

Evaluation of glyphosate contents in breast milk and urine

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According to media reports, a study has been conducted in which 16 samples of breast milk and 16 samples of urine were tested for glyphosate residues. The BfR has seen neither the original study nor sufficient methodological information on the analytical methods and sampling procedures used. For this reason, only a preliminary statement can be made with regard to the currently available data. The data on glyphosate in the urine from seven other studies assessed by the BfR to date have shown that the levels measured are usually in the single-digit microgram per litre range and hence consistently well below any levels that would raise health concerns. If the limit value in drinking water is exceeded as is apparently assumed for glyphosate findings in breast milk, this does not necessarily mean that a health risk exists, since the drinking water limit value represents a precautionary level for all pesticides rather than being toxicologically derived for individual substances.

According to media reports, a study tested 16 samples of breast milk and 16 samples of urine for glyphosate residues using an ELISA test. However, the ELISA tests known to the BfR are intended for detecting glyphosate in water samples they are not suitable for milk. The most sensitive analytical method for fat-containing matrices (i.e. by means of liquid chromatographic procedures) has a detection limit of 10 nanograms per millilitre. The levels detected in breast milk in particular are significantly below this value and can therefore not be assessed without detailed information on the analytical method used. The media reports emphasised that the glyphosate residue levels found in breast milk were above 0.1 nanograms per millilitre which is the drinking water limit value for pesticides. For pesticide residues in baby foods, the maximum value is 0.01 milligram per kilogramme (10 nanograms per gram) of ready-to-eat products. This limit value, then, is roughly one hundred times higher than the cited drinking water value.

So far the BfR has seen neither the original study nor sufficient methodological information on the analytical methods and sampling procedures used. For this reason, only a preliminary opinion can be given on the available data. Only once the necessary data is available will it be possible to conduct an assessment.

The data on glyphosate in the urine from seven published studies analysed by the BfR so far shows that the measured glyphosate levels are generally in the single-digit microgram per litre range and thus clearly below any level that would raise health concerns.

On the basis of the current scientific state of knowledge, the BfR acts on the following assumption: due to the physical and chemical properties of glyphosate, in particular in terms of its solubility properties, glyphosate does not accumulate in fatty tissues. In consequence, no increased excretion of this substance in breast milk is expected. In the available animal experiments, no affinity with fatty tissue was observed as well, and excretion into the milk of cows was negligible.

It cannot be assessed from the available data whether the test was previously validated for all examined matrices (i.e. breast milk and urine). Such validation is necessary for a meaningful statement, since the detection limits are very different in different matrices due to the physical and chemical properties of glyphosate. Numerous studies exist which have not produced any indication of an accumulation of glyphosate in the organism.