VETERINARY AND AGROCHEMICAL RESEARCH CENTER

CODA-CERVA

Exposure of Belgian adult consumers to pesticide residues through consumption of fresh fruits and vegetables

Within the framework of the federal Program for Pesticides and Biocides Reduction

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1 Introduction

Included in the framework of the Program for Reduction of Pesticides and Biocides (PRPB), this project in financed by the "Fonds des Matières Premières et des Produits[1]".

The PRPB has been launched in 2001 with the aim of reducing by 50% risks on environment and human health caused by pesticides uses (25% for agricultural uses). Within this federal program, several studies were carried out implicating all the stakeholders concerned by pesticide issues. In order to measure the impact of governmental actions such as specific policies regarding use of pesticides, restricted use or ban of selected pesticides, the PRPB needed an useful tool.

The University of Gent (UGent) developed different risk indicators related to both environment and public health. The program PRIBEL has been later improved with the collaboration of the CODA-CERVA. Therefore, it became possible to estimate risks on 9 compartments at national scale and over several years.

The project HEEPEBI, also financed by "Fonds des Matières Premières et des Produits", focused on impacts of pesticides and biocides on environment and human health. In that project, the issue of risk indicators for consumers (PRIBELconsumers) was tackled but not sufficiently to be clearly set out. Indeed, the PRIBEL indicator for consumers uses rough data such as MRLs and international consumption data in order to calculate consumer exposure in Belgium. Therefore, the idea of refining the indicator with more accurate data quickly arouse.

Using recent national data on residue concentrations in foodstuff and on food consumption, estimation of the consumer exposure to pesticide residue the way it was achieved in this project strived to match reality with higher accuracy. Thus, in this project, both deterministic and probabilistic methods were used to estimate exposure. When compared to toxicological limits by using the ratio exposure/Acceptable Daily intake, results obtained may be helpful to provide an overview of food safety in Belgium in terms of pesticide residues.

Besides, the procedure followed in this project can be repeated as further research could take advantage of the database and codes already created. Nevertheless, the method can still be refined in the future since some limits and bias have been encountered. Among them, processing factors that tend to decrease residue concentration in foodstuffs could be integrated in calculations in a latter stage.

This small project (4 months) is a new start in terms of pesticide residue risk assessment in Belgium since the method used can be improved and database upgraded over the years as changes regarding consumption, residue concentration or toxicological data occur. The project being very restricted in time and resources, special attention was paid on the collaboration with other scientific bodies (Scientific Committee of FASFC, University of Gent, IPH) in order to make sure that the work carried out could be pursued after the completion of the present project.

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[1] Part of the Federal Public Service – Public Health Safety of the food chain and environment

2 Collected data

2.1 Residue concentrations in foodstuffs

2.1.1 The Federal Agency for the Security of the Food Chain

2.1.1.1 General overview

The Federal Agency for the Security of the Food Chain was created in 2000 by merging different federal departments involved in the control of the food chain in Belgium. The main role of the FASFC is to verify that all the role-players in the food chain are respecting legislation and standards. Policies conception and imposition of its standards have been committed to the Federal Public Service for Public Health.

Principal tasks carried out by the FASFC are controlling foodstuffs all along the food chain, supplying certificates and authorizations to carry out activities involved in the food chain and developing identification and traceability of foodstuffs. Other assignments consist in providing scientific advices on risks regarding food (Scientific Committee), preventing problems occurring in the food chain and also ensure contacts with general public. This work, achieved by experts, helps to guarantee the highest safety level for consumers.

2.1.1.2 Pesticide residue campaign

Throughout the year, the FASFC is performing a pesticide residue campaign in foodstuffs in the whole food chain. Working plan is organized as a loop-system. Planning of foodstuff controls is done by the Control Policy department. In the same time, this department is in charge of control measure integration and development. The Control department is leading the next step, implementing practical application of controls. It implies to organize and plan the uptake of samples needed for residue tests. Further on, the Laboratory department achieves sample analysis. This department groups various official laboratories. If an offence is noticed through sample analysis, the General Services department of the FASFC is in charge of legal prosecution. Eventually, results from laboratories are provided to the Control Policy department which will be able to operate the risk assessment and report to UE the national data. The Scientific Committee of the FASFC gives advice on the Surveillance Program after thorough examination of all the available documentation.

