

Tuesday, 6 October 2026		
08:30	Grab a coffee	
09:00	Welcome	Josipa Grzetic Martens
09:10	Update on legislation and emerging issues	Frans Verstraete (DG SANTE)
10:30	Coffee break	
	Method developments and surveys	
10:50	Occurrence of <i>Alternaria</i> toxins in baby foods and edible oils	Ilaria Di Marco Pisciotano
11:05	Survey on mycotoxins in cocoa, cocoa products and spices	
11:20	Survey on mycotoxins and plant toxins in medical/therapeutic foods	Marta Sopel
11:35	Proficiency tests	
11:45	Quinolizidine alkaloids in lupin flour and milk	Rianne van Outersterp
12:00	Glycoalkaloids in potato starch and potato containing feed	Kerstin Krätschmer
12:15	Mycotoxins in baby food and compound feed	Josipa Grzetic Martens
12:30	Lunch	
13:30	Exploring the limits of UHPLC-MS/MS with polarity switching towards the quantification of 931 mycotoxins and other secondary metabolites in cereal-based food in 11 min run time	Lidija Kenjeric (DTU)
14:00	Analysis of the bacterial toxin cereulide: Method development and findings from the recent infant formula incident	Christoph Czerwenka (AGES)
14:20	From dry milling to slurring: lessons learned in achieving representative samples for mycotoxin and plant toxin analysis	Josipa Grzetic Martens
14:40	Discovery of pyrrolizidine alkaloids in lamb's lettuce (<i>Valerianella locusta</i>)	Leonie Straub
15:00	Coffee break & group photo	
	Q&A session	
15:30	Quinolizidine alkaloids: Monitoring and risk management – The ISS experience	Barbara De Santis (ISS)
	AQC session	
15:50	Divergent criteria for applying the default 50% expanded measurement uncertainty: what is needed to enforce maximum levels with the intended safety margin?	Anja These (BfR)
16:10	Harmonized approach regarding rounding and reporting of analytical results and measurement uncertainty	Hans Mol
18:00	Dinner	

Wednesday, 7 October 2026		
08:45	Grab a coffee	
09:15	General Info	
09:20	Evaluating β -glucosidase sources for reliable determination of cyanides	Tjerk Venderink
09:40	Method development and survey for cardiac glycosides in herbs and herbal products	Ilaria Di Marco Pisciotano
10:00	Artificial Intelligence for food safety	Floor van Meer
10:30	Coffee break (photo?)	
11:00	EURL work program and other updates (feed analysis, CEN, EURL-NRL activities)	Josipa Grzetic Martens
12:00	Extra time for discussion, Q&A and closure	
12:30	Lunch	

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Exploring the limits of UHPLC-MS/MS with polarity switching towards the quantification of 931 mycotoxins and other secondary metabolites in cereal-based food in 11 min run time**Lidija Kenjeric, Michael Sulyok, Christoph Bueschl, Alexandra Malachova, Rudolf Krska**

High-throughput multi-class LC-MS/MS methods are becoming essential for official mycotoxin control as the number of regulated and emerging analytes grows. In this work, a UHPLC-MS/MS method with polarity switching, covering 931 mycotoxins and other secondary metabolites in cereal-based food, was developed and validated in a single 11-minute injection.

Instead of validating against technical replicates of a single homogenized sample, as is common practice, the method was deliberately validated across five distinct commercial muesli varieties analyzed on separate days, since lot-to-lot variability – not injection repeatability – is the dominant source of measurement uncertainty in real official-control samples. Furthermore, validating across different samples from the same matrix imposed a greater challenge on the assessment of matrix effects, recovery, and reproducibility than single-matrix validation would, with performance assessed against SANTE 11312/2021 Rev. 2 criteria in the absence of a dedicated multi-class validation guideline. The method was validated across its full scope; however, to balance scientific rigor with practicality, data were examined in detail for a 52-analyte subset spanning all EU-regulated mycotoxins.

