Spatial and temporal patterns of pig herds diagnosed with Postweaning Multisystemic Wasting Syndrome (PMWS) during the first two years of its occurrence in Denmark - DTU Orbit (19/02/2019)

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The clinical syndrome Postweaning Multisystemic Wasting Syndrome (PMWS) in pigs has emerged globally during the last decade. In October 2001, the first pig herd diagnosed with PMWS was reported in Denmark, and since then the number of herds diagnosed with PMWS has increased markedly. The etiology of PMWS is not well understood, but increased knowledge of the causal factors is prerequisite for applying preventive interventions. In this study we described the temporal (time of diagnosis), spatial (location of herds) and spatio-temporal pattern of Danish pig herds diagnosed with PMWS during the first two years after the first herd was diagnosed, and we tested for spatial and spatio-temporal clustering using scan statistics. The study population consisted of pig herds that during the study period (October 2001 - September 2003) performed diagnostic submissions to the two major veterinary diagnostic laboratories in Denmark (6724 herds). Of these, 277 herds were diagnosed with PMWS. Two statistically significant spatial clusters of herds diagnosed with PMWS were identified. These clusters included 11% and 8% of the study herds, respectively. Within these two clusters the relative risk for a herd to be diagnosed with PMWS was twice as high as expected. One statistically significant spatio-temporal cluster was identified between February and May 2002. We discuss different hypotheses that could explain why pig herds diagnosed with PMWS were clustered both spatially and spatio-temporally, and conclude that the results support the hypothesis that PMWS is caused by introduction of a new, unidentified, pathogen into the Danish pig production. (c) 2005 Elsevier B.V. All rights reserved.

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