

# The Incidence on Severe Losses of Piglets in Central Thailand Caused by the PED Viral Disease

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During the winter months of years 2007/2008, the severe losses among affected enteritic suckling piglets occurred almost in all dense pig populated areas of central Thailand, both eastern and western pig production regions of the greater Chao-Phaya river. Despite the very general clinical manifestations of feed refusal and profuse diarrhea, of mild or moderate degree, in susceptible pigs of all age groups, but the additional obvious clinical observations, reflected as a non-response to any medical treatment, huddle together and piling up on sow's bodies, progressive severe dehydration with shrunken skins resulted in moribund and succumbed to death, were extremely common pictures revealed in all young piglets of the first week after birth.

In older piglets, age above eight to ten days up to the last week of sucking period, showed some clinical signs of milder degree or even asymptomatic. From the investigations, some of them may develop to an unthrifty condition, only when the nursing sows provided an insufficient lactation due to the ill health caused by the infection and some consequences. Vomiting of white curdle milk resulted from the gastritis may be seen in this older piglets, and sometimes in nursery pigs and growers.

The faculty members of the Chulalongkorn Veterinary School have enrolled the very first case in a large scale, newly established, breeding farm in Nakhon Pathom province since the second week of October 2007. In this case although the definite causative agent could not be mentioned and identified at the right time, but the incidence of extensive loss subsided gradually by

adequate symptomatic treatments, strategic intensive herd management together with good hygienic and sanitations. The total number of loss in the piglets of this case was around 5,000 heads within the period of 3-4 weeks. The disease spread from farms to farms and from regions to regions rapidly, especially during the worsen cool weather of December 2007 and January 2008, with the ambient temperature of 14-25°C. Hundreds of thousands of affected piglets died in the early days of life because of this continuing outbreak. As usual, the estimation of loss was a distance from the real number since there was no certain statistic records and most of the farms buried these piglet carcasses within their yards.

The tentative diagnosis among the swine practitioners at the first glance named the invasive incidences to be the TGE-like disease because of the compliance of some clinical pictures.

As attempts to cope this serious problems, some of the suspected causative agents were mentioned and identified from each individual farm from difference regions. Submitted samples for diagnosis were collected from difference places by many difference field veterinarians, officials and private sector. Freshly prepared as pooled intestinal tissues either fecal samples from suckling piglets or the separating pooled fecal samples of the sows with profuse diarrhea. But the best investigating materials to become an accurate positive result for PED were no other than the lining cells of small intestine. By the RT-PCR technique to confirmed diagnosis for the affected breeding herds, about 80% of

submitted samples were positive for PED, while the results for TGE were all negative. The other 20% has got the result as negative, suspecting due to the improper handlings of the samples prior to the laboratory.

Only one single case revealed the positive results of both PED and TGE viral nucleic acids in the same sample of pooled intestinal tissue from groups of wasting piglets. In addition to other pathogens, bacterial co-infections, isolates from some submitted samples, there may be *Clostridium perfringens*, *Salmonella* spp., pathogenic *E. coli* and some were *Isospora* protozoan. Quantitative analysis on some mycotoxins in feed were found as low as some ppb level in some cases.

Currently there is no PED commercial vaccine available in Thailand to meet the need of the pig producers. As an effective tool to control the invasive losses in newborn piglets due to be born next months, some field veterinarians and the learned swine practitioners applied the principle of autogenous vaccine, i.e. to spread the disease among the entire breeding sows, both pregnant and lactating sows, by feeding the whole herd once or twice.

This procedure must be done correctly under control condition, and as early as possible, with the infecting materials collected from their own farms at right time when groups of diseased piglets first detected and has been confirmed by the laboratories. Efficient infecting materials might be ones of these examples, such as pooled watery feces collected from 30-40 sows; loose or watery feces from 100-200 profuse diarrhea piglets at first week of age; or even better, with finely minced gastro-intestinal tracts of 50-100 moribund piglets of first week of age. Infective dose must be sufficient to induce the whole herd exhibiting the clinical signs of the PED within a few days. The sows will develop acquire immunity at high level and transfer adequate amount to their offspring via colostrum after the first sucking.

An intensive study on percents of total loss in suckling piglets from the incidence in each individual herds since the first day with high mortality, collected each day until back to the normal figures, reflected as high as 79.2, 81.8, 82.4, 56.6, 60.6, 67.7, 62.7 and 99.7% in the

herds with the number of sows on production(SOP) at 1203, 1380, 1450, 2170, 2260, 1410, 2340 and 1025 heads. The high daily mortality of piglets last for 20, 19, 22, 27, 27, 24, 21 and 11 days. When compare the number of total loss of piglets to the number of sows on production it revealed as 1.57, 1.18, 1.16, 1.27, 1.54, 1.59, 1.23 and 0.62 times respectively. The least severity of loss shown in a herd of 1,025 sows on production, of which only 637 piglets died during the period of 11 days of the incidence. The loss ratio appeared as few as 0.62 with a reason to explain, by chance that during the outbreak, there were altogether 5 days with no newborn piglets to be deserved as susceptible hosts for the virus infection in that farrowing house.

Up to now the suspicious of this PED virulent strain on its origin and where did it come from is not yet clear. Questionable and probable points to be discussed remained as follows:

- The import uncooked products as food for human consumption or as animal feedstuff (raw material) derived from swine visceral organs and the rendering products,
- Virus contamination in the veterinary biologics which were widely used in form of vaccine,
- Living breeding pigs and semen for purposes of genetic and performance improvement from foreign countries.

From this 2007/2008 outbreak, the epidemiology, the development of the disease, the clinical signs and symptoms and the severity of the damage within herds or as a whole are of some extent similar to that of the experienced viral disease of TGE, which was no report from all concerned for decades in the kingdom. In conclusion, all the responsive animal health personnel, both officials and private sectors, shall put every efforts on the establishing of some alert measures and prompt actions as precuratives and alleviatives to all the animal diseases that might happen to harm our Thai livestock at any times.