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RISK ASSESSMENTS ON MYCOTOXINS IN FOOD AND FEED – MORE PROTECTION TO EUROPEAN CONSUMERS AND ANIMALS

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ABSTRACT

European Food Safety Authority (EFSA)[1] carries out risk assessments on food and feed safety at the European level. As the European risk assessor, EFSA produces scientific opinions and advice to provide a sound foundation for European policies and legislation. EFSA's remit is wide and covers food and feed safety, nutrition, animal health and welfare, plant protection and plant health. The EFSA Panel on Contaminants in the food chain (CONTAM Panel)[2] carries out risk assessments in the area of chemical contaminants in food and feed. The CONTAM Panel scientific opinions then advice and help the risk managers such as the European Commission and Member States to decide the need for possible revisions of the current legislation and/or any other possible follow-up actions required in relation to contaminants in food and feed. Mycotoxins are one group of the contaminants, the CONTAM Panel has heavily been working in the last years and recently it has released several scientific opinions on the risks to human and animal health related to the presence of mycotoxins in food and feed. This presentation gives an overview on the process of how the EFSA CONTAM Panel does risk assessments on mycotoxins in food and feed.

[1] http://www.efsa.europa.eu/
[2] http://www.efsa.europa.eu/en/panels/contam.htm

Key-words : mycotoxins, risk assessments, EFSA, CONTAM Panel , food and feed safety.

European Food Safety Authority (EFSA)[1] carries out risk assessments on food and feed safety at the European level. In the European food safety system, risk assessment is done independently from risk management. As the European risk assessor, EFSA produces scientific opinions and advice to provide a sound foundation for European policies and legislation. Thus EFSA supports the European Commission, European Parliament and European Union Member States in their risk management decisions. EFSA's remit is wide and covers food and feed safety, nutrition, animal health and welfare, plant protection and plant health.

In the process of developing its scientific opinions, EFSA's Scientific Panels and Committee have crucial roles. The experts of the Scientific Panels and Committee from all over Europe and the world contribute to the scientific opinions. The EFSA Panel on Contaminants in the food chain (CONTAM Panel)[2] carries out risk assessments in the area of chemical contaminants in food and feed, namely process contaminants, environmental contaminants, natural toxicants, mycotoxins and residues of unauthorised substances.

In order to assess the risk for public and/or animal health and to prepare the related scientific opinions, the CONTAM Panel collects and scrutinises scientific information available in the public domain on the contaminants, their occurrence in food and feed, exposure to humans and animals, toxicokinetics and toxicity including dose-response data. For the human and animal exposure assessments, the CONTAM Panel uses the food and feed occurrence data submitted to EFSA from the European national authorities and similar bodies, research institutes, academia, food and feed business operators and other stakeholders. While the occurrence data are submitted to EFSA, the human consumption data are taken from the EFSA Comprehensive food consumption database. For livestock and companion animals similar feed consumption database does not exist and therefore best estimates are used.

Within the risk assessment process, the CONTAM Panel establishes health based guidance values for various contaminants, compares the estimated exposure levels to the established health based guidance values (humans), or to the identified no-observed-adverse-effect levels (livestock and companion animals). The CONTAM Panel can also calculate margin of exposure and finally it concludes on the risk for humans and/or animals.
The CONTAM Panel scientific opinions then advice and help the risk managers such as the European Commission and Member States to decide the need for possible revisions of the current legislation and/or any other possible follow-up actions required in relation to contaminants in food and feed.
Mycotoxins are one group of the contaminants, the CONTAM Panel has heavily been working in the last years and recently it has released several scientific opinions on the risks to human and/or animal health related to the presence of mycotoxins in food and/or feed. Mycotoxins such as zearalenone, *Alternaria* toxins, T-2 and HT-2 toxins, nivalenol, phomopsins, citrinin, sterigmatocystin, ergot alkaloids, beauvericin and enniatins[2] have been recently assessed. The most recent opinion of the CONTAM Panel was on the presence of modified mycotoxins (known also masked mycotoxins) in food and feed and the health risk they may pose to humans and animals. All these risk assessments were all developed upon requests from the EC.

This presentation gives an overview on the process of how the EFSA CONTAM Panel does risk assessments on mycotoxins in food and feed. In addition, this presentation discusses the EFSA risk assessments in the light to keep European – and also worldwide – food and feed safety at the high level. Thus, some discussion will relate to the risk management at the European level. The importance of the research institutions and other food and feed operators in the EU member states, including the European food and feed industry, to support EFSA risk assessments is highlighted during the presentation. Reliable and accurate food and feed occurrence data from public organisations and the food and feed industry to develop EFSA risk assessments are of the utmost importance.

Some final thoughts are presented on why the mycotoxins are important contaminants within the spectrum of the other contaminants in food and feed. In the developed countries contaminants in general are not considered posing a considerable human health risk. Obesity and the related illnesses such as diabetes, heart and blood diseases and various cancers are far more important when human health is of concern in our developed world. When we look at the human health issues caused by mycotoxins in the developing countries, then the presence of mycotoxins the food and feeds can cause health risks. However, global trade and evident climate change are surely matters which influence the presence of natural toxins, e.g. mycotoxins and marine biotoxins, in food and feed in Europe. Therefore continuous surveillance and awareness in this sector are needed, and a strong co-operation between different food safety operators in the Europe.

[1] http://www.efsa.europa.eu/
[2] http://www.efsa.europa.eu/en/panels/contam.htm