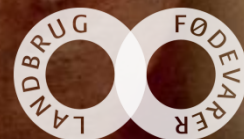
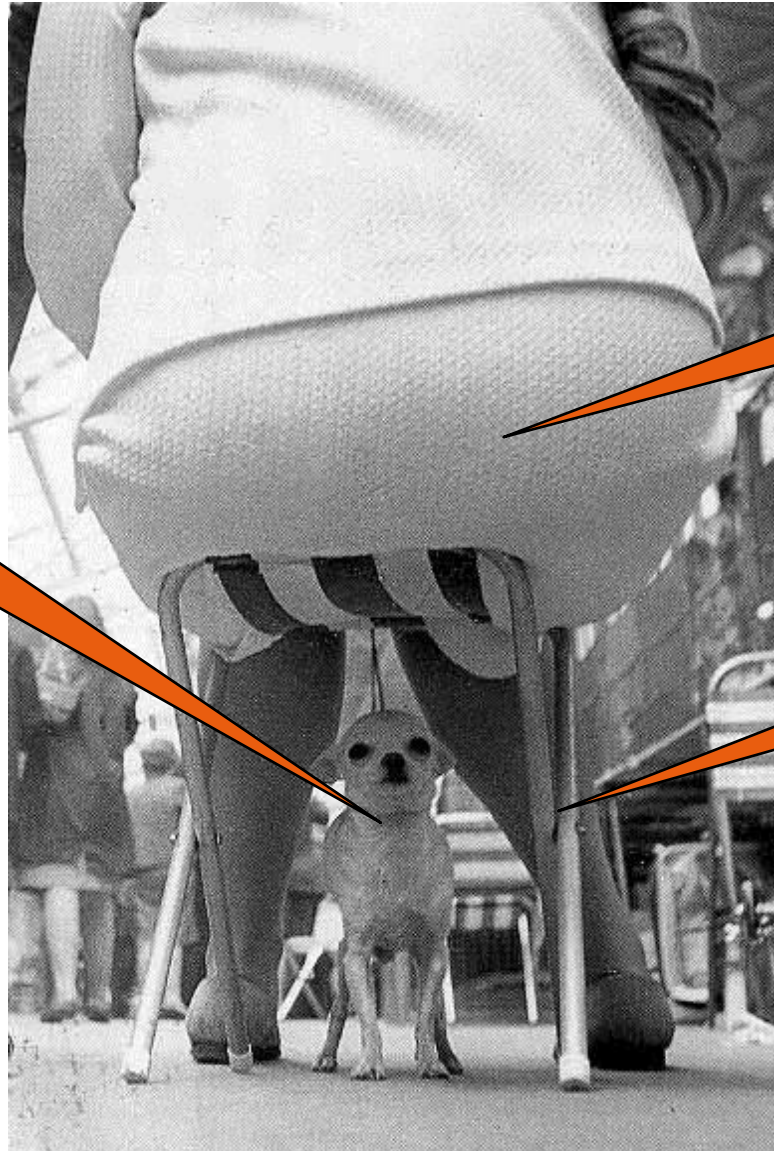


The Danish approach to pig production - quality pays

Nicolaj Nørgaard, Pig Research Centre
Danish Agriculture & Food Council

Pig Research
Centre





**Strong will
/ desire**

**Regulatory
framework**

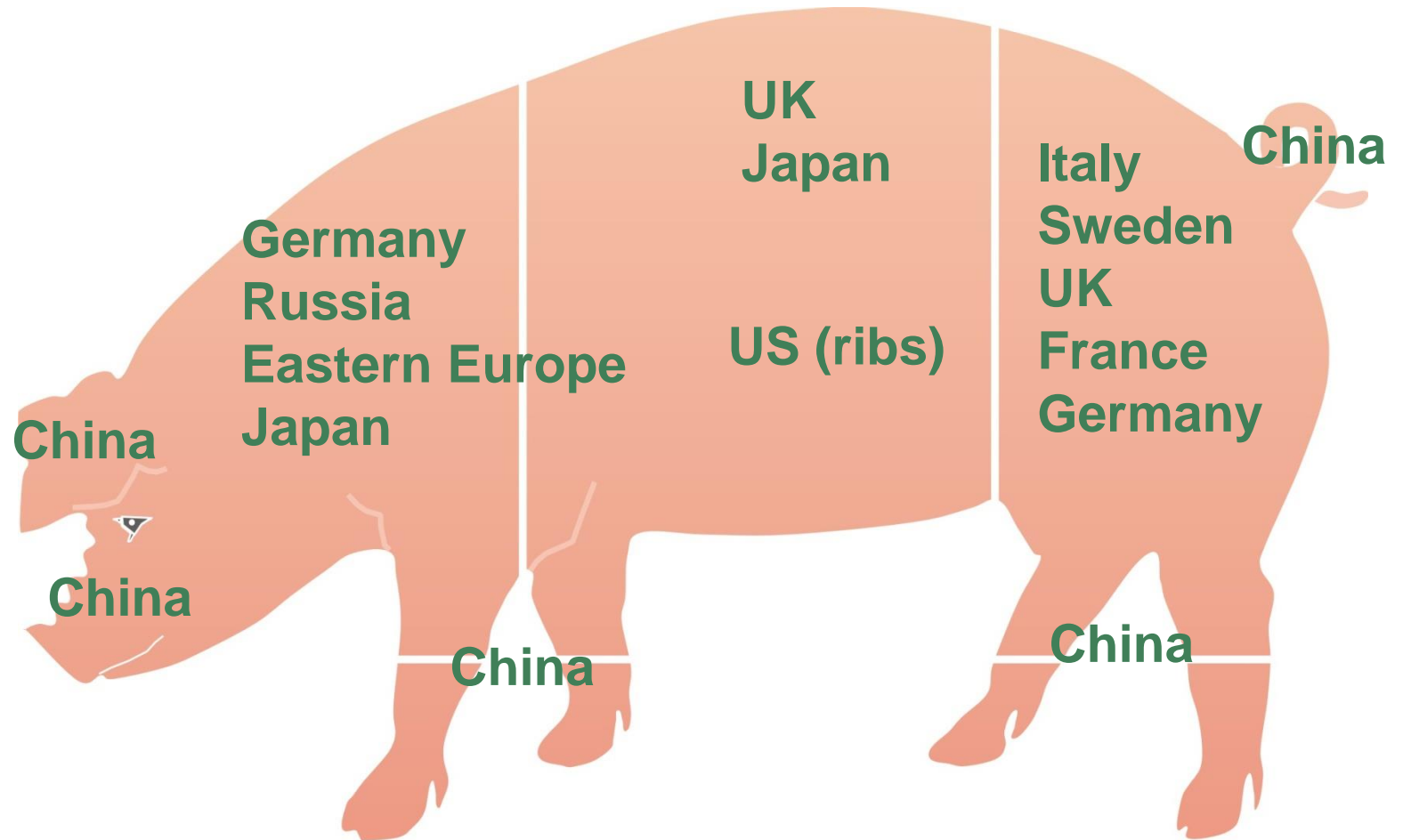
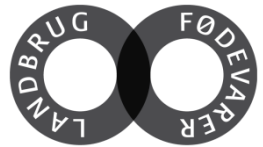
**Quality
pays**

