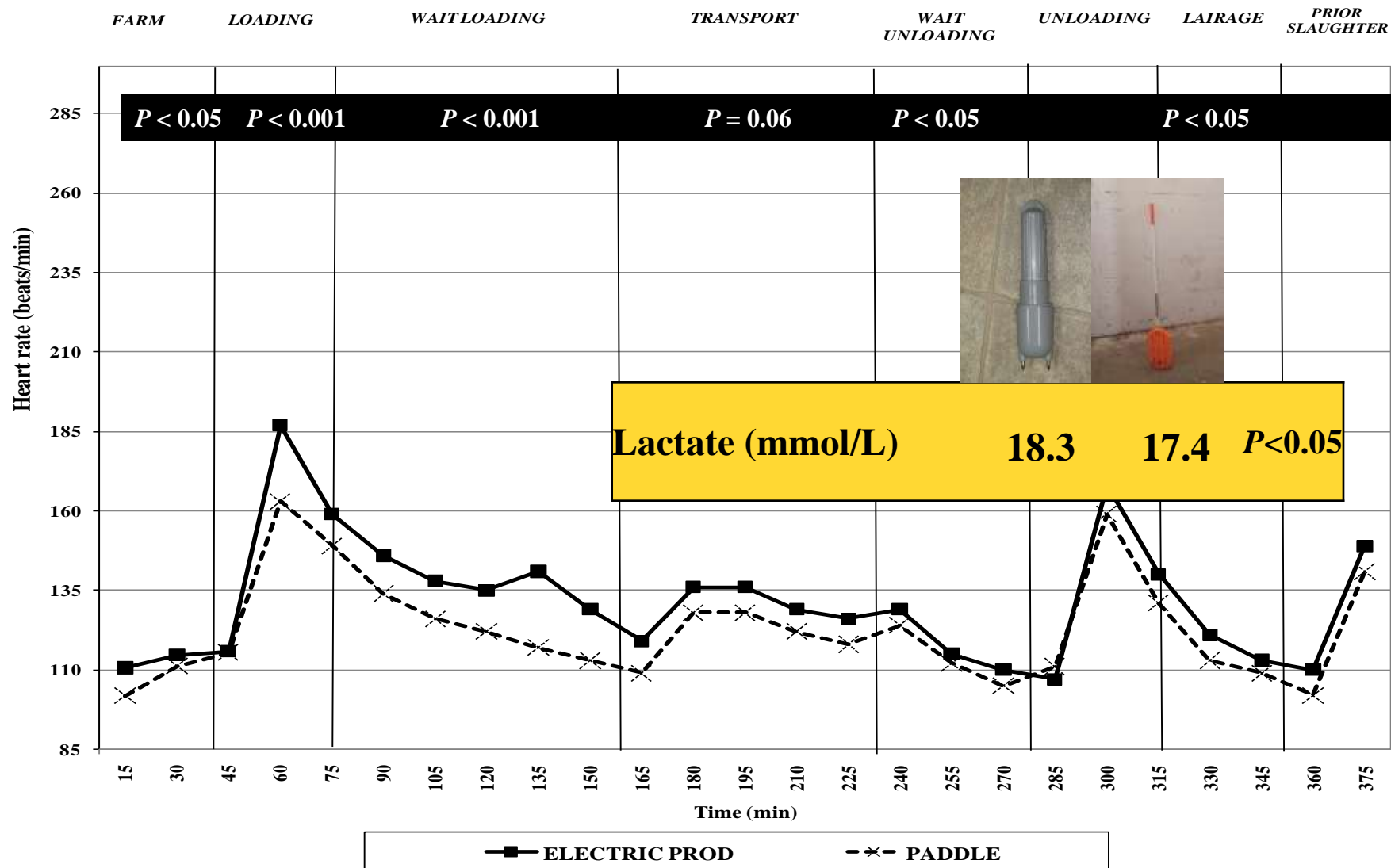
0,91 m wider





DO WE HAVE ALTERNATIVE TOOLS?





