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Czech J. Food Sci.

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Phthalic acid esters

(PAEs) in the food chain

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Phthalic acid esters (PAEs) rank among the primary risk pollutants and their adverse effects may endanger the environmental balance and affect the ontogenetic development of live organisms and their body functions. Therefore, the aim of this study was to monitor the occurrence of PAEs in packaging materials and plastics (infusion sets), to evaluate the accumulation and distribution of the most common phthalates such as DEHP (di-2-ethylhexyl phthalate) and DBP (di-*n*-butyl phthalate) in body tissues and organs of pigs and broiler chicks having been administered the phthalates *per os*, to assess the occurrence of PAEs in pig and cattle farms in the district of Hodonín (1997– 1999), and to propose precautionary measures to mitigate the risk of PAE penetration into the food chain and the environments. DEHP and DBP contents in packaging materials ranged from 0.1 to 4259 mg DEHP, and from 0.1

to 1298 mg DBP per 1 kg printed packaging material, respectively. In haemodialysis patients, over 0.5 mg DEHP per 1 kg blood was found after three hours of haemodialysis. In combined feeds for farm animals (pigs, cattle, poultry), DEHP and DBP concentrations ranging from 0.07 to 1.77 and from 0.06 to 2.36 mg/kg feed, respectively, were detected. In all the food samples investigated, measurable levels of DEHP (less than 0.01– 0.22 mg/kg sample) and DBP (less than 0.01 to 1.31 mg/kg sample) were found. In the experimental pigs and broilers, phthalate were distributed in all the organs monitored and the highest accumulation was found in adipose tissue as expected. All the samples withdrawn from farms in the Hodonín district had measurable phthalate concentrations; the hygienic