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ACROPOLIS

Aggregate and Cumulative Risk Of Pesticides: an On-Line Integrated Strategy

SEVENTH FRAMEWORK PROGRAMME

Deliverable 6.3 Report of the first stakeholder meeting and the way forward.

Freshfel Europe

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1. Contents

2. Executive summary

Since the publication of EU Regulation 396/2005 on maximum residue levels for pesticides, cumulative exposure modelling has been high on the agenda of the European Food Safety Authority (EFSA), the European Commission (EC) and in different Member States. The EU project ACROPOLIS addresses this issue by developing software to assess the cumulative dietary exposure to groups of compounds. In this project also software is being developed to assess the exposure to single compounds via different routes (the so-called aggregate exposure), which is also a requirement of EU Regulation 396/2005. All software will be as much as possible in line with European data collection.

During the ACROPOLIS Stakeholders Conference on February 1, 2012 in Brussels, the activities within ACROPOLIS were presented and discussed among interested parties. During the morning session, the European Commission, who funds the ACROPOLIS project, highlighted the need for cumulative risk assessment as a consequence of the present legislation. The project should provide a clear and transparent IT tool for risk assessment, risk management and risk communication. As European risk assessment is the responsibility of European Food Safety Authority (EFSA), the Commission expects cooperation between the parties involved in order to have the methodology in place as soon as possible. EFSA presented their ongoing work on the Cumulative Risk Assessment methodology including the establishment of Common Assessment Groups and the draft guidance document on probabilistic modelling of dietary intake which was published for public consultation on January 20th, 2012.

International developments were presented including the lessons learnt by the US Environmental Protection Agency (EPA) regarding the implementation of cumulative and aggregated exposure assessment in daily practice of risk assessment and risk management. The US EPA mentioned the importance of stakeholder involvement in the process of acceptance of probabilistic modelling of exposure and the complexity of risk assessment results which makes it almost impossible to capture them in a single value for decision making. Current practice within the US EPA is to use the whole exposure distribution as a basis for their decision making, including the uncertainties.

The ACROPOLIS results as generated in the first 18 months of the 3-year project, were shared with the stakeholders during the last presentation of the morning session. For the purpose of cumulative dietary exposure assessments, food consumption and concentration data have been organized, partly in cooperation with EFSA. Furthermore models are developed to address internal exposure dose and toxicological in vitro tests are developed to test the effect of various pesticides in the same Common Assessment Group. Suggestions were done to start working in user groups so that industry, regulators and food authorities can gain more experience with the ACROPOLIS model and data organisation in relation to their respective future legal obligations.

During the afternoon session, various stakeholders presented their views on future developments in cumulative risk assessment in general and the ACROPOLIS project in particular. The French Food Safety Authority (ANSES) follows the ACROPOLIS project with great interest, and hopes that the project will come up with a useful tool to be used for risk assessment at the member state level. Pesticide Action Network Europe recommended to keep using the deterministic approach to assess chemical food safety, but larger safety factors should be included to address the many unknown effects or more variable effects than anticipated. COPA COGECA, representing European farmers and cooperatives, highlighted that the failure to address cumulative exposure had led to market distortions caused by secondary standards and lack of clarity in the trade. This has an enormous impact on the daily practice of farmers.

Pesticide industry highlighted the need for clear and practical guidelines, which are still missing according to their opinion. Furthermore access to governmental data for industry to perform future cumulative risk assessments is a prerequisite which may not always be met. The ACROPOLIS models and data look however very promising to fulfil this need.

A questionnaire, with different issues regarding attitudes, expectations and challenges regarding cumulative and aggregated risk assessment practices or future expectations was filled in by the audience during the conference using an on-line voting system. The results indicated that the audience had high expectations of the ACROPOLIS models.

Furthermore a prospective was given on the future ACROPOLIS activities with the focus on aggregated exposure assessment and the establishment of in vitro test systems to screen for common assessment groups and to test the assumption of dose addition.