NANI AT THE SLAUGHTER PLANT



0 %



2.5 %

TRANSPORT OF PIGS



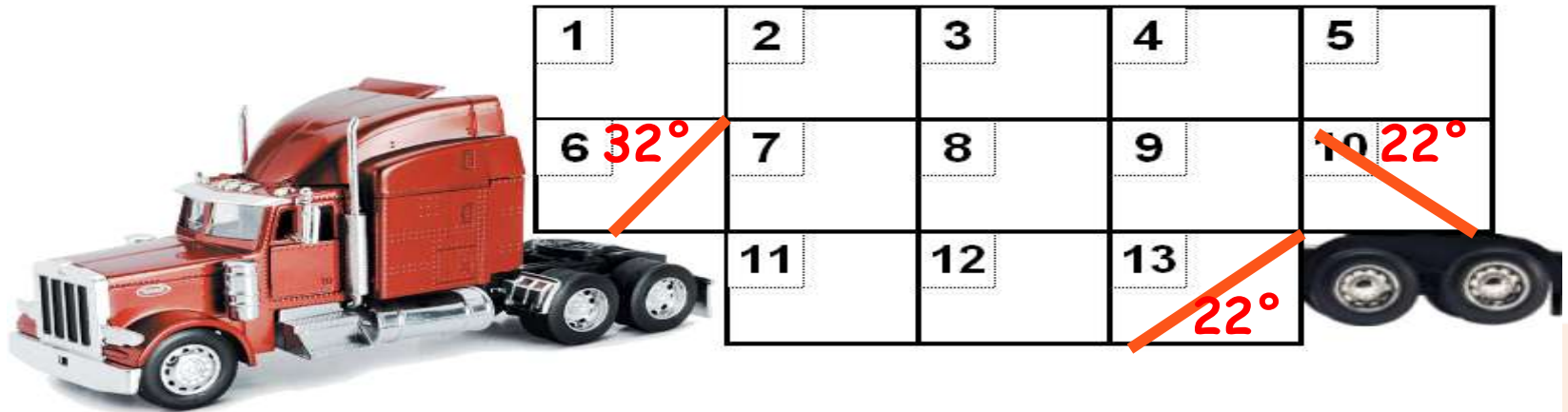
- **Truck design**

- **Season of the year**

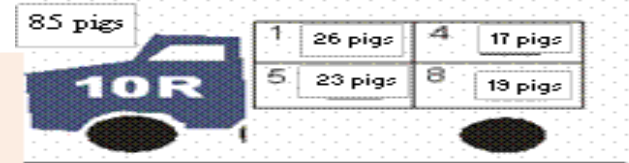
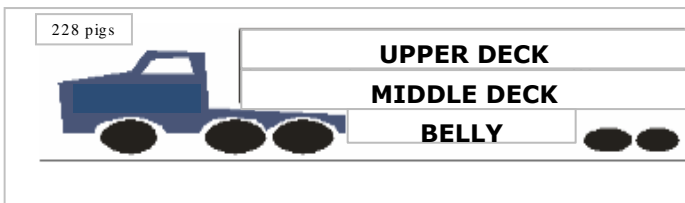
- **Density**

- **Transport time and/or distance**

"POT-BELLY" TRAILER



EFFECTS OF THE TRAILER DESIGN ON ANIMAL LOSSES DURING TRANSPORT



Type of vehicle	Deck position	Compartment	NANI pigs (n) ^a		NAI pigs (n)		DOA (n)	
			Summer	Winter	Summer	Winter	Summer	Winter
10W	Upper deck	1						
		4						
	Lower deck	5	1				1	
		8						
PB	Upper deck	1	1				1	1
		2					1	
		3			2	1	1	
		4		1			1	
	Middle deck	5	1					
		6	1					
		7	2				1	
		8						
	Belly	9						
		10	2				1	

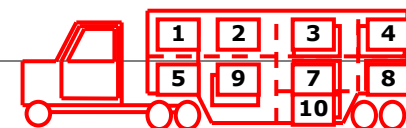
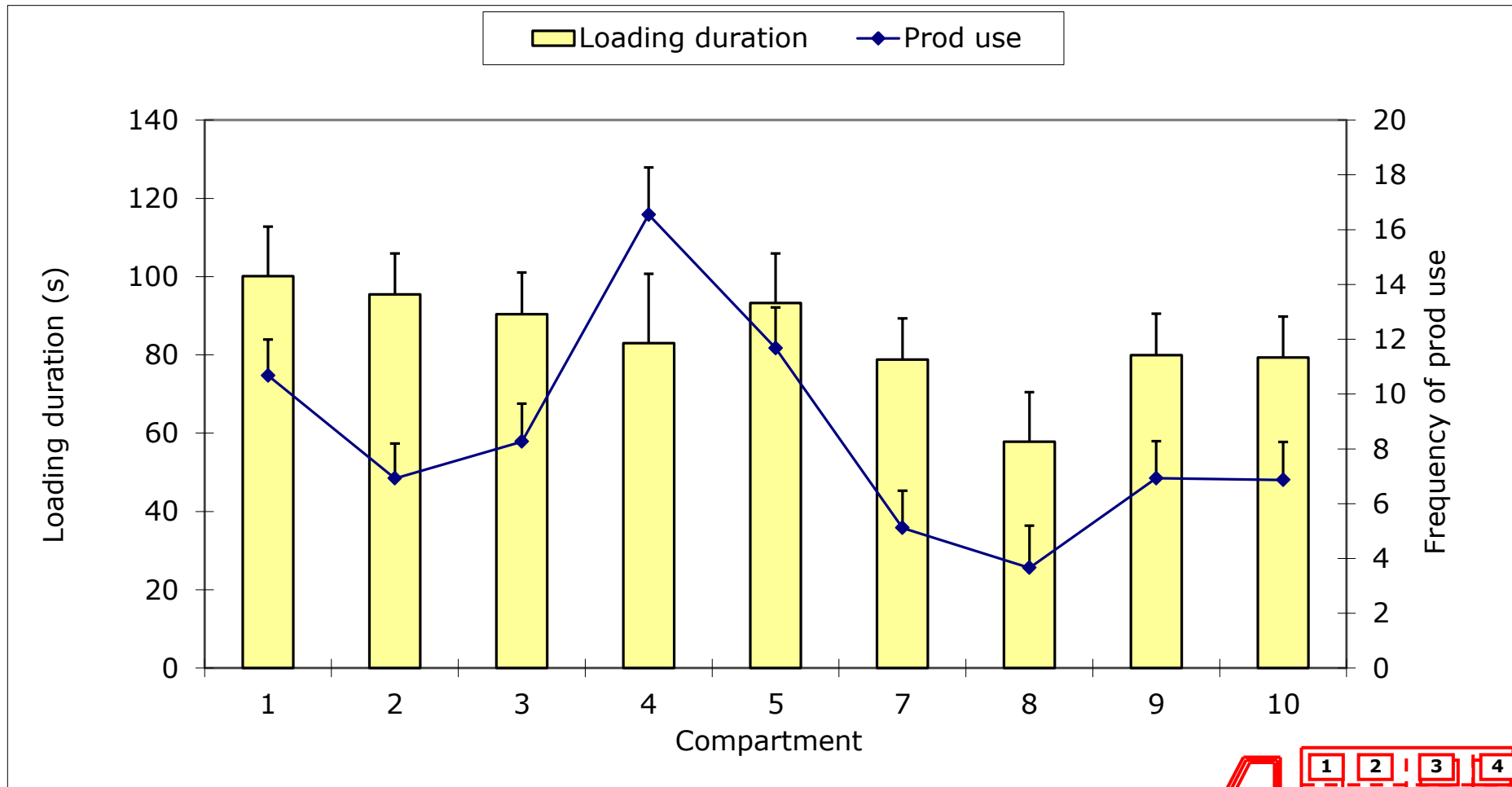
Total losses

