

SCIENTIFIC OPINION

Scientific Opinion on the risks for human and animal health related to the presence of modified forms of certain mycotoxins in food and feed¹

EFSA Panel on Contaminants in the Food Chain (CONTAM)^{2,3}

European Food Safety Authority (EFSA), Parma, Italy

ABSTRACT

Following a request from the European Commission, the risks to human and animal health related to modified forms of the *Fusarium* toxins zearalenone, nivalenol, T-2 and HT-2 toxins and fumonisins were evaluated. Modified (often called “masked”) mycotoxins are metabolites of the parent mycotoxin formed in the plant or fungus, e.g. by conjugation with polar compounds. Fumonisin, which are difficult to extract from the plant matrix, are also termed modified mycotoxins. The CONTAM Panel considered it appropriate to assess human exposure to modified forms of the various toxins in addition to the parent compounds, because many modified forms are hydrolysed into the parent compounds or released from the matrix during digestion. For modified forms of zearalenone, nivalenol, T-2 and HT-2 toxins and fumonisins, 100 %, 30 %, 10 % and 60 % were added, respectively based on reports on the relative contribution of modified forms. The same factors were used for animal exposure from feed. In the absence of specific toxicity data, toxicity equal to the parent compounds was assumed for modified mycotoxins. Risk characterization was done by comparing exposure scenarios with reference doses of the parent compounds. In humans, all lower bound (LB) and upper bound (UB) mean and 95th percentile exposures to the sum of modified and parent toxins were below the respective provisional maximum tolerable daily intakes (PMTDIs) and tolerable daily intakes (TDIs), with two exceptions: for zearalenone and modified zearalenone the UB 95th percentile exposure was up to 2.2-fold the TDI. For fumonisins and modified fumonisins the exposure of toddlers and other children exceeded the PMTDI at both the LB and the UB estimates, which could be of concern. For farm animal species and pets the exposure to the sum of modified and parent toxins was in general not of concern. The risk in fish could not be addressed. The CONTAM Panel identified several uncertainties and data gaps for modified mycotoxins.

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KEY WORDS

modified mycotoxins, masked mycotoxins, zearalenone, nivalenol, T-2 and HT-2 toxin, fumonisins, human and animal health

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² Panel members: Diane Benford, Sandra Ceccatelli, Bruce Cottrill, Michael DiNovi, Eugenia Dogliotti, Lutz Edler, Peter Farmer, Peter Fürst, Laurentius (Ron) Hoogenboom, Helle Katrine Knutsen, Anne-Katrine Lundebye, Manfred Metzler, Antonio Mutti (as of 6 October 2014), Carlo Stefano Nebbia, Michael O’Keeffe, Annette Petersen (as of 6 October 2014), Ivonne Rietjens (until 2 May 2014), Dieter Schrenk, Vittorio Silano (until 21 July 2014), Hendrik van Loveren, Christiane Vleminckx, and Pieter Wester. Correspondence: contam@efsa.europa.eu

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