



HEAVY METALS IN PIG PRODUCTION: A CONCERN FOR PUBLIC HEALTH

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Consumption of pork products is traditionally preferred in most of Asian countries, and has increased in the last 10 years as a result of rising incomes and urbanization. The safety of edible animal tissues for human consumption is a priority for public health. Some of the contaminants that may be found in pork products come from the pig diets. Heavy metals (mainly cadmium, lead, arsenic) in animal feeds can originate either from contaminated feedstuffs or from supplemental sources of additives, especially essential trace minerals like zinc, copper, iron or manganese. When contaminated diets are fed to pigs, heavy metals accumulate preferentially in the target organs whereas concentrations in muscle remain low. Cadmium (Cd) is accumulated in the kidney at a higher rate than in the liver. Recent analytical surveys showed that one fourth of pig kidneys in Thailand was above the regulatory limits for human consumption due to an excess in Cd. The percentage of unsafe products could not be only explained by potentially Cd polluted areas. Thus, it was hypothesized that Cd in pig feeds could come from contaminated sources of dietary trace minerals. Recent analysis on batches of zinc oxide products utilized in animal nutrition showed high levels of contaminants. Supplementation of weaning pig diets with zinc oxide *at pharmacological levels*, about 25 times more than the nutritional requirements, is common to secure growth performance and/or reduce post weaning diarrhea of the piglets. Although the period of supplementation is early in the pig life, the long biological half-life of cadmium causes a risk of high Cd levels in the kidneys at slaughtering. A stricter Quality Control system in the pig production chain and regulatory measures could enhance the food safety.

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