The optimized method met regulatory performance criteria for the large majority of analytes, including full compliance for all tested regulated mycotoxins, while acquisition speed introduced a measurable but bounded trade-off in sensitivity – most notably for aflatoxin B1, whose LOQ (2.5 µg/kg) narrowly exceeds the EU limit. Accuracy was independently confirmed via proficiency testing (triticale, pistachio paste). These results demonstrate that the method's efficiency gains are achievable without a proportional loss of reliability, supporting the transferability of ultra-fast multi-mycotoxin screening/quantification methods to diverse official-control matrices.

Analysis of the bacterial toxin cereulide: Method development and findings from the recent infant formula incident**Christoph Czerwenka, Austrian National Reference Laboratory for Plant Toxins**

Cereulide is a bacterial toxin produced by some *Bacillus cereus* strains under certain conditions, e.g. storage of cooked meals at insufficient temperatures, or upon infection of fermentation broths used to produce food supplements. The consumption of cereulide contaminated food can cause nausea or emesis but may also result in severe or even fatal intoxications.

More than a decade ago, the Austrian NRL developed a highly selective and sensitive LC-MS/MS method for the analysis of cereulide in food samples including a simple sample preparation based on the QuEChERS methodology. The various optimisation steps during method development will be discussed and the final method, which employs an isotopically labelled internal standard and thus can be robustly applied to various food matrices, will be presented.

At the end of 2025 it was reported that infant formulae may contain cereulide due to a contamination of the ingredient arachidonic acid oil. The established method was successfully validated for this matrix, while at the same time lowering the LOQ to 0.02 µg/kg. Analysis of a wide range of infant formulae from the Austrian market showed that several products were contaminated and significantly exceeded the level established by EFSA in their rapid risk assessment, leading to several world-wide recalls. The advantage of the presented method in this context is that it can be directly applied to powdered products without the need for any reconstitution, while still maintaining a very low LOQ. This is in contrast to the ISO 18465 standard which severely underestimates cereulide concentrations if applied directly to the powder, as was demonstrated by comparative investigations. The trueness of the presented method was verified by participating in a proficiency test with both spiked and contaminated infant formula with very satisfactory results.

The use of an isotopically labelled internal standard provided robust applicability for a wide variety of food matrices. During method development various parameters including HPLC conditions (mobile phase additives, column

temperature, etc.) were studied and optimised. The obtained findings and the resulting final method with an LOQ of 0.2 µg/kg will be presented.

Discovery of pyrrolizidine alkaloids in lamb's lettuce (*Valerianella locusta*)

Leonie Straub, WFSR

The occurrence of (toxic) pyrrolizidine alkaloids (PAs) in plant-based food products is commonly caused by accidental co-harvesting of PA producing weeds. In a screening study investigating this contamination in salad mixes, lamb's lettuce (*Valerianella locusta*) was initially selected as a presumable blank matrix, as members of the Caprifoliaceae family are not generally recognized as PA producing plants. However, we detected several unknown PA-like structures in the *V. locusta* samples. Given the potential toxicological relevance of these compounds, the structure of selected features was elucidated further using liquid chromatography coupled to high-resolution mass spectrometry (LC-HRMS) in combination with infrared ion spectroscopy (IRIS).

In ten lamb's lettuce samples, the plant alkaloids were prioritized by feature-based molecular networking (FBMN) in GNPS2. The approach was used for both data prioritization and library matching with our previously developed PA spectral library (PASL). Based on their characteristic fragmentation patterns, we found several PA-like structures that could not be assigned as previously known PAs. As contamination with PA producing weeds could be ruled out by visual screening of the lettuce before extraction, the similar PA profile in all samples indicated that the compounds are produced by the plant itself. Even though the FBMN in combination with MS2 data gave information about the class of PAs, the unambiguous identification of the compounds was hindered by the presence of constitutional and stereoisomeric candidates and the lack of analytical standards. Therefore, the experimental IR spectra of selected compounds were compared with density functional theory predictions, which facilitated the discrimination between candidate structures. By this approach, the presence of retronecine-based monoesters and diesters containing isovaleric and angelic acid substituents and their corresponding N-oxides were tentatively identified and subsequently confirmed by comparison of retention time, fragmentation pattern and IR spectra with in-house synthesized reference standards.