MEP Carl Schlyter from the European Parliament delivered the closing speech. He shared his experience that he could not explain to the European consumer and farmer why combinations of pesticides are not addressed in the current risk assessment procedures. It seems so logical to consumers that they eat combinations of fruit and vegetables and to farmers that they are exposed to pesticides via different routes. Both groups have the expectation that these risks are regulated in Europe, but they are not. His closing remark "go for it, and fix the hole" was in line with this observation.

All presentations are available from the Acropolis-project website: www.acropolis-eu.com .

3. Presentation summaries

International developments addressing cumulative risk assessment

1. Expectations from the legislator

Bas Drukker from the European Commission's Directorate General for Health & Consumer Affairs, introduced the background for the current discussions on cumulative risk assessment of pesticides at various levels. When the EU rules on pesticide maximum residue levels were reviewed in 2005, Council and Parliament which required further research on methods to take into account the cumulative and synergistic effects of pesticides with a view to improve the overall risk assessment of pesticide residues. Since EFSA is the scientific advisor of the EU Commission and Member States, it was decided to ask EFSA to develop the methods and guidelines. EFSA took the assignment on board as a 'self task', whereby it would be in charge of the procedures and timelines to carry out the task.

The Commission looks at the discussion from 3 different angles. Most work has been carried out on risk assessment, whereby common assessment groups of pesticides with a similar mode of action are identified and the effects are added up. The method and guidance have been finalised by EFSA, but still require user-friendly tools to implement them for regular risk assessment.

From a risk management perspective, it will be important to know whether additional data would need be provided by manufacturers. Even more important will be the development of a method to discard certain uses where toxicological thresholds are exceeded.

With the assessment and management options in place, the general public should also be better informed on the cumulative risks of pesticides in their food. One important feature of risk communication is transparency, whereby the public should be able to verify risk management decisions.

The Commission indicated that they have high expectations from Acropolis in delivering on all 3 angles.

2. Activities of EFSA's PPR Panel and PPR Unit

Luc Mohimont from EFSA provided an overview of EFSA's activities (in particular the panel on plant protection products and their residues – PPR) on cumulative risk assessment since the entry into force of the new EU regulation. Already in 2006, EFSA organised a Scientific Colloquium dedicated to the subject, thereby looking at the underlying science, existing experience and recommendations.

In 2008 the PPR panel issued a scientific opinion to evaluate the suitability of existing methodologies and, if appropriate, the identification of new approaches to assess cumulative and synergistic risks

from pesticides to human health with a view to set MRLs for those pesticides in the EU. The opinion looked at different types of combined toxicity and concluded that dose addition is the most relevant for pesticide residues. It also contained a description of the possible steps of a tiered approach for cumulative risk assessment with regard to hazard characterisation, exposure assessment and risk characterisation.

It was concluded that a probabilistic methodology would be needed, instead of the deterministic methodology currently in place. In this light the PPR panel just released guidance on the use of probabilistic methodology for modeling dietary exposure to pesticide residues. A public consultation has been launched in parallel.

In 2009 a pilot project was initiated for a selected group of pesticides from the triazole group to test possible methodologies to assess cumulative effects from exposure through food from these pesticides on human health. The conclusions from this pilot project indicated that the common assessment groups should be as refined as the data allow at an early stage. The exposure assessments should ideally be restricted to one deterministic and one probabilistic tier. Issues which still need to be solved include the establishment of cumulative assessment groups at European level, the level of protection and exposure assessment methodologies.

By the end of 2012 the PPR panel should release a scientific opinion on the identification of pesticides to be included in cumulative assessment groups on the basis of their toxicological profile, whereby the methodology will be based on identification of relevant phenomenological effects rather than on mechanism of action. It will be accompanied by a concrete proposal of respective common assessment groups. In order to also cope with the growing scientific evidence regarding the effects of pesticide with dissimilar mode of action (response addition), an opinion will be prepared on the relevance of the issue and its appropriate application for cumulative risk assessment of pesticides in food. The adoption is foreseen for the end of 2013.

