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Veterinarni Medicina

Variations in contamination by mercury, cadmium and lead on swine farms in the district of Hodonin in 1994 to 1999

Ulrich R., Raszyk J., Nápravník A.

Veterinarni Medicina, 46 (2001): 132-139

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Environmental samples ($n = 254$) were collected at regular intervals from 1994 to 1999 on three swine farms in the area of the district town Hodonín, Czech Republic. The samples of feed mixtures ($n = 85$), barn dust sediments ($n = 44$), and muscular ($n = 42$), hepatic ($n = 41$), and renal ($n = 42$) tissues of feeder pigs were analysed for the concentrations of mercury, cadmium and lead. The concentrations of mercury showed decreasing tendencies in animal tissue samples (1994–1996). Compared with the mean for the Czech Republic, the concentration of mercury was markedly higher in liver and kidney samples (0.064 mg/kg and 0.114 mg/kg, respectively)

collected in 1998, the concentration of cadmium was moderately higher in feed, muscle, liver, and kidney samples collected in 1996–1998. Statutory limits were exceeded in two liver and two kidney samples and one feed sample only. The concentration of lead in muscle, kidney, and feed samples (1994–1996) and barn dust samples (1996–1998) showed also a decreasing tendency. However, the limit was exceeded in 16 muscle samples (0.11 to 0.23 mg/kg) collected in 1994–1999 and two kidney samples collected in 1996 (0.74 mg/kg) and 1999 (0.77 mg/kg). Heavy metals present in dust sediments apparently did not contribute significantly to their content in animal tissue. While the health risk resulting from the contents of mercury and cadmium can be classified as moderate, the contents of lead must be regarded as markedly more dangerous.

Keywords:

swine farms; heavy metals; mercury; cadmium; lead; feed mixtures; dust sediments; pork; liver; kidney; health risk

[[fulltext](#)]

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