

Advice 01-2014 of the Scientific Committee of the FASFC on the list of polycyclic aromatic hydrocarbons (PAHs) to control in feed and on the action limit to be used

The Scientific Committee is asked to give an opinion on the list of polycyclic aromatic hydrocarbons (PAHs) to be included in the analysis of feed and on the action limits to be used. Currently, 12 PAHs (acenaphthene, acenaphthylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a, h)anthracene, indeno(1,2,3-cd)pyrene, fluoranthene, phenanthrene, and pyrene) are analyzed in feed while 4 PAHs (benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene and chrysene) are analyzed in the human diet.

The PAHs most frequently detected in feed and analyzed by the FASFC in 2010, 2011 and 2012 were phenanthrene, acenaphthene, fluoranthene and pyrene. These compounds are considered non-genotoxic and are not classified as carcinogenic by IARC (International Agency for Research on Cancer). These PAHs are also frequently detected in food. They were not deemed as relevant in foodstuffs due to their low toxicity. Based on available data on their occurrence and toxicity, EFSA concluded that 4 PAHs congeners (called PAH4: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene and chrysene) were adequate indicators of the presence of the most toxic PAHs in foodstuffs.

PAHs do not accumulate in animal tissues after ingestion of contaminated feed. Thus, the presence of PAHs in feed does not contribute to a direct human exposure to PAHs, but to a possible exposure to their metabolites.

The Scientific Committee is of the opinion that it makes sense to have the same approach for animal and human consumption. Therefore, the Scientific Committee suggests a 2-step approach. First, the monitoring in feed of 4 PAHs that are relevant because of their toxicity and their occurrence. Second, if the origin of the contamination must be sought, a larger group of PAHs could be controlled to establish a pattern of the PAHs congeners.

The Scientific Committee recommends to implement an action limit of 150 µg/kg and a action threshold of 50 µg/kg for the 4 relevant PAHs. The action threshold has the objective to draw the attention to the risk manager on the need to investigate for the source of contamination and/or to check the production process.

In the framework of scientific research, the Scientific Committee recommends to analyze metabolites of PAHs in foodstuffs of animal origin and to evaluate their toxicological relevance.

The full text is available on this website in dutch and in french, respectively under the section “Wetenschappelijk Comité/Adviezen” and “Comité scientifique/Avis”.