Group Housing of Sows in The Netherlands

Herman Vermeer

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Presentation outline:

Current situation NL and EU

Basics of group housing

Experiments 1990-2010

System design based on animal needs

Dutch Welfare Regulations since 1998

Sows in groups except:

- Until 4 days after insemination (EU 4 weeks)
- 1 week before farrowing until weaning

2,25 m² per sow min. 1,3 m² solid floor

More than 40 sows: - 10% and less than 6: + 10%

For all new sow buildings

For existing buildings from Jan. 2013

Situation in NW-Europe in 2008

	NL	DK	UK	D
Individual	50	30	0	50
F.A.S.	10	25	24	25
ESF	38	25	18	8
Other	2	20	28	17
Outdoor			30	

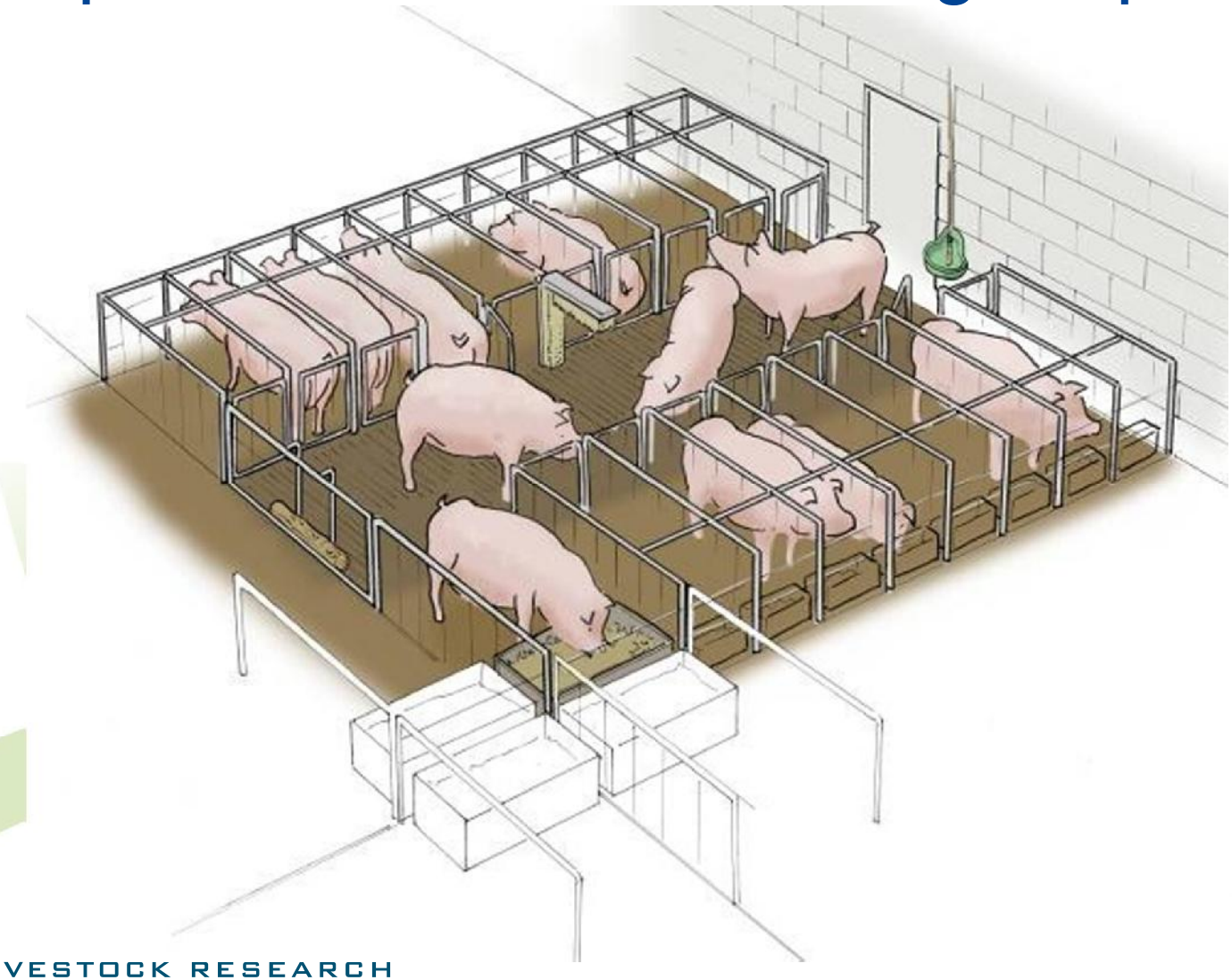
Group housing systems on Dutch sow farms in 2010