Danish Pig Production - 30 Million Pigs in 2013

- 150-year-old industry based on co-operative model: Food Safety, High Veterinary Level, Premium Quality, Uniformity, Animal Welfare, Security of supply
- 90% of Danish pig meat is exported to 140 countries
- 10 million live pigs exported in 2013
- DanAvl genetics has increasing sale worldwide
- Non-commercial trials and recommendation in Pig Research Centre
- Independent advice service



Danish Pig Meat Export



Benefits of the Co-Operative System

- **Commercial interest of producers “beyond the farm gate”**
- **Trust/stable relationship between producer and abattoir**
- **Joint Research Programmes**
- **Excellent communication, information flow**
- **Easy assimilation of quality initiatives**
- **Low transaction costs**

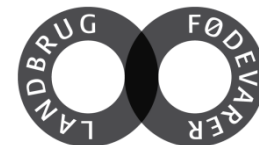


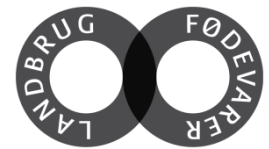
INTEGRATED PRODUCTION SYSTEM



Board of Danish Pig Research Centre - 12 Pig Producers

Pig Research
Centre





Danish Pig Research Centre – an Expert Organisation

We are here to develop the best products for our owners, the Danish pig producers, and to maximise our customers' benefits.

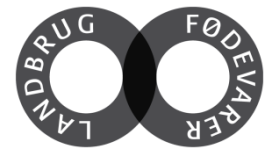
- **Competitiveness**
- **Environment**
- **Animal welfare**
- **Food safety and health**
- **Knowledge in work**

- Advisory-related activities
- Management and communication

ology

Danish Pig Research Centre

Pig Research
Centre



Trials for 15 million Euro per year

Operating in 200 commercial farms

Advisory service

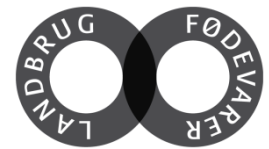


**Knowledge
transfer**



Two-Level Advisory System

Pig Research
Centre



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Farestaldsmanagement



Farestaldsmanual version 3.2
Marts 2011

DLBR
DANSK
LANDBRUGSRÅDGIVNING



Videncenter for
Svineproduktion

Vådfodermangement



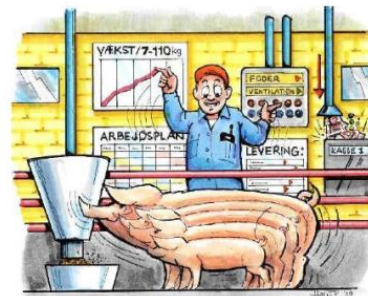
Vådfodermanual version 2.1 - maj 2011

DLBR
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LANDBRUGSRÅDGIVNING

Videncenter for
Svineproduktion



Vækstmanagement Svin



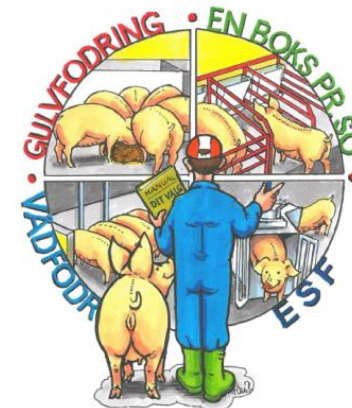
Vækstmanagement version 2.2 - juni 2011

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Svineproduktion



Drægtighedsmanagement



Drægtighedsmanual version 1.1 - maj 2011

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Poltemangement



Poltemanual version 1.1 - maj 2011

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28.05.2013

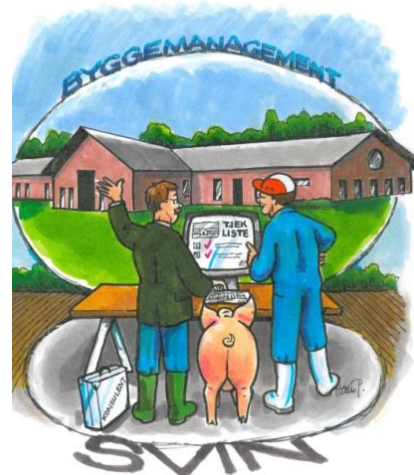
Løbemangement



Løbemanual version 1.1 - maj 2011

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Saneringsmanagement ved totalsanering



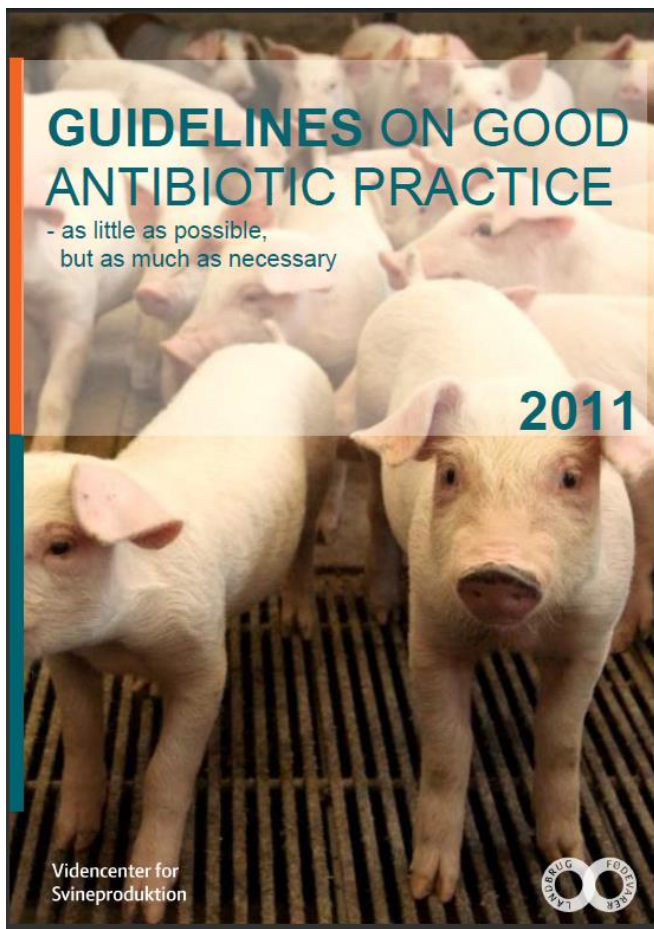
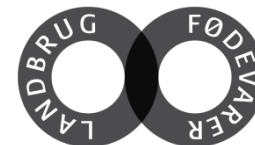
Saneringsmanual version 1 - 2008

