



Minutes

HBM4EU visit to EFSA

Date: Wednesday 12 Feb (afternoon), Thursday 13 Feb 2020 (morning)

Room 00/M09 (with Skype/video facilities)

Attendees

EFSA	EFSA	HBM4EU
Hans Verhagen (chair/host) Senior Scientific Officer (HBM4EU liaison) Hans.verhagen@efsa.europa.eu	Marco Binaglia et al. (Contaminants) Team leader contaminants Marco.binaglia@efsa.europa.eu	UBA (Marike Kolossa-Gehring, Rosa Lange, Petra Apel) marike.kolossa@uba.de Rosa.Lange@uba.de Petra.apel@uba.de Coordinator HBM4EU Task5.2: Development and consolidation of HBM4EU health-based HBM guidance values (HBM-GVs) general population
Stef Bronzwaer Research Coordinator Stef.bronzwaer@efsa.europa.eu		VITO (Greet Schoeters, Jos Bessems) greet.schoeters@vito.be jos.bessems@vito.be Pillar lead science -policy WP5: Translation of results into policy
Marta Hugas Chief Scientist Marta.hugas@efsa.europa.eu	Anna Federica CASTOLDI Senior Scientific Officer, packaging materials (phthalates, bisphenols) AnnaFederica.CASTOLDI@efsa.europa.eu	ANSES (Christophe Rousselle) christophe.rousselle@anses.fr Task5.2 Development and consolidation of HBM4EU health-based HBM guidance values (HBM-GVs) workers
Manuela Tiramani et al. (pesticides) Head of Unit Manuela.TIRAMANI@efsa.europa.eu	Georgia Gkrinzali Seconded National Expert Emerging Risks Georgia.GKRINTZALI@efsa.europa.eu	FIOH (Tiina Santonen) tiina.santonen@ttl.fi Task5.3 Risk assessment
Mary Gilsenan et al. (DATA) Head of Unit Mary.gilsenan@efsa.europa.eu	Jose-Angel Gomez Ruiz Scientific Officer Exposure, GMO JoseAngel.GOMEZRUIZ@efsa.europa.eu	ISCII (Argelia Castano) hbm4eu@isciii.es Pillar lead: HBM platform WP9: laboratory analysis and quality assurance
Katharina Volk Scientific Officer, packaging materials (phthalates) Katharina.Volk@efsa.europa.eu	Fatima den Ouden Trainee packaging materials Fatima.DenOUDEN@ext.efsa.europa.eu	INSA (Maria Joao Silva) M.Joao.Silva@insa.min-saude.pt Task 5.3: risk assessment CGL mycotoxins



<p>Jean-Lou Dorne Senior Scientific Officer, mixtures, toxicokinetics Jean-Lou.Dorne@efsa.europa.eu</p>	<p>Djien Liem Team leader chemical risk assessment Djien.Liem@efsa.europa.eu</p>	<p>SDU (Helle Raun Andersen) HRAAndersen@health.sdu.dk CGL: pesticides via Skype</p>
<p>Jose Tarazona Senior Scientific Officer Jose.tarazona@efsa.europa.eu</p>	<p>Davide Arcella Senior Scientific Officer Dietary Exposure Davide.Arcella@efsa.europa.eu</p>	<p>RIVM (Mirjam Luijten) mirjam.luijten@rivm.nl WP15: mixtures</p>
<p>Caroline Merten Senior Scientific Officer Emerging Risks Carioline.merten@efsa.europa.eu</p>	<p>Claudia Cascio Scientific Officer Dietary exposure Claudia.cascio@efsa.europa.eu</p>	<p>AUTH (Denis Sarigiannis) denis@eng.auth.gr WP12: exposure modelling</p>
		<p>UFZ (Martin Krauss) martin.krauss@ufz.de WP16: emerging chemicals</p>
		<p>Sofie Norager (DG RTD) sofie.norager@ec.europa.eu</p>



