

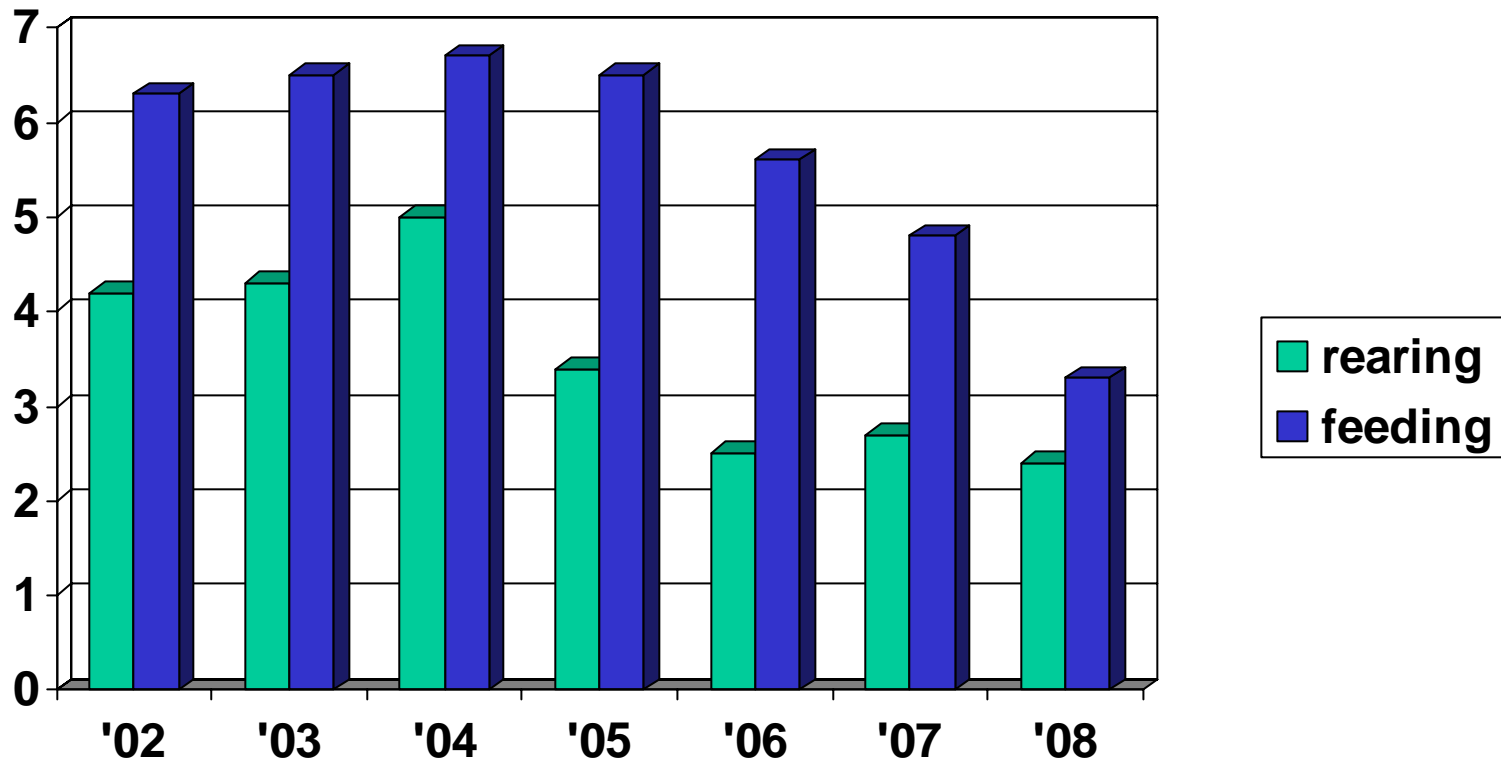
BPEX studies on PCV2 vaccines

Mark Wilson

June 2009

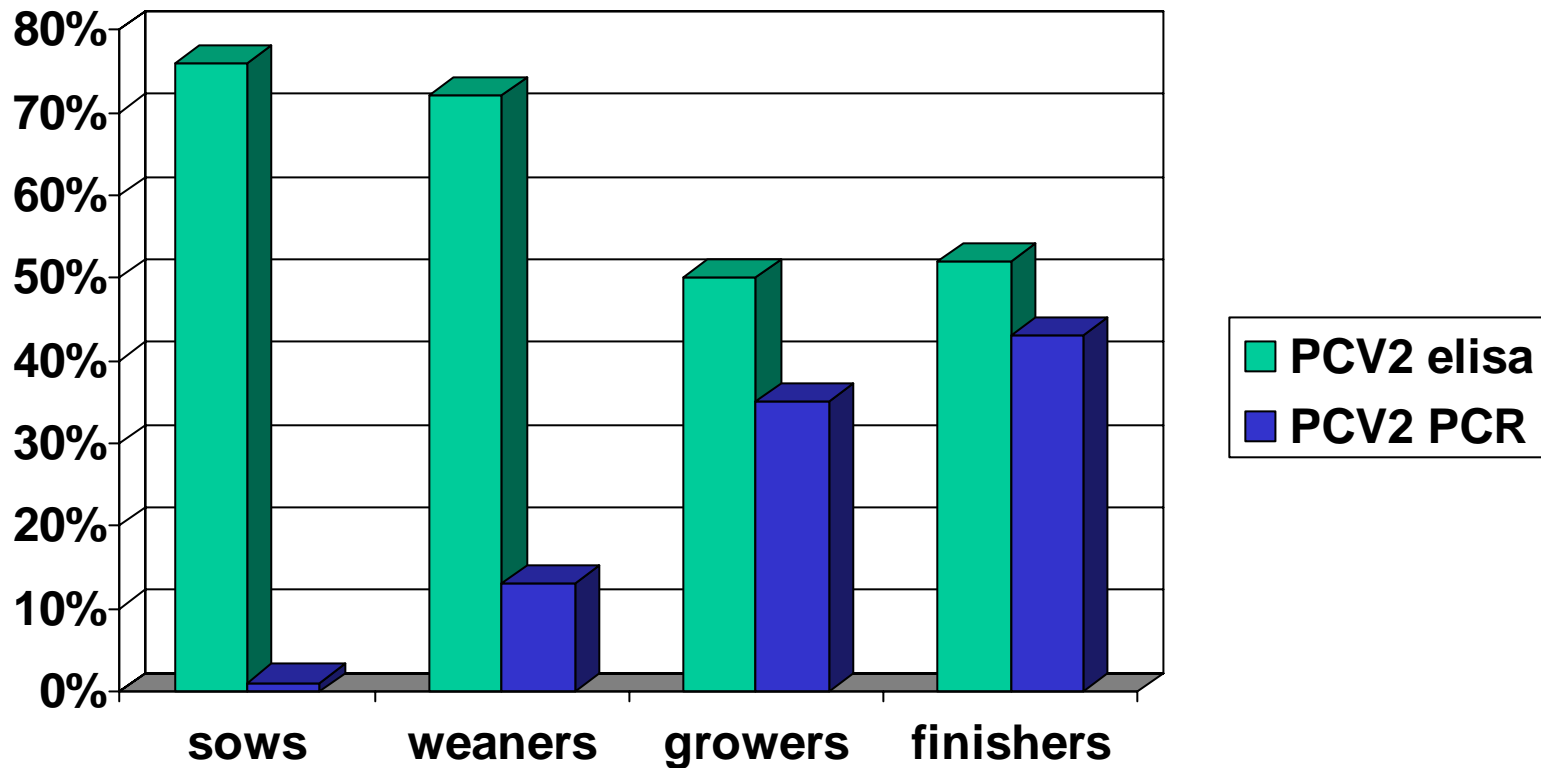
- The background
- BPEX national vaccine research project
- BPEX PDC controlled study
- Conclusions