Dansk Svineproduktion



GUIDELINES

Pig Research
Centre



As little as possible, but as much as needed

- *English*
- *Danish*
- *Russian*

vsp.lf.dk

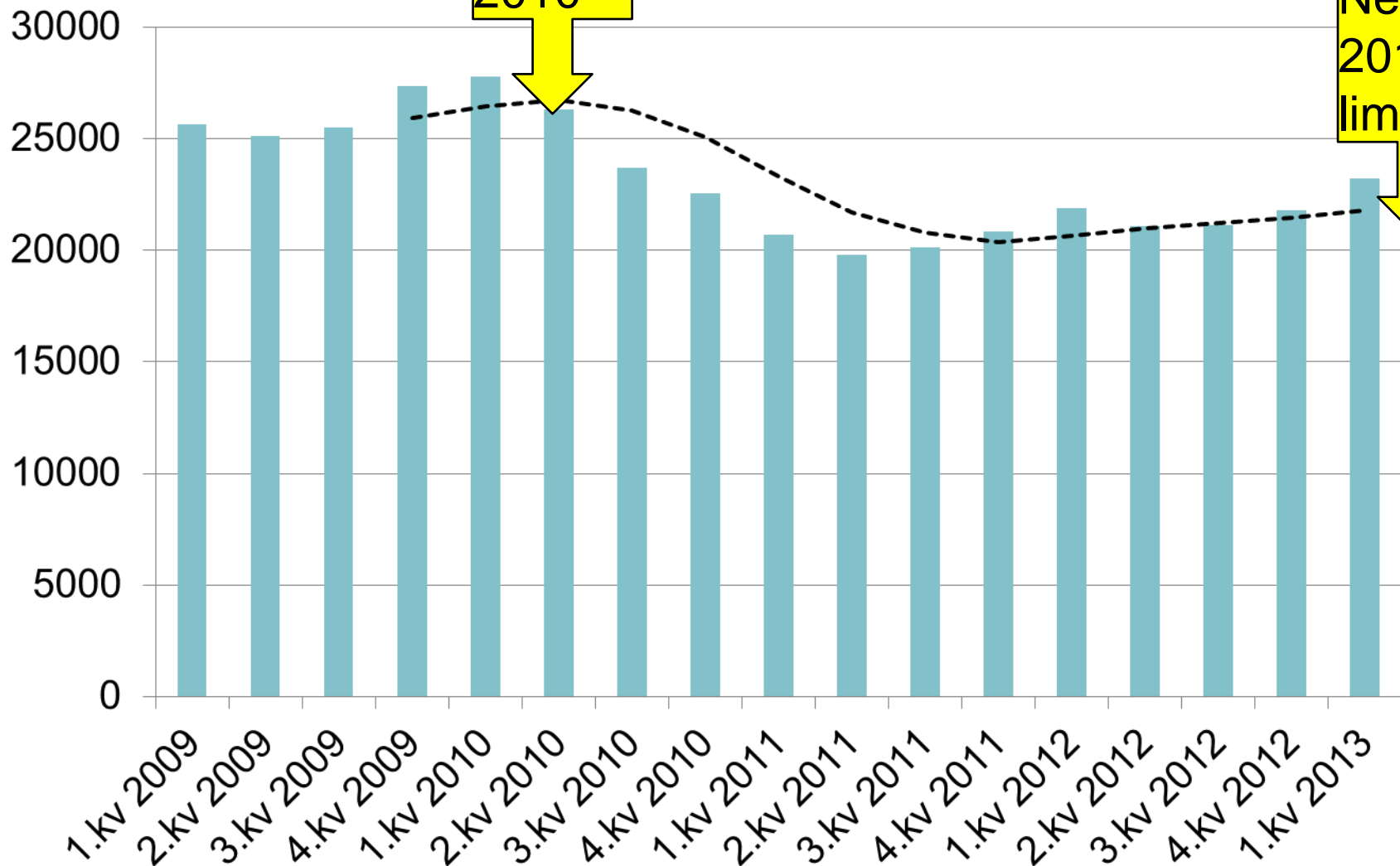
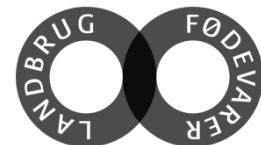
*Link til
Smartphone:*



Antibiotics for pig production (kg)

