

# Evidence of Melamine and Related Substances Contamination to Animal Feed in Thailand

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The suspect of melamine contamination in animal feed which can lead to extent adverse effects and some clinical manifestations in both companion animals and livestock has been arising. The concern has been established among the Thai livestock producers, the aquaculture sectors, the pet lovers and the veterinarians since the early of this 2007 year.

Some clinical data and field observations have been scrutinized, collected and analyzed from all concerns, but none of those not yet been confirmed because of the lack of scientific evidence on the detection of such substance in those feed samples.

During July-August 2007 the faculty members of the Faculty of Veterinary Science in conjunction with the faculty members of the Faculty of Science, Chulalongkorn University, together with the authorities of the Department of Livestock Development reported in the seminar held in the 60<sup>th</sup> year building of the Faculty of Veterinary Science, Chulalongkorn University on the identification and the quantitative analysis of melamine and some related substances from field sample of pig feeds collected from farms located in a dense populated swine producing region of the central Thailand. Pathological findings on affected tissue, both macroscopically and microscopically as well as the severity of continuous loss in the nursery pigs complied to the incident history

on feeding with rations formulated with parts of imported protein rich feedstuff. Damages on the renal tissue characterized by diffused multifocal necrosis, fibrosis and the evidence of foreign darken crystal and cast in the glomeruli and renal tubules can be compared to the lesions of the previous studies published in the United States.

Thousands of nursery pigs died in the months-long incidence; whereas the affected survivors were poor doers. Culling was the best action at this point. Results from the determination of the remaining imported portion of the only one suspected protein rich feed stuff sample from farm revealed the levels of melamine as high as 3,026 ppm, ammeline 958 ppm, and obviously, the amount of cyanuric acid was as high as 69,031 ppm. Thus, the term chronic cyanuric acid together with melamine intoxication could be applied in this case incidence. Possibly, as suspected, the scrap from the melamine production industry, collection of compositions, both the impurities and the rest of various raw materials, has been intentionally mixed before export.

A few weeks later, the staff of the faculty members of the Faculty of Veterinary Medicine, Chiangmai University disclosed in a pig magazine, Pig and Pork vol.2, No.22, on the study of clinical attritions affected on health and production in a case of melamine intoxication in one pig breeding farm of the upper north Thailand.

Carcass of the dead nursery pig showed a poor body condition, but without the clinical signs of the respiratory or alimentary systems.

On September 15, 2007, at the seminar of the Co-operative Promotion Department for the land animal and aquaculture producers, held in Nakhonpathom province, the faculty members of the Khon-kaen University together with the faculty member of the Kasetsart University revealed cases of melamine intoxication in nursery pigs which caused thousands of dead after some weeks of ingestion a ration composed of parts of imported protein rich feedstuff, mostly from the Chinese origin.

The speakers demonstrated a precautionary check on any suspected feedstuff prior to apply in the formulation as a preventive measure. The test kit was developed and supposed to be a practical tool for both scales of industrial and farm mixing levels. The fake

protein as well as any non protein nitrogen (NPN) would be identified and promptly rejected prior to unload.

The Director General of the Department of Livestock Development declared as a strict action, effective from the third of August 2007, a zero tolerance level on any commercial feed, both finish feed and feed stuff, since there is no study on the safety level orally intake by any animal species. The official melamine-free certificate issued by the exporter government must be submitted to the veterinary inspector upon arrival of each shipment.

The lessons learned from both the domestic and oversea incidences in the past will bring all concerns to a more careful level. We definitely must give our consideration or judgment to the quality of animal feed and feedstuffs, which always play a major role in animal health.