Mortality trends (%)



Laboratory results

from 3182 unvaccinated animals



BPEX National Project

The BPEX national project

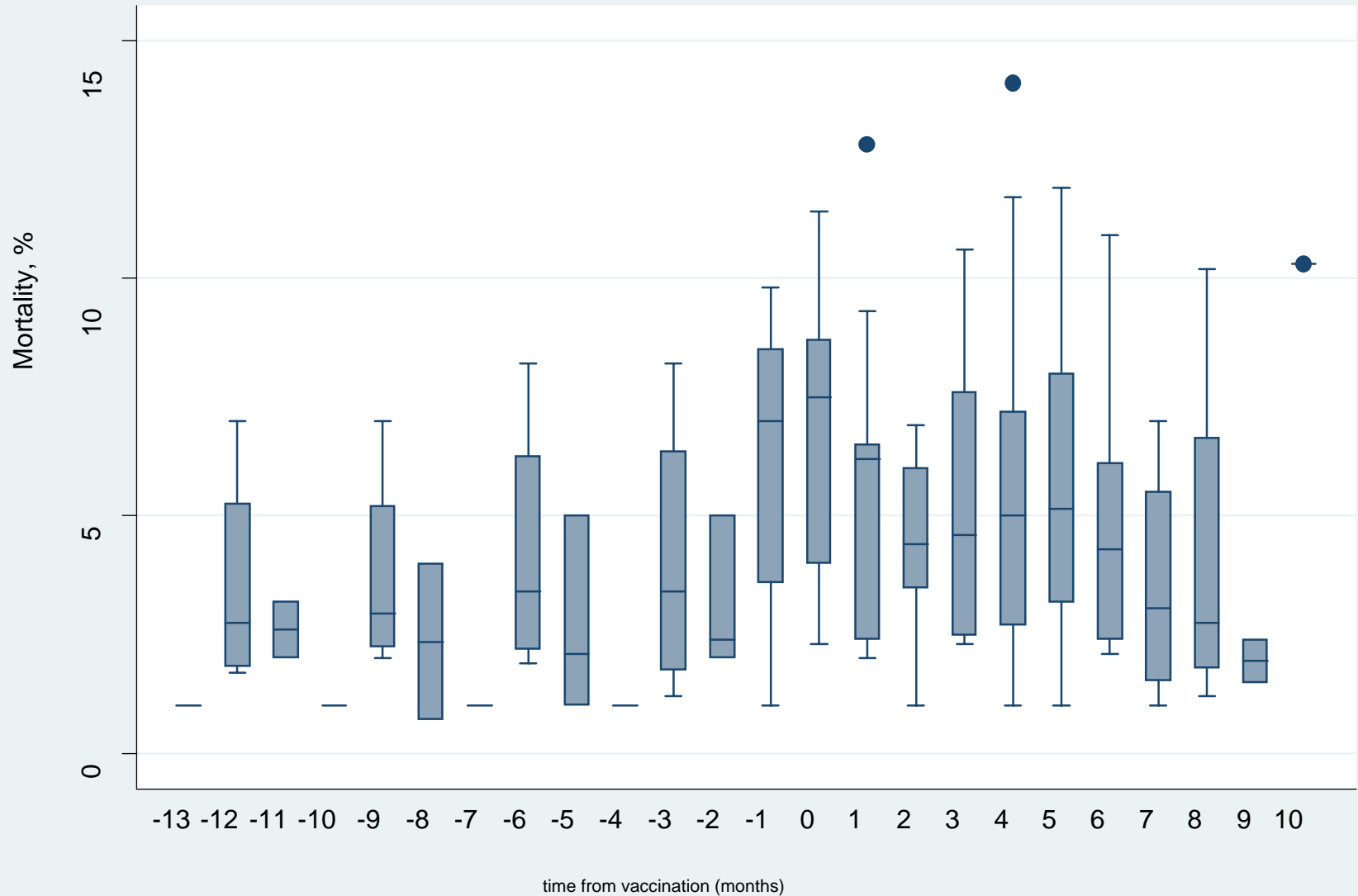
- Number of herds = 422
- Sows = 263,392
- Doses = 2,892,334
- Expenditure = £1,664,578