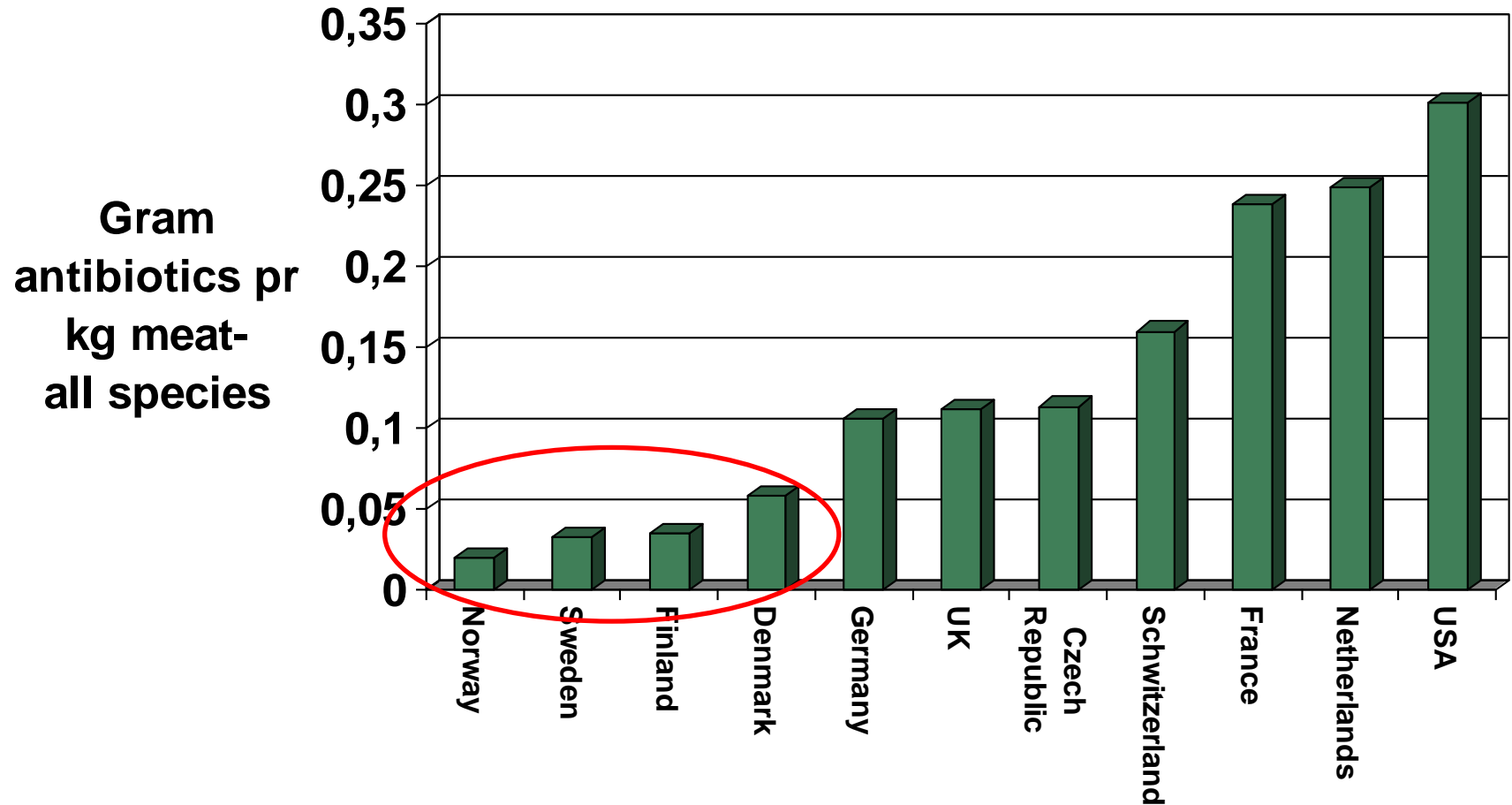
2009-Q1 2013-Q1

Pig Research
Centre



Use of Antibiotics per kilo Meat

International comparison



Animal Welfare Challenges

- Area of Discussion (aims)

- 1. Rooting material / straw**
- 2. No tail ducking**
- 3. Castration**



Animal Welfare

- Area of Discussion (aims)

Lower mortality, pct.

	2012	2020
Sows	12,8	9,0
Piglets (incl. stillborn)	22,4	20,0
Weaners	2,9	2,5
Slaughter pigs	3,4	3,0

Animal Welfare Challenges

- Area of Discussion (aims)

- 1. Rooting material / straw**
- 2. No tail ducking**
- 3. Castration**
- 4. Lower mortality**
- 5. Loose sows (total life cycle)**



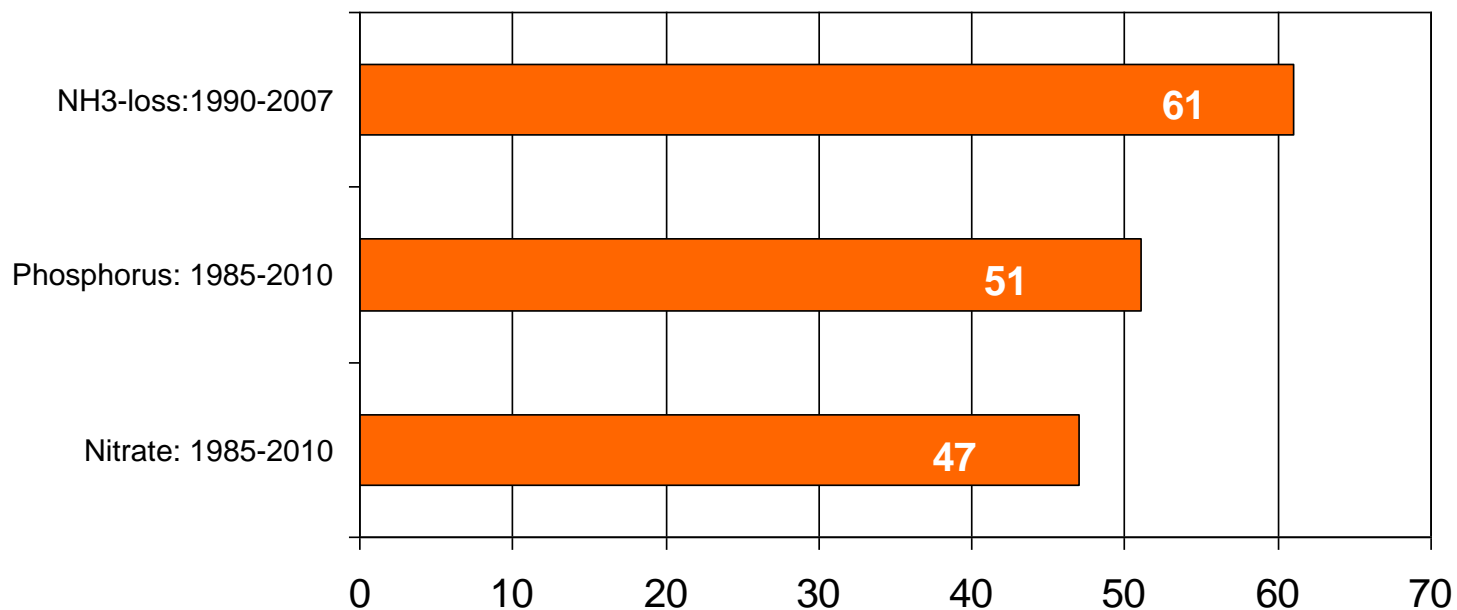
Loose-Housed Lactating Sows

- Improved welfare for sows
- Increased milk uptake for piglets
- More uniform piglets at weaning
- Improved image



