

Mycotoxin Research at the MRI

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The MRI conducts research in relation to aspects concerning food safety, food quality and nutrition with importance for the Federal Ministry of Food and Agriculture. In this respect, mycotoxins, which may occur in certain foods, are one issue in the range of topics concerning food safety. The tasks of the MRI are contributions to regulatory aspects as well as applied and basic research. Because the institutes of the MRI are organized according to the different food groups, questions concerning mycotoxin carry over to foods are treated at the Department of Safety and Quality of Milk and Fish Products as well as at the Department of Safety and Quality of Meat. Another important part of the mycotoxin work done at the MRI is the analysis of the occurrence of mycotoxins in the annual Germany-wide harvest of cereals to obtain a general overview about mycotoxin occurrence. These data are required by the ministry to be aware of changes in contamination risks. This work is carried out at the Department of Safety and Quality of Cereals. Lastly, the Department of Safety and Quality of Fruit and Vegetables is dealing with questions concerning the production and occurrence of mycotoxins in fruits and vegetables. Especially plant-type foods with a high water content are prone to fungal spoilage, and thus to mycotoxin production. The main toxins which are currently addressed at the MRI are the trichothecenes, the aflatoxins, ochratoxin, citrinin, patulin and the *Alternaria* toxins.

Applied research aspects treated at the MRI are measurements of carry over rates of aflatoxin from animal forage to cow's milk, especially in high-yielding cows, the development and optimization of analytical methods as well as the development of measures to reduce mycotoxins in certain food commodities. Basic research aspects are genomics of mycotoxin producing fungi, analysis of molecular fungus-plant interactions, *in situ* transcription analysis of mycotoxin biosynthesis genes and the development of monitoring systems for *in situ* growth and mycotoxin biosynthesis.

The overall objectives of these approaches are the provision of methods and measures to increase and ensure food safety for the consumer as well as the provision of new data and concepts to support the ministry in questions concerning mycotoxin guidance and regulation.