Program

Day 1: general introduction into EFSA and HBM4EU

Time	Topic	Who
13:30-14:00	1.1 Welcome; adoption of the agenda. Tour de table.	Hans Verhagen (EFSA) and Greet Schoeters (VITO/HBM4EU) (chairs)
14:00-14:30	1.2 Introduction into EFSA and its working practices, with attention for the place of human biomonitoring in EFSA risk assessment; including the challenges of the transparency Regulation.	Hans Verhagen
14:30-15:00	1.3 Overview of the HBM4EU project The HBM platform	Marieke Kolossa Argelia Castano
15:00-15:30	1.4 DG-RTD perspective on HBM4EU project and beyond	Sofie Norager
15:30-16:00	Coffee/tea break	
16:00-17:00	1.5 Working practices in relation to setting of HBGV's at EFSA. Receipt of mandates. Perspective of focus on food versus biomonitoring: - contaminants (heavy metals, mycotoxins, acrylamide, flame retardants, PFAS et al.) @Marco Binaglia - packaging materials (bisphenols, phthalates) Claudia Roncancio-Pena - pesticides Manuela Tiramani - mixtures @Jean-Lou Dorne - emerging risks (@Ana, @Caroline Merten) Other issues of potential relevance - approach for dietary exposure assessment (@ClaudiaCascio, @Davide Arcella) - EFSA's Research involvement (@Stef Bronzwaer) - assessment of low dose effects (@Jose Tarazona)	Marco Binaglia Claudia Roncancio-Pena Manuela Tiramani Jean-Lou Dorne Caroline Merten Claudia CASCIO Davide ARCELLA Stef BRONZWAER Jose TARAZONA



17:00-18:00...	1.6	Derivation of HBM-GVs in HBM4EU: complementary for EFSA's work on TDI's, TWI's and ADI's for foods? - Discussion on derivation - Discussion on use - Discussion on further planning within HBM4EU	HBM4EU: UBA/ ANSES Petra Apel Christophe Rousselle
19:30-23:00		Informal aperitivo/dinner (self-paid)	



Day 2: Discussing the future in HBM4EU and EFSA

Time	Topic	Who
9:00-10:30	2.1 Activities of the HBM4EU project in the next 2 years: <ul style="list-style-type: none"> • Pesticides (glyphosate, chlorpyrifos, pyrethroids) • Mixtures • Mycotoxins (DON, fumonisins) • Other contaminants (Per-/poly-fluorinated compounds, acrylamide, heavy metals) • Bisphenols • Phthalates <p>Connection with relevant EFSA priorities in the next years.</p>	<ul style="list-style-type: none"> • H. Raun Andersen • Miriam Luyten • Maria Joao Silva • Christophe Rousselle • Rosa Lange <p>(15 min each)</p>
10:30-11:00	Coffee/tea	
11:00-12:00	2.2 <ul style="list-style-type: none"> • Risk assessment in HBM4EU and EU (approach of WP5.3) • Modelling and risk assessment in HBM4EU (approach of WP12) • Participatory processes in science policy interactions and risk communication <p>Discussion on the basis of EFSA and HBM4EU perspectives.</p>	<ul style="list-style-type: none"> • Tiina Santonen • Dennis Sarigiannis • Christophe Rousselle • Greet Schoeters <p>(10 min each)</p>
12:00-13:30	2.3 Discussion and recapitalisation on selected topics in HBM4EU and EFSA / exploration of potential collaboration: <ul style="list-style-type: none"> - activities on pesticides - activities on mixtures - activities on emerging risks (Emerging substances project in EFSA and emerging substances biomonitoring in HBM4EU) - Communication? Dissemination aspects? - Non targeted analysis - Modelling and forward-backward dosimetry - use of HBM4EU data for addressing low dose effects 	<p>EFSA and HBM4EU participants</p> <p>Martin Krauss</p>
13:30-14:00	2.4 Wrap up by the two chairs and adjourn	Greet Schoeters and Hans Verhagen
	Lunch available in the EFSA canteen	



EFSA: Hans VERHAGEN (chair/host)

- In general, EFSA needs a mandate (from DG SANTE, another DG, the EU Parliament, an EU MS or EFSA itself) before scientific risk assessments can be started. Private entities, NGO's, or a supranational organization like WHO or FAO cannot task EFSA.
- EFSA performs risk assessments and takes care of risk communication; risk management is up to the Commission and the EU Member States.
- EFSA does not perform their own sampling or measurements. It is the responsibility of the national Food Safety Agencies to collect and generate data on chemicals in food and feed and to collect food consumption data.
- Data can be provided to EFSA voluntarily; some data have to be provided (legal commitment).
- EFSA evaluates regulated products such as active substances of plant protection products, food & feed additives, food contact materials, GMO's, ..., that are regulated under a Directive or Regulation. EFSA has responsibility for the risk assessment part.
- EFSA also evaluates non-regulated contaminants like dioxins, brominated flame retardants, heavy metals.
- Human biomonitoring can be part of an EFSA scientific evaluation. To date human biomonitoring data have been used in a limited number of scientific evaluations.
- EFSA is finishing its Strategy 2020, and is working on the next one EFSA Strategy 2021-2027.
- In addition to the EFSA Founding Regulation 178/2002 ('General Food Law'), EFSA will implement Regulation (EU) 1381/2019, the 'Transparency Regulation', which will entry into force in March 2021.
https://ec.europa.eu/food/safety/general_food_law/transparency-and-sustainability-eu-risk-assessment-food-chain_en