**10 per cent loose-housed
lactating sows by 2020**

Reduced environmental impact per kg, %



DanAvl – a Unique Breeding System



Danish Pig Research Centre

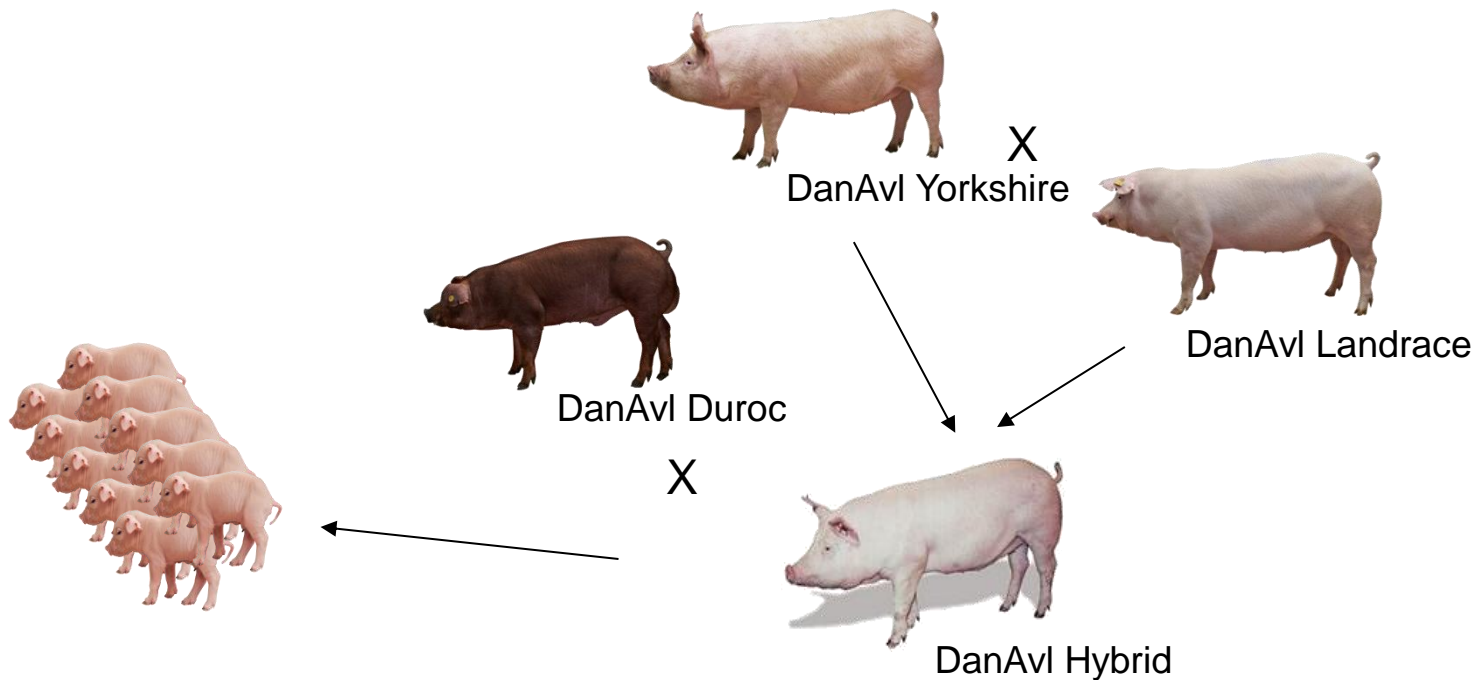


Danish Pig Research Centre
- owner of the DanAvl concept and brand



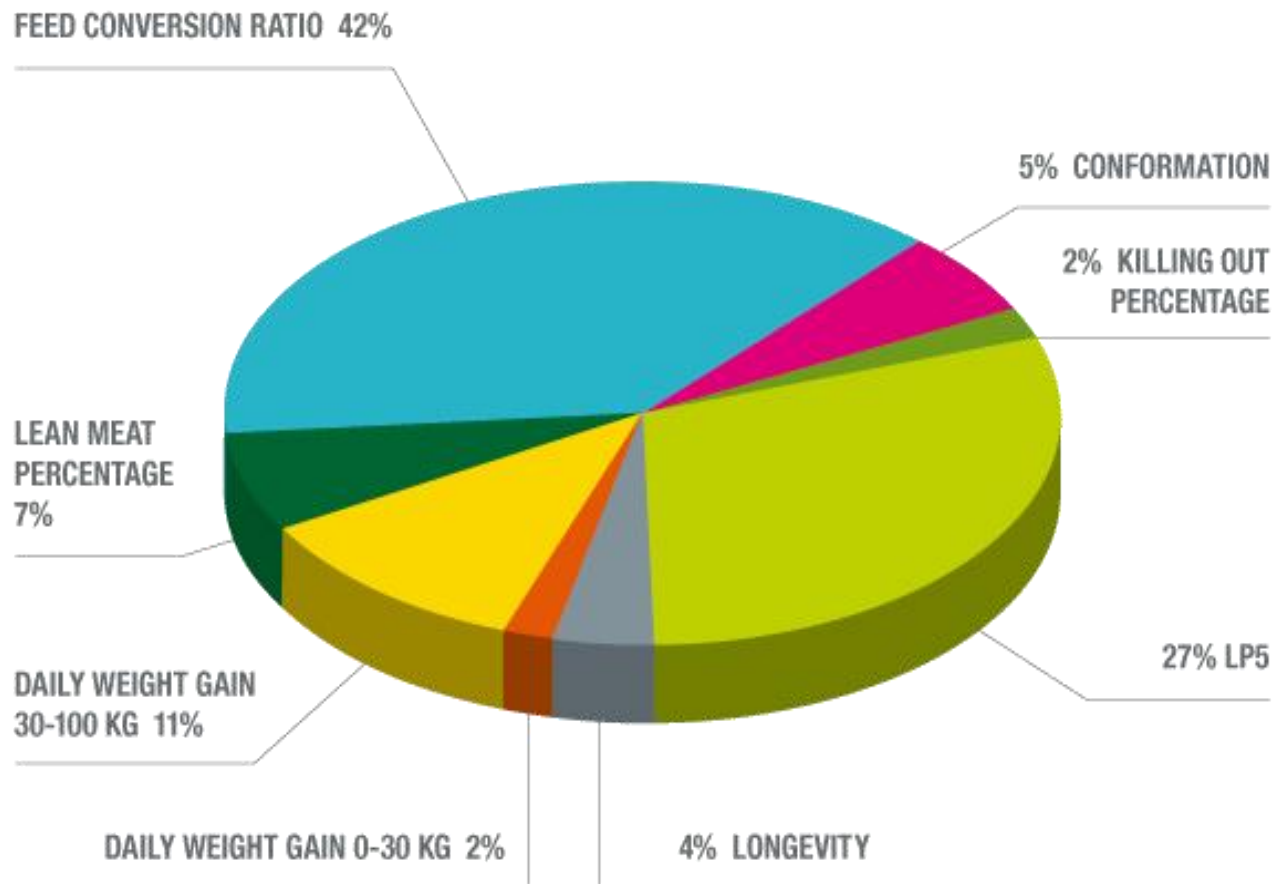
Complete Three-Way Crossbreeding System

