

FACTORS ASSOCIATED WITH THE SPREAD AND EFFECT OF PLEUROPNEUMONIA  
IN PIGS CAUSED BY HAEMOPHILUS PLEUROPNEUMONIAE  
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Healthy pigs carrying *Haemophilus pleuropneumoniae* (HP) are believed to play an important role in the spread of pleuropneumonia. Although pleuropneumonia is readily induced in pigs under no detectable stress conditions the effect of HP infection under field conditions might still be influenced by environmental stress factors. The purpose of this study was to evaluate the prevalence and factors influencing the spread and effect of pleuropneumonia in Ontario.

A questionnaire was mailed to 2000 randomly selected producers who had shipped 100 or more pigs the preceding year. The participants were asked to answer questions on herd size and type of operation, restock practice, pen size and number of pigs per pen, unthriftiness, disease preventative measures, whether or not pleuropneumonia had been diagnosed, mortality as a result of pleuropneumonia, conditions triggering pleuropneumonia, seasonal incidence and treatment practices.

A total of 418 producers returned a completed questionnaire. The data were entered on a SPSS computer program. Odds ratio and  $\chi^2$  were used to calculate effect and significance of factors influencing disease. The prevalence of pleuropneumonia in herds with feeder pigs only was 34.3%, and 16.0% among sow herds. The overall prevalence was 23.2%. Disease was introduced with new stock. The proportion of herds with pleuropneumonia was 2.4 times higher among open herds compared to closed. Purchase of stock from salesbarns was approximately 4.7 times more often associated with pleuropneumonia than any other purchase practice and 8.6 times higher than closed herd operation. Purchase from one or a few breeders known to the owner did not confer significantly higher risk than operating a closed herd.

The frequency of restocking also influenced the chance of introducing pleuropneumonia. Weekly restocking was 10.8 times more often associated with pleuropneumonia than closed herd operation. Yearly restocking was not different from closed herd, whereas monthly or irregular restocking was approximately 2 times more often associated with pleuropneumonia than closed herd. When asked to explain circumstances under which the disease had been introduced, 55% answered purchases from salesbarns.

Closed herd type of operation seemed to be the only measure which had shown some success in preventing HP infection. Quarantine of new stock, purchase of health-examined pigs, bird and pest control and banning visitors on premises had no effect.

The effect of HP infection was expressed in mortality and unthriftiness. The reported mortality is shown in Table 1. The most severe losses were suffered in the feeder pig category.

Unthrifty pigs were reported 3.7 times more often from HP infected herds than HP negative herds. This association between HP infection and unthriftiness was highly significant. Unthrifty pigs generally required 3-4 weeks extra time to finish.

Crowding (expressed as pen area/pig) was identified as a stress factor precipitating pleuropneumonia. The average pen area per pig among pleuropneumonia positive herds was 0.73 m<sup>2</sup> and 0.92 m<sup>2</sup> among pleuropneumonia negative herds (significant  $p < 0.05$ , Student's t-test). Crowding did not seem to influence the mortality due to pleuropneumonia, but was significantly associated with unthriftiness.

Inclement weather conditions and ventilation breakdown was reported by 60% to trigger increase in morbidity and mortality due to pleuropneumonia. This is consistent with answers to seasonal incidence in which 79% recorded problem periods in Fall, Winter and Spring, whereas only 1% recorded Summer. The remaining 20% had not noted differences in incidence between seasons.

The most popular drug for antibiotic treatment was chloramphenicol. Treatments were administered in drinking water alone or as injections either alone or in combination with feed and water medication. The efficacy of chloramphenicol was generally judged as good. Information on efficacy of other drugs was insufficient to allow evaluation.

#### Conclusions:

This study confirms that HP is a pig specific organism and that the chance of pleuropneumonia breaking out in a herd is increased with increased traffic of pigs into the herd. The source of supplementary stock has an important effect on the chance of pleuropneumonia to occur. The highest risk results from introducing stock from salesbarns and the lowest from stock of health status known to the purchaser and supplied by a few breeders only. Mortality, primarily among feeder pigs, and unthriftiness are the major effects of HP infection. Stress (crowding and inclement climatic conditions) precipitates outbreaks of pleuropneumonia. This would seem to indicate that HP infection can occur in a latent form until the host resistance is impaired.

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Table 1. Mortality as a result of *Haemophilus pleuropneumoniae*

	Farrow to finish operations			
	Sows	Sucklings	Weaners	Feeders
0%	89*	87	74	11
1%	10	3	9	14
2%	1	2	3	12
2-10%	0	8	11	47
10-20%	0	0	1	13
20-50%	0	0	1	3
50-100%	0	0	1	0

\* Per cent of farmers reporting mortality.

#### PREGUNTAS

- 1- TAMAÑO HATO
- 2- TIPO DE GRANJA
- 3- METODO DE REEMPLAZOS
- 4- TAMAÑO DE CERRAJES
- 5- # ANIMALES/CERRAJE
- 6- PERIODOS X IMPRODUCTIVIDAD
- 7- MEDIDAS MED. PREV.
- 8- DIAGNOSTICO O UNO DE PLEUROP.
- 9- MORTALIDAD X PLEUROPNEU.
- 10- CONDICIONES DE LA MORTALIDAD
- 11- INCIDENCIA ESTACIONAL
- 12- TRATAMIENTOS