Once the common assessment groups are identified the PPR panel will have to define the priorities between a number of groups as well as the desired level of protection. The implications on the level of data collection and possible data gapes still need to be identified. All in all EFSA expects to deliver the first cumulative risk assessment in the course of 2013.

3. Experiences and approaches in the USA

David Miller from the US Environmental Protection Agency (EPA) Office of Pesticide Programs (OPP) shared the experiences with cumulative risk assessments in the US following the adoption of the Food Quality Protection Act in 1996. The legislation required EPA to develop and implement a number of new methodologies that represented a new way of analyzing data about pesticide risks and looking at risk. In the meantime several pesticide groups have been assessed, the first were the 31 organophosphates in 2006, followed by 2 triazines and 2 chloroacetanilides in the same year and 10 N-methyl carbamates in 2007. In 2011 16 pyrethroids have been screened, the assessment should be finalized in the coming months.

The following basic steps were identified when conducting cumulative risk assessment:

- Identify common mechanism group
- Determine relevant exposure scenarios/pathways
- Estimate toxic potencies of common effect for each chemical

- Identify cumulative assessment group
- Select Index Chemical, estimate Relative Potency Factors (RPFs), and convert to cumulative basis
- Conduct assessment

Among the lessons learned from this overhaul in the risk assessment of pesticides, the need for involving the public and stakeholders in the decision process came out as one of the most important. Other include the need for representative data both regarding consumption as residue occurrence. Just as EFSA, EPA identified the need for probabilistic methods to allow more accurate estimates of the complete distribution of exposures and assess their associated probabilities. With a view to risk management, tracing back the sources of exposure is important. The use of Commodity Exposure Contribution Lists allow to focus refinements of exposure estimates, sensitivity analyses, and risk mitigation activities on those commodities or uses which contribute most significantly to risk.

In order to obtain accurate and realistic evaluations it is needed to appropriately match and subsequently combine estimates of pesticide exposures through food with estimates of pesticide exposures through residential uses and estimates of exposures through drinking water. Exposure and risk estimates need to be clearly characterized. The results and conclusions are clearly described, including the relative confidence in toxicity and exposure data sources and model inputs. This allows discussing the magnitude and direction of likely bias and the impact on the final assessment. Sensitivity analyses are carried out to determine those factors which are most important to final risk estimates.

The complexity of the risk assessment makes it almost impossible to capture the results in a single value for decision making. Current practice within the EPA is to use the whole exposure distribution as a basis for their decision making, including the uncertainties.

4. Experience and Perspective from an International Project on Combined Exposures

Bette Meek from the University of Ottawa provided background on the work the World Health Organisation has been carrying out regarding combined exposures, particularly the framework it developed. The framework provides when to conduct a combined assessment with a pragmatic tiered structure with increasingly detailed consideration of both exposure and hazard. Following consideration of the questions in the problem formulation, the initial tier begins with simple but conservative assumptions for both exposure and hazard. These assumptions are refined and replaced with increasingly detailed data and models, but only if necessary. Thus, if there is no cause for concern based on assessment at the initial tier using conservative defaults, no further resources are invested. However, if the results of an initial, conservative assessment indicate excessive risk, then the assessment is refined. The framework was further explained based on a case study involving Polybrominated diphenyl ethers (PBDE) often used in flame retardants.

She observed 3 key learning points, namely that exposure is more discriminating than hazard, hence the importance of ‘framing estimates’. The limited use of predictive/screening methods needs to be

addressed through the development of simple exposure surrogates and more targeted monitoring to verify estimates from predictive tools. Assessments also need to be “fit for purpose”, which greatly depends on early problem formulation and issue identification, thereby taking into account current data availability and the understanding of the most influential parameters. As the public wants to know about risks associated with combined exposures to environmental chemicals, authorities need to be proactive in this area. The problem formulation for grouping of chemicals already addresses one of the key principles of good risk communication; namely: Anticipate the Question; Be Prepared to Respond.