The development is based on knowledge-sharing,
analyses and research



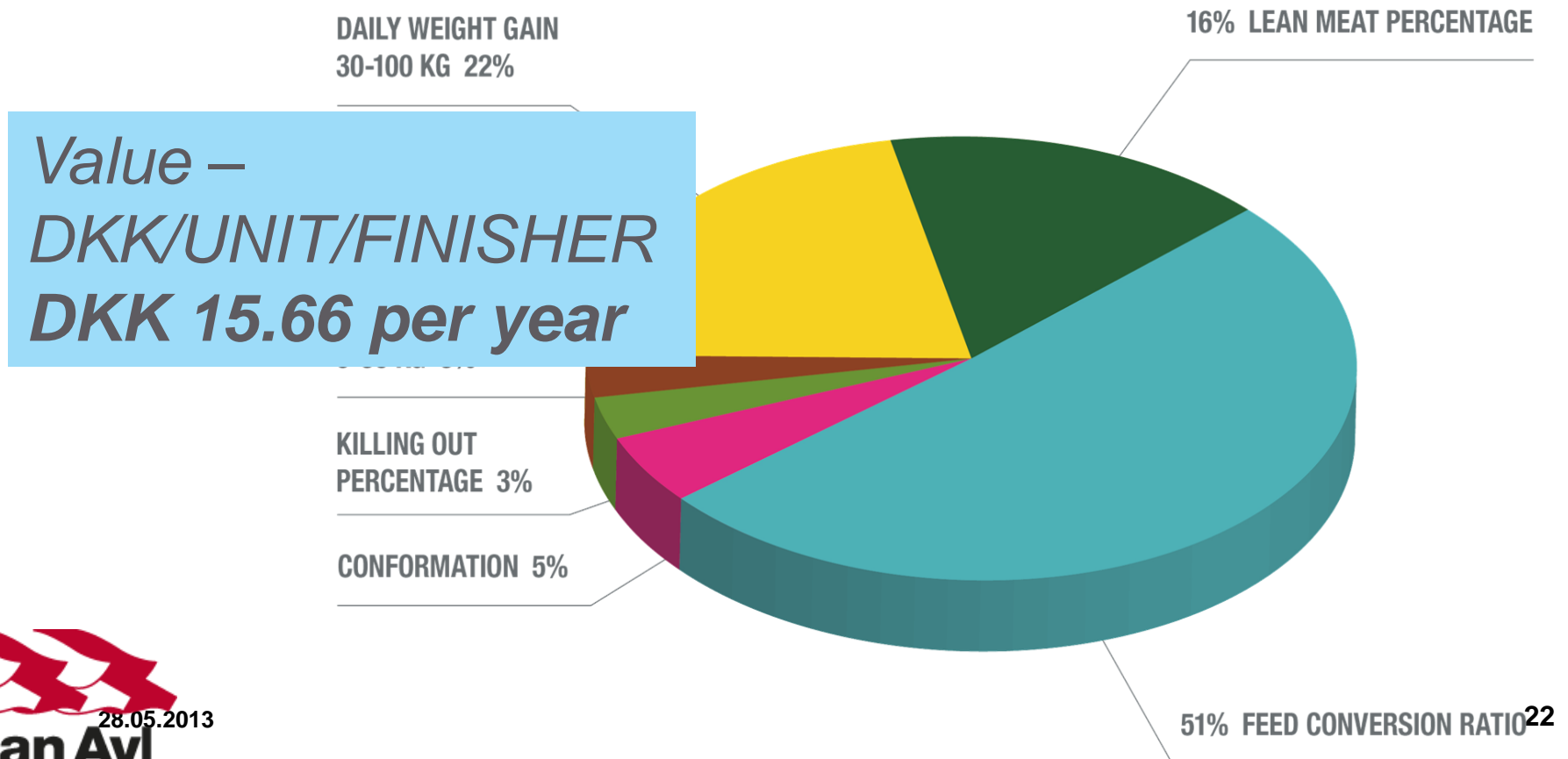
Weighting of Traits in the Breeding Objective of DanAvl LL/YY

Economic contribution

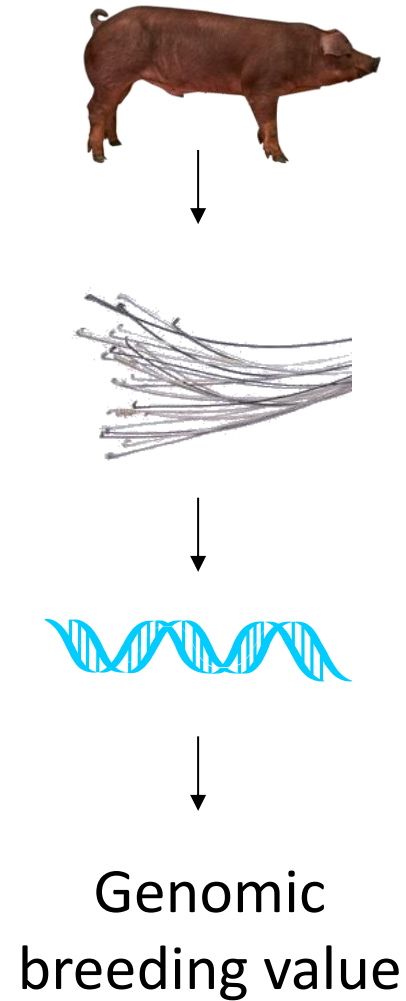


Weighting of Traits in the Breeding Objective of DanAvl Duroc

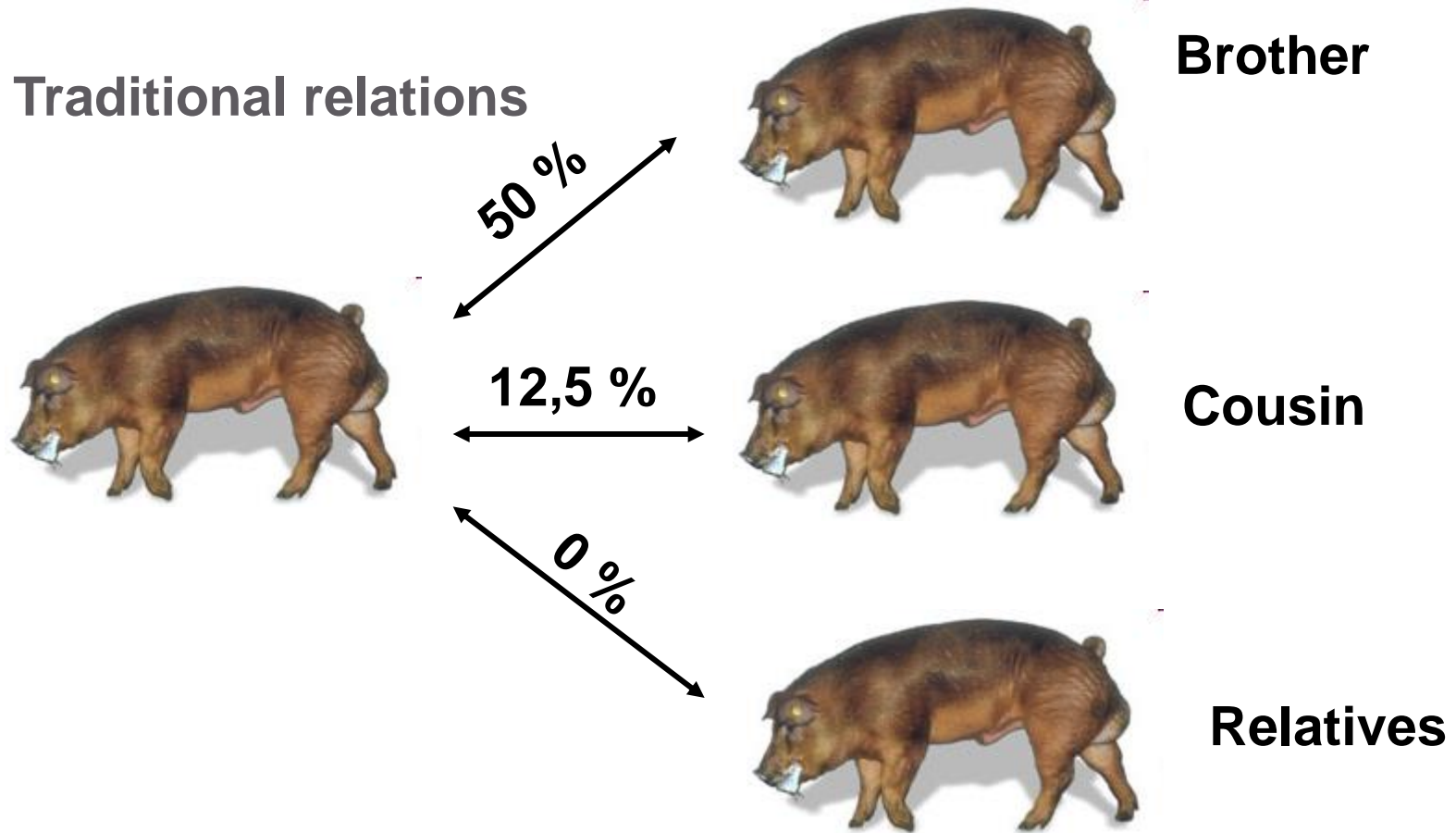
Economic contribution with Genomic Selection



