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## Present Situation of Porcine *Hernia inguinalis* / *scrotalis* in Thailand

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### Abstract

*Hernia inguinalis/scrotalis* is one of the most important congenital anomalies in pigs. The phenotype is believed to result from a weakness of the musculature surrounding the inguinal canal, permitting the intestine to drop into the scrotum (*Hernia scrotalis*) or into the inguinal canal (*Hernia inguinalis*). Estimated heritability for the disease range from 0.2 to 0.6 in different breeds and populations. Several candidate genes have been suggested to be causative for the disorder along with maternal and environmental influences. The Förderverein Biotechnologieforschung der Deutschen Schweineproduktion (FBF) reported a frequency of herniated pigs with about 2% in Germany causing losses in a range of about 2 million € per year. In Thailand, we recently began to survey frequency data in 4 industrial pig farms (> 5,000 heads), 5 middle-sized farms (500–5,000 heads) and 10 small-sized farms (50–500 heads). The frequencies of herniated animals ranged from 1% (industrial pig farms) to 5% in small-sized farms. The economic loss per herniated pig is about 300 baht (discount per animal for slaughter), alternatively the costs for castration are 150 baht per head. Taking the total number of pigs in Thailand (about 6,3 million pigs; Department of Livestock Development, 2004) the defect causes an annual loss of 19–95 million baht (0,38–1,9 million €). These data show that *Hernia inguinalis/scrotalis* is an economical problem for Thai pig breeders. We further intend to analyse genetic parameters and to identify environmental factors affecting the disease. We will genotype several candidate genes such as INSL3 in herniated and phenotypically unaffected animals. The application of both quantitative and qualitative analyses will be helpful to solve this congenital disorder in pigs.

**Keywords:** Disease, economic loss, hernia, swine