ACROPOLIS

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

Deliverable 6.10 A report describing the technical aspects of data connection between EFSA and ACROPOLIS.

The dissemination level changed from Public to Confidential because informal letters or minutes are included in the deliverables, The letters or minutes prove that we have delivered what has been promised but were not announced as being openly available at the time we discussed these issues.

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1 Introduction

Within the EU project ACROPOLIS an IT tool has been developed to assess the cumulative dietary exposure to groups of pesticide residues. This tool can also be used to assess the dietary exposure to single compounds or the estimate the intake of beneficial compounds, like micro-nutrients. The IT tool can calculate both the acute and the chronic exposure. The IT tool is an update of the Monte Carlo Risk Assessment (MCRA) software tool and is released as MCRA 8.0 (de Boer and Kruisselbrink, 2013b). The tool is available via mcra.rivm.nl.

Important part of using the software to assess the exposure to or intake of single compounds or groups of compounds is the organisation of the input data. This includes the organisation of food consumption and concentration data, as well as of additional information, like processing information and information on unit variability. This last input variable is important when addressing compounds that are analysed in composite samples (samples consisting of more than one unit) and that are acutely toxic.

The European Food Safety Authority (EFSA) has been identified as an important, possible user of the IT tool in the future. To enable this, it is important that the data (food consumption and concentration) as available at EFSA can be structured in such a way that the data are compatible with the IT tool, and that this can be done easily. In this report we describe how this has been facilitated within the project. The format of the input data to be uploaded to MCRA8.0 is described by (de Boer and Kruisselbrink, 2013a).

2 Food consumption data

At EFSA different food consumption figures are used to assess the exposure to all kinds of chemicals (EFSA, 2011c). The data available at EFSA that can be used within the IT tool to assess the exposure is the data present in the EFSA Comprehensive Database. This database contains food consumption data at the individual level of 17 Member States, covering 26 different surveys (EFSA, 2011d). The food consumption data is coded according to the FoodEx classification system (EFSA, 2011b).

These data can be used in MCRA8 to assess the exposure and intake of chemicals. For this, the following variables need to be extracted from the Comprehensive database per survey and saved in an Access or Excel file organised in the following tables (Access) or worksheets (Excel):

- AgeClass: ID, AGECLASS
- Consumption: ORSUBCODE_ID, DAY, AMOUNTFOOD, FOODEXCODEL4
- Country: COUNTRYII, COUNTRY
- Foodlist: FOODEXCODEL1, FOODEXCODEL1_NAME, FOODEXCODEL2, FOODEXCODEL2_NAME, FOODEXCODEL3, FOODEXCODEL3_NAME, FOODEXCODEL4, FOODEXCODEL4_NAME
- Gender: ID, DESCRIPTION
- Subjects: COUNTRYII, SURVEY_ID, ORSUBCODE_ID, GENDER_ID, AGE, WEIGHT, HEIGHT, WF, AGECLASS NDAYS

- Survey: SURVEY, ID

3 Concentration data

Member states submit monitoring data of all kinds of chemicals to EFSA via the Data Collection Framework (DCF) according to the Standard Description Data (SSD) model for analytical measurements in food and feed (EFSA, 2009; 2010a; 2011a). The SSD model is targeted to support the data collection and the data transmission of samples and the results of analytical measurement to support exposure assessments for food and feed safety. It also facilitates the harmonised collection of analytical measurement data for the presence of harmful or beneficial chemical substances in food, feed and water within the EU (EFSA, 2010b). The SSD is intended to support the following analyses:

1) Assessment of acute and/or chronic consumer exposure,
2) The number of samples for specific product / parameter combinations below and above detection limits,
3) The number of samples for specific product / parameter combinations above legal limits (legal compliance).

To make the data collected according to the SSD model suitable for use in MCRA 8.0, for both single and multiple compound exposure assessments, information on the levels of individual active substances analysed per sample, including the results analysed at levels below a certain reporting (LOR = limit of reporting) or analytical level (LOQ or LOD = limit of quantification or detection, respectively), are necessary. The information collected as part of the SSD model minimally relevant for this are

- ParamCode
- LabSampleCode
- OrigCountry
- ProdCode
- ProdText
- SampY
- SampCountry
- ResUnit
- ResLOD
- ResLOQ
- ResVal
- ResType

Preferably all information available should be included. These data can be organised as XLSX or MDB files, and will, after uploading onto MCRA, automatically be organised in a format compatible with MCRA 8.0.

Users should be aware that the food consumption data should link to the concentration data. This can be done either by using the same coding for foods, or by preparing a recipe table to link the consumed foods to the analysed foods.

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