

# The National Monitoring Program

Serving Food Safety and Preventive Consumer Health Protection in Germany for more than 20 years

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The National Monitoring Program is a nationwide coordinated measuring and supervision scheme jointly performed by the Federal Government and Federal States in Germany since 1995.

In contrast to risk-oriented food safety programs, the National Monitoring Program utilizes data from consumption studies allowing the representative coverage of foodstuffs, and since 2010 cosmetic products and commodities. Samples taken during official controls are examined for substances or microorganisms undesirable from a health perspective to assess consumer exposure and for the analysis of trends and recognition of potential health risks.

## Objectives, legal basis and importance of monitoring

The National Monitoring Program is part of the preventive framework for consumer health protection [1]. It helps early recognition and possible prevention through targeted measures where appropriate, of potential risks to consumers' health that might be caused by undesirable substances. Those include residues of plant protection and biocide products as well as pharmacologically active substances, mycotoxins, heavy metals, nitrate and nitrite, organic contaminants, and microorganisms found in and on foodstuffs, cosmetic products and commodities. The National Monitoring Program further provides information about trends over time and a sufficient data basis to assess consumer exposure to the aforementioned undesirable substances. Thus, findings from the National Monitoring Program are continuously incorporated into health risk assessment for review and revision, where necessary, of legal limits (maximum residue levels) of undesirable substances. As regards cosmetic products, updating of the data serves, among other purposes, to derive guidance values for technically unavoidable contents of, for example, elements. For these purposes, the data is delivered to the Federal Institute for Risk Assessment (BfR) in Germany and to the European Food and Safety Authority (EFSA). Conspicuous findings may lead to further studies into the causes of those findings in later Monitoring programs.

## Performance of monitoring

The National Monitoring Program is carried out as an independent legal task in the framework of official controls based on §§ 50–52 of the German Food and Feed Code [2]. The Federal Ministry of Food and Agriculture in Germany has delegated the organizational and conceptual tasks to the Federal Office of Consumer Protection and Food Safety (BVL). The National Monitoring Program is based on a plan drawn up annually by the Federal Government and the Federal States fixing in detail the products to be examined, the substances to be tested for and the distribution of monitoring analyses over the Federal States. Participating laboratories are provided with a monitoring manual, which serves as a guideline for the practical performance of monitoring. In addition to their routine control tasks, the monitoring authorities in the Federal States are also tasked with sample drawing and analysis. Data obtained by the National Monitoring Program is compiled and assessed by the BVL. The findings are published in an annual monitoring report and are part of the report on Germany's Multiannual National Control Plan according to Regulation (EC) No. 882/2004 [3,4]. Both the monitoring manual and the annual monitoring report are publically available [1].

## Criteria for selection of products and substances to be tested

Products subject to monitoring are chosen according to the General Administrative Provision on the performance of monitoring for foodstuffs, cosmetic products and commodities 2016–2020 [5]. The provision is based on a long-term plan agreed between the Federal Government and the Federal States for developing sound data for risk assessment of the above-mentioned undesirable substances or microorganisms. This plan also covers Article 29 of Regulation (EC) No 396/2005 [6] on the delivery of findings about pesticide residues in certain foodstuffs.

The foodstuffs to be examined are part of a representative “market basket” derived from national consumption studies (market basket monitoring). Between 2010 and 2015, the market basket comprised yearly about 35 foodstuffs of which ~ 80 % were of plant origin and ~ 20 % of animal origin. Apart from that, some food is analyzed in particular projects (project monitoring, introduced in 2003), which focus on particular problems related to certain foods or substances of topical importance. Each foodstuff chosen is analyzed for some of the aforementioned undesirable substances that may occur as residues or contaminants in or on the product. Cosmetic