HBM4EU: Marike Kolossa (UBA) and Argelia Castano (ISCIH)

<https://www.hbm4eu.eu/the-project/> + presentation Marike Kolossa and Argelia Castano

HBM4EU conducts research driven by needs of policy makers and risk assessors (including EFSA). It runs from 2017 to 2021. The focus is on human internal exposure as measured by human biomonitoring. Based on input from stakeholders, HBM4EU has identified 18 priority substances to work on, several of them with clear links to dietary exposure. Existing HBM data are collected EU wide. New HBM data are being generated through a network of national and regional studies. Results are expected end 2020-2021. Laboratory capacity has been built in EU to get comparable HBM data. HBM4EU conducts research to facilitate interpretation of HBM data in relation to health risks and in relation to exposure sources and exposure routes. HBM4EU also provides tools to facilitate policy uptake of results.

Availability of HBM data from HBM4EU:

Aggregated HBM data will be made available through IPCHEM (<https://ipchem.jrc.ec.europa.eu/RDSIdiscovery/ipchem/index.html>).



- For now, due to the new GDPR regulation, IPCHEM can only hold aggregated HBM data or completely anonymized individual data. The latter means that there is no possibility anymore to link the data to an individual.
- The commission services can obtain permission to analyse individual data. This requires that they formulate their research question, identify the variables that are needed for the statistical analysis, identify the datasets that are needed and describe the statistical analysis that they will perform. A supplying data controller – receiving data controller agreement has to be signed between the data providers and the commission services. The HBM4EU informed consents are broad enough to cover environmental health related research aspects. More information can be requested from HBM4EU.DATAMANAGEMENT@vito.be. VITO is responsible for data management and data analysis in HBM4EU and acts temporarily as dataprocessor which is the liaison between dataprovider and data receiver.

EFSA has interest in identification of human low doses through HBM:

- What are human-relevant exposure levels?
- Could HBM-found internal concentrations trigger MIE in an AOP?
- HBM levels will be useful to put human *in vitro* toxicology findings in perspective?

It needs to be checked whether dataformats for IPCHEM and EFSA database are compatible and will allow easy exchange of data?

As requested by the HBM4EU attendees, EFSA identified links to EFSA pages that could be of interest to HBM4EU colleagues:

- The EFSA Comprehensive European Food Consumption Database

<http://www.efsa.europa.eu/en/food-consumption/comprehensive-database>

- Guidance on the EU Menu methodology

<http://www.efsa.europa.eu/en/efsajournal/pub/3944>

- Assessment tools and resources

<http://www.efsa.europa.eu/en/science/tools-and-resources>

Bisphenols:

A working group on **BPS** of the European Food Safety Authority's (EFSA) Food Ingredients and Packaging Unit together with experts from Belgian authorities and ECHA started in June 2019 and is reviewing the results from an extended one-generation reproductive toxicity study and a toxicokinetic study. The publication of an EFSA technical report focussing specifically on the impact of these two studies on the current authorisation of BPS for use as food contact material under Regulation (EC) 10/2011 is expected in April 2020.

EFSA's Panel on Food Contact Materials, Enzymes and Processing Aids (CEP) is currently re-assessing the potential hazards of **BPA** and review the temporary safe level set in



EFSA's previous full risk assessment from 2015. The draft assessment should be ready for public consultation in 2021.

HBM4EU has derived HBM-GV¹ for BPA (workers and general population). HBM-GVs for BPF and BPS will follow. Responsible: Christophe Rousselle (ANSES).

HBM4EU Chemical group leader for bisphenols: Robert Barouki (Inserm)
Contact persons for EFSA: Claudia Roncancio-Pena; Anna Federica Castoldi

Phthalates:

EFSA expects a new mandate on a more comprehensive re-evaluation of phthalates in food contact materials (FCM) (not only plastics).

FCM are under EFSA's mandate. The REACH Restriction for a number of phthalates does not apply to FCM. Better alignment of various chemicals legislations in the EU is needed.

EFSA is interested in the overall exposure levels of all phthalates that are included in relation to dietary intake context.

