

Migration of mineral oil from packaging materials to foodstuffs

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For ecological purposes, cardboard packaging material is largely produced using recycled paper. Swiss studies have shown that cardboard boxes made from recycled material can contain significant portions of mineral oil. The mineral oils stem from printing ink which is commonly used in newspaper printing. If foods such as rice are packaged in such cardboard boxes, it is possible that increased amounts of mineral oils can migrate from the cardboard to the foodstuff. Due to the large portion of mineral oil fractions with short chain and aromatic hydrocarbons, such contaminations of foodstuffs are adverse. Short chain hydrocarbons are more easily taken up by the body. Frequent intake of such contaminated foodstuffs can thus lead to exceedances of the toxicological limit values. Animal studies have shown that mineral oil mixtures with low viscosity are stored in the body and can lead to accumulations and damage in the liver, heart valves and lymph nodes. As a result of this data, the Federal Institute for Risk Assessment (BfR) in its assessment came to the conclusion that there is an urgent need to minimise the migration of mineral oils to foodstuffs.

In order to reduce this substance migration, the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV) has asked BfR to recommend possible courses of action. For foodstuffs that are especially prone to contamination with mineral oils, BfR provides the option to use inner bags in order to prevent substance migration from the cardboard box. An additional option for these foodstuffs is the use of cardboard made from virgin fibres. Further options to be investigated include changing the composition of printing inks used in newspaper printing and to refrain from using mineral oils that are cause for health concern. This suggestion is further supported by the fact that the uptake of mineral oils from printing inks can also occur through skin contact.

The full version of this BfR Opinion is available in German on http://www.bfr.bund.de/cm/216/uebergaenge_von_mineraloel_aus_verpackungsmaterialien_auf_lebensmittel.pdf