THE INCIDENCE OF THIN-TO-WASTING PIGS WITH RESPECT TO RACE IN A PROGENY TEST STATION AFFECTED BY PMWS

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Introduction

In December 2003, the index case of PMWS in Sweden was diagnosed in a progeny test station, receiving animals from 18 pure bread nucleus herds. The test station was established in March 2002 and effectuated rearing strategies not used elsewhere in Sweden. The pigs arrived at the day after weaning and they were repeatedly mixed and moved during the testing period. Thus, it was concluded that the total pathogen load of the 18 nucleus herds in combination with the stressors at the test station was enough to induce PMWS (1).

In March 2004 the test station was closed down due to the PMWS and the present paper scrutinises the incidence of thin-to-wasting pigs (TW-pigs) recorded at the station.

Table 1 The incidence of thin and wasting pigs (TW-pigs) in a progeny test station affected by PMWS

Herd of origin	Pigs at stn	Thin or wasting pigs	
	n	n	%
All Landrace	655	74	11.3
All Yorkshire	509	45	8.8
All SPF-Y	137	15	11.7
All Hampshire	497	14	2.8
L1 #	130	18	14.8
L2	8	1	12.5
L3	173	21	12.1
L4 (also herd H4)	177	20	11.3
L5	9	1	11.1
L6	102	10	9.8
L7	34	3	8.8
L8	22	0	0
Y1 ##	109	15	13.8
Y2	107	12	11.8
Y3	124	9	7.3
Y4	97	7	7.2
Y5	72	2	2.8
Y-SPF 1, establ 99*	73	9	12.3
Y-SPF 2, establ 98*	64	7	10.9
H1	149	7	4.3
H2	145	4	2.8
H3	129	3	2.3
H4 (Also herd L4)	74	0	0

Herd deemed for PMWS in March 2004
Herd with a continuous exchange of boars with
* Established by purchase from the index Y-SPF herd established by Caesareans of sows from herd Y3 in 1988.

Materials and Methods

Totally 1798 pigs aged 5 weeks entered the test station before it was closed down due to PMWS; Landrace from 8 herds; Yorkshire from 5 herds; SPF-pigs (Y) from 2 herds and Hampshire from 4 herds. One herd (L4-H4) delivered both L and H pigs. With the exception of herds L1 and Y1 which exchanged boars, all these herds were closed and recruitet new genes only via artificial inseminations

Animals denoted as TW-pigs were recorded and the incidences of TW-pigs were compared between races and between herds using χ^2-tests.

Results

TW-pigs (n = 149, 8,3% of all pigs) included animals denoted as thin (n=132; 7.3%) or wasting (n=17; 0.9%). They were assorted according to race and herd of origin (Table 1). No significant difference in incidence of TW-pigs was recorded when L and Y pigs were compared. Pigs from SPF herds (Y) had the highest incidence of TW-pigs, but still this incidence did not differ significantly from that of conventional Y or L pigs, nor from herd Y3 from were they indirectly were recruited ($p>0.05$).

The incidence of TW-pigs was significantly ($p<0.001$) lower among H pigs than for any other race or category of animals.

The incidence of TW-pigs of H origin from herd L4-H4 was significantly lower than for pigs of L origin (0% vs 11.3%; $p<0.01$).

Discussion

When PMWS was diagnosed at the test station it was the index case of Sweden (1). Four months later PMWS was diagnosed in herd L1 (1), and it is notable that this herd had the highest incidence of TW-pigs at the station. It is also noteworthy that herd Y1, which continuously exchanged boars with L1 had the second highest incidence of TW-pigs. However, PMWS has not yet been diagnosed in herd Y1.

The incidences of TW-pigs differed between herds within race, indicating an influence of genes and/or pathogen load in the herd of origin. It is worth noticing that pigs from the SPF herds had rather high incidences of TW-pigs, possibly indicating a risk of mixing pigs with different health status.

The results indicate that pure bred Hampshire under these conditions was least likely to become TW-pigs. Not the least elucidated by the pigs emanating from herd L4-H4, since pigs of the two breeds from this herd had shared environment also prior to entering the test station

Reference

1. Wallgren et al., (2004), VetQ. 26:170-187