2

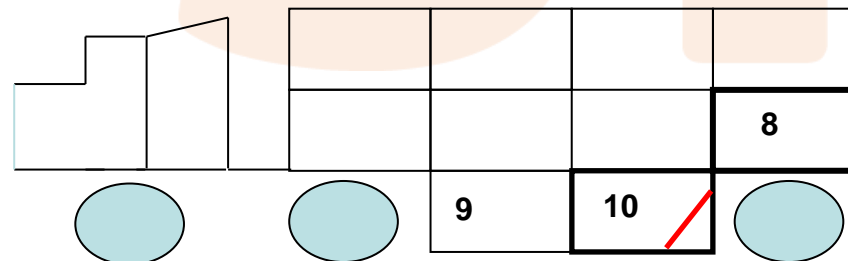
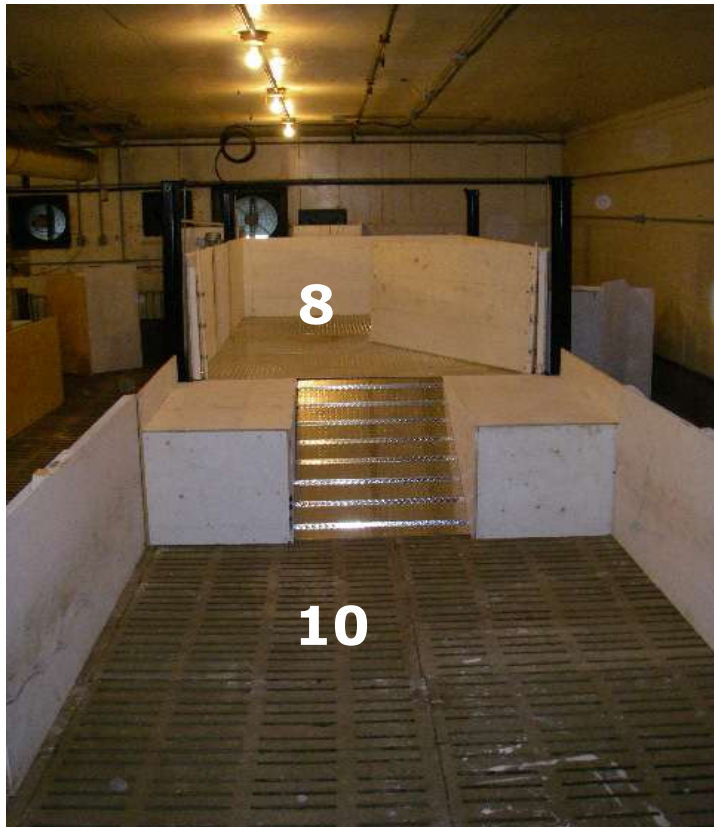
16

^a NANI: non-ambulatory, non-injured; NAI: non-ambulatory, injured; DOA: dead-on-arrival

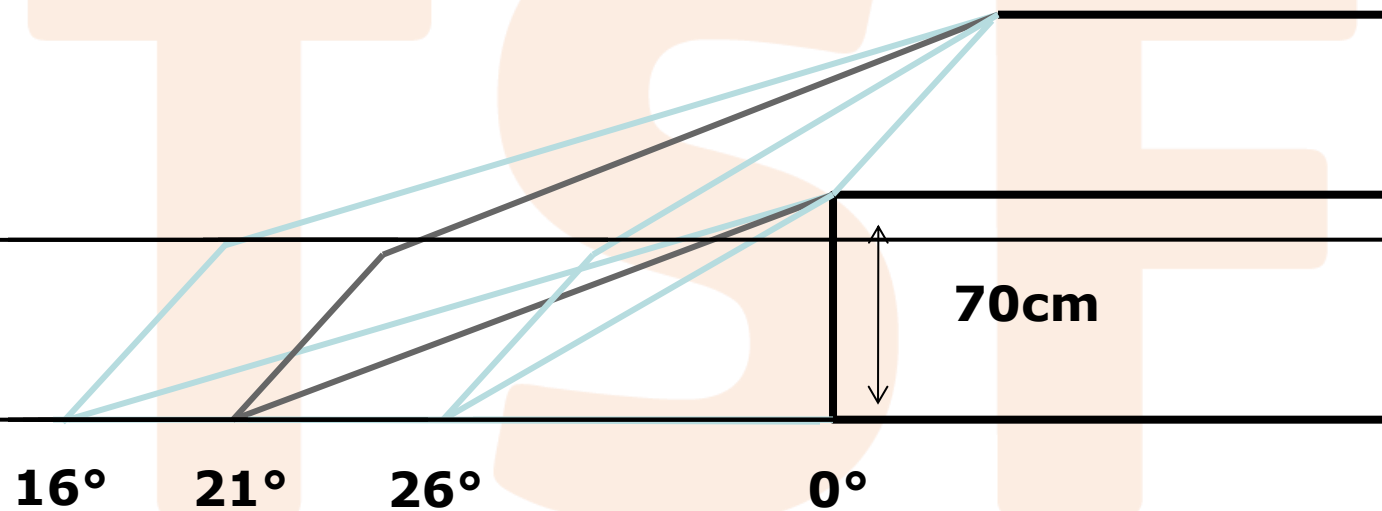
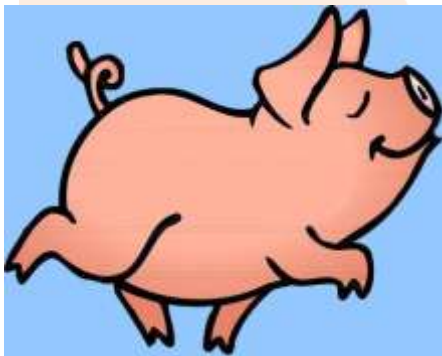
TRAILER DESIGN AND EASINESS OF HANDLING