	% farms	N farms
Individual stalls	35	452
Electronic Sow Feeding (ESF) on Straw	8	103
ESF Concrete slatted	33	425
Free Access Stalls (FAS)	30	394
Trickle Feeding (Biofix)	1	10
Other…	3	37
Total	110	1304

(source: AgriDirect, specialist in Agrimarketing)

- Last third: major part chooses FAS or stops in 2013

Free Access Stalls (FAS)
groups of 15-40, sorted on age + pregnancy



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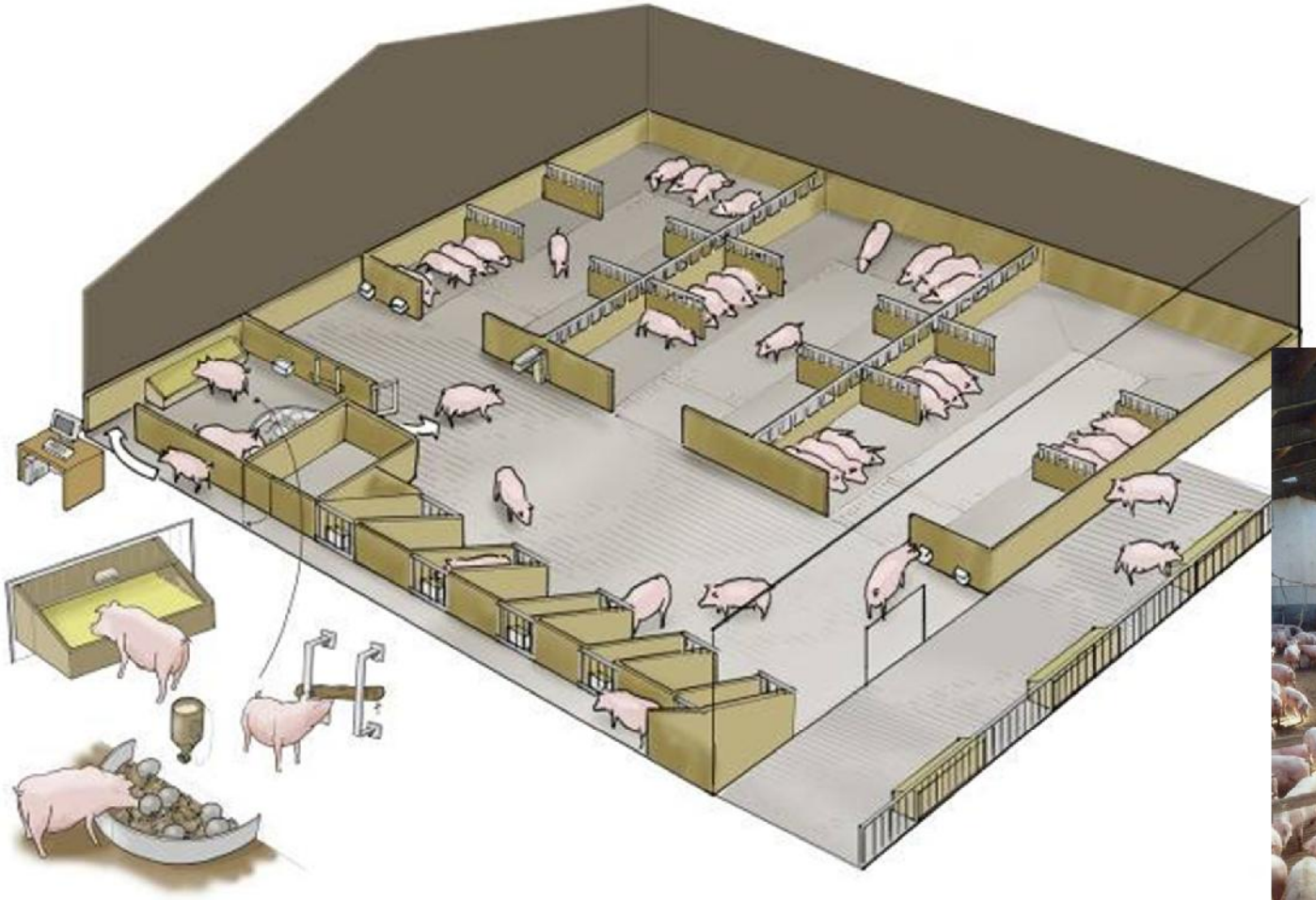
Electronic Sow Feeding (ESF) – mainly dynamic, but larger farms also static groups



