Risiken erkennen – Gesundheit schützen

Initial evaluation of the assessment of levels of glycidol fatty acid esters detected in refined vegetable fats

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The Chemical and Veterinary Test Agency (CVUA) Stuttgart has detected glycidol fatty acid esters in refined vegetable fats on a palm oil base. The analytical methods currently available do not, however, permit the determination, merely the estimation of the exact levels. Furthermore, we do not know what levels of glycidol are released from the glycidol fatty acid esters during digestion in humans. Based on findings from animal experiments, glycidol is classified as probably carcinogenic to humans.

Because of this major hazard potential and because refined edible fats are used in products like margarine and in infant formula, too, the Federal Institute for Risk Assessment (BfR) takes the findings of CVUA Stuttgart seriously and presents its initial evaluation of the assessment whether the detected ester-bound glycidol could constitute a threat to health. This evaluation is based on the worst case scenario that glycidol is released fully during digestion from the fatty acid esters and is then available in the organism. As the exact levels of glycidol fatty acid esters could not be reliably determined up to now in vegetable fats, BfR adopts the hypothetical assumption that one kilogram of edible fat contains one milligram glycidol.

Based on this calculation, BfR comes to the conclusion that infants who are fed exclusively industrially prepared infant milk formula would take in harmful levels of glycidol. As there is no alternative to infant milk formula with refined fats for infants who are not exclusively breastfed, the manufacturers of these products must do everything they can to reduce the levels of glycidol fatty acid esters as far as possible. In order to obtain robust exposure data for reliable risk assessment, BfR is of the opinion that there is an urgent need for the development and validation of a suitable detection method for glycidol fatty acid esters. Likewise, there is a need for research on the conversion of glycidol fatty acid esters into glycidol in the human body.

At the present time, the detection of glycidol fatty acid esters in refined vegetable fats has no impact on the fundamental statements on the risk assessment of 3-MCPD fatty acid esters which also occur in these fats.

The full version of the Opinion in German is available on

http://www.bfr.bund.de/cm/208/erste_einschaetzung_zur_bewertung_der_in_raffinierten_pflanzlichen_fetten_nachgewiesenen_gehalte_von_glycidol_fettsaeureestern.pdf