Organic farrowing conditions as an example for future conventional pig husbandry?

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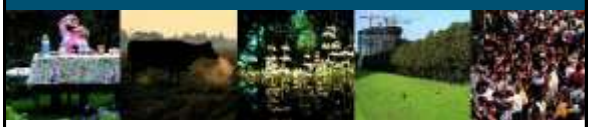

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Background

- Piglet mortality welfare and economic problem
- Conventional and Organic share problem
- Larger litters and lower birth weights in Organic
- Mortality conventional 12%, Organic 20%
- organic is ideal setting to study neonatal mortality with implications for future conventional systems
- Farmers play important role in project group

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Conventional versus Organic farrowing:

- Conventional:
  - crate 2.30 x 0.75 m, pen 2.50 x 1.80 m (almost 5 m²)
  - 3-4 week lactation
  - 14 liveborn piglets
- Organic:
  - free farrowing 7.5 m² indoor
  - 4 m² outdoor
  - Straw
  - 6 week lactation
  - 15-16 liveborn piglets

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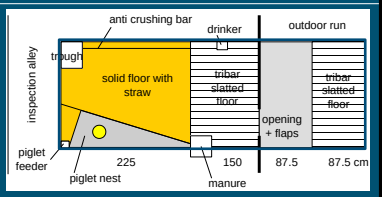
Experimental pen on research farm Raalte



- 2 x 3.75 m = 7.5 m² indoors
- 2 x 2 m = 4.0 m² outdoors
- Piglet creep with floor heating
- Daily fresh straw

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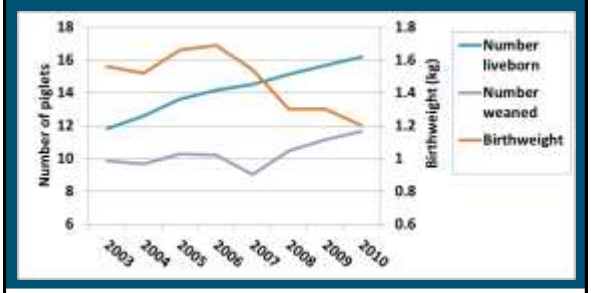
Development organic piglet mortality res. farm



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Experiments in the last 5 years:

- creep use and mortality
- dunging area
- additional heating
- extra straw
- accessibility of creep
- extra sow drinking water

one objective: Reduction of piglet mortality

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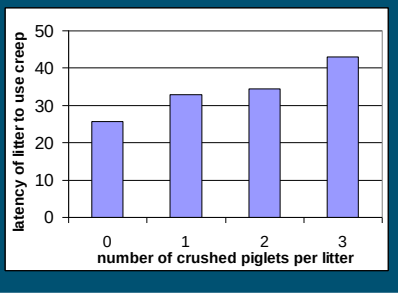
1) Latency in creep use and crushing

higher creep use gives lower mortality,



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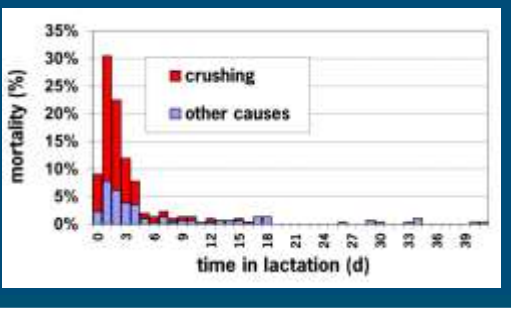
Time and cause of mortality



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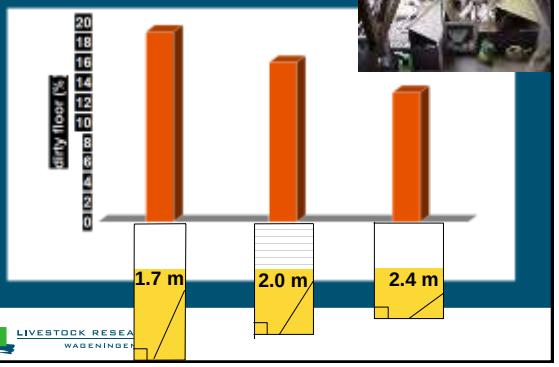
2) Pen width and floor hygiene



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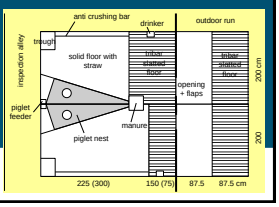
Solid Floor Size

- Hypothesis: better maternal behaviour and piglets survival on larger floor
- 2.00 x 2.25 vs 2.00 x 3.00 m solid floor
- Longer solid floors = less slatted floor
- Alternating within rooms

- No effect on survival
- Longer floor dirtier



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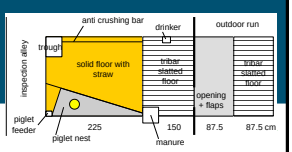
3) Additional Floor Heating