The challenges of analysis

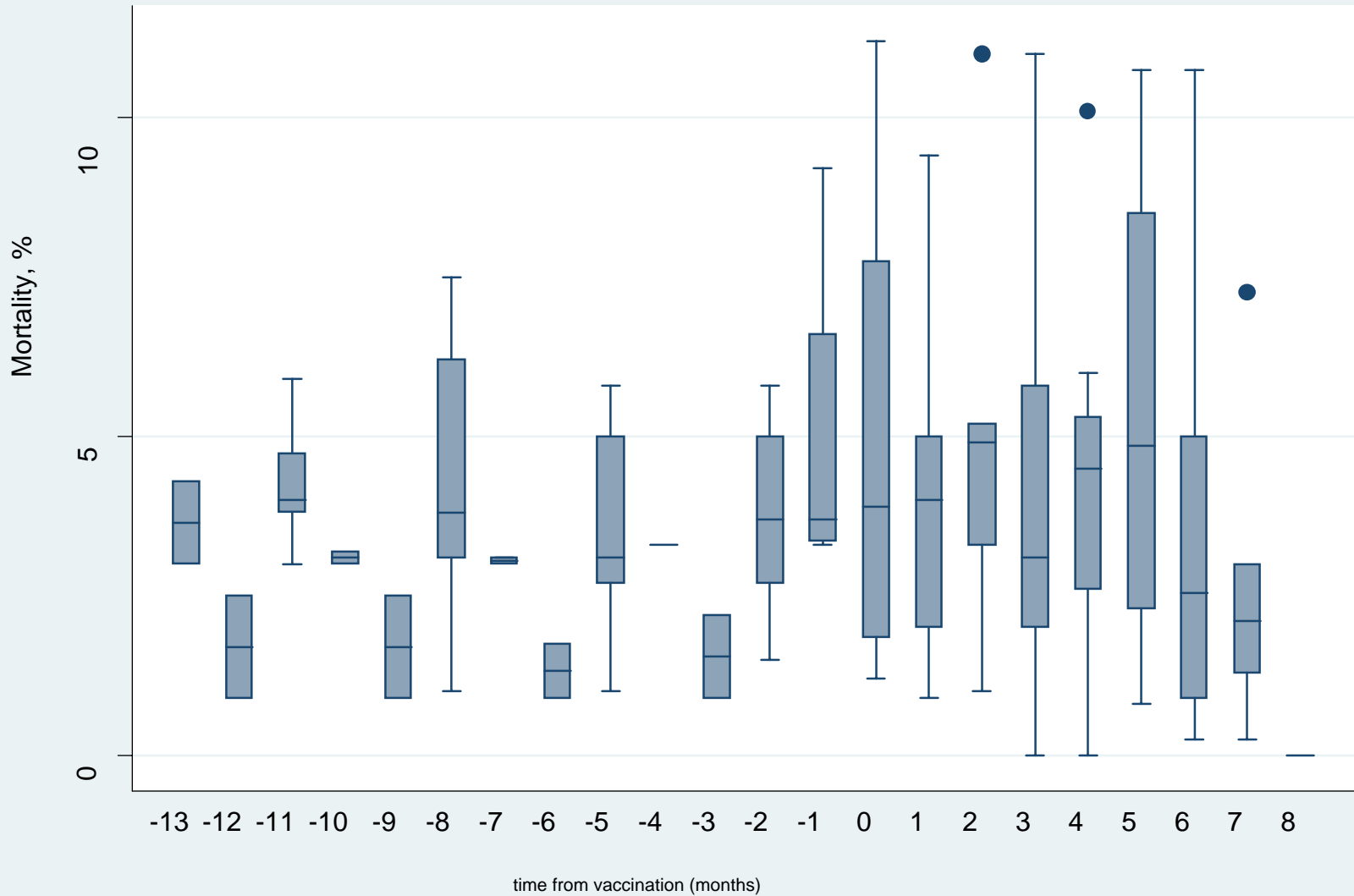
- Statistical controls
- Differences in recording methods
- Issues of management changes
- Changes to Feed formulation
- Seasonality
- The Weather

