

Food safety research

Analysis | reference laboratory | scientific research



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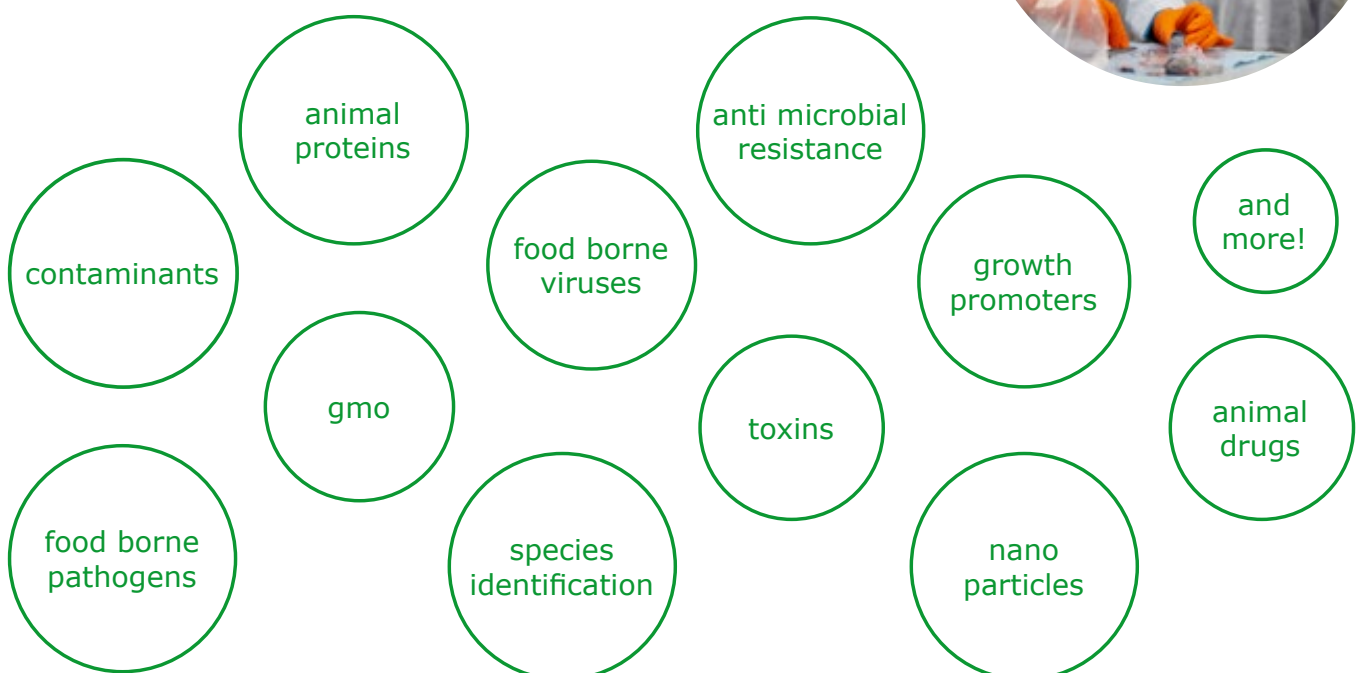
Wageningen Food Safety Research (WFSR) is conducting independent research on safe and reliable food. We specialise in state-of-the-art analysis of food and feed. We determine levels of chemical and microbiological contamination and study their effects, authenticate food, and perform forensic research. It is our task to monitor changes and trends in the food production chain and to identify emerging risks. Wageningen Food Safety Research mainly works for governmental bodies and in particular for The Netherlands Food and Consumer Product Safety Authority (NVWA).

Analysing food and feed

WFSR develops and applies a wide range of analytical methods for examining the safety of food and feed products. We determine the presence of specific pathogens and food borne viruses and levels of substances and contaminations that may have an effect on food safety. We check the authenticity and compliance of test results with feed and food law.



These include



WFSR has the specialised know-how and infrastructure for (forensic) detection and identification of novel hazardous substances and pathogens. Next to highly advanced specific (bio) chemical analytical methods, classical microbiological and molecular-based methods, we use a range of bioassays to detect the presence of bioactive or toxic components in food and feed.