Acropolis research project

1. Project presentation

Jacob Van Klaveren from RIVM and project coordinator of the Acropolis project presented the objectives and results of the first 18 months of the 3-year project.

The project objectives are as follows:

- Improved cumulative exposure assessment and cumulative hazard assessment;
- New models for aggregated exposure assessment addressing different routes of exposure;
- Setting up new toxicological testing for identifying possible synergistic effects and developing a strategy for refinement of cumulative assessment groups;
- To integrate cumulative and aggregate risk models in a web-based tool, including accessible data for all stakeholders;
- Improving the understanding of cumulative risk assessment methodology of different stakeholders.

With regard to the exposure assessment, most data on the relative potency factors of active substances have been organised and industry will be contacted to further optimise information. Pesticide residue data from 8 Member States (CZ, SE, IT, UK, FR, NL, CY, DK) have been organised in a compatible format. Consumption data from 9 Member States (CZ, SE, IT, UK, FR, NL, CY, DK, BE) have been organised and converted to raw agricultural commodities. The conversion model and data are fully compatible with EFSA methodology, future cooperation will be sought.

New models for aggregate exposure assessment combine the leading models in Europe based on previous research projects (MCRA, EUROPOEM, ConsEXPO). The availability of data has been assessed as well as their usefulness for modelling. Three case studies are planned with 2 different routes of exposure. (see also Future developments – Aggregate exposure p. 14).

New toxicological testing involved testing the assumption of dose addition using *in vitro* tests. This should enable to include or exclude chemicals in Common Assessment Groups and further refine such groups. Physiologically Based Pharmaco Kinetic (PBPK) Modelling will allow to link external and internal doses. Case studies are foreseen looking at different routes of exposure and at the internal dose effect of simultaneous exposure. (see also Future developments – Toxicology p. 14).

An inventory of available models and data needed for cumulative assessment has been established and will serve as input for programming Monte Carlo Risk Assessment (MCRA) version 8. The present version MCRA 7.1 is web-based and already follows the EFSA guidance on probabilistic modelling. An inventory of uncertainties, and how to solve them has been prepared. Tables with qualitative uncertainties have been programmed in MCRA 7.1. MCRA version 8 will eventually feature the

distribution of cumulative triazole intake as well as the distribution of the individual margin of exposure for crano-facial malformations.

Improving the understanding of cumulative risk assessment methodology of different stakeholders is a key element of the project and is addressed through research on stakeholder attitudes (see also Stakeholder feedback – introduction p. 12) and training. The first series of trainings have taken place between 16 and 19 January and involved regulators, food authorities and pesticide manufacturers from all over Europe. A distance learning tool will be developed for other stakeholder groups.

The links with other stakeholders (e.g. EFSA, EU Commission, trade organizations) were explained. With regard to consumers it is of paramount importance that the process is open and transparent. Acropolis responds to these criteria given the model is made and owned by government institutes and thus independent (no commercial interest and no financial barriers). The website includes an open reference manual and the model provides options to check data quality.

Suggestions were done to start working in user groups so that industry, regulators and food authorities can gain more experience with the ACROPOLIS model and data organisation in relation to their respective future legal obligations.

2. Panel discussion with speakers morning session

Bernadette Ossendorp (RIVM) asked whether there was already experience with response addition. Bette Meek (Ottawa University) indicated that there was very limited data, so it is difficult to make steps forward on this issue. In the few cases where some data were available, the magnitude of the effect of examining the compounds simultaneously based on response addition was very small. Common assessment groups based on response addition may be relevant as a low tier assessment. Dependent on the goal of the assessment one may wish to start broad and narrow it down if needed at a later stage (iterative process).