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Basics of Group Housing

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Mixing of sows as starting point

Establishing social rank is normal behaviour

At least 0.5 year after conversion extra attention

Minimize risks:

⇒ space and dry solid floor around mixing (4 m²)

⇒ minimize number of mixing moments

⇒ prepare gilts for handling social contacts

⇒ gilts in group pen at a younger age

Risk for lameness on slippery slatted floors

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Extra space during first period after mixing

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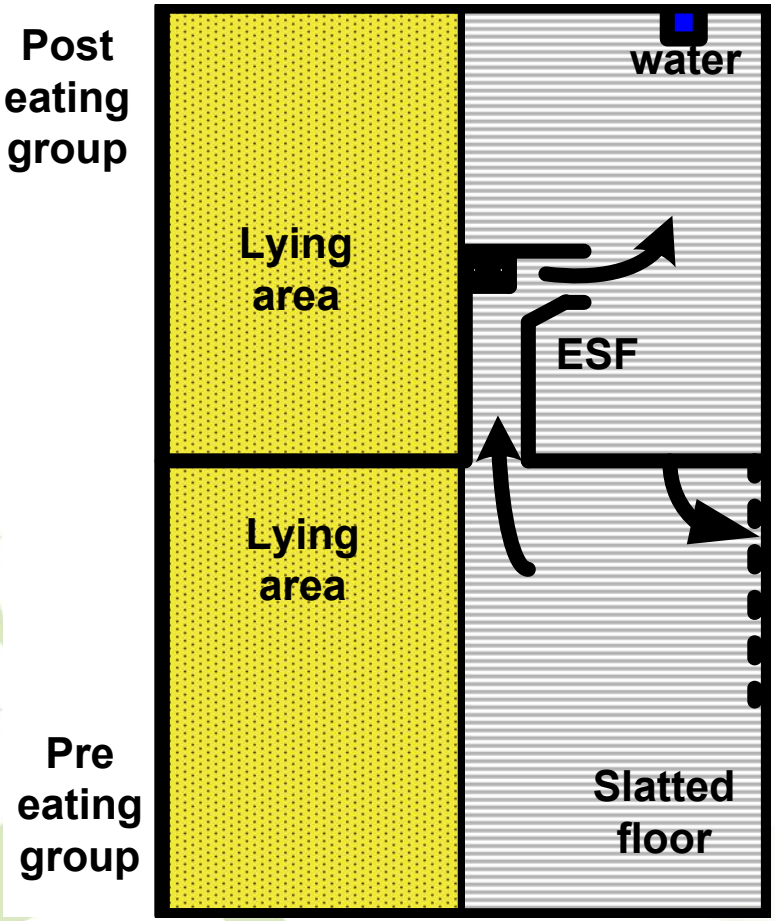
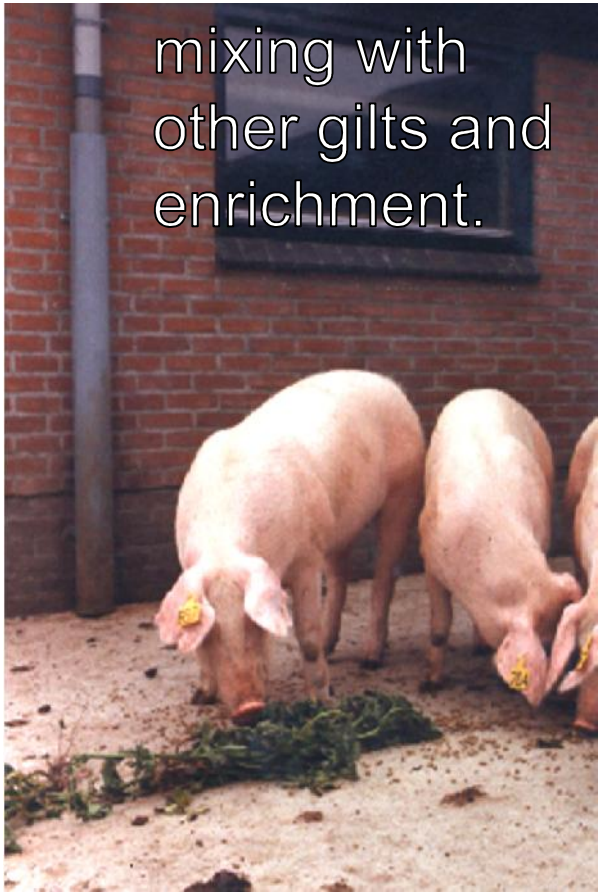
Take returners to oestrus out!

