

Communication 001/2024

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New mandatory deposit for milk: no impact on food safety to be expected if deposit machines are cleaned properly

Since the beginning of 2024, the deposit obligation for bottles made of disposable plastic also applies if they have been filled with milk, milk products and mixed milk drinks. From now on, these bottles must be returned to the deposit return machine after use. Just as in the case of the already known deposit beverage containers for lemonade, beer or juice, it can be assumed that beverage residues in the bottles will lead to contamination of the vending machines, especially by milk fats and proteins.

A comprehensive risk assessment of the possible consequences of this impurity is currently not possible because the necessary data is lacking. For example, it is not known to what extent the desposit machines are actually contaminated or how they are cleaned and disinfected. The German Federal Institute for Risk Assessment (BfR) also does not know whether bacterial biofilms form or moulds grow that could impair health.

However, according to the BfR's current assessment, an increased health risk for consumers is not to be expected if the deposit machines are cleaned properly. Effects on food safety are also unlikely. This is mainly due to various technological developments in deposit return machines and advances in food production and packaging, which lead to a reduced bacterial load.

A deposit system for disposable beverage packaging was introduced in Germany back in January 2003, primarily for environmental reasons. The mandatory deposit was extended to more and more beverages and beverage packaging in the years that followed. Since 1 January 2024, single-use plastic packaging for milk and mixed milk drinks with a milk content of at least 50 per cent and other drinkable milk products, in particular yoghurt and kefir, have also been subject to a deposit. This applies to bottles with a filling volume of 0.1 to 3.0 litres.

In the run-up to the introduction, it was discussed whether the additional use of deposit return machines for containers with milk and dairy produce, which are highly perishable, could impair food safety. In principle, due to the relatively high viscosity of high-fat products, considerable amounts of food residue can remain in the packaging after opening and emptying, which in principle represents a very good breeding ground for microorganisms. Dairy products with a pH value in the neutral range and a high water content (e.g. chocolate milk) offer ideal conditions for bacterial spoilage, particularly by protein and fat-degrading bacteria. Dairy produce with an acidic pH value but also a high water content (e.g. drinking yoghurt, buttermilk) offer good opportunities for the development of yeasts and moulds; this also applies to most fruit juices and fruit-containing products. If food residues remaining in the packaging spoil, odours develop and the risk of enrichment of the environment with microorganisms increases, which could also adversely affect other foodstuffs stored in a retail establishment. In the case of low-fat, low-viscosity drinks, such as beer and drinks containing CO₂, the hazard can be considered to be lower because smaller residual quantities remain in the emptied packaging.

In 2003, the BfR pointed out that before introducing a mandatory deposit on beverage packaging for milk, dairy products and fruit juices, it must be ensured that the microbiological and hygiene problems mentioned do not occur. Since the first introduction of mandatory deposits on beverage containers 20 years ago, there have been various technological developments that require a reassessment of the hygiene concerns raised at the time. Technically sophisticated machines have been developed that can accept, sort and crush deposit bottles fully automatically. In the course of developing these machines, cleaning regimes were also perfected.

Considerable progress has also been made in the area of food production with regard to microbiological contamination and packaging technology. This is partly due to the fact that the legal responsibility of food companies was significantly increased when the EU hygiene package came into force in 2006. It is therefore much more in the interest of food companies to ensure food safety through good manufacturing practice and effective hygiene concepts, among other things. In many cases, food is now better protected by its packaging than it was 20 years ago, and the introduction of germs with food is far lower than it used to be. The germ load has been significantly reduced, particularly in the case of dairy products. The low bacterial count and the resulting extended shelf life, even for fresh milk, are now standard in this area. These developments also reduce the microbiological risks associated with the return of beverage packaging.

According to a current assessment, no increased health risk for consumers is to be expected if the vending machines are cleaned regularly.

Further information on food safety

Microbial risks in foods

https://www.bfr.bund.de/en/assessment_of_microbial_risks_in_foods-739.html

More information on kitchen hygiene]

https://www.bfr.bund.de/en/kitchen_hygiene-194171.html

About the BfR

The German Federal Institute for Risk Assessment (BfR) is a scientifically independent institution within the portfolio of the Federal Ministry of Food and Agriculture (BMEL) in Germany. The BfR advises the Federal Government and the States ('Laender') on questions of food, chemicals and product safety. The BfR conducts independent research on topics that are closely linked to its assessment tasks.

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