HBM4EU has derived HBM-GVs for DEHP, DPHP, DnBP, BBzP and DiBP. A strategy for derivation of internal HBM-GVs for phthalate mixtures will be developed. Responsible: Petra Apel (UBA)

An expert workshop is foreseen in June 2020 (note added: this will be postponed due to the CORONA crisis); EFSA participation is welcomed.

HBM4EU Chemical group leader for phthalates: Rosa Lange and Marike Kolossa (UBA).
Contact persons for EFSA: Claudia Roncancio-Pena, Anna Federica Castoldi and Katharina Volk

PFASs:

EFSA: PFASs opinion will be open for public consultation in March 2020 (note: <http://www.efsa.europa.eu/en/news/pfas-public-consultation-draft-opinion-explained>)

HBM4EU: HBM4EU plans a PFASs workshop in November 2020 (WP5.5). It will be a multi actor dialogue on interpretation and use of HBM results. EFSA's participation will be welcomed.

Chemical group leader: Maria Uhl (maria.uhl@umweltbundesamt.at)
Organiser of the workshop: Ilse Loots (ilse.loots@uantwerpen.be)
Contact person for EFSA: Marco Binaglia

Pesticides:

EFSA:

- Pesticides are re-assessed every 5 years.
- Glyphosate: peer review for renewal starts next year (2021)
- Deltamethrine will be reviewed by EFSA in 2020
- Cumulative assessment of pesticides is of high priority for EFSA

¹ HBM-GV = **H**uman **B**iomonitoring **G**uidance **V**alue; not to be confused with the concept of HBGV = **H**ealth-**B**ased **G**uidance **V**alue.



- EFSA's mandate on pesticides covers also risks for bystanders and workers
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HBM4EU: presentation by H. R. Andersen

- HBM4EU can contribute with HBM data/knowledge to re-evaluations of deltamethrin and chlorpyrifos (2021).
- 3-PBA will be measured as a common metabolite of several pyrethroids and has an added value for mixture assessment to pyrethroids
- EU wide HBM data on glyphosate chlorpyrifos, and pyrethroid exposure (children) are expected in 2021
- The SPECIMEN study will collect HBM pesticide exposure data from 5 different EU countries. on pesticide exposure of and a control population. Urine samples will be collected from mothers and children living near fields in the spraying and non-spraying season. In parallel a control population will be sampled. Samples will be analysed by non-targeted techniques.

Contact person for EFSA: Manuela Tiramani

Chemical group leader HBM4EU: Helle Raun Andersen (SDU) HRAndersen@health.sdu.dk

Mixtures:

EFSA uses different strategies for prioritisation of mixtures: target based? Source based? Risk based?

HBM4EU has specific interests:

- how to model internal exposures to mixtures?
- Information on agrochemicals that are typically used in pear apple orchards?

Contact person: HBM4EU: Miriam Luyten (RIVM)

Contact person for EFSA: Jean-Lou Dorne

Emerging risks:

Exchange is needed between EFSA and HBM4EU as both are working on lists of chemicals with emerging concern

Contacts for EFSA: Caroline MERTEN

Contacts for HBM4EU: Jean-Philippe Antignac (jean-philippe.antignac@oniris-nantes.fr), Martin Krauss

EFSA is mandated to identify emerging risks in the food chain early.

EFSA is developing a prioritization system for exposure of REACH chemicals via food <https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/sp.efsa.2019.EN-1597>.

Another prioritisation system is published for chemicals in consumer products :

Pellizzari et al, 2019 <https://ehp.niehs.nih.gov/doi/full/10.1289/EHP5133>

In HBM4EU WP16 different approaches are followed:

Suspect screening for pesticides: SPECIMEN study - proof of concept

Non targeted screening in placenta samples: looking for halogenated compounds (INRA)

Effect directed analysis



HBGV's at EFSA/ HBM-GVs by HBM4EU:

It is important to note that HBM4EU derives HBM-GVs and that EFSA derives HBGV's; these should not be confused despite the close similarity of the two abbreviations.

HBM4EU: HBM-GV = **H**uman **B**iomonitoring **G**uidance **V**alue. HBM4EU HBM-GVs are based on internal dose.

EFSA: HBGV = **H**ealth-**B**ased **G**uidance **V**alue. EFSA's HBGVs are based on dietary intake.

Mutual exchange of information will facilitate EFSA's and HBM4EU work as there are many substances to handle. It is important to inform each other of ongoing and planned activities in order to avoid duplication.