EFFECT OF THE RAMP DESIGN ON HEART RATE AND EASINESS OF HANDLING

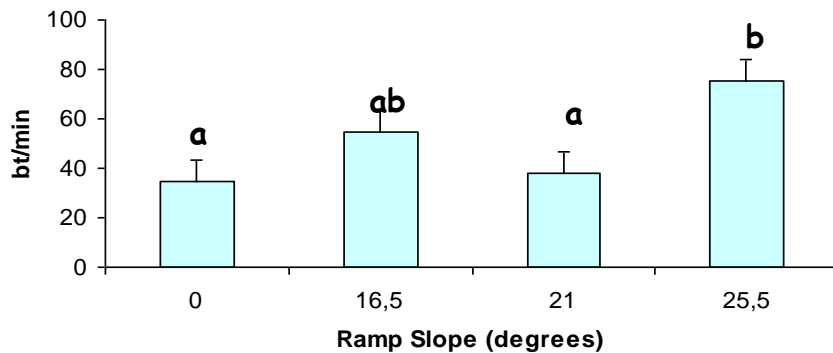


STUDY OF THE RAMP SLOPE

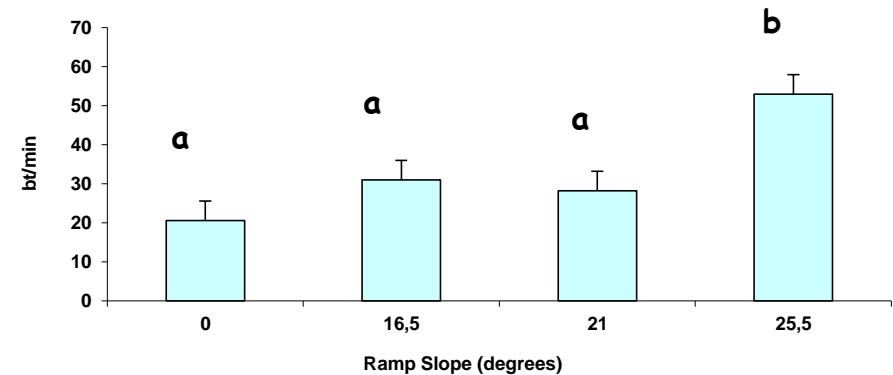


EFFECT OF THE RAMP SLOPE ON HEART RATE AND EASINESS OF HANDLING

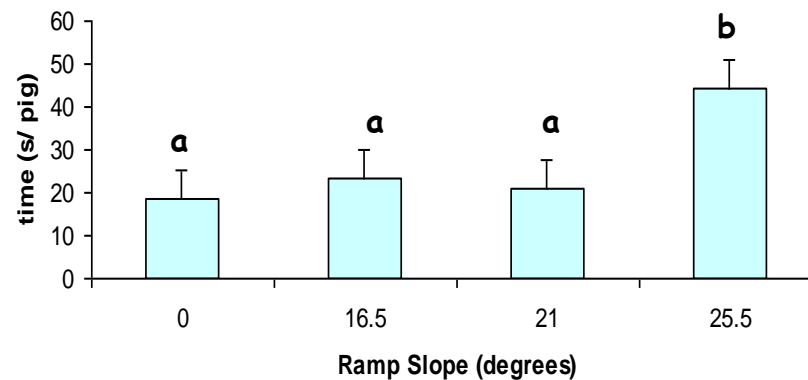
Difference Max - min Heart rate in Pigs



Difference Max - min Heart rate in the Handler



Unloading time



OTHER DESIGN PROBLEMS ...