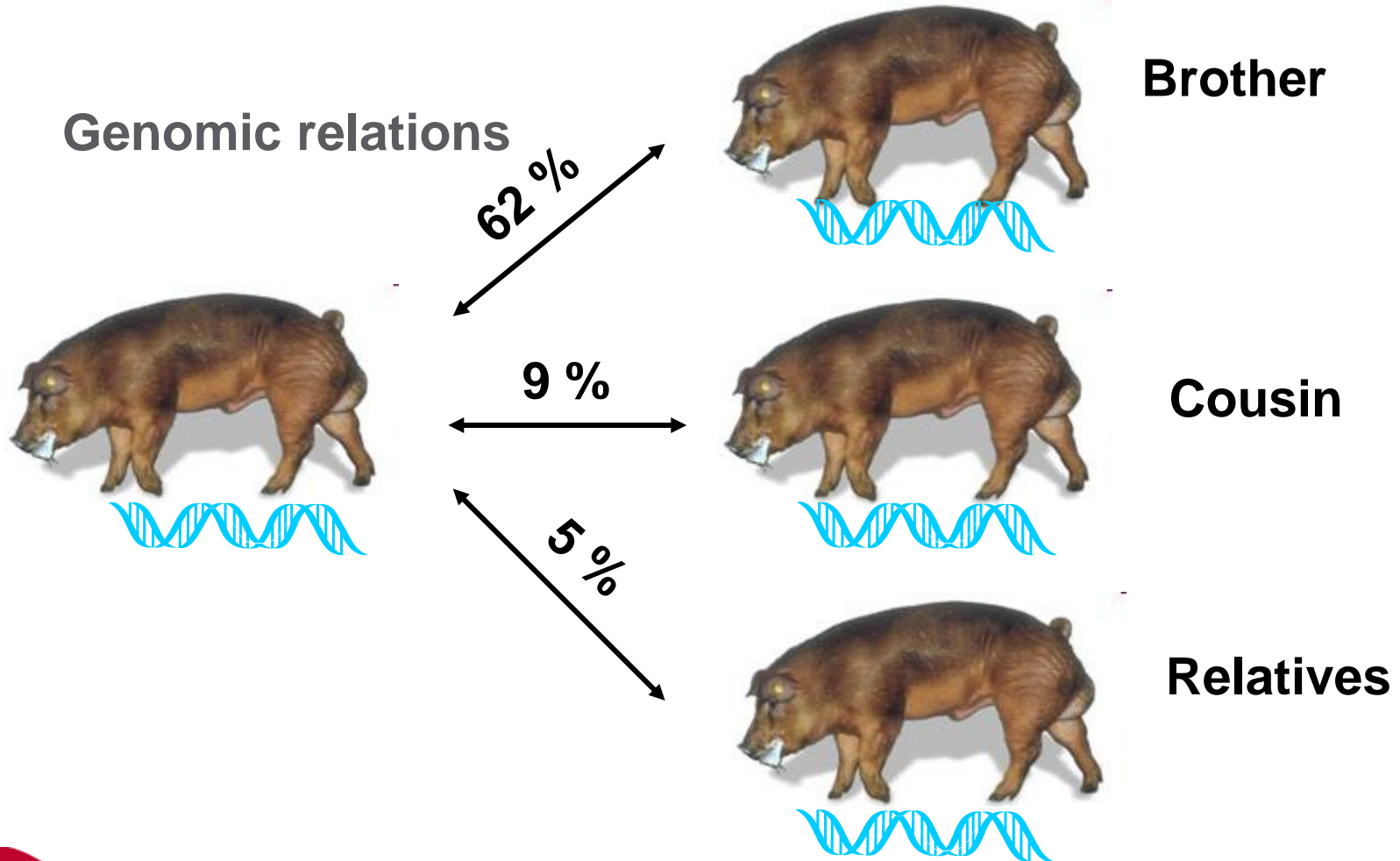
Using Genomic Information



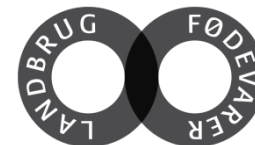
Traditional relations



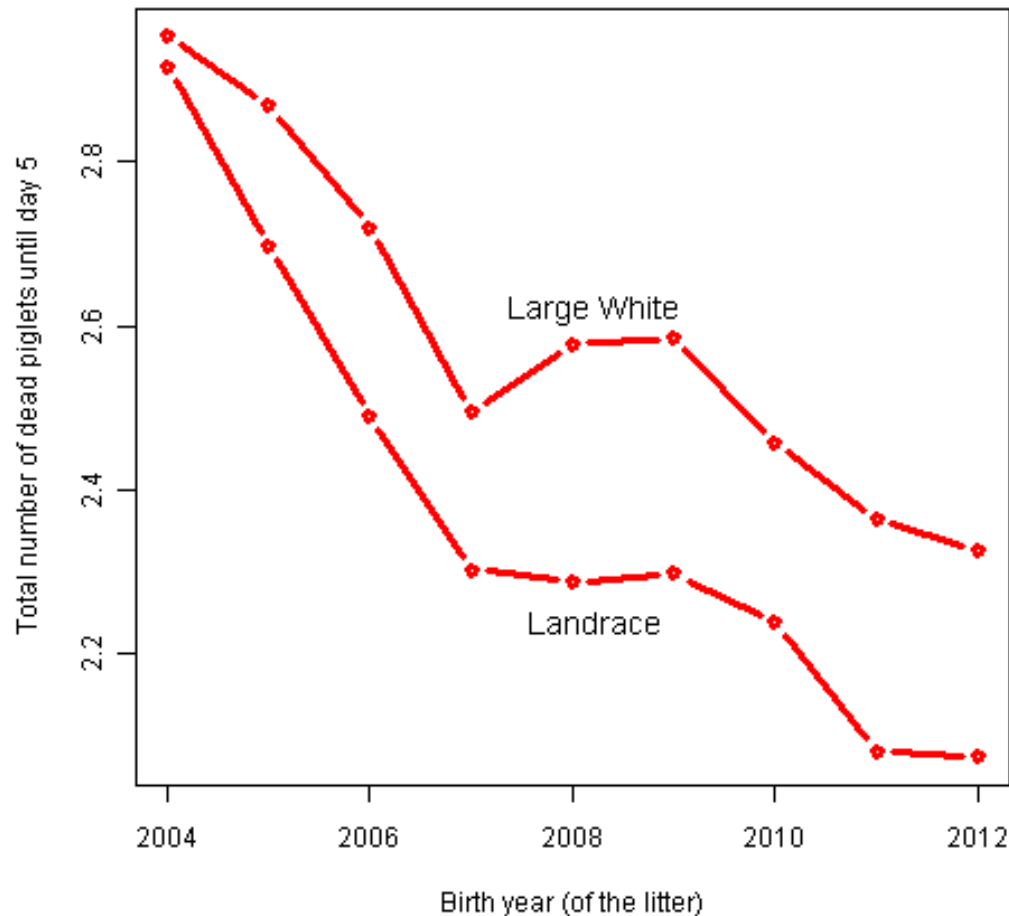
Genomic relations



Total Piglet Mortality at Day 5 (LP5)



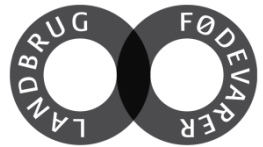
**LP5:
25 % reduction in
6 years**



DanAvl Average and Top Herds 2012

Herd Rank	1	2	3	4	5	Top 25%	AV. 2012	Av. 2011
Weaned pigs per year per sow*	35.9	35.8	35.3	35.1	34.8	32.3	29,6	28.8
Live-born pigs per litter	16.7	16.6	17.3	17.0	16.7	15.8	15,1	14.8
Weaned pigs per litter	14.8	15.1	15.2	14.9	14.8	14.0	13.1	12.7
Weight at weaning (kg)	5.5	6.6	6.5	7.0	5.9	6.8	7.0	7.1
Mortality during lactating period (%)	11.1	8.9	12.0	12.3	11.6	11.6	13,6	13.9
Farrowing rate (%)	92.8	94.4	92.0	96.3	90.7	90.1	87.0	86.7





How to Produce 38 Piglets per Sow per Year?

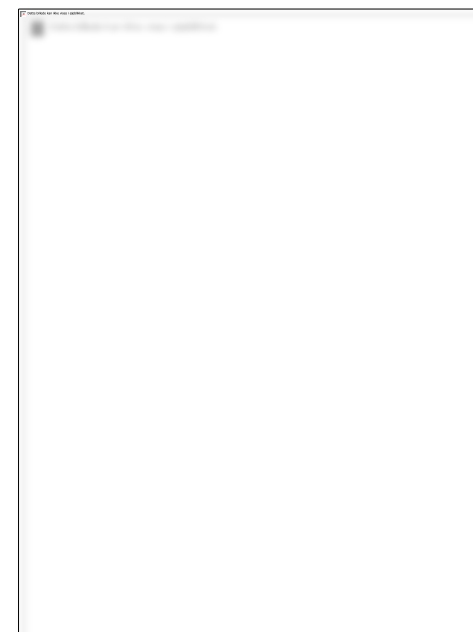
- 1. 'Quality' genetics
- 2. 'Quality' management
- 3. 'Quality' housing systems
 - ✓ Culling/replacement
 - ✓ Selection from birth to mating
 - ✓ Body condition
 - ✓ Feeding
 - ✓ Heat detection
 - ✓ Mating strategies
 - ✓ Nurse sows

Efficiency – Finisher Herds (30-107 kilo live weight)

	2012		2011
	Top 25%	Av.	Av.
Daily weight gain, g	985	906	898
Feed conversion Kg feed per kg live weight	2.51	2.67	2.68
Average slaughter weight hot, kg	82.4	81.8	81.6
Average lean meat, %	60.4	60.4	60.4
Dead and culled, %	2.6	3.4	3.7

First Russian Multiplier herd

Sows	2013
Weaned / sow /year	32.5
Litter / sow /year	2.35
Born alive / litter	14.5
Weaned / litter	14.0