Gilts are most important group
The key to success !





Summary of Research in NL

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Performance 1994–1996 = basis Welfare Regulation 1998

From weaning to farrowing (excl days in oestrus)

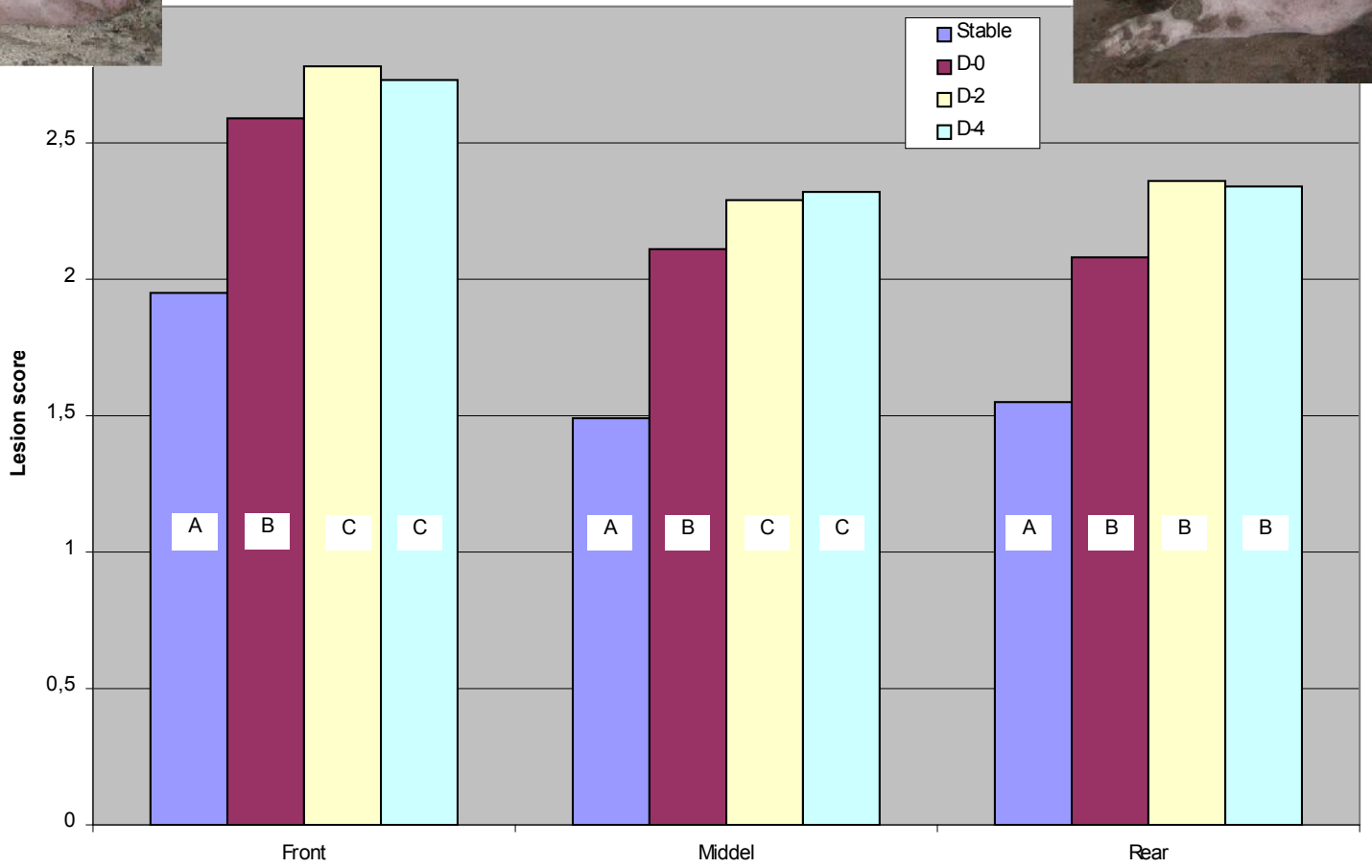
	Indiv. stalls	Free access stalls	Slow feeding	ESF
N litters	377	373	401	395
Farrow.rate	84.0	83.6	85.7	85.6
Liveborn	10.7	10.9	10.7	11.0
Weaned/ sow/year	22.1	22.5	22.2	22.1