- Hypothesis: dryer, warmer, more vital piglets
- Floor heating in sow lying area 24-30 h postpartum
- Two parallel rooms (cold/warm) per 3 wks
- Mortality and causes
- Behaviour: location of sow and piglets



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Additional Floor Heating: Results

	"Cold"	"Warm"
N litters	83	83
Liveborn/litter	12.63	12.36
Weaned piglets/litter	10.12	9.94
Mortality (% of liveborn)	20.0	19.4
Crushed (% of died piglets)	56.3	60.1

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Additional Floor Heating: Results

- Behaviour:
  - All sows farrowed on the solid floor
  - 58% ("Cold") vs 50% ("Warm") of piglets in nest after 24 h
  - Post mortem: more empty stomachs in "Cold" piglets (58% ("Cold") vs 38% ("Warm"))

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4+5) Straw and accessibility of piglet nest

- Hypotheses:
  - Extra straw = maternal behaviour and less chilling of newborn piglets
  - Shorter flaps = piglets sooner in nest, separation sow-piglets
- 2x2 factorial design
- Recording of behaviour and performance

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Straw - Results

	Straw quantity	
	Low	High
n litters	56	56
liveborn/litter	13.3	14.5
weaning weight (kg)	12.45	12.07
n weaned	10.43	11.02
mortality (% of liveborn)	22.2	24.2

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Accessibility nest – Results

	Long flaps	Short flaps
N litters	56	56
Liveborn/litter	13.7	14.1
Weaning weight (kg)	12.39	12.14
N weaned/litter	11.02	10.43
mortality (% of liveborn)	19.7	26.7

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Straw and accessibility

- No interaction effects
- Straw: positive effects of drying up and insulation and negative of hampered locomotion and too attractive area around the sow
- Flaps: better accessibility but too much loss of heat

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Additional anti crushing bar

	"Pipe"	Control
Number of litters	54	55
Litter size at start	14,0	14,1
Birth weight (kg)	1,66	1,65
Number weaned	10,2	10,4
Weaning weight (kg)	12,1	12,6
Preweaning mortality (%)	27,1	25,5
Number piglets died	3,8	3,6
Number died by crushing	1,5	2,4
Position changes in 3 d.	182	217

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6) Water intake

- Extra water to stimulate feed intake and milk production
- Fraser and Phillips (1989)
- 3 days post partum 2x3 l water extra in feed trough
- Ad lib water from nipple
- Measuring total water intake per sow

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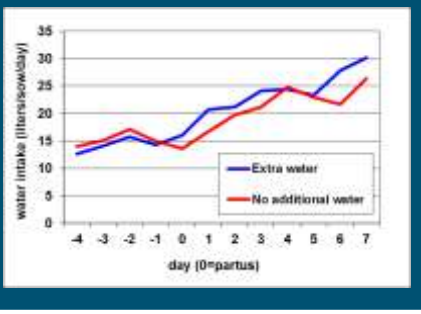
Days around partus and water intake (l/d)



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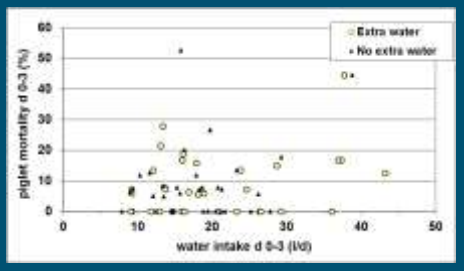
Waterintake (day1-3) and piglet mortality



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Nutrition: Sugars to improve and uniform follicles

	Control	300 g lactose + sucrose 5 d before insem.	300 g lactose + sucrose 10 d before insem.
N sows + litters	34	42	39
Total born	17.0	17.2	18.0
Liveborn	15.9	16.0	16.8
Birthweight liveb.	1.28 (0.32)	1.27 (0.30)	1.22 (0.36)
Crossfostered	-0.5	-0.3	-0.7
Weaned	11.4	11.0	11.9

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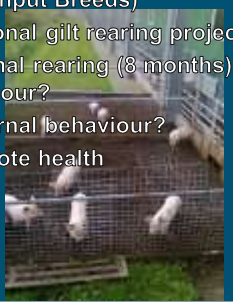
Preventing mortality peri partum and post weaning

- Running experiment (Low Input Breeds)
- Cooperation with conventional gilt rearing project
- Does organic or conventional rearing (8 months) effect later maternal behaviour?
- Does genotype effect maternal behaviour?
- Pasture for piglets to promote health



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Trends

- Ban on individual housing of pregnant sows will be followed by pressure to give farrowing sows more freedom
- Group housing of lactating sows is difficult
- Separation of dunging, lying and creep needs at least 6 m²
- Organic projects cooperate with conventional ones: housing, feeding, breeding, rearing, management

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Conclusions

- Not much to gain from “technical” improvements
- Vitality of newborn piglets is the keyword
- and management is crucial
- Study groups specialised on piglet survival
- Exchange with convential pig farmers

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With the right project teams organic and conventional pig projects are an ideal couple to develop future pig production hand in hand

Thanks for your attention!

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