Monica Bross (BASF) noted that EPA disposed of very good input data, which may be less so at EU level. Luc Mohimont (EFSA) responded that EFSA has a reasonable source of monitoring data based on the annual monitoring programmes conducted by Member States. Based on the assessments, including in the future cumulative assessments, gaps in the collection of pesticide residue data may be identified, resulting in recommendations for data collection adjustments. Furthermore, when using the data it is imperative to describe the data and the uncertainties. Jacob van Klaveren (RIVM) added that there a lot of consumption data in Europe. The data are however not always comparable within Europe, and not necessarily compatible with the developed tools. Furthermore, in the future it is expected that via the EFSA EU-menu initiative harmonised food consumption data will be collected at the European level.

Bernadette Ossendorp (RIVM) asked what level of protection should be aimed at and what has been the experience in the USA. David Miller (EPA) noted that the 99.9th percentile is used for single compound assessment. This level has been supported by the public, but was deemed too strict by the pesticide industry. For cumulative exposure, it will be a case by case decision whereby risk managers base themselves on the complete picture of the distribution of exposure, input data and uncertainties, and make a well considered decision. Furthermore, it could very well be that dependent on the assessment, one may want to base its decision on different percentiles.

Moniek Pieters (RIVM) further enquired on the communication element of such case by case approach ('tell the story'). David Miller (EPA) recommended describing what one has done via a narrative description. One should include choices made, how do percentiles vary depending on these choices, do the percentiles change significantly in time, what are the important crops/compounds driving the risk, etc. Bette Meek (Ottawa University) noted that it is very important that risk managers are transparent about their decision making process. If one explains clearly how one has arrived at a decision, the public will be willing to accept it. It is also important to increase stakeholder involvement and subsequently acceptance by including the relevant stakeholders already in an early stage of the decision making process. Luc Mohimont (EFSA) emphasized that it is important to clearly define the problem so that the 'story' will address this problem. One has to use the tool to come up with an answer to the problem. Bas Drukker (EU Commission) noted that risk assessment is one thing, after that a decision has to be made, e.g. what to do about aldicarb on potato, the risk drivers for the cumulative exposure to the carbamates as shown by David Miller. David Miller (EPA) informed that a single compound assessment was conducted which corroborated the cumulative assessment, so the process is now ongoing to ban the use of aldicarb on potato within the US.

Filip Cnudde (DOW Agroscience) asked how to handle the different views of the different stakeholders. Jacob van Klaveren (RIVM) indicated that ACROPOLIS will supply the tools/concepts to deal with cumulative and aggregate exposure, and to make such assessment transparent to the stakeholders. The interpretation of all this is outside the project team's influence. Key is to already involve stakeholders early in the process, so that they make their decisions on the right information from the start.

Frederic Rosseneu (Freshfel Europe) asked which kind of tool would be needed for the risk management and whether cumulative assessments already resulted in MRL changes. Bas Drukker (EU Commission) noted that the EU Commission needs tools so that it can communicate its risk management decisions in a transparent manner to the relevant stakeholders. Such a tool should also be able to give information on the consequences of possible decisions regarding MRLs/deletion of uses. David Miller (EPA) informed that based on probabilistic assessments performed within the USA, some mitigation actions have been taken.

John Acton (Irish authorities) asked whether there is a preference for a tool to be used for probabilistic assessment (e.g. Crème used by EFSA). Luc Mohimont (EFSA) informed that EFSA defines the methodology that serves the needs of the Authority best. There will not be a recommendation on the tools on the market. David Miller (EPA) noted that EPA adopts a similar approach. It has set 3 criteria that models should meet before they are accepted for use by EPA: 1) model has to be freely available (costs should not bar stakeholders from using it), 2) model has to be peer-reviewed (e.g. scientific advisory panel of the EPA), and 3) the model has to be transparent.

Stakeholder feedback

1. Introduction

Wim Verbeke from the University of Ghent introduced their work on stakeholder attitudes towards pesticide risk assessment in the framework of the Acropolis project. With a view to the first stakeholder conference, a qualitative assessment has been undertaken through 15 in-depth interviews with various stakeholder groups. The results of this exercise served to prepare the quantitative assessment which is planned during this stakeholder conference. A questionnaire, with different issues regarding attitudes, expectations and challenges regarding cumulative and aggregated risk assessment practices or future expectations was filled in by the audience during the conference using an on-line voting system. The results indicated that the audience had high expectations of the ACROPOLIS models.