The FASFC leads food controls for the Belgian State as well as for the European Union. Indeed the annual co-ordinated program of Pesticide Residue Monitoring in Food of Plant Origin to be reported to the European Union recommand to all EU-member countries to sample a fixed number of given commodities. Nevertheless, these controls are integrated in those from the national surveillance program for food controls. In order to establish the national surveillance program, the Control Policy department relies on previous identification of problematic residues based on previous controls in Belgium and Europe, toxicological data (ARfD, ADI), the analytical and budgetary possibilities as well as the importance of foodstuff in diets, RASFF[1] messages, and other information. These information are then taken into account and the nature and number of foodstuff as well as residues to seek are determined before starting the campaign.

Controls are targeted on vegetables, fruits, cereals, and processed products from local or imported foodstuffs, in different geographical places and along the complete food chain. Tests on chosen samples are carried out by both federal and independent certified laboratories. Depending of the residue concentration, exceeding of MRLs in samples can lead to a simple warning, an official report with a fine, and when the dietary intake calculations indicate a risk for the consumer (evaluated following document SANCO/3346/2001) then a national and international rapid alert is issued. Measures to protect consumers are therefore taken like tracing and calling back the foodstuffs for destruction.

2.1.1.3 Data provided

In the framework of this project, the FASFC provided data concerning the national surveillance program of 2003, 2004, 2005. For technical reasons, data from 2003 were difficult to analyse. Data are composed of two type of tables for each year. One table gives the precise number of tests led on all the combinations residue/commodity, while another table is composed by all the samples in which a residue was detected.

In the table giving the overall tests done during the year, the method used by laboratories is documented (GC-MS/MS, LC-MS/MS,…). An important property of the method is the LOQ which is the lowest residue concentration measurable. In case the residue cannot be quantified in a sample, its real concentration is then between 0 and the LOQ related to the method. The LOQ is expressed in mg residue kg^{-1}commodity and its value for a given method can differ depending on the laboratory.

During the year 2005, no less than 134940 combinations residue/commodity were analysed. For 200 different pesticide residues, test were carried out on a total amount of 1322 samples of fresh and frozen fruit and vegetables. The FASFC has recorded in 2005 a higher rate of MRLs exceedings (7,9% of the total number of samples) than the previous years (4,3% for 2003 and 4,8% for 2004). The enhancement of the number of pesticides sought, seeking of pesticides recently banned (therefore pesticides whose MRL decreased) and the improvement of analytical performance of the laboratories explain this higher rate (FASFC, 2006).

2.1.2 Retailers

Several retailers were contacted in the framework of this project. All retailers did not replied and therefore all did not participated to this study. Data concerning retailers as presented further in the report are those gathered during the year 2005.

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[1] Rapid Alert System for Food and Feed

2.2 Food consumption study

2.2.1 The Institute of Public Health

2.2.1.1 General overview

The Institute for Public Health (IPH) is the federal scientific institution dealing with public health issues. Providing expertise and public services in the field of public health as well as leading scientific research to support health policies are among the main assignments of the IPH. The IPH also represents the Belgian State in the European Union, in the World Health Organisation (WHO), and in the Organisation for Economic Cooperation and Development (OECD) in collaboration with other public bodies.

In practical terms, the IPH main activities are diseases surveillance, federal product norms verification (e.g. foodstuffs, pharmaceuticals, vaccines), risk assessment linked with chemical products or genetically modified organisms, and the management of biological resources.

2.2.1.2 Data provided

The Food Consumption Study[1] performed by the IPH in 2004 gives precise data on foodstuff consumption in Belgium. In total, 3214 Belgian citizens over 15 years old were questioned about their last-24-hours-consumption. When possible, they were interviewed a second time 2 to 8 weeks after the first meeting, giving a total of 6015 interviews. No less than 215 food items were recorded for fresh fruits and vegetables.