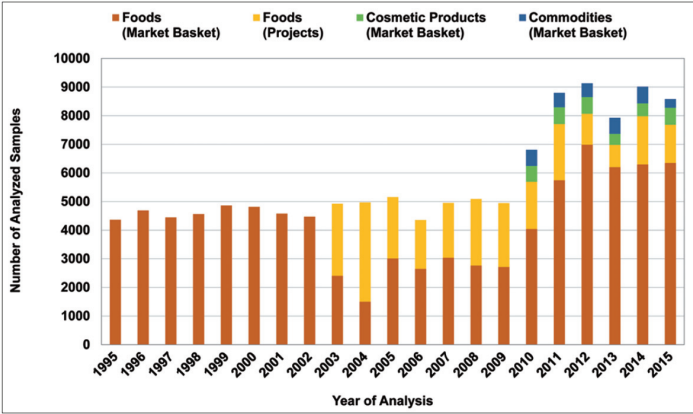


Fig. 1: Numbers of analyzed samples in the National Monitoring Program since its establishment from 1995 to 2015. The project monitoring for food was introduced in 2003 and the monitoring of cosmetic products and commodities in 2010. Preliminary data are shown for 2015.

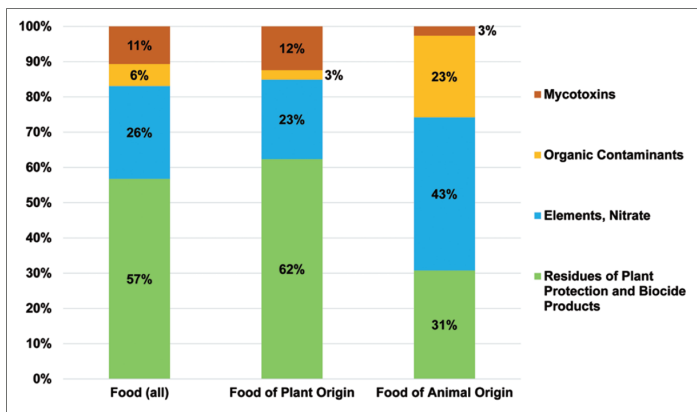


Fig. 2: Percentage distribution of analyzed substances in foods tested in the National Monitoring Program (market basket) from 2010 to 2015. Between 2010 and 2015, the market basket comprised yearly about 35 foodstuffs of which ~ 80 % were of plant origin and ~ 20 % of animal origin.

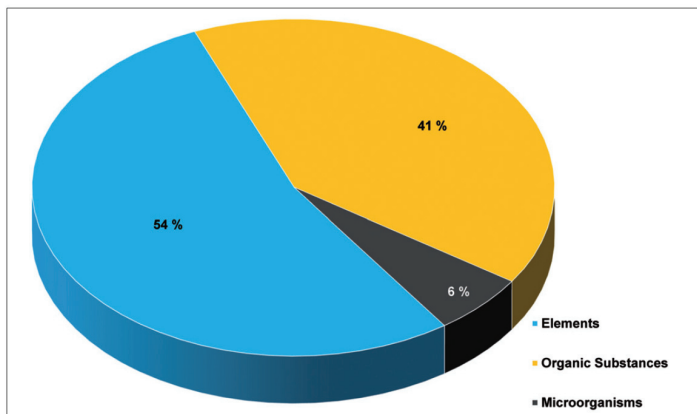


Fig. 3: Percentage distribution of analyzed substances in cosmetic products tested in the National Monitoring Program from 2010 to 2015.

products and commodities are primarily analyzed for elements, organic substances and microorganisms in selected groups of products.

### How many analyses are carried out?

The National Monitoring Program annually includes about 9,000 tests on foodstuffs, 500 tests on cosmetic products and 500 tests on commodities on the national scale [5]. Depending on the matrix-substance combination to be tested, 50 to 190 samples are analyzed according to a specific statistical approach [7]. A test in the meaning of these provisions is the analysis of one product for certain representatives of one of the aforementioned group of substances, or for microorganisms. The authorities in the Federal States may choose whether the tests for a product shall be carried out on the same sample or on different samples of that product.