Reference laboratory

WFSR is the major National and an European Union Reference Laboratory and has extensive experience in assuring laboratory quality. Our activities include external quality assurance of analytical food and feed laboratories and the organisation of collaborative studies and proficiency tests.

WFSR is the Dutch National Reference Laboratory for all chemical residues, toxins, contaminants in food and feed, GMOs, animal proteins, feed additives and food borne viruses. WFSR is the European Union Reference Laboratory: (1) hormonal growth promoting compounds, sedatives and mycotoxins in food of animal origin and (2) mycotoxins and plant toxins in food and feed.



Scientific research

Method development

WFSR has the best methods to analyse food and feed. Therefore we are constantly working on developing and implementing new techniques and new methods so that we can analyze more and more (undesirable) components in a better, faster and more cost effective way. Effect based methods allow us to find emerging food safety risks.

Effects of substances on humans and animals

WFSR studies the possible toxicological effects of substances and food ingredients to assess their safety for consumption. We use various techniques to measure uptake, metabolism and physiological effects of food and feed components. We also investigate the transfer of undesired compounds from feed to food.

Reduce animal tests

Animal experiments are often still carried out to test the toxicity of substances and to answer questions in the context of food safety. Together with other WUR institutes we are actively working on alternative methods that can replace these animal experiments. We now have tools that can replace specific aspects of animal experiments aimed at the gut, such as absorption and gut metabolism. In that way we want to reduce animal tests.



Microbiological hazards

At WFSR daily many food and environmental samples are tested for microbiological and virological contamination to keep an eye on food safety. We continuously ask ourselves what new pathogenic variants of viruses or micro-organisms are emerging as food safety threats, and how can we detect them and assess their impact on human health.

Safe food production

Primary production, transport, storage, processing, packaging and preparation of food and feed products is rapidly evolving in terms of the application of new (breeding) techniques in product development and further processing and marketing.

WFSR is keeping a close eye on these developments and trends. We constantly develop and apply new analytical concepts, models and tools for prediction and monitoring. This helps to assess and improve the safety in the food production chain and support governmental bodies in their risk analysis.

Food fraud and composition

- Is Tuscan olive oil really from Tuscany and is it extra virgin olive oil?
- Are organic eggs really organic?
- Does this hamburger contain horse meat?
- Is this fish the species that is claimed on the package?
- Is this product really halal?
- Does this product contain allergens, adulterants or microplastics

These questions are examples of the authenticity and composition issues WFSR deals with on a regular basis. We study relevant indicators, develop methods, and apply these methods to authenticate food, feed and fertilisers. We investigate e.g. compositional authenticity, processing characteristics, geographical origin, production methods and typical characteristics of artisan products.



'Our customers come from over 50 countries'



Training & Consultancy

WFSR can provide you with advice and expert training (on site or in Wageningen) regarding laboratory, fraud and food chain aspects related to the safety and the reliability of food and feed. We have extensive experience in tailored training courses and can respond to the specific needs of our clients. Our training courses will help you to improve the performance of your laboratory and the analytical methods you employ. Where relevant we use the train the trainer approach.

24/7

In order to be able to swiftly respond to food safety and environmental incidents, WFSR has a 24/7 response team that can advise governments. We can rapidly increase our analytical capacity, start sample analysis within 2 hours and immediate start-up forensic research. WFSR experts participate in various national emergency teams.

'If it isn't safe, it isn't food'



Facts and Figures



Reports (annually)
~ 50



Employees
± 450



Scientific publications (annually)
> 100



PhD students
± 15



Activities (annually)
~ 400 for over 50 countries



Samples (annually)
± 135.000 (and ± 235.000 analysis)



Facilities
The largest and most broadly equipped microbiological and chemical analytical laboratory in the Netherlands

Contact us

Wageningen Food Safety Research (WFSR) is part of Wageningen University & Research.

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To explore
the potential
of nature to
improve the
quality of life