Interviews were carried out throughout Belgium, taking care of different factors that contribute to create a representative sample of the Belgian population. The number of interviews by province was determined by population density. Citizens interviewed are also representative of the population in terms of age, gender, education level and other parameters although people over 75 years old were over represented. At this stage of development, an extrapolation factor needed to take this parameter into account is still under construction.

To respect time factors, interviews took place throughout the year to avoid seasonal factors and every day of the week. All these interviews have been recorded and provided as individual raw data, giving information about the person questioned (e.g. height, weight, age,…) and their consumption (g/day of commodities consumed).

[1] The complete study is available in French (http://www.iph.fgov.be/epidemio/epifr/foodfr/table04.htm) and in Dutch (http://www.iph.fgov.be/epidemio/epinl/foodnl/table04.htm)

3 Database study

Residue campaigns from the FASFC and the retailers are analysed in this chapter for the years 2004 and 2005. Testing conditions are quite similar since most of sample analysis were performed in the same laboratory. Therefore methods used and their LOQ are equivalent. However, results cannot be compared strictly because objectives followed by the FASFC and the retailers differ. Therefore, samplings are planned differently.

3.1 Results overview

Detection results obtained by residue campaign of FASFC and retailers are presented in Table 1 and Figure 1 and 2. Residues in samples are more often detected by the FASFC than by the retailers in 2005 (66% vs 42,7%). The percentage of MRL exceedings recorded by the FASFC are slightly higher than the percentage of MRL exceedings recorded by retailers in 2005 (7,9 vs 6,9). In 2004, the opposite situation was observed.

Table 1 : Comparison of detected residue frequency and of MRLs exceedings frequency (%)

	2004		2005	
	FASFC	Retailers	FASFC	Retailers
% of samples with residue detected	45,9	47,8	66,0	42,7
% of MRL exceedings	4,8	5,5	7,9	6,9

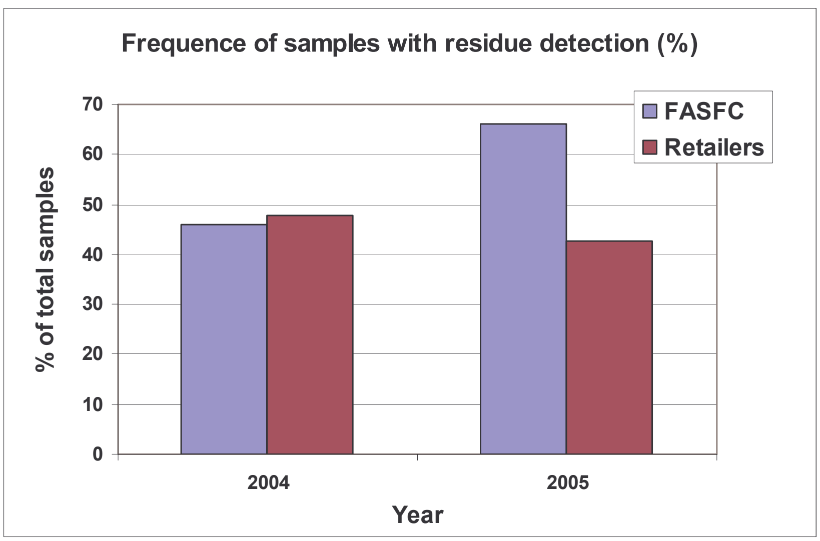

Figure 1 : Frequence of samples with residue detection in % for the years 2004 and 2005 (FASFC and retailers)