### Sampling and Analytics

Sampling is mainly carried out in accordance with the regulations of the Official Collection of Analytical Methods following § 64 LFGB [2]. The samples are taken throughout the whole food supply chain, but mainly at retail level. The Federal States are tasked with drawing samples and performing the analysis in official laboratories, which have to be accredited according to Regulation (EC) 882/2004 [4]. The data obtained from sample analysis is electronically reported to the BVL. To assure reliable and comparable analysis results, samples are processed according to standardized procedures described in the monitoring manual. The official laboratories have to ensure that the analytical methods used produce relevant, reproducible and valid results. The samples often have to be analyzed for a comprehensive spectrum of inorganic and organic substances. For this purpose, multi-methods are mostly employed. However, the analysis of certain substances can also require single methods. The competence in specific analyses and the reliability of the analysis results are regularly verified by quality assurance measures. Therefore, official laboratories continuously participate in proficiency tests or interlaboratory studies, which are, amongst others, organized by the BVL.

### Results from the National Monitoring Program

Nearly 122,000 samples of foodstuffs, cosmetic products and commodities have been analyzed within the framework of the National Monitoring Program since its establishment in 1995. The findings and conclusions are presented in the yearly-published Reports on the National Monitoring [1]. Figure 1 highlights the numbers of analyzed samples since the beginning of the National Monitoring Program. The percentage distributions of analyzed substances in foods, cosmetic products and commodities from 2010 to 2015 are shown in Figures 2 – 4.

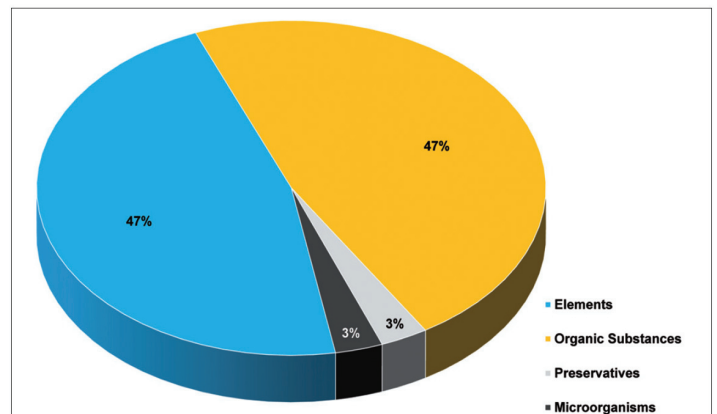


Fig. 4: Percentage distribution of analyzed substances in commodities tested in the National Monitoring Program from 2010 to 2015.

## Outlook

Since its establishment, the National Monitoring Program for foodstuffs, cosmetic products and commodities has provided important findings for preventive consumer health protection in Germany. The results are continuously incorporated into health risk assessment for review and revision, where necessary, of legal limits of undesirable substances on a national and EU level. Thus, the National Monitoring Program has proved its importance as a nationwide coordinated control program and will be continued in a similar way in the next years.

[1] [http://www.bvl.bund.de/monitoring\\_EN](http://www.bvl.bund.de/monitoring_EN)

[2] German Food and Feed Code: Lebensmittel- und Futtermittelgesetzbuch in der Fassung der Bekanntmachung vom 3. Juni 2013 (BGBl. I S. 1426), zuletzt geändert durch Artikel 2 des Gesetzes vom 5. Dezember 2014 (BGBl. I S. 1975).

[3] <http://www.bvl.bund.de/MANCP>

[4] Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules.

[5] General Administrative Provision on the performance of monitoring for foodstuffs, cosmetic products and commodities 2016–2020: Allgemeine Verwaltungsvorschrift zur Durchführung des Monitorings von Lebensmitteln, kosmetischen Mitteln und Bedarfsgegenständen für die Jahre 2016 bis 2020 (AVV Monitoring 2016–2020), 14. Dezember 2015 (GMBI S. 1341).

[6] Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC.

[7] Sieke, C., Lindtner, O. und Banasiak, U.: Pflanzenschutzmittelrückstände, Nationales Monitoring, Abschätzung der Verbrauchereexposition: Teil 1. Deutsche Lebensmittel-Rundschau, 104 (2008) 6, S. 271 – 279, Teil 2. Deutsche Lebensmittel-Rundschau, 104 (2008) 7, S. 336 – 342

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