and can contaminate food, feeds and specific indoor environments resulting in high economic losses. Severe health problems and death have been related with mycotoxins exposure through the consumption of several food commodities. There are many factors involved in mycotoxin production by fungi but climate is the most important. Thus, when changes in the weather occur, mycotoxins production will be affected. We looked for articles that were available in scientific databases, written in English and that mention in the title and/or abstract the combined terms fungi and climate change and also mycotoxins and climate change. Nineteen articles were found: seven with the fungi and climate change terms and twelve with mycotoxins and climate change. Through the paper analyses, we noticed that some authors have stated that Portugal and others European countries with temperate climates have the biggest risk regarding exposure to fungi and mycotoxins. Additionally, a recently scientific report submitted to European Food Safety Authority stated that is expected a higher risk of contamination by Aflatoxin B1 related with the optimal conditions expected for *A. flavus* complex growth and proliferation in several food and feed products. Other fungi that can also increase its growth with global warming, specifically *A. ochraceus* complex that grow in high moisture environment and, consequently, we can expect also an increase of Ochratoxin A. The warm and humid weather also encourage crop infections caused by *Fusarium* sp., favoring, among this *genus*, F. verticilloides spread instead of *F. graminearum* and this can also lead to a change in the prevalent *Fusarium* mycotoxins in some crops. Although the increasing concern supported by several research groups that study the relation between climate changes and mycotoxins production, and also the possible impacts on public health, we still need new resources based on scientific data to support decisions and actions to prevent future fungi and mycotoxins contamination and exposure.

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P03-066
Derivation of a threshold for genotoxic carcinogens: An insight into the procedure of the MAK Commission for compounds classified in Carcinogen Category 5

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The Permanent Senate Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (MAK Commission) proposes maximum workplace concentrations (MAK values) for volatile chemicals and dusts, biological tolerance values (BAT values), 'biologische Leitwerte' (BLW), biological reference values for workplace substances (BAR) and analytical methods for substances in the air and biological material. Substances which are carcinogenic, germ cell mutagenic, sensitising or absorbed percutaneously or which pose a risk during pregnancy are classified accordingly. The task of the MAK Commission is to provide comprehensive and authoritative information for health and safety professionals and researchers and to give scientific policy advice. Each year detailed documentation is published for all proposed MAK values, BAT values and classifications. Since January 2012 the MAK Collection has been available online in German and English. All publications that have appeared since 1972 are therefore available free of charge in electronic format: www.dfg.de/en/mak. To gain an insight into the procedure of the MAK Commission, this poster provides examples for the derivation of MAK values and allocation in the classification categories. Of particular interest are compounds classified in Carcinogen Category 5, substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value can be derived. A genotoxic mode of action is of prime importance but is considered to contribute only very slightly to human cancer risk, provided the MAK and BAT values are observed. The reasoning behind the classification is illustrated by dichloromethane (MAK value 50 ppm) and isoprene (MAK value 3 ppm) with information on the mode of action, dose-dependence and toxicokinetic data.

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P03-067
Development and validation of an analytical methodology for the determination of antipsychotic drugs in hospital wastewaters by gas chromatography–tandem mass spectrometry (GC–MS/MS)

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The consumption of psychiatric drugs has seen a huge increase during the last years as a consequence of the financial European crisis, and this can lead to psychological health effects causing several psychiatric diseases. These drugs have become pseudo-persistent in the environment due to their large volumes of use, and nowadays they are considered environmental emerging contaminants. Within this main group, the antipsychotic class have experienced an expressive increase in consumption, namely in Portugal, being used for the management of psychotic episodes as well as for other related behavioral symptoms and even other therapeutic indications. The present work describes the development and validation of a highly sensitive analytical method for the simultaneous determination of antipsychotic drugs in influent and effluent hospital wastewaters by GC–MS/MS. The studied compounds were levomepromazine, clozapine, chlorpromazine, haloperidol, quetiapine and ciamemazine using promazine as internal standard. Sample preparation was carried out by solid phase extraction (SPE) using mixed mode-columns (Strata XC – 200 mg) and followed by derivatization of the extracts with MSTFA (with TMCS). Chromatographic separation was achieved on a 5% phenylmethylsiloxane column. All chromatographic conditions and mass spectrometric parameters were previously optimized to enhance the maximum signal. The method was validated following internationally accepted criteria, and the studied parameters included selectivity, linearity, limits of detection (LOD) and quantification (LOQ), instrumental limits, precision and accuracy, stability and recovery. The procedure was linear for concentrations ranging from 0.1 to 10 μg/L (0.02–2 μg/L for haloperidol), with determination coefficients higher than 0.99 for all analytes. Intra- and inter-day precision was lower than 15% for all analytes at the studied concentrations, while accuracy remained between a ±15% interval. Recoveries ranged from 35% to 80%. Low LODs were achieved, between 2 and 10 pg/mL, allowing a reliable and accurate quantification of the analytes at trace level (low ppb). All studied parameters complied with the defined

criteria and the method enabled the successful determination of antipsychotics in hospital wastewater samples.