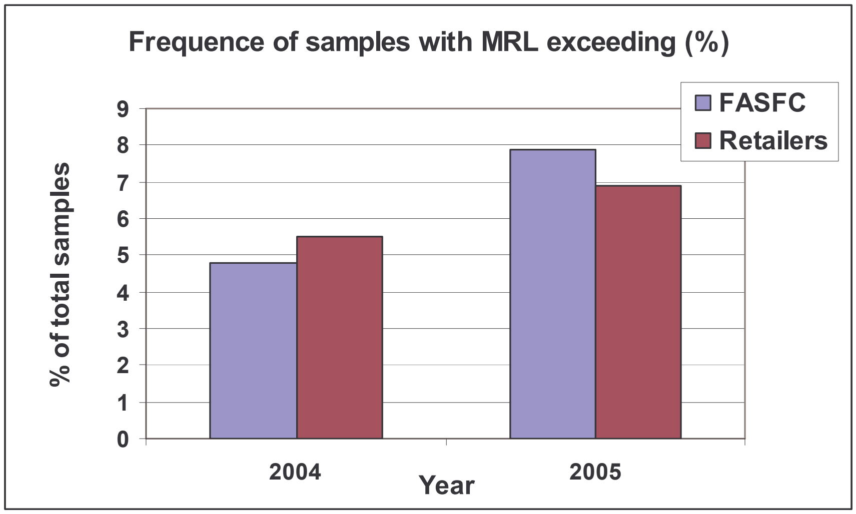

Figure 2 : Frequence of samples with MRL exceeding in % for the years 2004 and 2005 (FASFC and retailers)

3.2 Commodities and MRL exceedings

As indicated in

Table 2 and Figure 3 and 4, berries and small fruits are the fruit commodities for which samples are most often exceeding MRL in 2005. It has to be noted that % of MRLs exceedings reaches 17,6% for retailers in 2005. In general, there was less exceedings during 2004 for fresh fruits. Citrus were recorded by both FASFC and retailers, although at a different % of MRL exceeding. Stone fruits and miscellaneous fruit samples were not found containing residue concentration above MRLs by retailers.

For vegetables, mainly lettuces are responsible for MRL exceedings of leaf vegetables and fresh herbs. Fruiting vegetables, stem vegetables and roots vegetables have approximately the same frequency of MRL exceedings for the FASFC, while only stem vegetables and fruiting vegetables in a lesser extent were analysed with residue concentration above MRL in 2005. During the same year, stem vegetables and legume vegetables were found in exceedance at a frequency of one out of five samples for retailers. Leafy vegetables and stem vegetables are presenting high % of MRL exceedings for both 2004 and 2005.

It has to be added that the way commodities are sorted into group as they are presented is similar for both sources. All groups of commodities were samples, so the 0 value does not mean commodities were not tested.

Table 2 : MRLs exceedings (%) in commodities

	% of MRL exceedings			
	2004		2005	
	FASFC	Retailers	FASFC	Retailers
Fruits				
Berries and small fruits	5,4	2,8	11,3	17,6
Stone fruit	2,0	10,0	11,1	0,0
Citrus	2,9	0,0	7,0	4,0
Miscellaneous fruits	0,0	0,0	7,0	0,0
Pome fruit	2,4	0,0	1,0	4,3
Vegetables				
Leaf vegetables and fresh herbs	9,4	14,7	12,7	15,9
Fruiting vegetables	3,8	9,1	10,1	4,8
Stem vegetables	10,9	5,3	9,5	20,0
Roots vegetables	3,5	9,5	9,2	0,0
Potatoes	3,3	16,7	3,3	0,0
Legume vegetables	0,0	11,1	3,2	20,0
Brassica vegetables	6,1	12,5	1,2	0,0