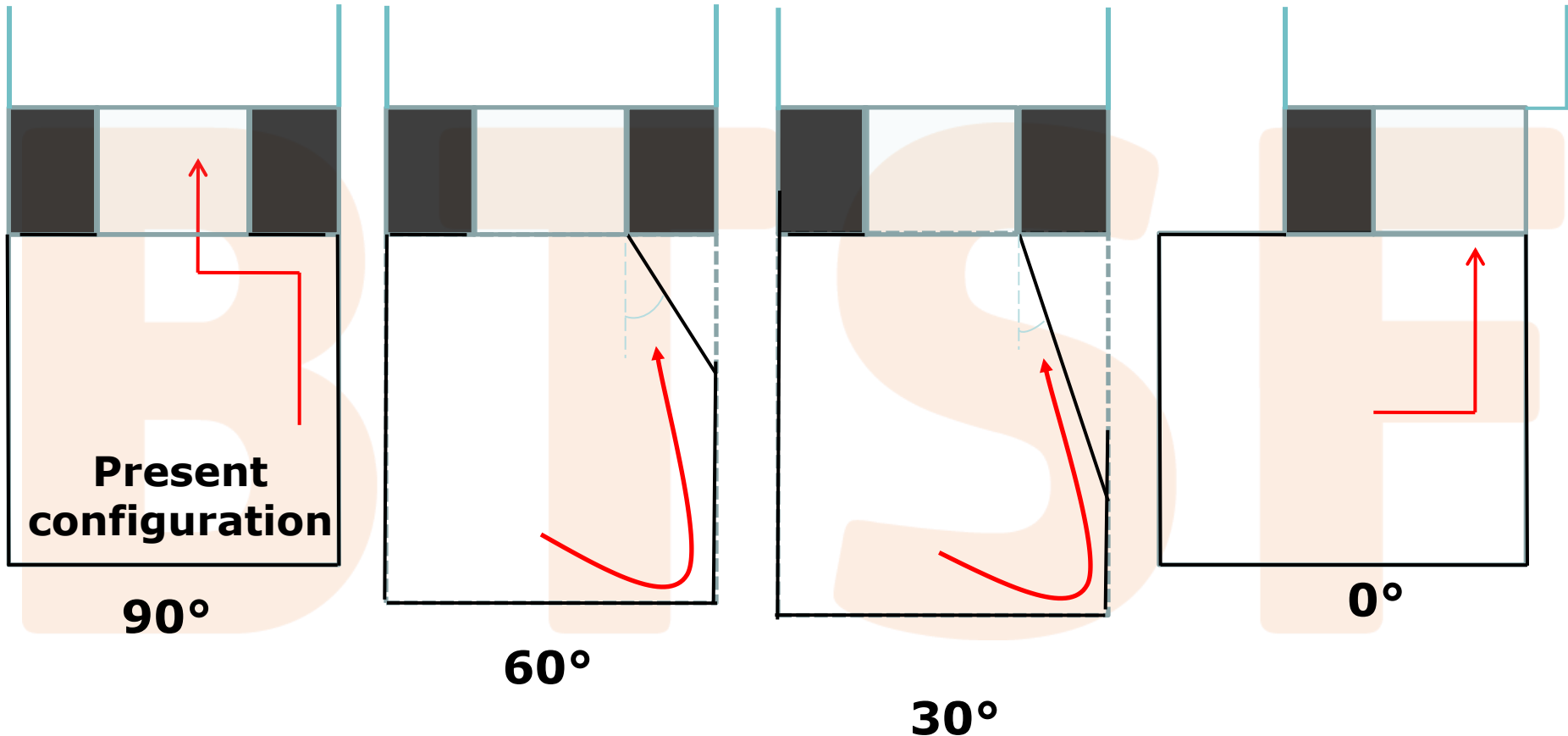
**Access
angle to
the
ramp**



Step



STUDY OF THE ACCESS ANGLE



→ 90° angle: animals stuck and dead-end

→ 0° and 30° angle: ideal!

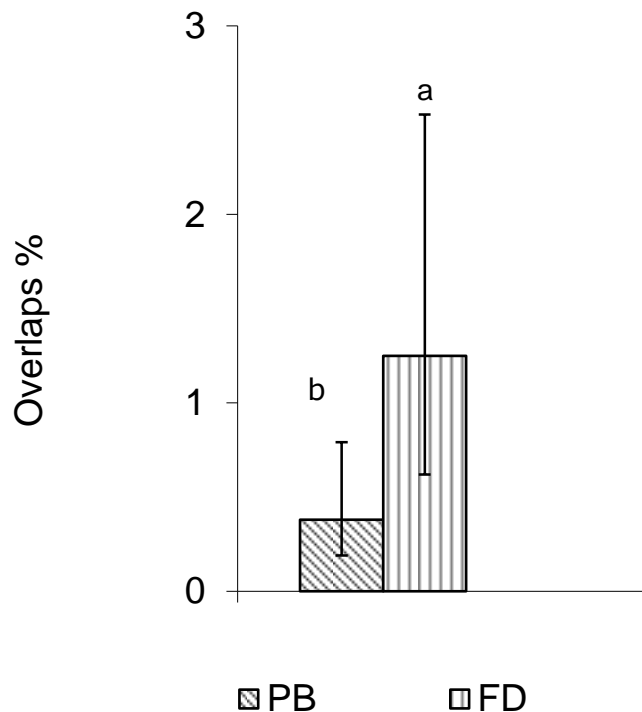
CAN THE FLAT-DECK TRAILER BE A SOLUTION?



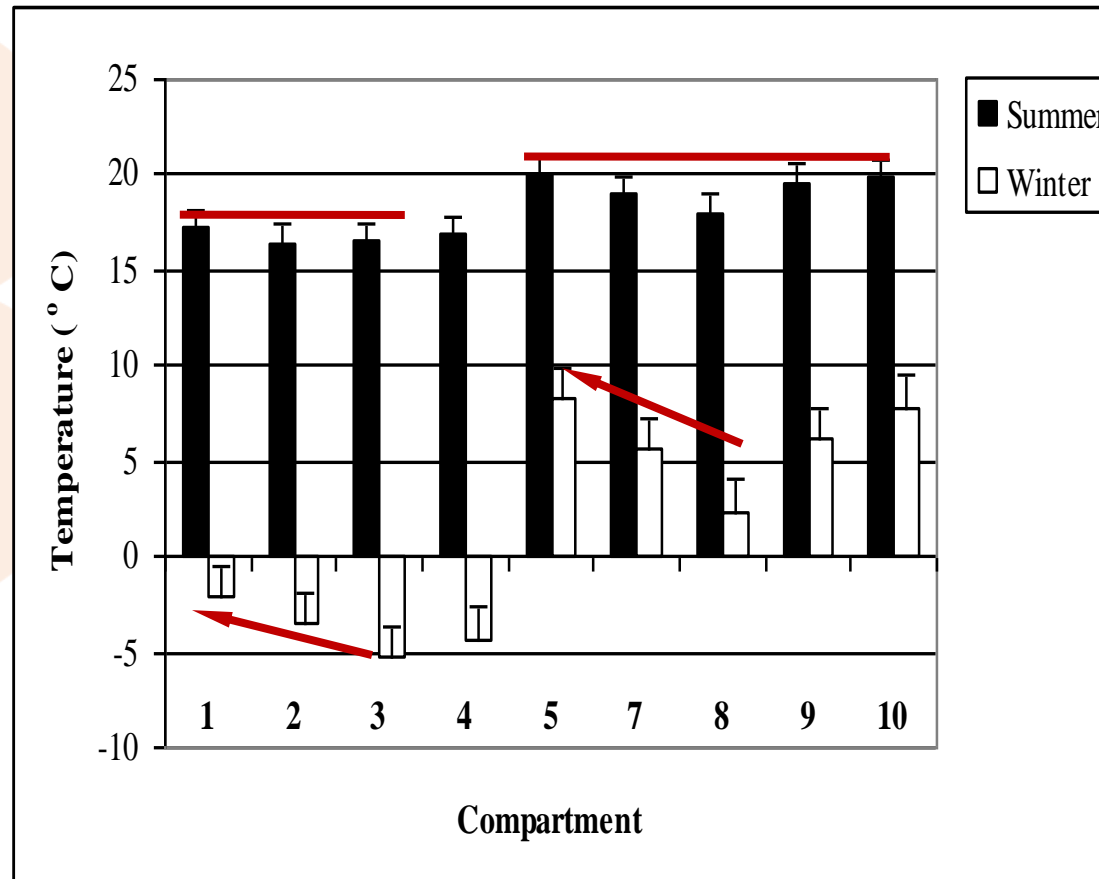
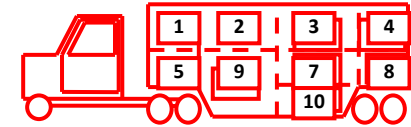
	Pot-belly	Flat-deck	SEM	P
CPK, log	3.40	3.26	0.04	0.006
pHu (SM)	5.77	5.74	0.02	0.05
pHu (AD)	6.04	5.97	0.03	0.01

