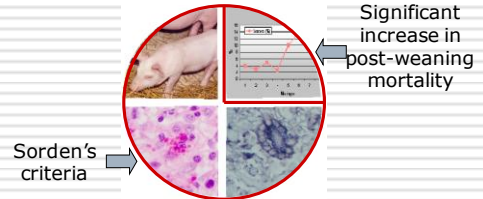


Profiles of seroconversion to PCV2 in herds of different clinical status

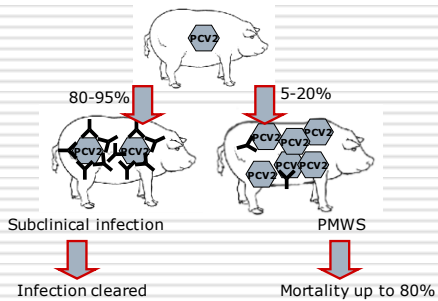
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Madrid, July 2010

PMWS diagnosis in Poland



A course of PCV2 infection



Are serological methods usable in PMWS diagnostics?

- Is there a difference in serological response between PMWS-affected and subclinically infected pigs?
 - Exp. infection studies pigs longitudinally followed – YES (Ladekjaer-Mikkelsen et al., 2002)
 - Naturally infected pigs longitudinally followed – YES (Grau-Roma et al., 2009)
- Is there a difference between PMWS-affected and healthy herds?
 - Earlier infection in PMWS-affected herds (Rose et al., 2003)
 - Difference in seroconversion? – non consistent results

Aim of the study

- Comparison of the seroconversion dynamics between PMWS-affected herds and herds subclinically infected with PCV2

Characteristics of herds

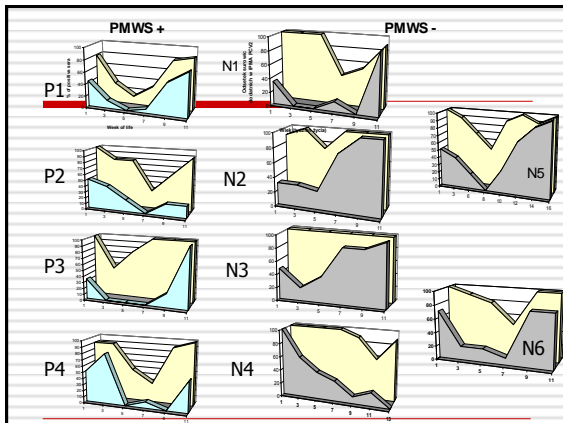
Herd	No. of sows	PMWS status	Postweaning morbidity /mortality (%)	Recognized diseases
P1	900	+	30/12	PRRS, streptococcosis, Glasser disease
P2	600	+	20/4.5	PRRS
P3	500	+	20/10-12	Aujeszky disease, pleuropneumoniae, atrophic rhinitis, mycoplasmal pneumoniae, dyzentry, adenomatosis, PRRS
P4	700	+	30-35/10	PRRS, dyzentry, adenomatosis, pleuropneumoniae
N1	900	-	-	adenomatosis, dyzentry,
N2	1800	-	1-1.5/1-1.5	PRRS
N3	400	-	5/5	PRRS, atrophic rhinitis, mycoplasmal pneumoniae, streptococcosis, adenomatosis, dyzentry, pleuropneumoniae
N4	220	-	1/1	-
N5	3380	-	30/10	PRRS, pleuropneumoniae
N6	1700	-	1/1	-

Material and methods

- Farms
 - PMWS-affected = case (P1-P4)
 - Control (N1-N6)
- Sampling
 - Sera collected simultaneously and randomly from 10-15 animals in 6-7 age groups between the 1st and 11th-13th week of life (1,3,5,7,9,11,13)
 - Sampling was unrelated to the clinical status of pigs

Material and methods

- Laboratory tests: IPMA
 - 1:100 and 1:1000 sera dilutions
 - Results expressed as a proportion of seropositive pigs in a given age group
 - **Seroconversion of an age group** = the age group where seroconversion occurred was identified based on increased number of seropositive pigs compared to preceding age group.
 - 2-fold titration of selected sera