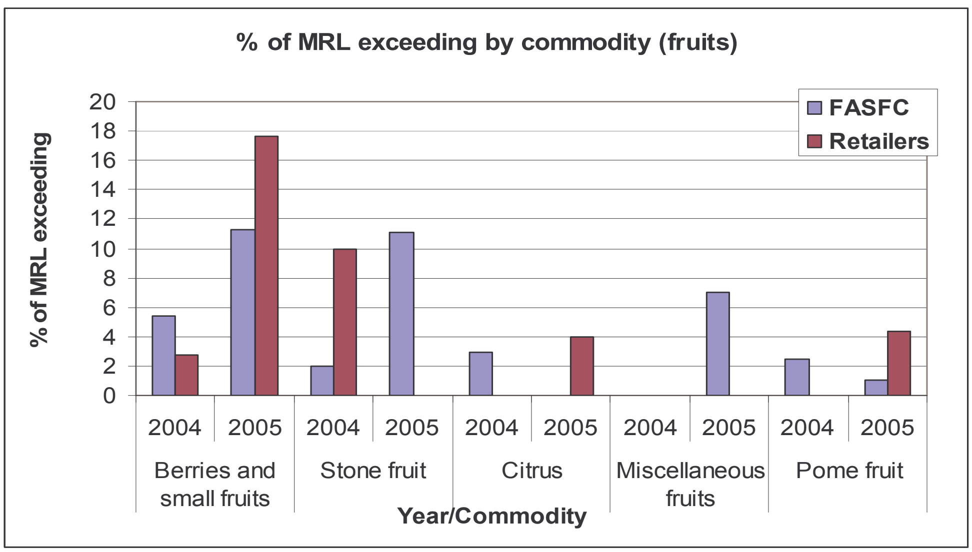

Figure 3 : % of MRL exceeding by commodities (fruits) for the years 2004 and 2005 (FASFC, retailers)

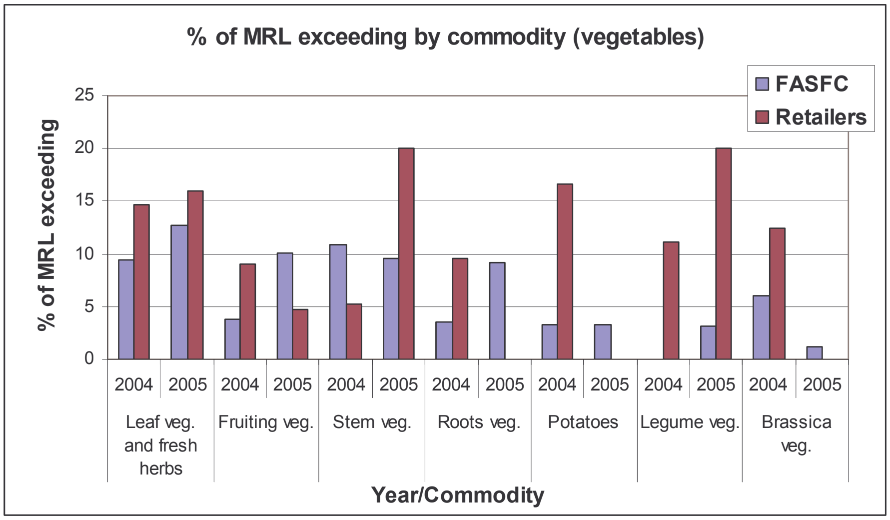

Figure 4 : % of MRL exceeding by commodities (vegetables) for the years 2004 and 2005 (FASFC, retailers)

3.3 Most often found residues

In 2005, residues detected by both FASFC and the retailers are imazalil, carbendazim, dithiocarbamates and iprodione (Table 3). These two residues are most often in MRL exceedings concentration in lettuces. Dithiocarbamates are often detected in cabbages and pears in data from the FASFC, and in celeries in data from the retailers in 2005. Sulphur is not frequently sought and therefore found by the FASFC whereas it is often the case for retailers in 2004 and 2005. Bromide was often found in 2004 in both residue campaign, but in 2005 it was found mainly by the FASFC.

Table 3 : Most often detected residues

Most frequently found residues			
2004		2005	
FASFC	Retailers	FASFC	Retailers
Chlorpropham	Iprodione	Bromide	Imazalil
Orthophenyl-phenol	Sulfur	Dithiocarbamates	Sulfur
Bromide	Procymidone	Ethephon	Thiabendazole
Chlormequat	Bromide	Propamocarb	Iprodione
Propamocarb	Cyprodinil	Iprodione	Dithiocarbamates
Dithiocarbamates	Thiabendazole	Carbendazim	Carbendazim
Iprodione	Dithiocarbamates	Imazalil	Cyprodinil
Imazalil	Methomyl		
Prochloraz	Imazalil		

3.4 Origin of tested samples

Table 4 as well as Figure 5 and 6 give tested samples origin from the FASFC and retailers. It appears that the FASFC is proportionally testing more Belgian originated samples than retailers in 2004 and 2005, whereas % of samples originated from outside EU are almost equal.

