

EVALUATION OF TURBINATE ATROPHY IN SLAUGHTERED PIGS IN THAILAND BY NASAL LESION SCORING

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INTRODUCTION

Porcine Atrophic Rhinitis (AR) caused by toxigenic strains of *Bordetella bronchiseptica* (Bb) and *Pasteurella multocida* type D toxin (PMT) is a disease with a seriously underestimated economic cost. This disease has two forms of presentation; Non-Progressive AR (NPAR), produced by Bb, induces growth retardation and poor health status (sneezing) and Progressive AR (PAR), induced by toxigenic *Pasteurella multocida*, causes severe cases of nasal septal deviation¹. Other pathogens historically associated with AR are *Haemophilus parasuis*, *Mycoplasma hyorhinis*, *Streptococcus suis* and viral infections such as Swine Influenza. In Thailand, disease knowledge is poor and how the swine population is affected is unknown. The main objective of this study was to evaluate the prevalence of nasal lesions associated with AR in Thai slaughterhouses.

MATERIALS AND METHODS

A farrow-to-finish unit with >800 sows was selected for this study during 2019. Three hundred eight pigs from 15 farms from Northern (N), Northeastern (NE), Eastern (E) and Western (W) regions of Thailand were evaluated. A blind analysis was carried out for turbinate bone atrophy and nasal septum deviation in accordance with the scoring shown in table 1². Pigs from both vaccinated and non-vaccinated sows were included in the study. Lesions in this study were divided into 4 grades: score 0 = no lesion (Normal), score 1-4 = mild lesions, score 5-11 = moderate lesions; 12-18 = severe lesions.

Lesion grade	
Turbinate atrophy (16 points)	
0 - Normal	
1 - < Half absence	
2 - > Half absence	
3 - Straight turbinate	
4 - Complete absence	
Septal deviation (2 points)	
0 - Normal	
1 - Slight deviation	
2 - Deviated septum	
Total (18 points)	

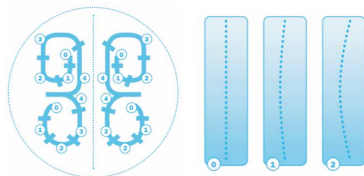


Table 1. Nasal lesion scoring system

RESULTS

181 out of 242 fattening pigs' noses (74.8%) derived from unvaccinated sows showed lesions. 57 out of 66 fattening pigs' noses (86.4%) derived from vaccinated sows showed affected pigs. Mild nasal lesions were mostly observed in fattening pigs from both unvaccinated sows and vaccinated sows.

N° farm	Region	N° sample	Nasal Score (%)			
			0	1-4	5-11	12-18
Fattening pigs from unvaccinated sows						
1	N	20	15	40	40	5
2	W	50	18	70	12	0
3		33	57.6	42.4	0	0
4	NE	20	20	75	5	0
5		20	5	60	30	5
6		20	20	55	25	0
7	E	15	20	53.3	26.7	0
8		20	50	35	15	0
9		20	15	70	15	0
10	E	40	10	62.5	27.5	0
11		5	20	80	0	0
Total		242	25.2	54.5	19.4	0.8
Fattening pigs from vaccinated sows (No RHINISENG [®] vaccine)						
12	N	20	15	45	40	0
13	NE	10	10	70	20	0
14		16	12.5	50	37.5	0
15	E	20	15	60	25	0
Total		66	13.6	54.5	31.8	0

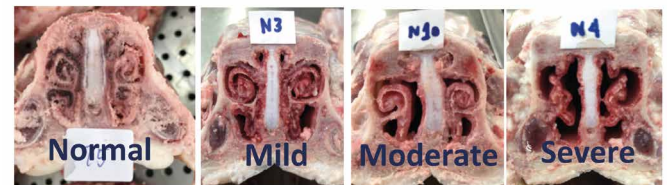


Table 2. Nasal sections of pig snout

CONCLUSIONS AND DISCUSSION

This study shows the presence of PAR on Thai swine farms all over Thailand. Moreover, NPAR is also present in pigs vaccinated against AR. The nasal lesion scoring system used in this study was helpful for evaluation of farm status in terms of PAR.

Therefore new AR vaccines should be tested and evaluated on Thai farms in order to improve the current status of PAR and NPAR in Thailand.

ACKNOWLEDGMENTS

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REFERENCES

1. Gu S et al. 2017. J Vaccines Vaccin 8:1.
2. Liu w et al. 2017. APVS 2017 China (Poster presentation)