Results (2)

	Indiv. stalls	Free access stalls	Slow feeding	ESF
Oral activity post feeding %	32.4[a]	20.4[b]	26.7[ab]	9.4[c]
Claw problems %	8.4[a]	10.4[a]	17.8[b]	19.5[b]
Labour 170 dry sows (h/y)	287[a]	285[a]	293[a]	207[b]
Controllability (high=negative)	1.0	2.2	3.2	3.7
Annual costs (% from ind. stalls)	100	130	93	86

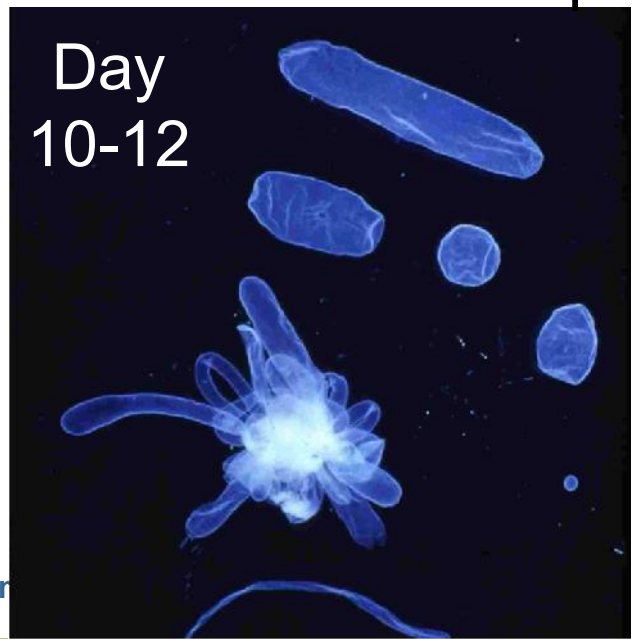
Skin lesions

Static versus dynamic (intro 3-17-31d after insemination) group housing systems for pregnant sows (2003)



Reproduction: returns and litter size

	Stable	D-0	D-2	D-4
Returns to service %				
Outside cycle	**4.41a**	**1.54b**	**4.71a**	**4.42a**
Within cycle	3.78	6.00	4.54	5.82
Total	8.19	7.54	9.25	10.23
Live born	**11,94a**	**12,52b**	**12,02ab**	**11,80a**
Still born	**0,82ab**	**0,66a**	**0,68a**	**0,92b**
Growth during pregnancy (kg)	62.09a	56.37b	56.77b	56.66b