2. Regulators and food authorities

Claude Vergnet from the French risk assessment agency ANSES participated in the ACROPOLIS training of January 2012. ANSES participates in the project through the provision of French consumption and residue data. The MCRA tool was shown to be easy to use, in a standardised way. The use of such a tool by different member states would be a big step forwards to comparable risk assessments at the EU level. However, before the tool can result in harmonised risk assessment within Europe, EFSA guidance is needed on 1) a standardized approach of data collection (both food consumption and residues), 2) rules definition in the different potential frames of use, and 3) definition of the limits of the tool. The probabilistic approach should be as protective as the deterministic approach.

3. Fruit and vegetable sector

Luc Peeters from COPA-COGECA, representing European farmers and cooperatives, highlighted that the impact of pesticides is an important issue. Today's market reality is more and more focussing on competition based on public health issues. Market demands are going far further than the legal requirements whereby secondary standards are imposing MRL restrictions and restrictions on the number of active substances. A modern farmer is willing to follow these market guidelines and secondary standard as far as he can, but also has to stay within Good Agricultural Practices (GAP) which is set in the accreditation dossier of the active substance as such and also to make his farm economically sustainable. The present situation entails a lack of clarity in the trade, whereby a farmer can never be certain whether the market will accept his crop or not. By accepting the secondary standards, public authorities have somehow undermined their competence as safeguard of public health. Addressing the issue of cumulative exposure is an essential step in reversing this trend.

4. Consumer and environmental NGOs

Hans Muilerman from Pesticide Action Network Europe, argued that exposure to pesticides occurs via different routes, they are everywhere. One needs to look at the whole picture. It is impossible to study all possible combinations of pesticides and possible interactions. There is therefore a need for an extra uncertainty factor to address other routes than food as well possible interactive effects that are unknown. Given the enormous uncertainty probabilistic on food is not very relevant to the protection of humans. An uncertainty factor of 100 used in the deterministic approach may also not be enough for its present purpose, and will certainly not address possible interaction. Higher levels ranging from 1.000 to 10.000 should be envisaged.

5. Manufacturers of pesticides

Monica Bross from BASF noted that probabilistic methods are needed to address actual exposure and to address issues not addressed in deterministic approach (e.g. variability, uncertainty). In order to use probabilistic methods one needs reliable and transparent food consumption data (not yet fully available nor harmonised) and residue data (include monitoring data for background exposure). Whilst tools are under development, quality criteria still need to be adopted by EFSA and the tools would need to be validated. The MCRA tool used in this project has undergone several improvements, but a lot of work is still ahead. For the use of the tool for authorisation/MRL setting, it should be possible to include field trial data inserted by the user in the tool, including data security and defined access rights. Also the set of data within ACROPOLIS should preferably be extended with other relevant countries to make it more powerful. Clear guidance on probabilistic exposure assessment both for risk assessment and risk management is a prerequisite for regulatory acceptance and the predictability of decisions. From a risk management perspective, the most important issue remains an agreement on appropriate levels of protection ensuring predictability of decisions.

Future activities

1. Aggregate exposure

Andy Heart from the UK Food & Environment Research Agency (FERA) introduced the work initiated on aggregate exposure assessment and the links to other EU projects dealing with aggregate exposure. The objective within the Acropolis project is to improve the methodology for aggregate exposure assessment allowing the possibility of calculating the exposure via more than one exposure route, as well as to gain better understanding of the validity of models by comparison with measured intakes.

The review of available data suggests that reasonable data sets are available for operator exposure to plant protection products. Data for workers, bystanders and residents are less good. A conceptual model will be developed integrating dermal, inhalation and dietary exposure. The model will be tested on case studies involving triazoles for 3 specific scenarios. The model will be validated with biomarkers and a duplicate diet study on operators in vineyards.