HBM4EU derives HBM-GVs for HBM4EU priority substances if no recent values are available or new toxicological or epidemiological information requires an update.

HBM-GVs derived by HBM4EU are proposed with an uncertainty score.

HBM4EU welcomes input on their proposals for HBM-GVs from national experts that are contacted through national hubs and from EU risk assessors, including EFSA, through the EU policy board. All comments are dealt with.

HBM4EU scientists connect to an international working group for deriving international HBM based guidance values. The group is led by Health Canada.

A challenge to tackle is the derivation of HBM-GVs for non-threshold chemicals.

HBM4EU contacts: Petra Apel (UBA) and Christophe Rouselle (ANSES)

Contact for EFSA: Hans Verhagen

Modelling and kinetics and risk assessment:

Presentation by D. Sarigiannis

HBM4EU compares internal concentrations (HBM data) with available HBM-GVs (WP5.3-contact T. Santonen)

HBM4EU estimates intake using reverse dosimetry, starting from HBM data and compares the estimates with available TDIs (WP12.2)

EFSA has domain specific modelling tools available
<https://www.efsa.europa.eu/en/science/tools-and-resources>
EFSA produces exposure estimates for heavy metals

Contact for EFSA: Jean-Lou DORNE (EFSA – Kinetics and Modelling)

Contact for HBM4EU: Denis SARIGIANNIS and Jos BESSEMS (and WP12 on reverse dosimetry and risk calculations using TDI's).



Dietary exposure assessment: Davide ARCELLA (EFSA)

EFSA has data on chemical contaminants in different food items , aggregated per country (<https://www.efsa.europa.eu/en/microstrategy/contaminants-occurrence-data>).

EFSA has a Comprehensive European Food Consumption Database with age specific information per country (<https://www.efsa.europa.eu/en/microstrategy/food-consumption-survey>). EFSA uses food classification system FoodEx2 to categorise foods and beverages included in the database. EFSA's new EU Menu project aims to provide standardised information on what people eat in all countries and regions across the EU.

Average and 95th percentile exposure distributions per country based on consumption data and occurrence data can be obtained from these data bases.

EFSA can be consulted for input in questionnaires: how to categorise food items? Do the HBM4EU food questionnaires contain questions on relevant food items? Which are foods with high content of chemicals?

HBM data can assist EFSA as to:

- Identify which food items contribute most to internal dose based on questionnaire information in combination with HBM data?
- Validate dietary exposure estimates with HBM data?
- How important is dietary exposure in comparison with other exposure routes?

Cross cutting scientific issues: Jose TARAZONA (EFSA)

EFSA wants to incorporate modern approaches like knowledge on mechanisms, AOPs, human in vitro data and kinetic modelling in its risk assessment approaches

Use of effect biomarkers in combination with exposure biomarkers for the external HBGV derivation (e.g. for heavy metals and kidney damage markers)

EFSA plans on 2 December 2020 in Milan a 1-day networking event with satellite meetings. Open registration for all interested. Contact with Commissioner Gabriel who might be opening the event.

Food Safety Regulation research needs 2030: Stef BRONZWAER (EFSA)

Stef Bronzwaer briefly introduced three main research needs and priorities in support of food safety risk assessment in the coming years that was published recently in the EFSA Journal: <https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2019.e170622>. He invited the participant to block their agenda's on 2 December to participate in EFSA's second RARA event, see below.

- Safe Food Systems.
- Innovations in Risk Assessment.



- Anticipating impact of innovations and new technologies on integrated risk assessment
- Big data
- Holistic Risk Assessment
 - Understanding the context
 - Balancing risks and benefits
 - communication RA's

Workshops of interest for EFSA and HBM4EU:

- (EFSA): 2 December (Milan) – Risk Assessment Research Assembly (RARA2020), dialogue with scientific community, details will become available through <http://www.efsa.europa.eu/en/engage/research-platform>
- EFSA Scientific Colloquium on micro- and nanoplastics in food and feed (postponed to 15, 16 October): <https://www.efsa.europa.eu/en/events/event/update-rescheduled-scientific-colloquium-25-coordinated-approach-assess>

HBM4EU:

- Workshop on mixture assessment on internal levels (planned June 2020, but will be postponed); organiser: UBA
- Workshop on general approach to derive guidance values (November 2020); organiser: ANSES
- PFASs workshop – multi actor dialogue on using HBM results (November 2020); organiser (UAntwerpen)
- Mixture workshops on policy recommendations (2020-2021); organiser RIVM