Ad lib feeding – Good temporary system

Popular several years after 1998

Pellets with low energy and 50-60% SBP

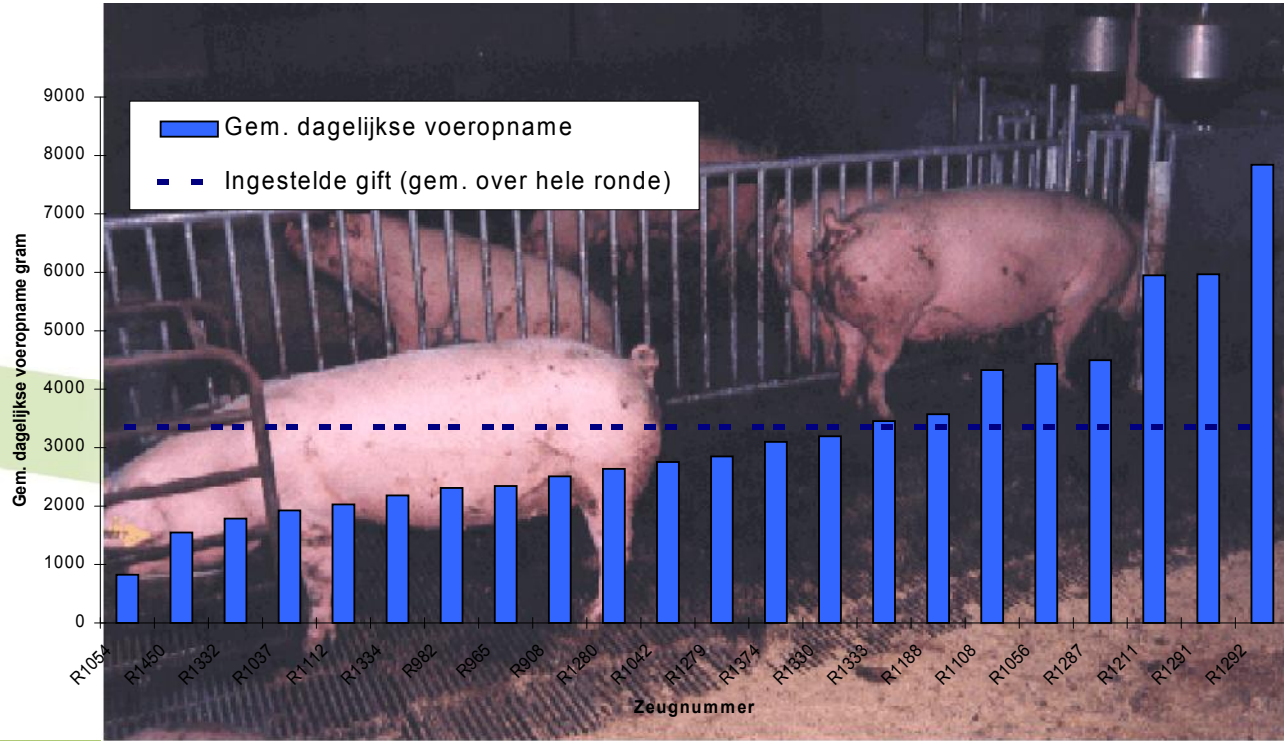
First and second pregnancy good results

Older sows too high energy intake

High feeding costs

Low housing costs

Behaviour positive



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Survey on farms with sows in groups before day 4 of pregnancy 2008-2010
Success and risk factors group housing

What are success and risk factors of group housing?

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Survey on farms with sows in groups before day 4 of pregnancy in 2008-2010