Age of seroconversion

Herd	% of seropositive pigs in week of life											
	1		3		5		7		9		11	
	1:100	1:1000	1:100	1:1000	1:100	1:1000	1:100	1:1000	1:100	1:1000	1:100	1:1000
P1	78.5	42.8	33.3	13.3	13.3	0	33.3	6.6	80	53.3	86.6	73.3
P2	100	50	80	40	80	20	30	0	60	20	90	20
P3	100	33.3	46.6	0	76.9	0	100	0	100	23	100	100
P4	90	50	90	80	50	0	30	10	90	0	100	50
N1	100	33.3	100	0	100	0	42.8	0	55.5	33.3	90	90
N2	90	30	100	30	75	25	100	77.7	100	100	100	100
N3	100	46.6	100	20	100	40	100	86.6	100	86.6	100	100
N4	100	100	100	60	100	40	100	30	90	10	60	20
N5	100	50	90	40	70	20	50	0	90	30	100	70
N6	100	70	90	20	80	20	50	10	100	80	100	80

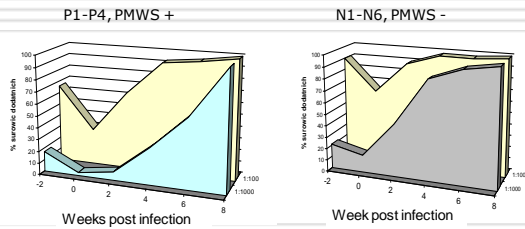
Age of seroconversion/infection

Herd	% of seropositive pigs in week of life											
	1		3		5		7		9		11	
	1:100	1:1000	1:100	1:1000	1:100	1:1000	1:100	1:1000	1:100	1:1000	1:100	1:1000
P1	78.5	42.8	33.3	13.3	13.3	0	33.3	6.6	80	53.3	86.6	73.3
P2	100	50	80	40	80	20	30	0	60	20	90	20
P3	100	33.3	46.6	0	76.9	0	100	0	100	23	100	100
P4	90	50	90	80	50	0	30	10	90	0	100	50
N1	100	33.3	100	0	100	0	42.8	0	55.5	33.3	90	90
N2	90	30	100	30	75	25	100	77.7	100	100	100	100
N3	100	46.6	100	20	100	40	100	86.6	100	86.6	100	100
N4	100	100	100	60	100	40	100	30	90	10	60	20
N5	100	50	90	40	70	20	50	0	90	30	100	70
N6	100	70	90	20	80	20	50	10	100	80	100	80

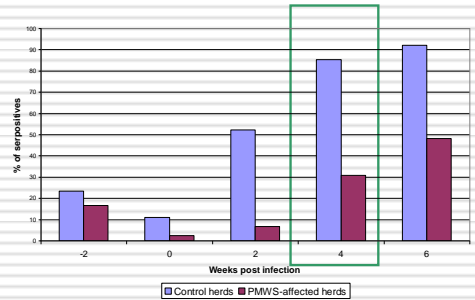
Normalisation according to the age of inferred infection

Herd	% of seropositive pigs in weeks pre- and post infection (week 0)													
	-6		-4		-2		0		+2		+4		+6	
	ORIT	ORIT	ORIT	ORIT	ORIT	ORIT	ORIT	ORIT	ORIT	ORIT	ORIT	ORIT	ORIT	ORIT
P1	78.5	42.8	33.3	13.3	13.3	0	33.3	6.6	80	53.3	86.6	73.3		
P2	100	50	80	40	80	20	30	0	60	20	90	20		
P3	100	33.3	46.6	0	76.9	0	100	0	100	23	100	100		
P4	90	50	90	80	50	0	30	10	90	0	100	50		
N1	100	33.3	100	0	100	0	42.8	0	55.5	33.3	90	90		
N2	90	30	100	30	75	25	100	77.7	100	100	100	100		
N3	100	46.6	100	20	100	40	100	86.6	100	86.6	100	100		
N5	100	50	90	40	70	20	50	0	90	30	100	70		
N6	100	70	90	20	80	20	50	10	100	80	100	80		

Serological profiles normalized according to the age of infection



Serological profiles normalized according to the age of infection



Summary results

Herd	PMWS status	Seroconversion to PCV2 (week of life)	% of pigs seropositive at 1:1000 dilution 4 weeks p.i.	Mean titre (log)
P1	+	7	53,3	3,48
P2	+	9	20	2,9
P3	+	5	0	3,48
P4	+	9	50	not tested
N1	-	9	90	4,75
N2	-	7	100	4,36
N3	-	5	86,6	4,47
N4	-	13	no data	not tested
N5	-	10	70	4,23
N6	-	9	80	4,16

Conclusions

- In PMWS-affected herds the compromised serological response may be detected not only in pigs with clinical symptoms
- Quantitative/semi-quantitative serology should be considered as a potential diagnostic tool

Thank you for attention