Besides, % of MRL exceedings of "outside EU" originated samples is far more higher in 2005 in the residue campaign of retailers than the one from the FASFC although these samples were almost not presenting MRL exceedings in 2004. Nonetheless, % of exceedings are higher for EU originated samples from the FASFC than those from the retailers in 2005.

Table 4 : Sampling origin and MRL exceedings (%)

	% of total number of samples				% of MRL exceedings by origin			
	2004		2005		2004		2005	
	FASFC	Retailers	FASFC	Retailers	FASFC	Retailers	FASFC	Retailers
BE	62,1	48,3	62,1	46,8	5,4	5,8	7,3	8,5
EU	17,8	34,3	19,2	37,2	6,7	8,2	9,8	5,4
Other	15,8	17,5	18,7	16,0	1,6	0,0	7,7	7,5

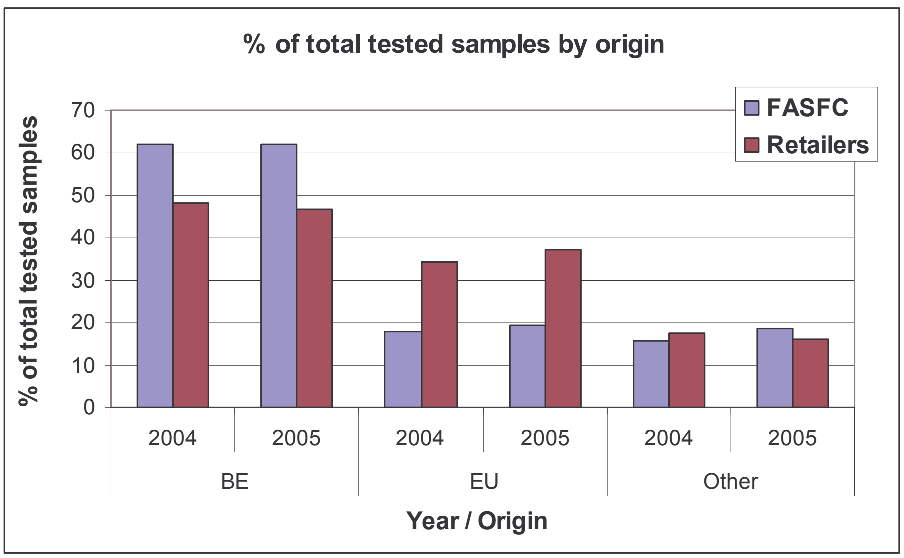

Figure 5 : % of samples tested by origin for the years 2004 and 2005 (FASFC and retailers)