Success and risk factors group housing

Selection criteria 70 farms

Sows + gilts within 4 d after insemination in group

Group housing from 1-1-2005 or earlier

No major changes in system in 2006 en 2007

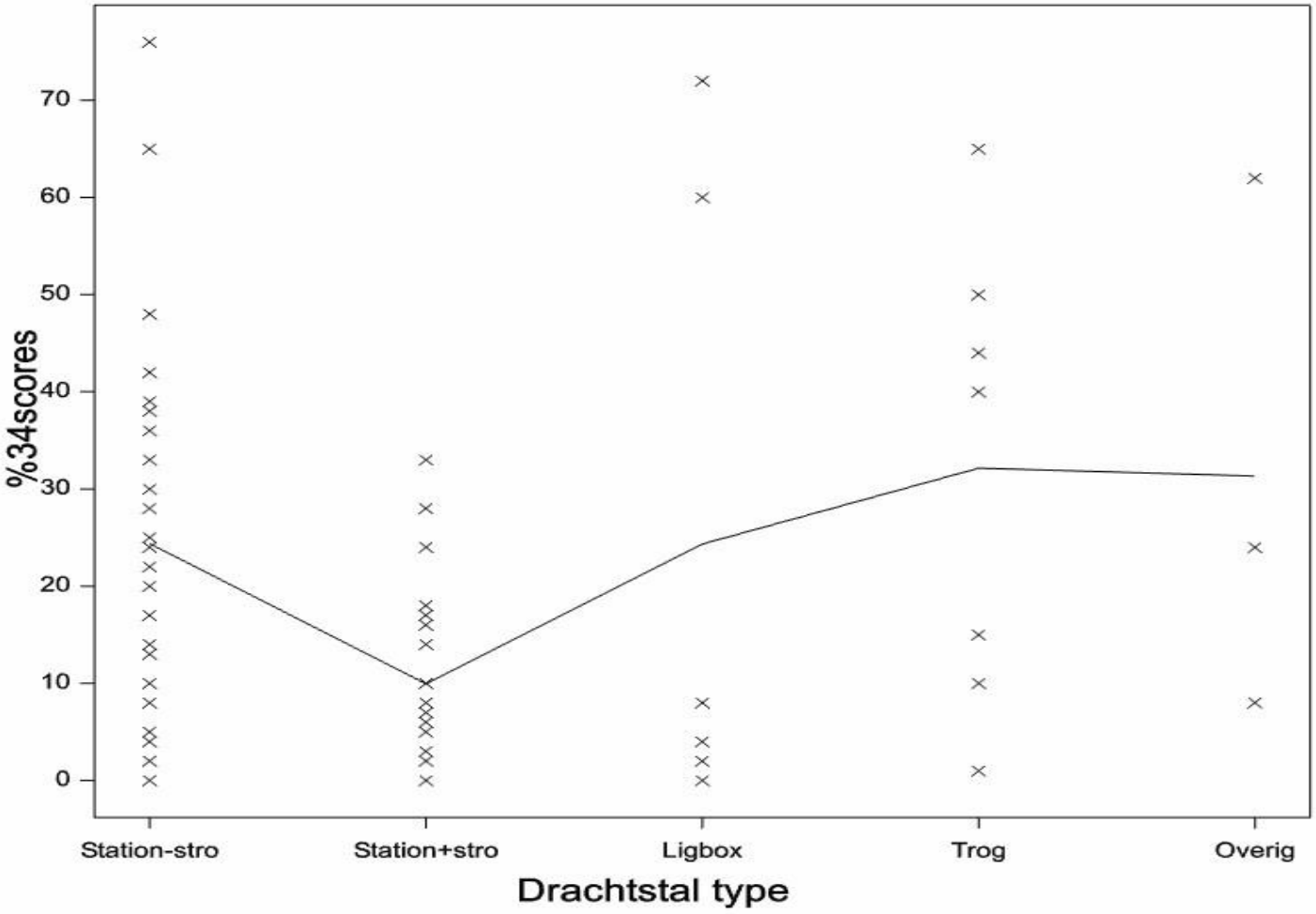
70 farms visited in 2008

Management, performance, animal measurements

Results in 2005 en 2006 – data collection in 2007-2008 and analysis in 2009

	average	Minimum	Maximum
farrowing%	85,9	77,2	93,0
farrowing% cycle 1	87,3	73,7	95,9
Weaned piglets/sow/y	25,2	22,1	28,1
% replacement cycle 1 sows	5,2	0,8	16,6
% replacement cycle 2 sows	10,2	1,9	21,7