Finishing Herd Results

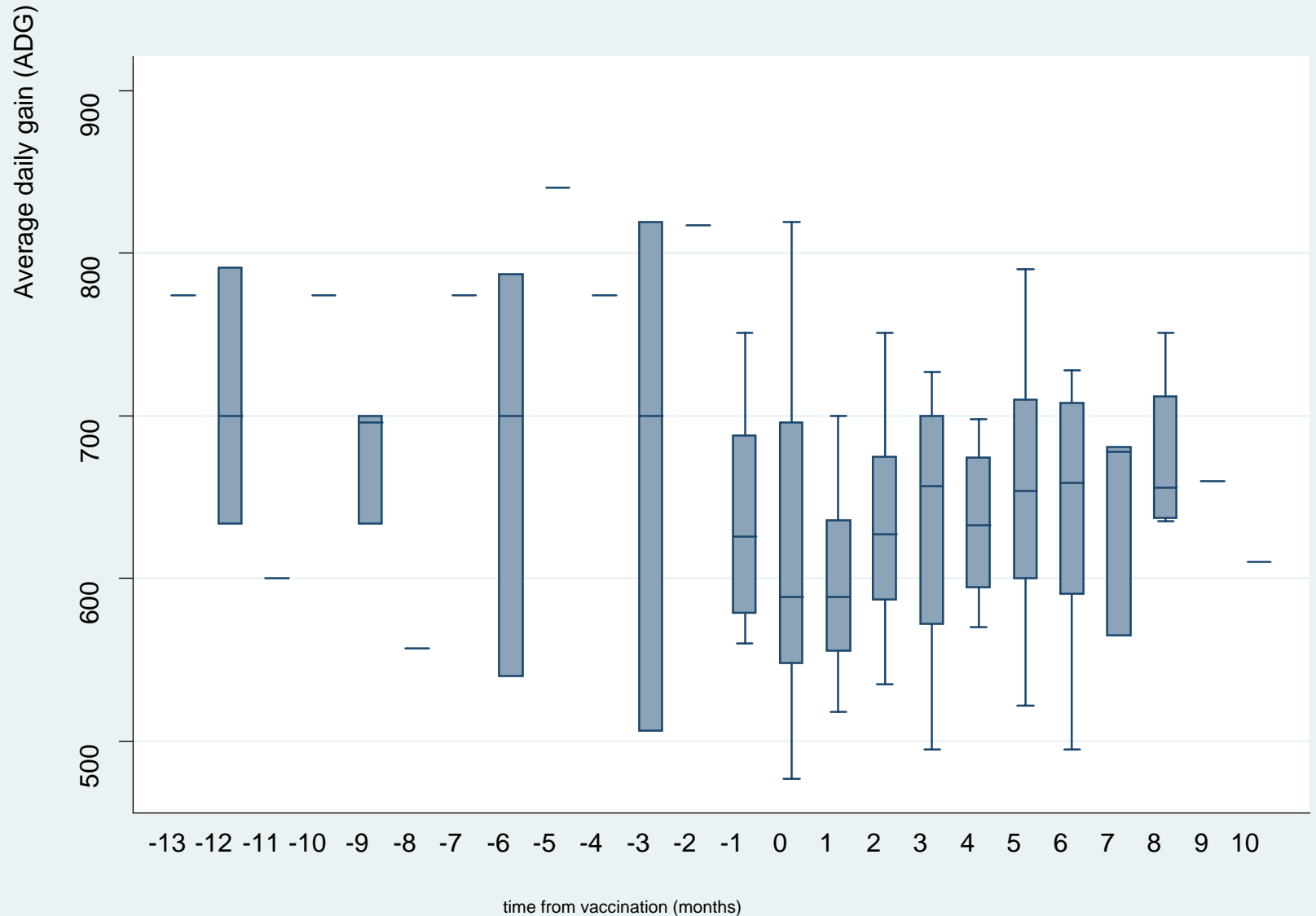
Circovac mortality



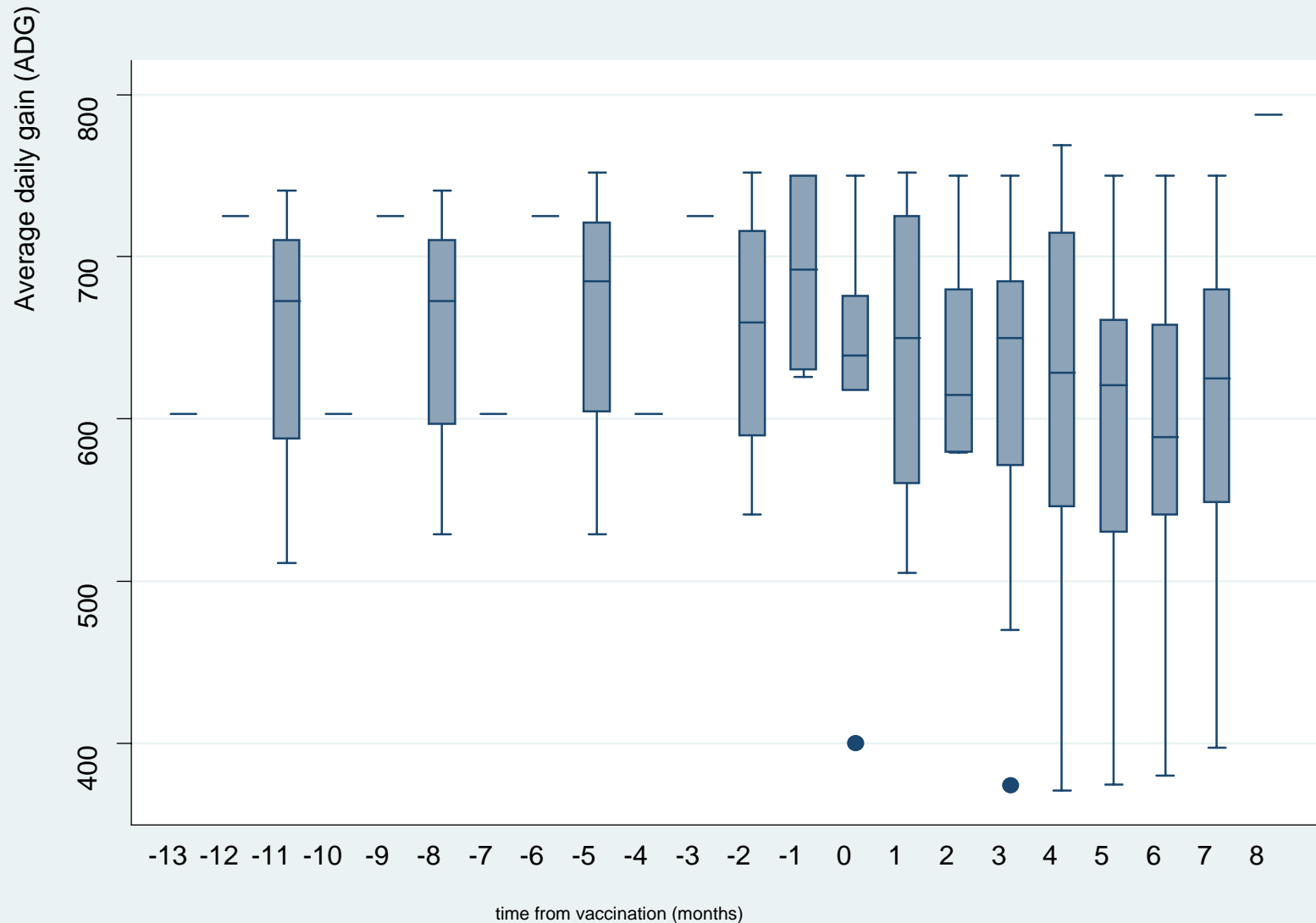
Circoflex mortality



Circovac growth rate



Circoflex growth rate



Breeding Herd Results

Circovac

...compared with 12 months earlier

- At 6 months post vaccination
 - +0.2 born and weaned per litter *
- At 9 months post vaccination
 - +0.4 born
 - More significant effects **
 - +5% conception

Circoflex

...compared with 12 months earlier

- At 6 months
 - +0.5 weaned *
- At 9 months
 - -6.5% return to service *
 - +1% conception rate *