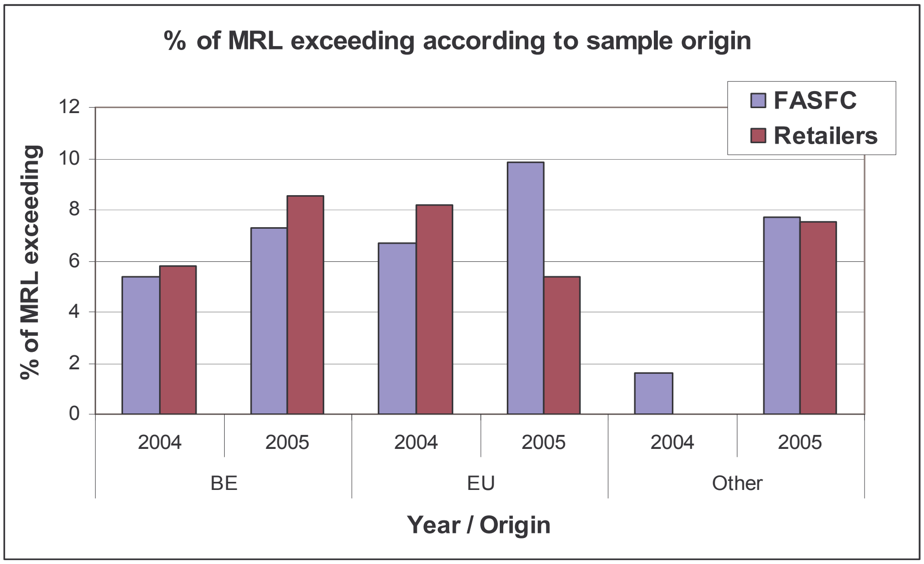

Figure 6 : % of MRL exceeding by origin for the years 2004 and 2005 (FASFC and retailers)

3.5 Conclusion

This comparison shows differences in the way residue campaign is led but also on some results obtained. Yet one must avoid to come on quick conclusions based on this comparison. Indeed, it has to be reminded that missions fulfilled by the FASFC and by retailers are different. Besides, it can be seen that results can differ for on year to another.

Basically results obtained are quite similar. However some differences occurred in the results when dealing about risky commodities and frequency of MRLs exceeding for non-Belgian samples. It is interesting to see that sulphur is quite often detected in retailers residue campaign although it was detected only once in the 432 samples tested by the FASFC in 2005. Also, in both year it appears that FASFC tested proportionally more samples from Belgian origin.

Surveillance programs of the FASFC and the retailers are not completely independent, as results obtained by one of the two can determine samples tested by the others, especially in case of MRL exceedings. Indeed, special notifications have to be issued by the retailers to the FASFC in case of MRL exceeding. Besides, retailers also consider notifications done by the FASFC or the RASFF to target the sampling. Therefore, the FASFC and the retailers exchange information that contribute to target the residue campaign of each other.

4 Exposure estimation

4.1 Introduction

The aim of this exercise is to estimate chronic exposure of pesticide residues for a Belgian consumer. Results of these calculations will allow to obtain for each residue a value representing the total amount/intake of a given residue consumed via foodstuffs consumption. This intake can be expressed in terms of mg residue kg^{-1}BW day^{-1} or in % of the ADI which is the Acceptable Daily Intake (toxicological data of reference). When expressed in terms of % of ADI, exposure can be used to see if there is any potential harm for consumers. Indeed, if the exposure is more important than the ADI, human health can be considered at risk.

To estimate the exposure, also called intake, two main approaches can be used in order to perform calculations : the deterministic approach and the probabilistic approach.

The deterministic approach uses point estimates, that are so called because single-point estimates are made for a range of factors in the intake calculation (Travis et al., 2004). In this case, the average value for residue concentration was calculated for each combination residue/commodity.

Instead, the probabilistic method uses individual data, both for consumption and for residue concentration. Various authors have noticed that probabilistic approach gives a more accurate estimation of the exposure (Tomerlin, 2000; Hughes, 2002; Renwick, 2002; Travis and al., 2004; Hamilton et al., 2004). Using the Monte-Carlo model, this approach consists in a random combination of residue concentrations with the distribution of food consumption to produce a distribution of residue intake across the population studied.

The following points were taken into account in both methods :

- For economical reasons, laboratories perform sample analysis for a given method on a range of residue, depending their chemical properties. In laboratories, several residues from the same chemical group can be sought in a sample. To avoid the addition of non-authorized combinations residue/commodity as they are tested by the laboratories, combinations were taken into account for exposure calculations only if they are authorized by Belgian legislation. Therefore, in the residue concentrations databank, all combinations residue/commodity were sorted in order to separate authorized combinations from not authorized combinations[1] by using legislation data from Fytoweb[2]. Nevertheless, not authorized combinations where residue is detected[3] should retain our attention if detections are repeated in future years.

