

***Escherichia coli* in flour - First results of the technical exchange on BfR statement 004/2020**

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In 2020 the BfR published statement 004/2020 on the health risk of Shiga toxin-producing *E. coli* (STEC) in flour. The background to this risk assessment were observations that a considerable proportion of flour samples from the federal control plan (BÜp) were contaminated with STEC.

The risk assessment showed that only small amounts of these bacteria were detected in flour and that no cases of illness in Europe could be traced back to flour. Nevertheless, under certain circumstances, these contaminations can pose a health risk. In North America (Canada and USA), corresponding infections have been observed after the consumption of raw dough. In the past two years, BfR has discussed open questions and possible measures with experts from science, food monitoring, industry and industry associations. Among the topics discussed on various occasions were possible sources of STEC in flour, analytical challenges, suitable measures for consumer education and the need for further research.

Usual heating procedures in the production of food from and with flour (bread, fine baked goods, pastries, sauces, etc.) protect consumers from adverse health effects resulting from STEC infection. This also applies to baking in private households if the rules of good kitchen hygiene (no snacking on raw dough, avoidance of cross-contamination) are observed. However, there is a risk of infection when eating raw dough made in the household or commercial ready-made dough if the doughs are contaminated with STEC. Whether these health risks are known to the public and how they can be effectively communicated, is the subject of a planned consumer survey by the BfR.

Shiga toxin-producing *Escherichia coli* bacteria (STEC) can cause severe, life-threatening infectious diseases. Food, including cereal grains and flour, should therefore contain as little STEC as possible.

The significance of the possible entry pathways of STEC in cereal flour is not yet known due to a lack of data. For example, entry through the faeces of wild ruminants in the field is conceivable. An entry through organically fertilised soils via the plants into the cereal grain is possible in principle, but so far there is no empirical evidence.

The importance of mills for the introduction of STEC into flour is also not yet known. First of all, experimental data would have to be collected in mills to identify critical sections of the processing chain and develop hygiene measures to minimise STEC contamination of flours and products made from them as far as technically possible. The effectiveness and practicality of a downstream heat treatment of flour should also be tested in this regard.

Analysis is a particular challenge because STEC, like other germs, are usually unevenly distributed in flour. The aim is to harmonise and optimise microbiological detection methods. The National Reference Laboratory for *E. coli* at the BfR will conduct studies on this and strive to adapt the methodology in cooperation with the national standardisation bodies.

Whether and how the public perceives the health risk of STEC in flour is currently unknown. Therefore, BfR plans to conduct a consumer survey on the health risk of eating food raw, addressing the issue of STEC in flour and raw dough. The aim is to determine how these health risks can be communicated and whether information on the packaging of flour or ready-made dough can help to minimise the risk of infection.

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This text version is a translation of the original German text which is the only legally binding Version.

Further information on the BfR website on the topic of *Escherichia coli* in flour

<https://www.bfr.bund.de/cm/349/escherichia-coli-in-flour-sources-risks-and-prevention.pdf>



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