HOWEVER, SOME POTENTIAL HANDLING PROBLEMS IN THE FD TRAILER

B

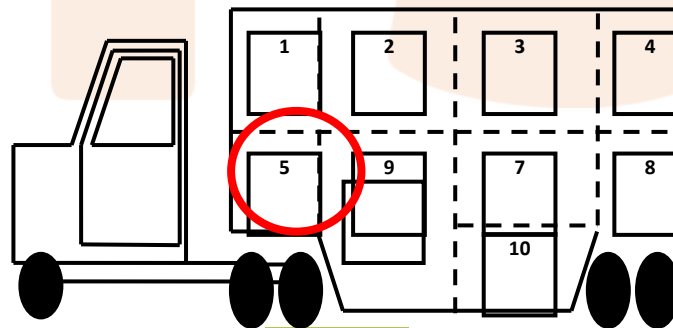


VARIATION OF INTERNAL TEMPERATURE DURING TRANSPORT



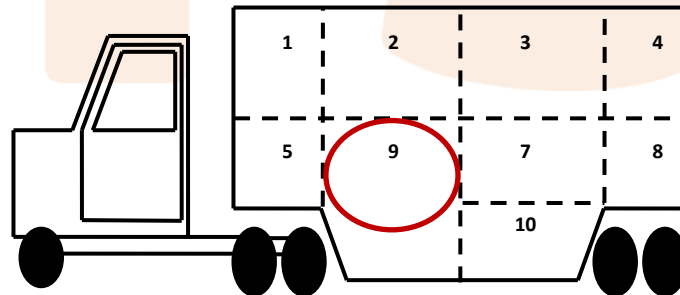


Compartment 5 (bottom-nose)

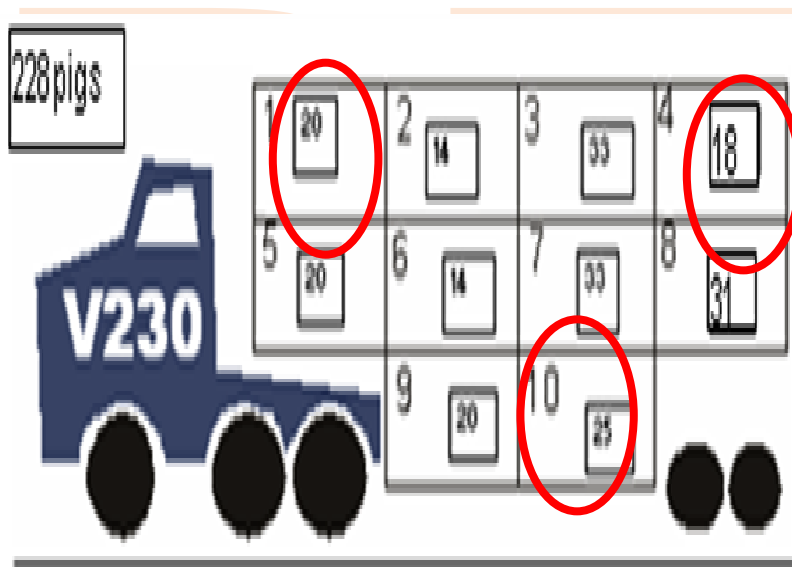




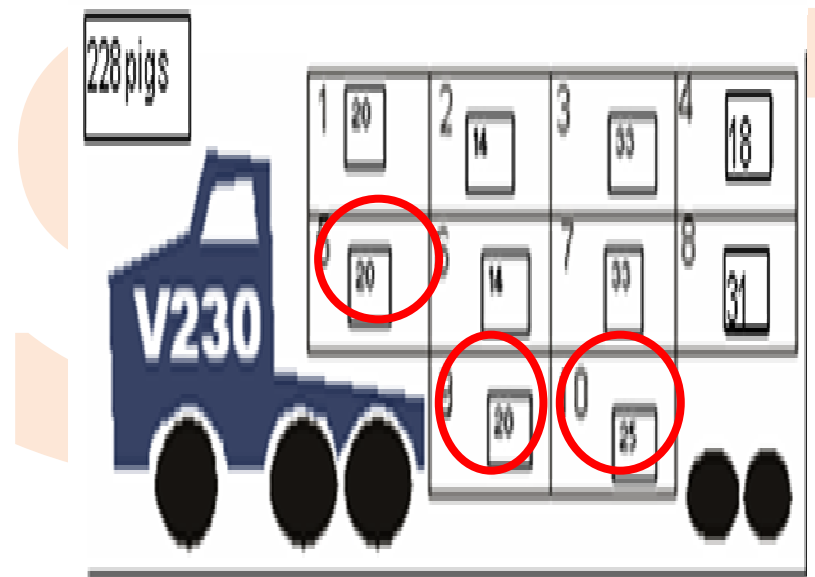
Compartment 9 (looking towards 5)



Variation of body and ambient temperature by compartment in a stationary trailer in summer



Body temperature

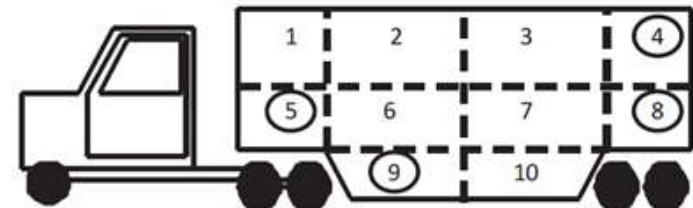


Ambient temperature



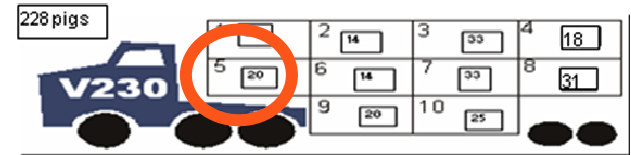
EFFECTS OF WATER SPRINKLING ON ANIMAL WELFARE AND MEAT QUALITY

- 2 trailers of 208 pigs per week for 12 weeks
- May to Sept 2011 shipped 2h from commercial farm to slaughter plant
- 4 test compartments per trailer

