

Mineral oil contamination in humans: A health problem?

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From a quantitative standpoint, mineral oil is probably the largest contaminant of our body. That this contaminant can be tolerated without health concerns in humans has not been proven convincingly. The current Editorial of the *European Journal of Lipid Science and Technology* reflects on this and concludes that this proof either has to be provided or we have to take measures to reduce our exposure – from all sources, including cosmetics, pharmaceuticals and the environmental contamination.

In the Ukraine recently around 100,000 tonnes of sunflower oil were contaminated with mineral oil at concentrations often above 1000 mg/kg. Much of the contaminated oil was withdrawn, but there are products on the market which were produced before this contamination was detected; and this autumn there are still several 10,000 tonnes of contaminated oil in the Ukraine and other parts of the world. To protect consumers, a broad analytical campaign was initiated throughout Europe. The European Commission decided to apply a legal limit of 50 mg/kg to the mineral paraffins in Ukrainian sunflower oil and in September 2008 it organized a workshop together with the Official Food Control Authority of Zurich, Switzerland, to promote this campaign.

The editorial by Dr. Koni Grob from the Official Food Control Authority of the Canton of Zurich, Switzerland, titled "Does the Ukrainian sunflower oil contaminated with mineral oil wake up sleeping dogs?" discusses the situation. Dr. Koni Grob says that in many more foods more than 50 mg/kg mineral oil components from other sources

will be found and the enforcement authorities will then be in difficulty to decide how to react. Certain edible oils, but also certain other foods, like canned fish, frequently contain more than 50 mg/kg mineral oil components, some products as much as 1000 mg/kg. Although known for some time, so far no measures were taken to stop this. He continued, our lab works for the safety of the consumers. Presently there is insufficient knowledge about potential negative effects of mineral oil on human health. We are heading for data regarding the material we are exposed to and which is accumulated in our bodies, in order to provide toxicological data for an improved safety evaluation."

It has been shown that the molecular mass of the mineral paraffins resorbed by our body is higher than assumed by the safety evaluation of the European Food Safety Authority (EFSA). Further, probably a majority of the mineral oil products are not "white paraffin oils": they easily contain 30 % aromatic components, a substantial portion being alkylated adding to the health risk. This unerringly questions the current official safety evaluation – which, admittedly, is a difficult task because of the complexity of the material. It can only be hoped that the mineral oil contamination of the Ukrainian sunflower oil and the inconsistencies regarding the effects of mineral oil on the human body will make the responsible industry, science and authorities more aware of this smouldering problem.

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