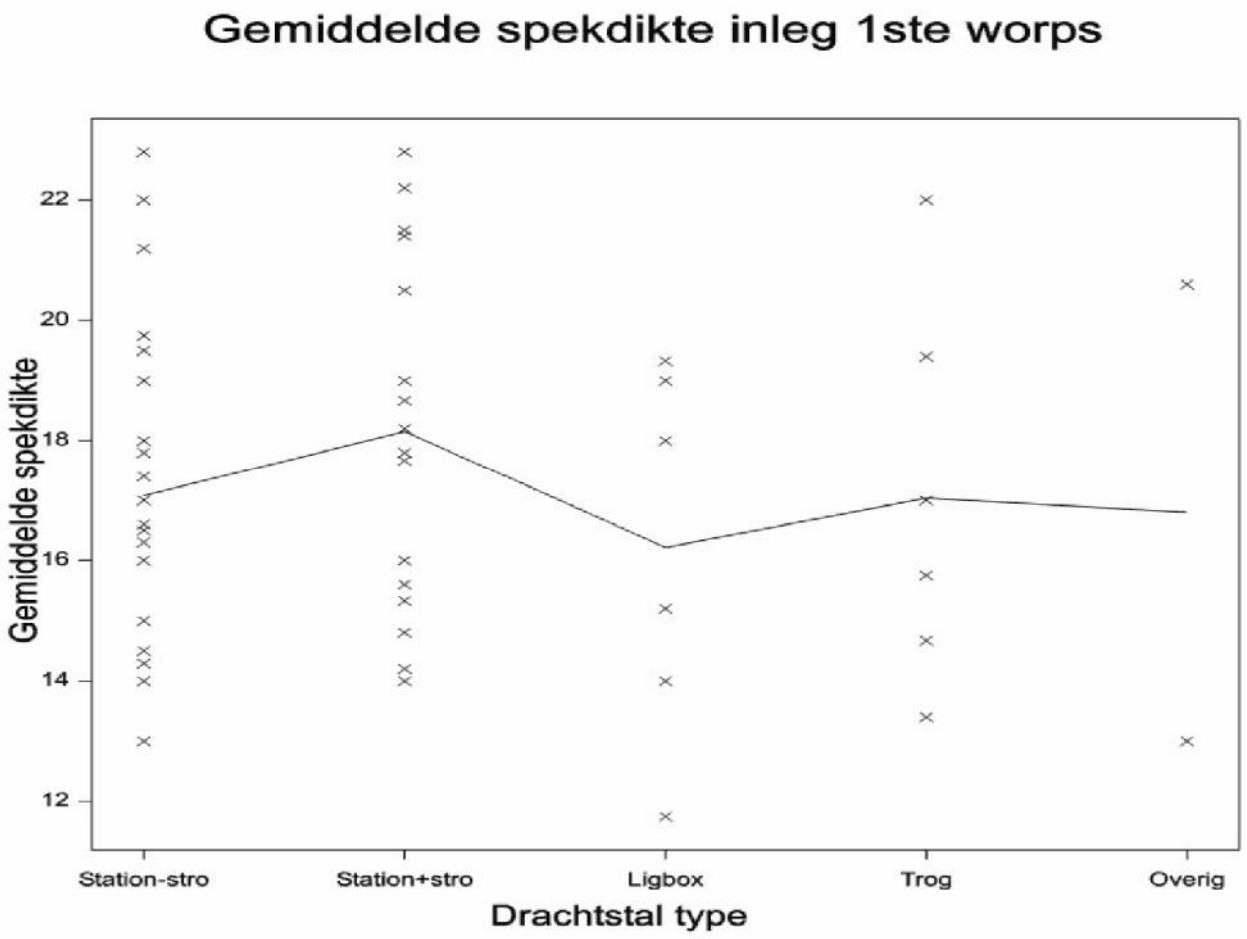
Sows with severe claw lesions



Severe skin lesions (3+4) front (=aggression)

	Early pregnancy	Late pregnancy
ESF	21	11
ESF straw	19	11
FAS	8	7
Trough	32	3

Backfat (mm) end of pregnancy parity 1



Conclusions based on data analysis

Conclusion 1

Group housing in (early) pregnancy can be successful .....

but advisors often blame group housing during periods of bad results

Conclusion 2

System of group housing is not the most important factor

Each system can produce good and bad results

Important is

- Motivation
- Management
- Benefit from advantages and minimize disadvantages
- How is pen design and what equipment do you use

Conclusion 3

Huge variation in all collected data

- Animal characteristics (condition/backfat, skin lesions)
- Farmer characteristics
- Farm equipment
- Farm management

This means that there is room for improvement!

Quotes of the best pig farmers:

"Adviser and vet shouldn't say what I'm doing well, but say what I have to change."

"I don't take all advise for granted."

"I discuss about the advise and take a decision after careful weighing."

Conclusion 4: Success factors

- Management
- Gilt rearing
- Pregnancy

Management

- Working in a structured way
- Working accurate
- Working consequent
- Change when necessary
- Record data
- Feeding based on animal condition
- Inspection of ESFeeders
- Use attention lists in ESF

Effect of management on results

	25 % worst	25 % best
Farrowing rate	< 83,3 %	> 89,0 %
% of management points	50 %	76 %
% farm optimisation	45 %	62 %

Rest and rhythm

Second and third week of pregnancy critical

Rest and rhythm

- No aggression/stress during feeding
- Feed on fixed times
- Guarantee feed and water delivery
- Remove returners to oestrus immediately
- Provide flight distance
- Quiet human-animal relations

Period of 6 hrs of inactivity: for animals and for inspection

Success factor 2

Gilt rearing

Sufficient physical development

Getting used to feeding system

Space to develop social skills

Gilts: nutrition and training

	25 % Worst	25 % Best
Farrowing rate	< 83,3 %	> 89,0 %
Limited vs Ad lib feeding	60	94
Dry vs liquid feeding	73	100
Training feeding system (yes vs no)	69	94

Space per gilt

	25 % worst	25 % best
% culled sows during cycle 1 and 2	> 10,1 %	< 4,9 %
Space (m^2 / gilt), last pen before insemination	1,2	1,9

*

Space during pregnancy

	25 % worst	25 % Best
% culled sows during cycle 1 and 2	> 10,1 %	< 4,9 %
Living space (m^2 / sow)	2,0	2,4

*

Free Access Stalls

Success factors

- Floor between stalls 3 m wide
  - Higher farrowing rate
  - Less culled
  - Better sow condition at farrowing

Width between two rows of stalls

	25 % worst	25 % best
Farrowing rate	< 83,3 %	> 89,0 %
Width between stalls (m)	2.75	3.23

Stall Width	Pen Length	Width between rows
0.60	3.75	3.50
0.65	3.46	2.90
0.70	3.21	2.40

Main conclusions from analysis

Based on reproduction, mortality, skin lesions

Good results with all kinds of systems

Management is most important factor

Improvements possible especially feeding in ESF

Extra attention for gilts: space and training

More space per sow = higher farrowing rate and lower replacement of parity 1 and 2 sows

ESF: Exit gate far away from entrance: less injuries

Straw positive for claws and reduction of stereotypies


Group housing of sows is possible
and the farmer is the key to success!

Thanks for your attention!

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