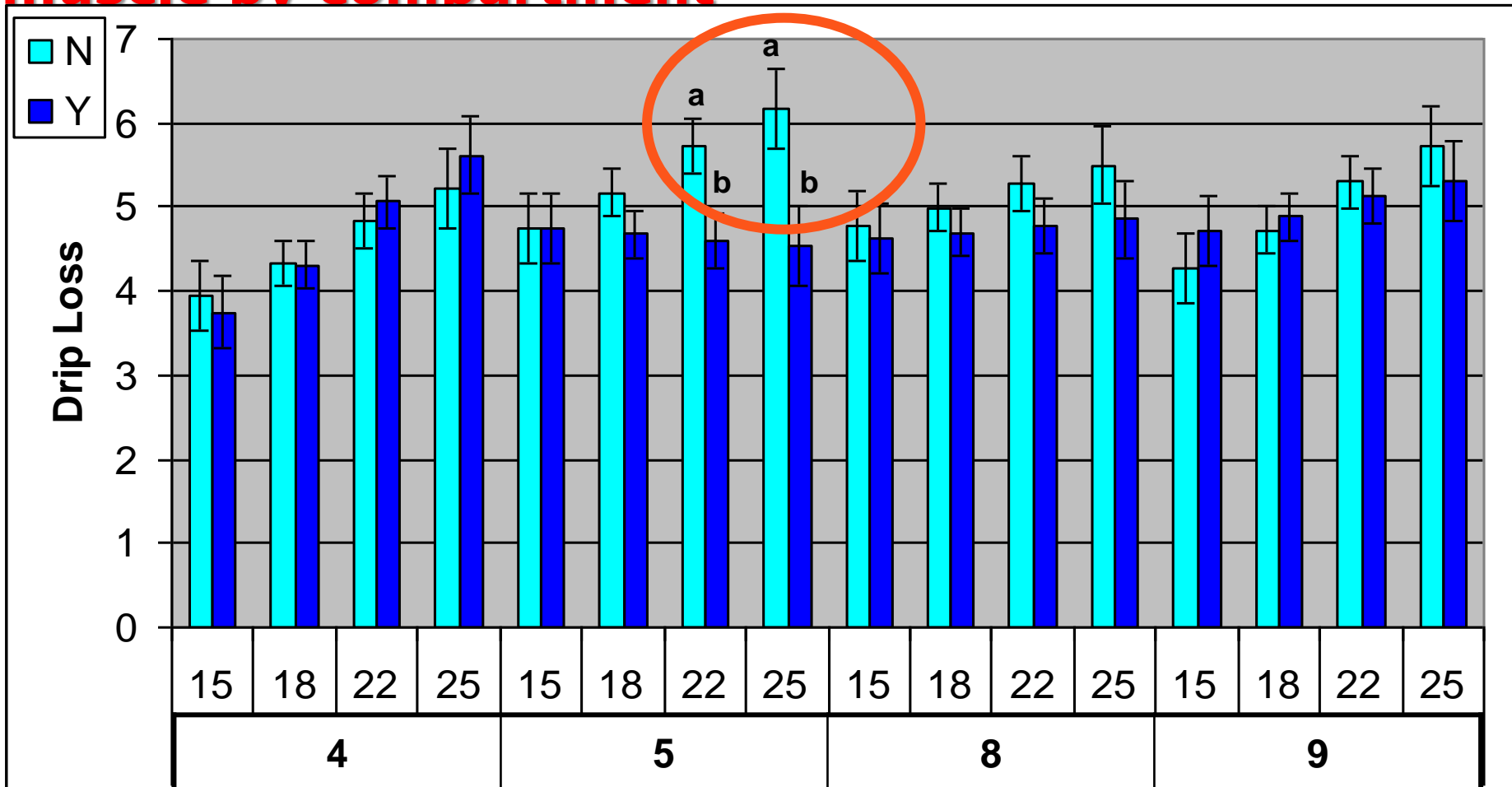


BEHAVIOUR IN THE LAIRAGE PEN

	Sprinkled	Not sprinkled	SEM	P
Standing, %	21.1	22.3	1.5	0.40
Sitting, %	7.8	10.5	0.5	<0.001
Lying, %	60.3	56.4	2.0	0.03
Drinking bouts, n	5.01	7.42	0.86	<0.001