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P03-068
Using urine ETU levels as an indicator of risk from Mancozeb exposure in vineyard applicators

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Introduction/Question: The use of pesticides in agriculture can be a source of excessive exposure in farmers. As an alternative to risk assessment based on dermal exposure measurements, we propose a method for establishing a threshold urine level, taking the biomarker of bis-ethylene-thiocarbamates, ethylenethiourea (ETU), as a proof-of-principle example for biological monitoring. *Methodology*: A field study was performed in Northern Italy on 29 vineyard farmers who sprayed Mancozeb. Farmers worked for 37 work-days and their dermal exposure was monitored using pads and hand washing. Each subject collected one pre-application and further 24-hour urine samples during all workdays and one day after finishing the work. The measurement of ETU in pads, hand wash and urine was performed by liquid chromatography–mass spectrometry. *Results* The median Potential body exposure was 0.2865 (range 0.0137–13.357) mg, while the median glove exposure was 0.0577 (range 0.008–5.8958) mg. The median actual body exposure was 0.0016 (range 0.0001–0.5228) mg, while the median actual hand exposure was 0.1367 (range 0.0196–4.7213) mg. The median total actual exposure was 0.1120 (range 0.0003–4.7774) mg. Between the Closed and Open tractor there was no statistically significant difference in hand exposure, but there was a statistically significant difference in actual body exposure (Mann–Whitney *U* Test, $p < 0.05$) and total actual exposure (Mann–Whitney *U* test, $p < 0.05$). Creatinine corrected ETU levels in 24-h urine classified subjects for high- and low-exposure with a statistically significant ROC curve (area under the ROC curve: 0.69, 95% CI: 0.51–0.83, $p = 0.035$), and the discriminatory level of creatinine corrected ETU was 6.04 mcg/g creatinine. *Discussion*: Our results demonstrate the efficacy of field studies to establish urine metabolite levels for highlighting the workers/working conditions where personal exposure monitoring and risk assessment is necessary. In this pilot study, a preliminary ETU level was established as a demonstration that it is possible to derive from field studies easily applicable limits for risk assessment of pesticide exposure in agriculture.

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P03-069
Toxicological evaluation of chromatographic profiles from "vapor" products

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"Vapor" products are growing in use and regulatory interest worldwide. It is important to establish approaches to characterize the chemical composition of aerosols generated from "vapor" products to facilitate toxicological risk assessments. Gas chromatography mass spectrometry (GC–MS) is used to create a profile of compounds present in "vapor" product aerosols. Several different thresholds of toxicological concern (TTCs) routinely applied in the assessments of food packaging, consumer products, pharmaceuticals, and medical devices have been reviewed to determine the most appropriate ones to use in "vapor" product evaluations. TTCs can be applied at two phases of the evaluation: (1) analytical phase and (2) risk assessment phase. Integration of TTCs at both phases ensures that relevant compounds are reported and that efforts focus on compounds of high level of toxicological concern. An example of a toxicological evaluation strategy of chromatographic profiling data sets is presented. This illustrates the application of TTCs in combination with QSAR and scientific literature review in the chromatographic profiling data evaluation process. Aerosol chemical characterization, including chromatographic profiling of "vapor" products, has the advantage of maximizing the use of resources while minimizing animal testing.

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P03-070
INTEGRA: Advancing risk assessment using internal dosimetry metrics

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The objective of the INTEGRA project is to bring together all information necessary for assessing the source-to-dose exposure continuum over the entire life cycle of substances covering an extensive chemical space. The major outcome of INTEGRA is a computational platform that integrates multimedia environmental and micro-environmental fate, (external) exposure and internal dose within a dynamic framework in time. Coupling seamlessly exposure models with refined computational tools for internal dosimetry supported by QSARs transforms exposure/risk assessment of environmental chemicals since it allows risk characterization to be based on internal dosimetry metrics. In this way high throughput system data such as the ones generated by Tox21 in vitro testing can be used, promoting the drive towards "exposure based risk assessment". This opens the way towards a higher level of assessment that incorporates refined exposure (tissue dosimetry) and toxicity testing (Biological Pathway Altering Dose – BPAD). The applicability of INTEGRA was tested on a large number of potential endocrine disruptors including bisphenol-A among others. Several exposure scenarios were investigated, incorporating data from external exposure assessment (food residues, food consumption patterns), as well as from human biomonitoring data using exposure reconstruction algorithms. Internal exposure metrics were