Finishing Herd Results

Batch finisher 1

- 50 batches
- Total pigs in 83,631
- Unvaccinated 41,405 – 10 months pre
- Vaccinated 42,226 – 10 months post
- Single management system

Batch finisher 1

Variable	Vaccination status	Average	Variation	Significance
mortality, %	Unvaccinated	3.90	3.23-4.58	***
	Vaccinated	2.19	1.75-2.63	

Batch finisher 1

Variable	Vaccination status	Average	Variation	Significance
mortality, %	Unvaccinated	3.90	3.23-4.58	***
	Vaccinated	2.19	1.75-2.63	
growth rate, g/day	unvaccinated	778.5	760.1-796.9	**
	vaccinated	836.8	797.9-875.7	

Batch finisher 1

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	vaccinated	836.8	797.9-875.7	
feed conversion ratio	unvaccinated	2.88	2.79-2.97	NS
	vaccinated	2.85	2.73-2.98	

Batch finisher 2

- 56 batches
- Total pigs in 53,556
- Unvaccinated 23,227
- Vaccinated 30,329
- Single management system

Batch finisher 2

Variable	Vaccination status	Average	Variation	Significance
mortality, %	Unvaccinated	6.40	5.07-7.72	***
	Vaccinated	3.39	2.87-3.92	

Batch finisher 2

Variable	Vaccination status	Average	Variation	Significance
mortality, %	Unvaccinated	6.40	5.07-7.72	***
	Vaccinated	3.39	2.87-3.92	
growth rate, g/day	unvaccinated	656.0	635.0-677.0	*
	vaccinated	694.4	667.3-721.6	

Batch finisher 2

Variable	Vaccination status	Average	Variation	Significance
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	Vaccinated	3.39	2.87-3.92	
growth rate, g/day	unvaccinated	656.0	635.0-677.0	*
	vaccinated	694.4	667.3-721.6	
feed conversion ratio	unvaccinated	2.56	2.47-2.65	NS
	vaccinated	2.48	2.39-2.57	

Conclusions and Learning Points

- Sow and Piglet vaccines both delivering improved performance.
- Large numbers needed to prove the effects or very close control of comparisons
- Accurate recording vital for correct decision making on your unit.

BPEX PDC Leeds

- Merial Circovac® and Boehringer Circoflex® both used at Leeds University Spen Farm.
- 8 batches
 - Half vaccinated with sow vaccine, half not.
 - Within each batch half of each litters piglets vaccinated.
- Breeding, rearing and feeding herd traits measures together with Serology.

- 183 litters
- 1776 piglets

- NN = Unvaccinated control group
- SN = Vaccinated sow unvaccinated piglets
- NP = Unvaccinated sow vaccinated piglets
- SP = Vaccinated sow vaccinated piglets

Sow performance

Sow vaccination	No	Yes	Significance
Parity	5.2	4.6	NS
Total born alive	11.1	11.1	NS
4 week litter weight	78.6	82.1	*

Subsequent litter performance

Sow vaccination	No	Yes	Significance
Total born	12.2	12.8	NS
Born alive	11.2	11.7	NS

Effect of vaccination on post weaning performance

Sow/piglet vaccination	NN	NP	SN	SP	Significance Sow / Piglet	
Weaning weight (kg)	8.1	8.1	8.5	8.4	***	NS
Post weaning daily gain (g/day)	669	683	688	698	***	***
Lifetime daily gain (g/day)	597	607	611	618	***	***
Age at slaughter (days)	166	163	162	160	***	***

Mortality

					Significance	
Sow/piglet vaccination	NN	NP	SN	SP	sow	Piglet
Post weaning mortality (%)	7.1	5.4			**	
Post weaning mortality (%)	7.1	4.8	5.9	5.6	NS	NS