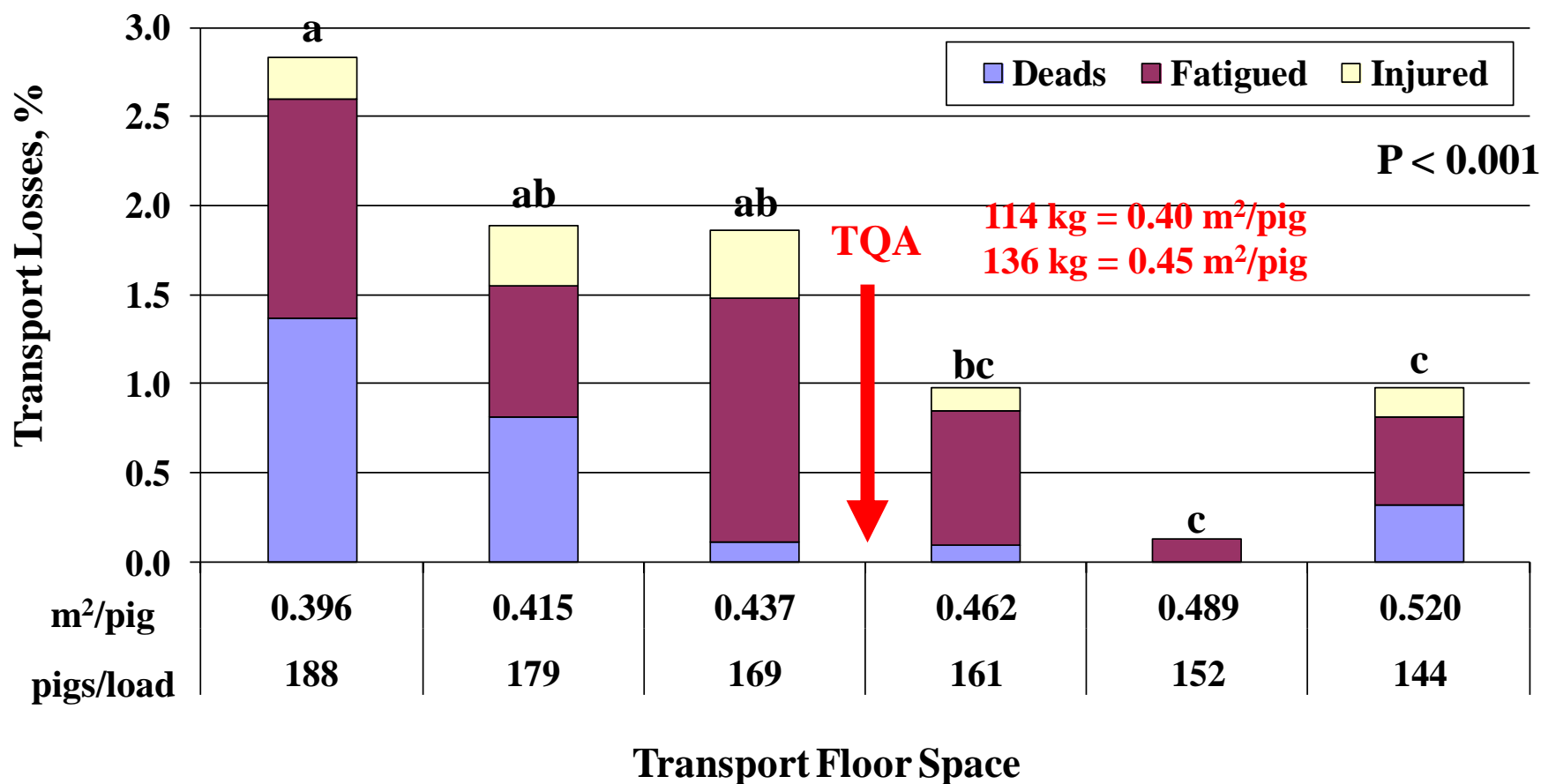
Drip loss (%) in the longissimus muscle by compartment



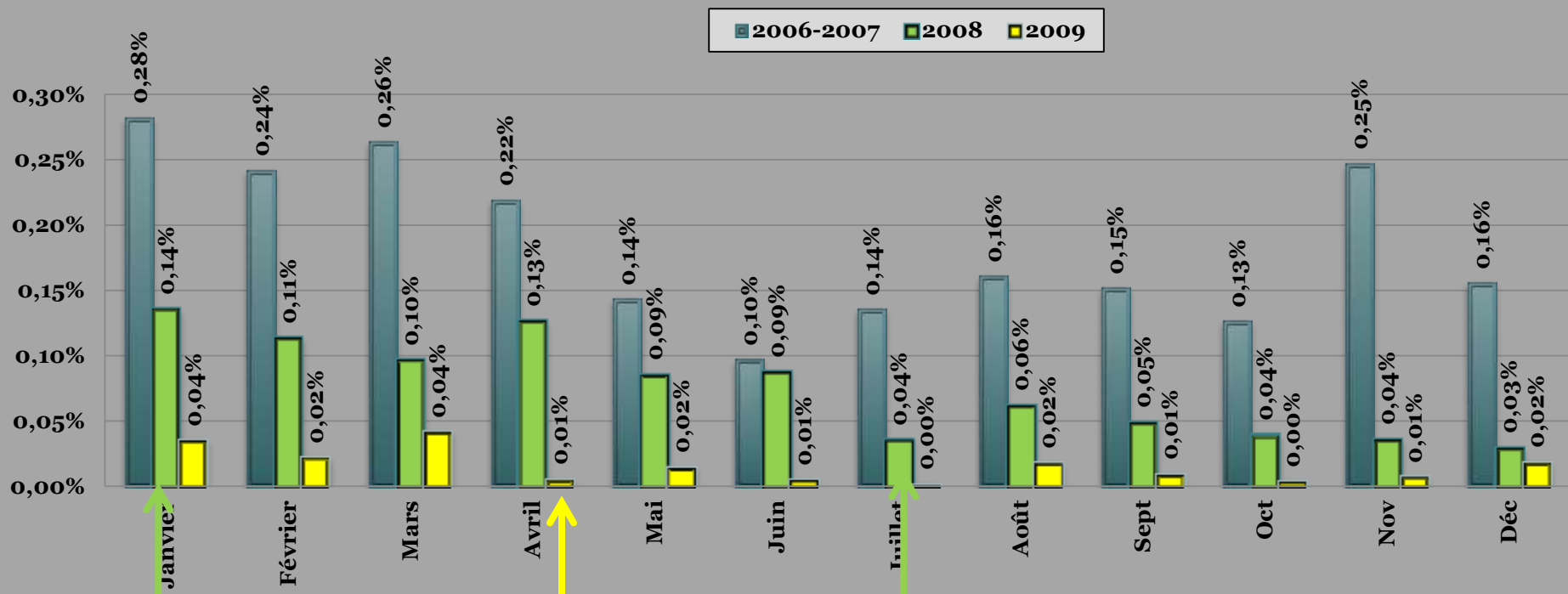
VENTILATION SYSTEMS



Respect recommendations to reduce losses



Fatigued pigs or downers on arrival to the abattoir from 2006 to 2009



Unloading
pigs with no
electric prods

Changed method of
payment to transporters
and handlers (slow
down at loading)

Application of recommendations
- Enhancing loading facilities
- No electric prods
- Handler training

A photograph of two pink pigs in a metal cage. The pig in the foreground is lying down, and the pig behind it is also lying down. A large light blue thought bubble with the word 'THANKS!' in bold black capital letters is positioned above the pig in the background. The cage has metal bars with circular openings. The floor of the cage is covered with straw and some food.

THANKS!

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