



RISK FACTORS FOR PIGLET MORTALITY IN DANISH ORGANIC PIG PRODUCTION

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THE PROJECT

- ▶ What? Identifying the risk factors of piglet mortality in Danish organic pig production.
- ▶ Why? An estimated pre weaning mortality between 25 and 40 % is unsustainable both from an economic and animal welfare point of view.
- ▶ How?
 1. Detailed on farm registrations on the piglet mortality in 9 farms during one year
 - › Approximately 6000 farrowings
 2. Necropsies on a selection of the dead piglets from the 9 farms
 - › 100-125 piglets per farm per season ~ 4000 necropsies



STOCKMAN RECORDINGS FOR MORTALITY CALCULATIONS- **METHODS**

- ▶ A pocket sized booklet.
- ▶ Counting and registration of piglets four times during the seven week long pre weaning period; At birth, castration (or 3-5 days after birth), vaccination (or 14-21 days after birth) and at weaning.
- ▶ Registrations on the sows include: Parity, body condition, health status and functional teats on the gilts.
- ▶ Data collection from June 2014 until May 2015
- ▶ **Registrations on approximately 6000 farrowings**

STOCKMAN AND THEIR RECORDINGS DIFFERS ...

Hold:	So nr.	500	774	911	635	642	705
	Hytte	73	63	26	115	65	44
	Læg nr	5	2	1	4	4	3
Indsæt føremærk	Dato	198	45/2	25/2	19/2	25/2	13/2
	Halvbed (0-1) + Huld (2-4)	3	7	4	3	2	3
Faring	Faring, dato	24/6	29/1	24/2	24/2	29/1	29/1
	1. tilsyn efter faring, dato						
	Dødføde	5	3		6	2	1
	Døde efter faring (S/A)		1 5	1 5		3 5	
Indtil kastning	Levendeføde	19			18	24	22
	Heraf små (max. 21 cm)		2			1	
Gylte	Kuldudjævning +/-	-1	-3	+9	-3	-6	
	Antal pætter	14	14	14	14	15	
Kastrering	Kastrering dato	20/6	20/6	20/6	20/6	20/6	
	Antal grise v/start	14	14	12	14	12	13
	Affliv. efter optæll. antal						
Førgård/vaccination	Evt. kuldudjævning +/-		73			-2	-2
	Dato	19/8	17/8	7/9	13/9		
Fravæning	Antal grise	13	13	10	12	13	
	Dato	20/6	20/6	14/10	20/10	20/10	
Noter (evt system*)	Antal grise frav. soen	12	11	2	10	12	13

*Lidelse: 1: Farefeber 2: yverbet. 3: ben 4: andet. Antibiotika i/v

Række	4	AVLs 500-579	580-599	600-699	700-799														
Byg	Hytte	So nr.	Læg	Indtil Huld	Faring	Lev.	Dørf.	Små	Dødføde	Kuldudjævning i kast.	Kastrering	Antal	Kuldudjævning	Antal	Fravæning	Antal	Ligger med	Døde	Bemærkning
13	770	136	3	30/6	19/8	0					1/7	14	21	15/7	13	1			
14	770	136	3	30/6	12	2				+21	1/7	12	21	15/7	12	1			
15	534	136	3	20/6	22	7	1				20/6	12	21	14/2	11	1			AVL (4)
16	519	136	3	25/6	12		1			-44	2/7	13		14/2	13	1			
17	518	136	3	28/6	19					2	20/6	11		14/2	8	1			Reponering 3/2
18	524	136	3	29/6	22	2	2				20/6	19	24	14/2	13	1			
19	520	136	3	20/6	17	1	4	1			1/7	16	22	11/2	12	1			12 år
20	75	136	3	26/6	20		2			-4	20/6	11	22	15/7	12	1			12 år
21	642	136	3	6/6	10	1	2				X	3		14/2	13	1			Amesoo
22	461	136	3	15/6	19	1				26/5	20/6	12		14/2	10	1			Bytteso
23	131	136	3	2/6	16	1	2	2			20/6	13		14/2	11	1			11 år
24	438	136	3	27/6	25	3	2	4		3	20/6	13	21	14/2	12	1			11 år
25	106	136	3	17/6	17			1		5	20/6	12		14/2	10	1			Bytteso
26	754	136	3	18/6	18	8					23/6	13		14/2	12	1			Bytteso
27	478	136	3	26/6	23			1		2	20/6	14		14/2	11	1			11 år
28	530	136	3	25/6	18		3	1			20/6	12	22	15/7	12	1			11 år
29	505	136	3	29/6	13		2			-2	20/6	11		15/7	10	1			11 år
30	487	136	3	28/6	14			1			20/6	11		15/7	11	1			11 år
31	538	136	3	26/6	17		2				20/6	14	23	15/7	13	1			11 år
32	458	136	3	29/6	15					1	2/7	14		15/7	11	1			11 år
33	434	136	3	26/6	18			1			20/6	12	2	15/7	10	1			11 år
34	524	136	3	26/6	18					3	20/6	12	22	15/7	12	1			AVL (5)
35	500	136	3	29/6	18					-6	20/6	16	2	15/7	12	1			AVL (6)
36	531	136	3	29/6	16	1				-1	20/6	14		15/7	14	1			14 år
37	484	136	3	29/6	19	4		5			20/6	13		15/7	12	1			12 år
38	493	136	3	28/6	18					3	20/6	14	21	15/7	13	1			12 år
39	507	136	3	29/6	18					2	20/6	16	22	15/7	12	1			12 år

Prognosis 23-24

CROSS FOSTERING AND NURSING SOWS IS DIFFICULT

- ▶ Risk of double registrations when cross fostering piglets and using nursing sows
- ▶ Communication with the farmers and the employees in the farrowing unit
 - Have they changed their daily routines?
 - Are new employees being trained to do the registrations correctly?



NECROPSIES - METHODS

- ▶ Dead piglets from approximately 25 sows on each farm.
- ▶ 4 collection periods - summer, autumn, winter and spring.
- ▶ Collection during the same 12 month period as the mortality registrations are performed.
- ▶ Dead piglets are kept frozen and necropsies are performed at the farms.
- ▶ Detailed information on body condition, stomach content etc. and a cause of death is noted for each piglet.

- ▶ **Necropsies on approximately 4000 piglets**

NECROPSIES - A PICTURE IS WORTH A THOUSAND WORDS





NECROPSIES - ISSUES

- ▶ Dystocia vs. crushed – from what do the oedema originate?
- ▶ Intrauterine Growth Restriction (IUGR) is hard to evaluate
- ▶ Diagnoses on older piglets – often in need of histology or other diagnostic tools
- ▶ Consistency in the use of diagnoses



THE END PRODUCT OF THE STUDY

- ▶ A PhD thesis including three peer reviewed articles to be published in internationally recognised journals.
- ▶ Suggestions on how to combine the results from the necropsies and the detailed registrations in solid hypotheses



HYPOTHESES – WORK IN PROGRESS

- ▶ A proportion of piglets that are diagnosed as crushed have other potential underlying predisposing factors such as poor nutritional state, low birth weight or infectious diseases.
- ▶ Poor health status, nutritional stage and high parity of the sow will increase the piglet mortality rates.
- ▶ There is a significant difference of pre weaning mortality and causes of death both regarding the temporal distribution and in the individual variations between the farms.

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