

Food involved in disease outbreaks in Germany in 2010

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In order to prevent foodborne diseases, extensive knowledge of the foods involved and the circumstances of food production and processing is required. To this end, the Federal Institute for Risk Assessment (BfR) has been recording data on the foods involved in disease outbreaks since 2005. A foodborne disease outbreak is suspected when two or more people take ill with symptoms connected with the same food. In line with the General Administrative Regulation (AVV) "Zoonoses in the Food Chain", upon completion of all investigations into a foodborne disease outbreak, the authorities responsible for food monitoring in each federal state and in the armed forces use the BELA¹ reporting system to transfer information to the BfR about the foods involved .

For the year 2010, the BfR received information on 94 disease outbreaks from 15 federal states for evaluation. Most of the foodborne outbreaks reported to the BfR were caused by *Salmonella* (n=31), followed by noroviruses (n=14) and *Campylobacter* (n=13), although other pathogens, toxins and biogenic amines also caused foodborne outbreaks. Biogenic amines occur naturally in plants and animals, but they can also form in foods through the microbial degradation processes of amino acids. Their most important representative is histamine. Excessive intake of the various biogenic amines can trigger symptoms of disease in humans after only a few minutes. Typical symptoms are erythema, nettle rash, headache, dizziness, nausea, vomiting and diarrhoea.

Foods were confirmed as the cause of the illnesses in humans by microbiological or epidemiological means in 39 of the 94 reported outbreaks. The category "Ready-to-eat meals and prepared dishes" dominated among the confirmed food vehicles (n=10). Foods contaminated with germs, toxins or amines were consumed above all in private households (n=15) and in catering businesses (n=12), with "School/kindergarten" being listed as the place of consumption in five confirmed food-related outbreaks .

According to the information provided by the responsible authorities, cross-contamination played an important role in at least 11 confirmed foodborne outbreaks. Cross-contamination is the name given to the transfer of microorganisms from one (usually raw) food to another food. In addition, the following influencing factors which could have led to a contamination of food were mentioned frequently: handling of foods by infected persons (n=8), detection of pathogens in primary production (n=4) and the processing of shell eggs (n=6) or contaminated ingredients without further heating (n=9). Insufficient refrigeration or cooling of foods (n=10) was also mentioned as a significant factor which could have contributed to the propagation of pathogens in the contaminated foods. Insufficient heating (n=6) whereby pathogens can survive in foods was also mentioned. Pest infestation was also named as a factor in two outbreaks. The Hazard Analysis and Critical Control Point (HACCP) concept is an integral component of the self-checking concepts implemented by food companies. In two confirmed outbreaks, the HACCP concept is said to have been inadequate according to the authorities.

In synopsis, the information received indicates that many of the foodborne disease outbreaks reported to the BfR in 2010 were caused by poor hygiene and errors in temperature management both in private households as well as commercial catering businesses. Three con-

¹ BELA is short for "bundeseinheitliches System zur Erfassung von Daten zu Lebensmitteln, die bei Krankheitsausbrüchen beteiligt sind" which means "federal system for collecting data on food involved in disease outbreaks"

firmed *Campylobacter* outbreaks were caused by the consumption of raw milk straight from the farm which had not been heated prior to consumption. Suitable efforts to raise the level of awareness of consumers, as well as the regular training of staff in restaurants and community institutions on the proper handling of foods, can help to prevent future outbreaks. Leaflets with consumer tips on how to prevent foodborne infections in private households can be requested from the BfR press office (pressestelle@bfr.bund.de or per fax at 030-18412-4970) free of charge. They are also available in the internet as a document.

The full version of this BfR Information is available in German at <http://www.bfr.bund.de/cm/343/an-krankheitsausbruechen-beteiligte-lebensmittel-in-deutschland-im-jahr-2010.pdf>