

Advice 03-2016 of the Scientific Committee of the FASFC on the origin of anthraquinone and biphenyl in dried feed

Anthraquinone and biphenyl are compounds related to aromatic hydrocarbons. Anthraquinone is active as a repellent for birds and biphenyl has useful fungicidal properties for post-harvest treatment of (citrus) fruit. The use of these substances as a pesticide is however no longer allowed in the European Union.

Analysis of anthraquinone and biphenyl in food and feed are performed in the framework of the control of pesticide residues in food and feed. Samples of dried products non-compliant for anthraquinone and/or biphenyl have been found for which no plausible explanation could be given in regard to the origin of the contamination.

The Scientific Committee is asked to provide an opinion on the possibility if, in some cases, the detection of anthraquinone and/or biphenyl in dried feed could be due to the formation of these compounds during the drying process instead of being the result of their use as a pesticide. The Scientific Committee is also asked if it has knowledge about other such cases.

The Scientific Committee conclude that the presence of anthraquinone and/or biphenyl in dried products could come from another source than an illegal use of the pesticide. The presence of anthraquinone linked to the combustion process during drying, is the most problematic origin in terms of public health because this source of contamination is also related to the concomitant presence of polycyclic aromatic hydrocarbons (PAHs) in the sample. Concerning biphenyl, which has a chemical structure similar to polychlorinated biphenyls (PCBs), its presence could be an indication of a contamination with dioxins and PCBs during the drying process.

The available data in the literature and of other official control organisms are insufficient to conclude whether or not there is a link between the presence of anthraquinone or biphenyl in some dried products to the formation of PAHs or PCBs during drying. To ensure the safety of consumers on the one hand, and to collect data to confirm or refute the link, on the other hand, the Scientific Committee recommends, when anthraquinone has been detected in animal dried feed and where the investigation excluded an illegal use of pesticides to analyze the four congeners of PAHs usually sought in animal feed (namely benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene and chrysene). Moreover, it is also recommended when biphenyl has been detected in animal dried feed and where the investigation excluded an illegal use of pesticides to analyze dioxins and PCBs when biphenyl has been detected.

Other substances known as residues of pesticides may have another origin besides their use as a pesticide. Mepiquat and pentachlorophenol are illustrated in this opinion as an example.

The full text is available on this website in dutch and in french.