The EU project BROWSE aims to deliver improved exposure models for operators, workers and bystanders as well as a new model for residents thereby taking into account gender and regional factors. An EFSA project looks at specifically at the non-dietary cumulative exposure of farmers, contract applicators, amateur users and workers. Whereas the assessment of aggregate exposure is challenging, current projects will provide tools for basic aggregate assessments – a first tier. Higher tier assessments of aggregate exposure will however require further activity data and model development.

2. Toxicology

Angelo Moretto from the University of Milan introduced the work initiated on the strategies for the refinement of Common Assessment Groups (CAG). In vitro approaches are carried out both on conazoles and neurotoxicants. In vitro tests allow for testing many compounds to identify a common hazard, testing many doses to establish an accurate dose-response curve, testing many mixture combinations to establish additivity, synergy, antagonism and testing unrelated chemicals. Consequently, the number of in vivo tests can be reduced, thereby focussing on relevant combinations and conducted with doses relevant to derive Reference Values or close to human exposure.

The provisional conclusions indicate that in vitro studies can provide the basis for defining CAGs and provide indication of synergistic effects (or the lack of them). Physiologically Based Pharmaco Kinetic (PBPK) Modelling will further help in understanding the toxicological significance of findings in workers (or other exposed population).

Closing speech

MEP Carl Schlyter shared his experience that he could not explain to the European consumer and farmer why combinations of pesticides are not addressed in the current risk assessment. It seems so logical to consumers that they eat combinations of fruit and vegetables and to farmers that they are exposed to pesticides via different routes. Both groups have the expectation that these risks are regulated in Europe, but they are not. His closing remark "go for it, and fix the hole" was in line with this observation.

4. Annex I Meeting Agenda

Registration (9h)

Opening (10h)	Chair Moniek Pieters (member of the Board of Directors RIVM)

International developments addressing cumulative risk assessment (10h05-11h45)

Expectations from the legislator	Bas Drukker (DG SANCO)
International cooperation in science at EFSA	Luc Mohimont (EFSA)
US experience	David Miller (EPA)
WHO perspective	Bette Meek (University of Ottawa)

Coffee break

Acropolis research project – overall	Jacob Van Klaveren (Project coordinator)

Panel Discussion

Lunch

Stakeholder feedback (14h-15h30)

Introduction	Wim Verbeke (University of Ghent)
• Regulators and food authorities	Claude Vergnet (ANSES)
• Consumer and environmental NGOs	Hans Muilerman (Pan-Europe)
• Manufacturers of pesticides	Monica Bross (BASF)
• Fruit & vegetable sector	Luc Peeters (COPA-COGECA)

Coffee break

Acropolis research project – future activities (15h45-16h45)

Aggregate exposure, link to BROWSE-project	Andy Hart (FERA)
Toxicology	Angelo Moretto (University of Milan)
Closing (16h45)	Member or Parliament Carl Schlyter