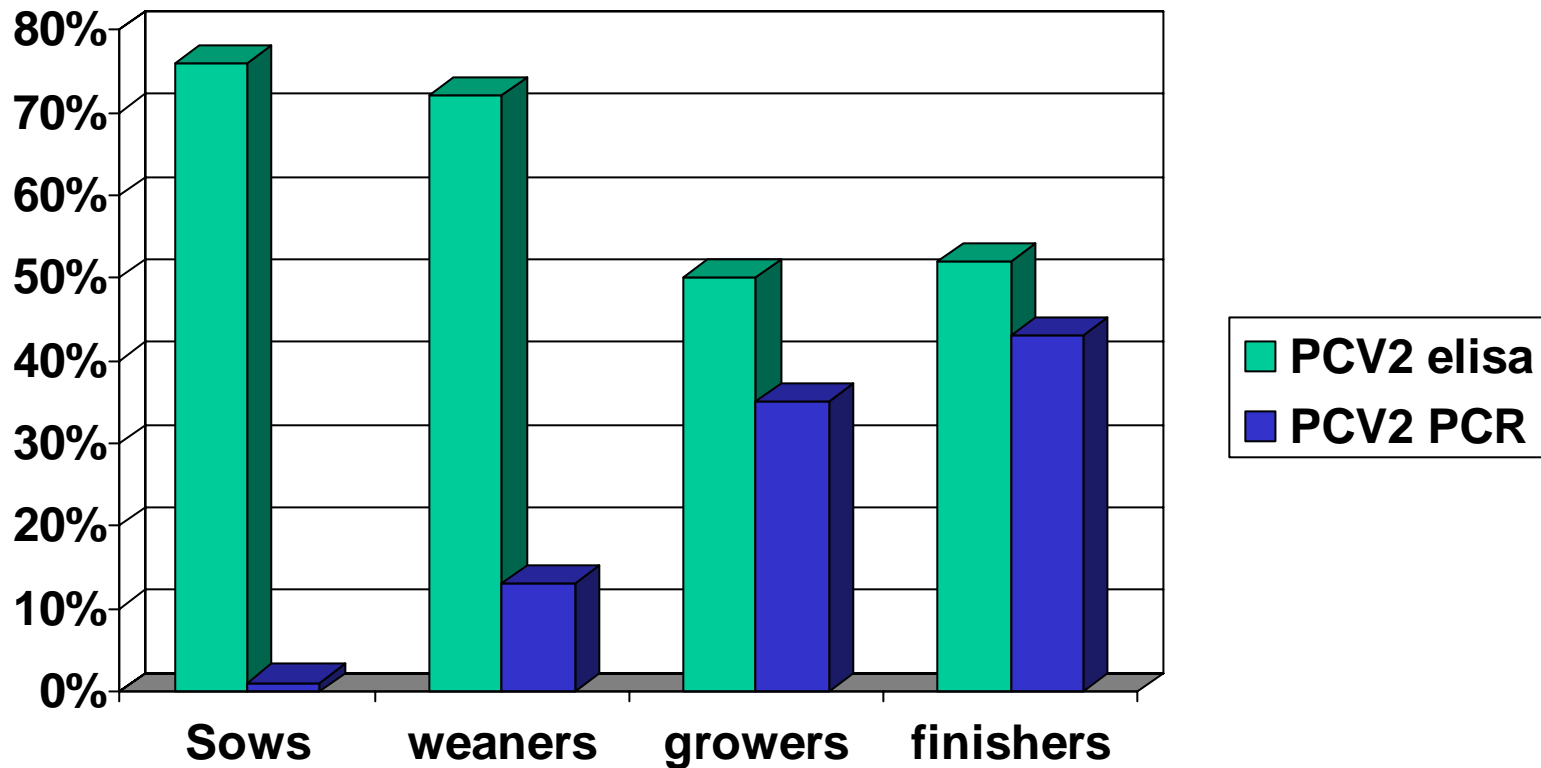
Laboratory results: Herd level

Includes results of 147 farms

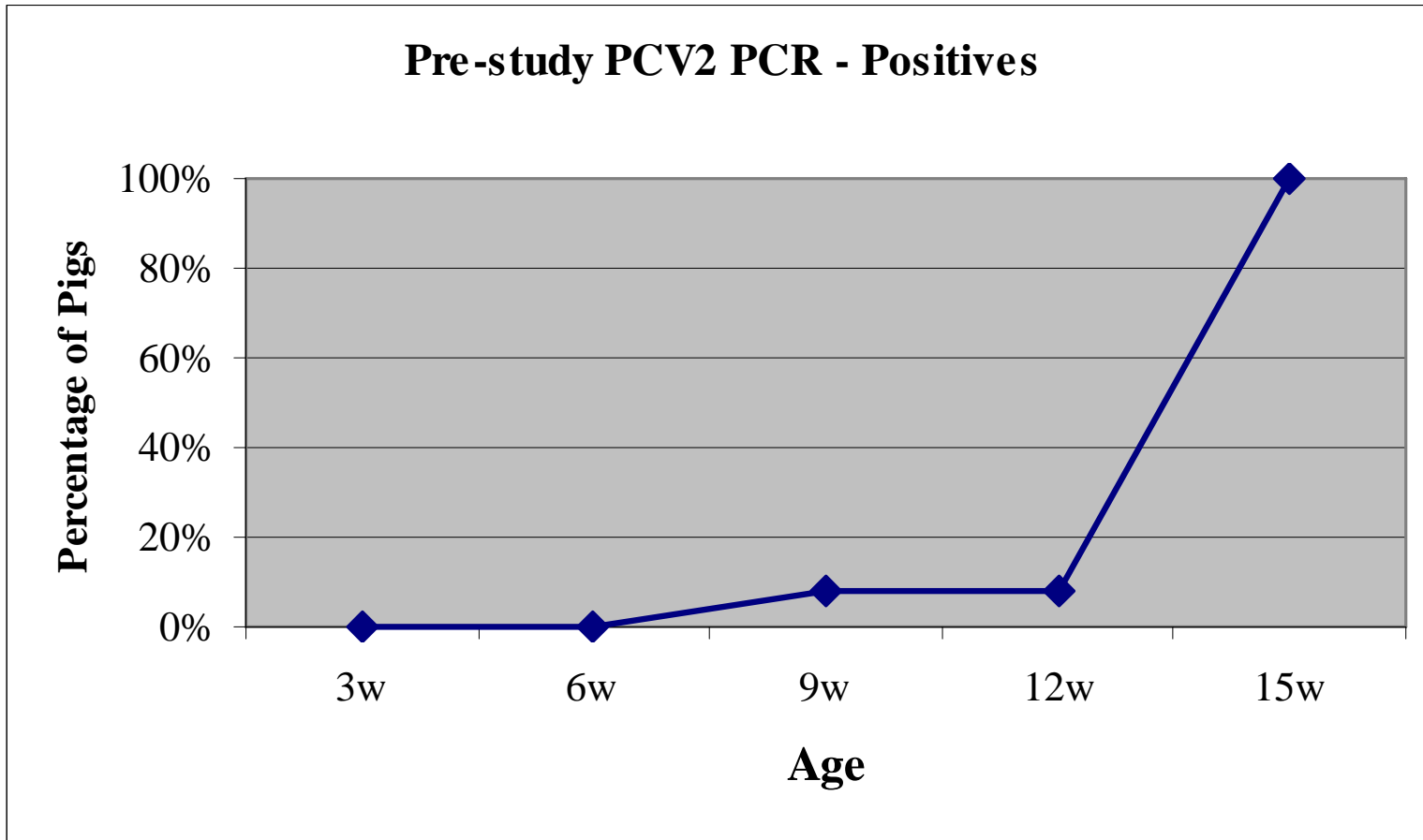
Test	+ farms	%
PCV-2 Elisa (Synbiotics)	145	98.6
PCV-2 qPCR	130	88.4
APP (Swinecheck APP 3, 6 & 8)	107	72.8
EP (Biobest in-house test)	73	49.7
PPV (Svanova ELISA)	126	85.7
PRRS (Biobest in-house test)	66	44.9