Suckling period, days	27.0
Pre-weaned mortality	3%
Weaners	
Average weight of weaning, kg	6.5
Average weight transfer to fattening, kg	20.4
Feeding days / animal	40
Mortality	0.6%
Daily gain, g	345
FCR, kg/kg	1.58
Growers	
Average weight sold	112
Feeding days / animal	82
Mortality	2.25%
Daily gain, g	1.120
FCR, kg/kg	2.30



***Beeindruckende
Produktionsergebnisse
über einen Zeitraum von
19 Monaten:***

500 Sauen mit Ferkelaufzucht
bis 25 kg.

Abferkelquote 90,9 %

Lebend geborene Ferkel 15,4
pro Wurf / 36,2 pro Sau und Jahr

Säugetage 25,8

Abgesetzte Ferkel 13,7 pro
Wurf / 32,4 pro Sau und Jahr

Saugferkelverluste 10,6 %

Würfe pro Sau und Jahr 2,36

36,2

***Lebend geborene
Ferkel pro Sau
und Jahr***





***Beeindruckende
Produktionsergebnisse
über einen Zeitraum von
9 Monaten:***

180 Sauen
Lebendgeborene Ferkel:
34,6 pro Sau und Jahr

Ergebnisse Mast:
(Durchschnitt der Sauen und Eber)
Tageszunahmen: 1080g
Futterverwertung: 1:2,45
Anfangsgewicht: 31 kg

Schlachtergebnisse:
Schlachtgewicht: 94 kg
Sauen: 0,99 Indexpunkte
Eber: 0,98 Indexpunkte

1080g

Tageszunahmen



Dan Avl



Pig Research Centre

Pig Research Centre



8 employees in neighbouring areas



15 employees in slaughter-Houses and related industries



Concluding remarks

Quality pays:

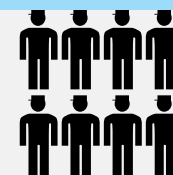
Yes - not only for the pig industri, but also for Denmark



Farm turnover to EUR 1.5 mio.



Slaughtering and food processing turnover to EUR 2.2 mio



Tax income will fund at least 8 public sector employees.



Thank You!