With this HRMS-centered workflow, we identified the structures of 10 PAs in lamb's lettuce without the need for previous isolation from the complex plant matrix. The elucidated structures include closely related (stereo)isomeric pairs and their corresponding N-oxides. The exploration of the unexpected occurrence of PAs in *V. locusta* broadens the awareness of these alkaloids in edible plants and underlines the possibility to identify previously unknown alkaloids by combining untargeted HRMS, molecular networking, and IRIS.

Divergent criteria for applying the default 50% expanded measurement uncertainty: what is needed to enforce maximum levels with the intended safety margin?

Anja These & Michael Weiß, BfR

In accordance with Commission Implementing Regulations (EU) 2023/2782 and (EU) 2023/2783, laboratories may specify a default expanded measurement uncertainty (eMU) of 50 %. The regulations clearly define the performance criteria that laboratories must meet under repeatability and reproducibility conditions in order to apply the default eMU. A comparison of these performance criteria with other areas in which an eMU of 50 % is also applied—such as pesticide residue analysis—shows that different values are required for the same criterion. This applies in particular to the performance in proficiency tests.

The presentation will provide an overview of the currently used approaches to determine MU. Additionally, it will be explained how each one affects the performance criteria that must be met. The requirements for bias and precision that a laboratory must meet depend on the desired margin of safety for the monitoring of maximum levels (i.e. the avoidance of deviating measuring results between two laboratories). Therefore, we have calculated the probability of deviating results for all possible combinations of bias and precision within a realistic range of values. Based on these data, it can be concluded that the performance criteria set forth in the Implementing Regulation (EU) 2023/2782 and (EU) 2023/2783 on plant toxins and mycotoxins are appropriate to achieve the safety margin intended by the legislature for the monitoring of maximum levels.

Artificial Intelligence for Food Safety**Floor van Meer, WFSR**

Artificial Intelligence (AI) is increasingly being applied in food safety research and practice, offering new possibilities for data analysis, prediction, and risk-based decision-making. This presentation provides an accessible overview of key AI concepts, including machine learning, deep learning, and foundation models, and illustrates how these approaches are currently being used in food safety. It will discuss promising applications and opportunities, alongside important limitations and risks, and consider what the future of AI for food safety may be.

Evaluating β -glucosidase sources for reliable determination of cyanides**Tjerk Venderink, WFSR**

The determination of cyanogenic glycosides (CNGs) in feed and food matrices commonly relies on enzymatic hydrolysis to release hydrogen cyanide (HCN) prior to quantification. Standardized methods, such as EN 16160, employ commercially available β -glucosidase preparations. However, variations in enzyme availability, cost, and substrate selectivity may compromise analytical performance. This study investigated the suitability of various β -glucosidase sources by evaluating the activity and selectivity of commercially available enzymes towards the most relevant CNGs. Marked differences in substrate conversion efficiency and specificity were observed, demonstrating that not all enzymes are equally suitable for routine CNG analysis.

Based on these findings, flaxseed was identified as a promising natural source of β -glucosidase. A sustainable extraction procedure was subsequently developed, addressing critical aspects such as removal of endogenous CNGs, enzyme stability, and storage conditions. The extracted enzyme displayed broad substrate specificity, achieving complete conversion of common CNGs within 3 hours at pH 6 under conditions compatible with EN 16160. The results demonstrate that flaxseed-derived β -glucosidase provides a robust, economical, and sustainable alternative to commercial enzyme preparations, while highlighting the importance of enzyme characterization for reliable determination of CNGs in feed and food matrices.