Laboratory results

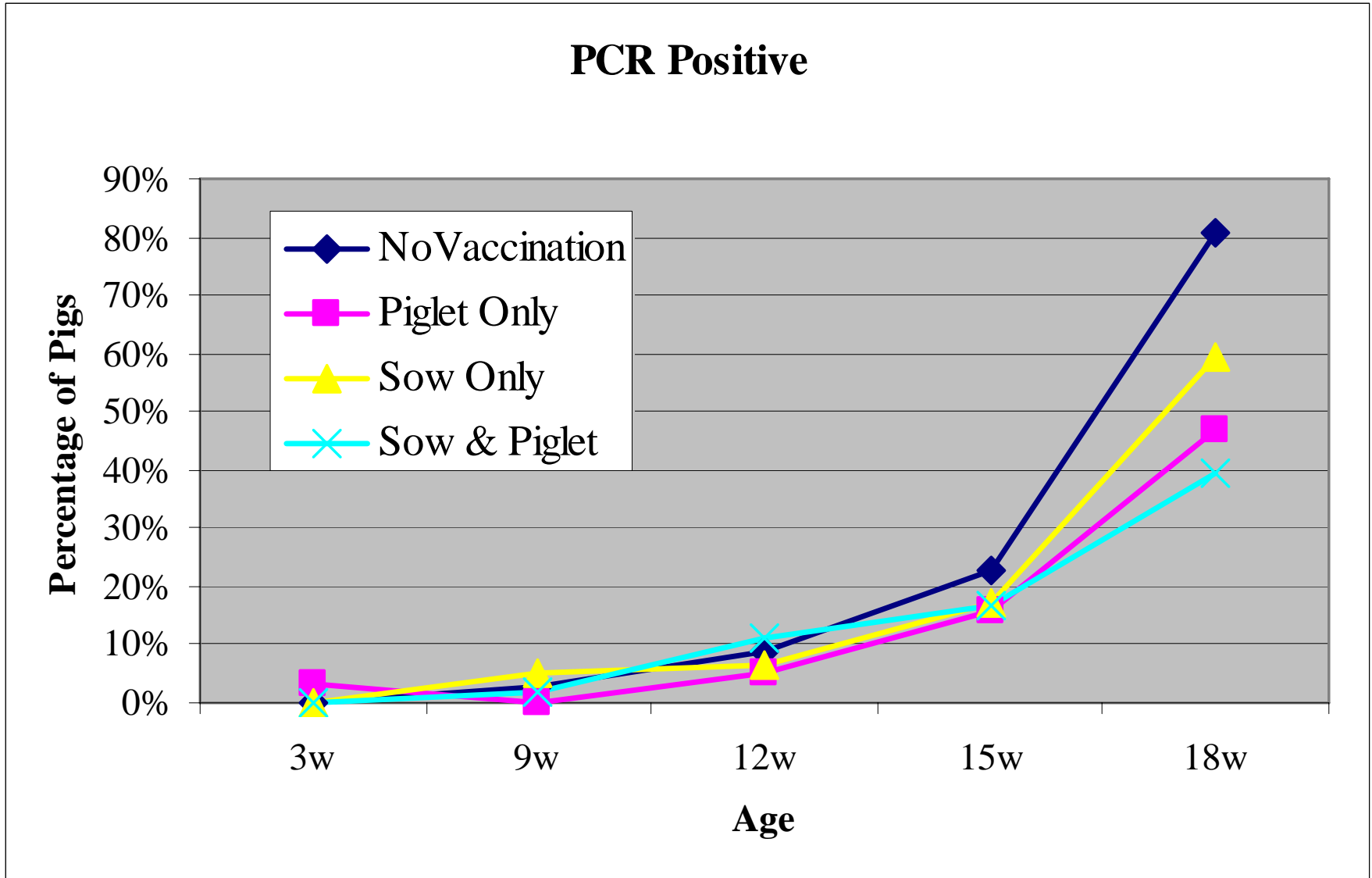
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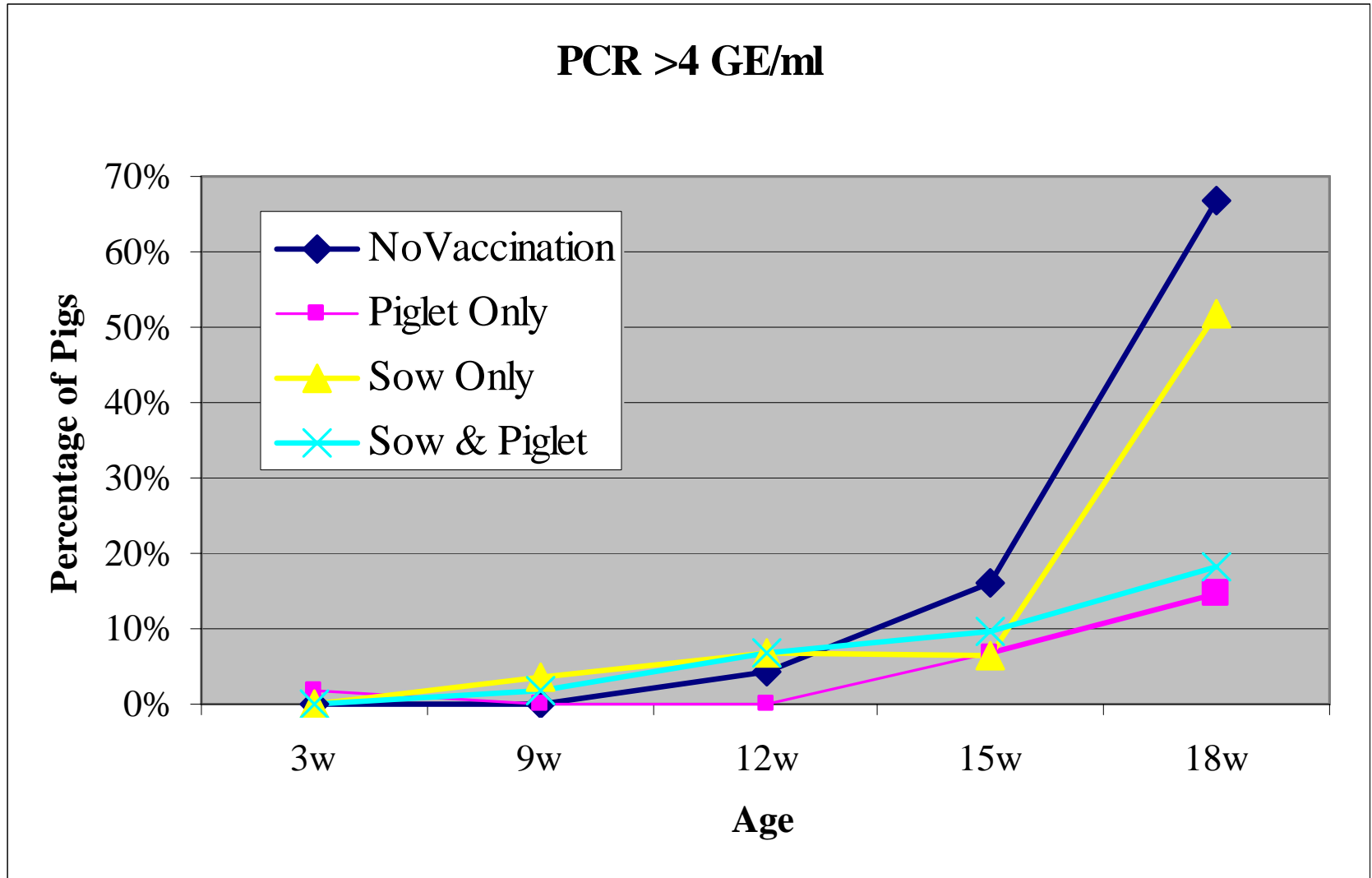
Leeds study