5. Annex II Participant list

#	Name	Organisation / Company	Country
1	Acheampong, Rufina	Food Standards Agency	UK
2	Acton, John	Pesticide Registration and Control Division	Ireland
3	Bechert, Claire-Lise	FEDIOL	EU
4	Binard, Philippe	Freshfel Europe	EU
5	Boon, Polly	RIVM	The Netherlands
6	Bouxin, Arnaud	FEFAC	EU
7	Bross, Monika	BASF	
8	Bruegger, Andreas	DFHV	Germany
9	Brzuska. Karolina	FEDIOL	EU
10	Casado de Santiago, César	AESAN	Spain
11	Cnudde, Filip	Dow AgroSciences	Belgium
12	Corro, del Miguel	INIA	Spain
13	Crepet, Amélie	ANSES	France
14	De Blaiser, Raf	LAVA cvba	Belgium
15	Di Rubbo, Pasquale	COPA-COGECA	EU
16	Drukker, Bas	DG SANCO	European Commission
17	Ellen van Loo	Ghent University	Belgium
18	Florence, Gerault	DGAL	France
19	Franke, Katrin	BFR	Germany
20	Gasowski, Andrzej	Polish EU Permanent Representation	Belgium
21	Glass, Richard	FERA	UK
22	Göbel, Angela	BMELV	Germany
23	Gran, Hanne Marit	Food Safety Authority	Norway
24	Haraldsen, Terje	Norwegian Scientific Committee for Food Safety	Norway
25	Harris, Caroline	Exponent International Ltd	UK
26	Hart, Andy	FERA	UK
27	Heusinkveld, Harm J.	University of Utrecht	The Netherlands
28	Hilbert, Gudrun	Danish Veterinary and Food Administration	Denmark
29	Hohgardt, Karsten	BVL	Germany
30	Hooghe, Wim	FPS Health, Food Chain Safety and Environment	Belgium
31	Huis in ‘t Veld, Fabianne	Product Board for Horticulture	The Netherlands
32	Klaassen, Ad	Dutch Produce Association	The Netherlands
33	Klaveren, van Jacob	RIVM	The Netherlands
34	Laporte, Frank	Bayer CropScience	
35	Mäkinen-Töykkä, Tiia	Finnish Food Safety Authority	Finland
36	Meek, Bette	University of Ottawa	Canada
37	Metha, J.	Dow AgroSciences	
38	Miller, David	Environmental Protection Agency	USA
39	Misina, Laura	State Plant Protection Service	Latvia

#	Name	Organisation / Company	Country
40	Mohimont, Luc	EFSA	Italy
41	Moreira, Christine	COLEACP-PIP	Belgium
42	Moretto, Angelo	University of Milan	Italy
43	Muilerman, Hans	Pesticide Action Network Europe	EU
44	Muller, Erica	NVWA	The Netherlands
45	Nadezda Krpesova	National Institute of Public Health	Czech Republic
46	Ossendorp, Bernadette	RIVM	The Netherlands
47	Peeters, Luc	COPA-COGECA/Mechelen Auctions	EU
48	Pieniadz, Agata	DG Research & Innovation	European Commission
49	Pieters, Moniek	RIVM	The Netherlands
50	Planken, Kees	Ministry of Health, Welfare and Sport	The Netherlands
51	Quaedvlieg, Nicolette	Dutch Product Board for Horticulture	The Netherlands
52	Roederer, Jeanne	Makhteshim Agan	
53	Rosseneu, Frederic	Freshfel Europe	EU
54	Salazar, Domingo	Syngenta	
55	Schlyter, Carl	European Parliament (The Greens)	Sweden
56	Sgouri, Vassilia	Bayer Cropscience	
57	Spanoghe, Pieter	Ghent University	Belgium
58	Stephenson, Claire	Chemicals Regulation Directorate	UK
59	Steurbaut, Walter	Ghent University	Belgium
60	van der Linden, Arie	The Greenery B.V.	The Netherlands
61	Van Der Sypt, Veerle	Fresh Trade Belgium	Belgium
62	van der Voet, Hilko	Wageningen University (Department Biometris)	The Netherlands
63	van Donkersgoed, Gerda	RIVM	The Netherlands
64	Van Hauwe, Nele	FPS Health, Food Chain Safety and Environment	Belgium
65	Verbaas, Peter	Frugiventa	The Netherlands
66	Verbeke, Wim	Ghent University	Belgium
67	Vergnet, Claude	ANSES	France
68	Vooijs, Jacco	Dutch Produce Association	The Netherlands
69	Wedgbury, Russell	Chemicals Regulation Directorate	UK
70	Wermund, Ursula	UNIVEG	Germany
71	Wibbe, Barbara	DFHV	Germany
72	Wiegand, Zuzana	EDEKA AG	Germany
73	Wilmart, Olivier	AFSCA	Belgium
74	Ziegler, Pinelopi	State General Laboratory	Cyprus