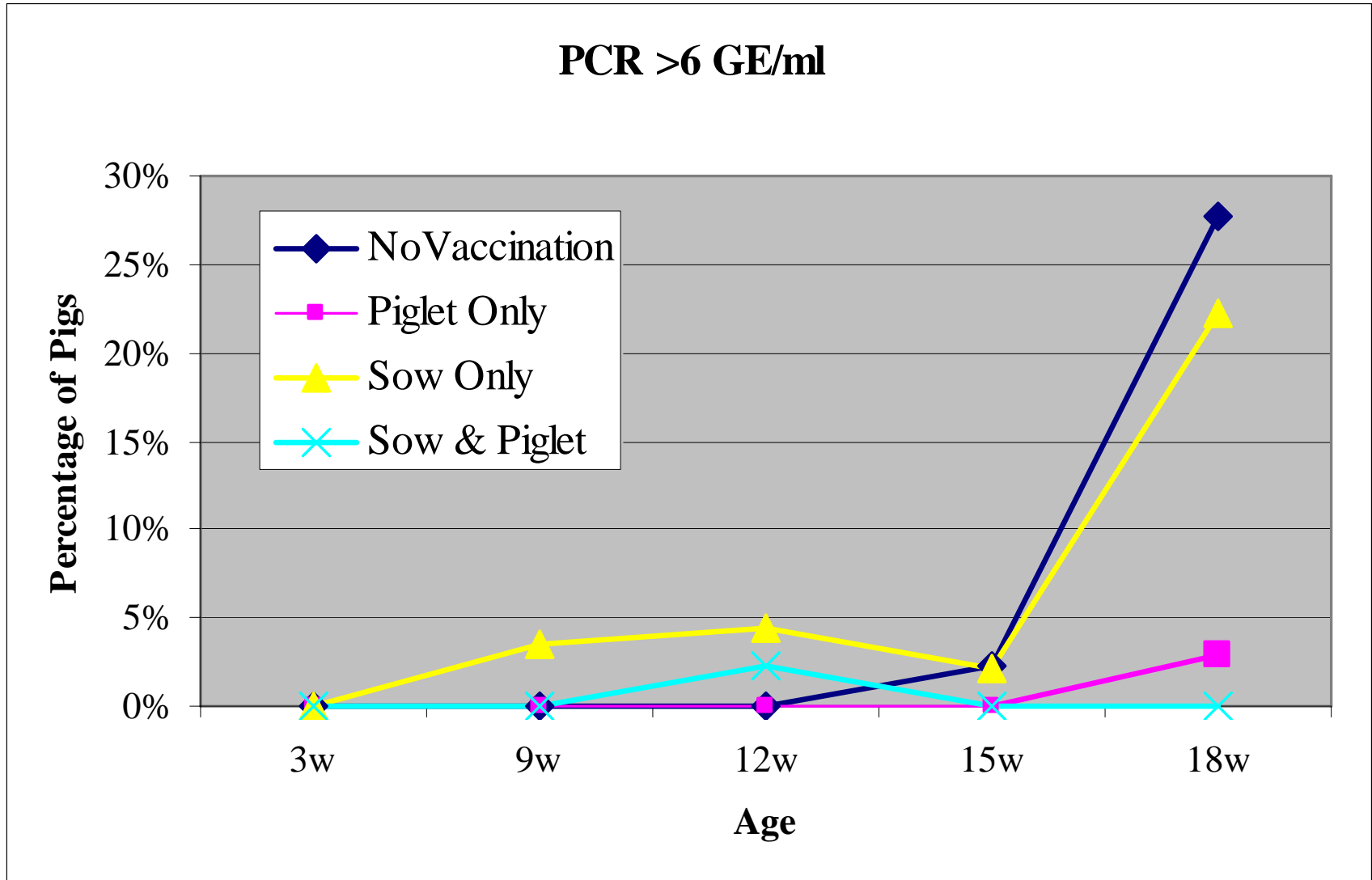
Leeds study



Leeds study



Leeds study



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Economics

- Breeding herd benefits
- Feeding herd benefits
- Additional benefits:
 - Slaughter pig uniformity 19% to 4%
 - More in the contract 'hot box' -8p/kg to -2p/kg
- Pluses
 - £0.94 to £1.00 for growth and mortality.
 - Additionally
 - breeding herd,
 - plus contract ...
- Minuses
 - Vaccine costs
- ROI

What's the performance on your unit?

Overall Conclusions

- Clear evidence that PCV2 vaccines do work to combat PMWS and PDNS delivering improved herd performance.
- It is clear that there are more health issues than PCV2 related diseases.
- PCV2 vaccines no substitute for excellent management.
- Large numbers needed to prove the effects or very close control of comparisons
- Accurate recording vital for correct decision making on your unit.
- What are your herd records telling you?