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[1] As an example, the residue carbendazim was sought in leek whereas applications of carbendazim on leek crops are not authorized by Belgian regulation.

[2] www.fytoweb.fgov.be – Aggregation consultation

[3] As an example, tolclofos-methyl was found 3 times in broccoli, a crop for which it is not authorized to apply tolclofos-methyl.

- Value for residue concentration in samples where the residue was not detected remain open to discussions. To increase the scope of the study, three different values were used in the case of non-detected residue samples. For these residue concentrations the value 0 was given as lower bound, LOQ/2 was given as middle-bound and LOQ was given as the upper-bound[1]. These scenarios are therefore giving three different average values for residue concentration.
- As a given residue can be found in more than one commodity for which the use on crop is authorized, the exposure is the sum of all exposures related to all the commodities in which the given residue is found.

4.2 Deterministic approach

4.2.1 Residues and Commodities chosen

The case study chosen used specific data of residue concentration and food consumption in Belgium. On one hand, data from residue concentrations were given by residue surveillance campaign on fresh fruits and vegetables led by the FASFC in 2005. On the other hand, consumption data were gathered by the IPH in 2004.

4.2.1.1 Residue data

Among the 200 residues sought in foodstuffs by the FASFC in 2005, a total of 25 residues were chosen for the deterministic method (Table 5). These residues were selected because they have the 25 highest frequency of detection in analysed samples. All residues exceed reporting level (LOQ) at a frequency above 2% of the tested samples. For the Maneb-group, testing methods do not allow to determine which is the dithiocarbamate detected. Therefore, they were kept as a group and knowing that mancozeb and maneb together account for 87% of pesticide sales for dithiocarbamates in Belgium, the ADI chosen was the one of mancozeb and maneb. Residues included in the benomyl group are benomyl, thiofanate-methyl and carbendazim. Benomyl is not anymore authorized in Belgium but carbendazim is the common metabolite of thiofanate-methyl and carbendazim. Thus, the ADI value of Benomyl group use in the project was the one of carbendazim.

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[1] See 2.1.1.3

Table 5 : Residues chosen for the deterministic approach

Residue	% of samples with residues at or above reporting level	Total number of samples analysed	Number of samples with residue at or above reporting level
bromide	17,6	408	72
maneb-group	16,3	1010	165
ethephon	14,3	28	4
propamocarb	12,9	457	57
iprodione	12,0	1273	153
carbendazim	9,4	976	92
imazalil	8,6	1033	89
tolylfluanide	7,0	1273	89
pirimicarb	6,7	924	62
chlorpropham	6,0	716	43
thiabendazole	5,9	976	58
procymidone	4,9	1273	63
cyprodinil	4,7	924	43
methomyl	4,7	675	32
boscalid	3,9	975	26
imidacloprid	3,7	675	25
tolclofos-methyl	3,5	1273	44
dimethoate	3,3	1004	33
chlormequat	3,2	31	1
tebuconazol	3,1	576	18
oxadixyl	2,4	254	6
chlorpyriphos-ethyl	2,3	999	23
lambda-cyhalothrin	2,2	1273	28
azoxystrobin	2,1	1107	23
linuron	2,1	675	14

4.2.1.2 Consumption data

In the whole panel of commodities[1] recorded by the IPH, a selection was made in order to match commodity database with residue campaign results. Indeed, in residue campaign of 2005, a smaller panel of commodities[2] were sampled in which were included most consumed commodities.

Another selection had to be done due to tested sample information provided for residue concentration. While in samples where a residue was detected the precise name of the commodity tested was given by the FASFC, in the samples where the residue was not detected sometimes only the name of the type of foodstuffs was given[3]. To deal with it, aggregations of commodities were created (see Annex). Therefore, in commodity consumption tables, values of consumption for aggregated food items were summed to obtain one value per commodity A as listed in the new commodity list A (Table 6).

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[1] 203 commodities for fresh fruits and vegetables

[2] An example could be given by the commodity luzern (IPH code 128), as it was not chosen by the FASFC for tests during the year 2005, this commodity has not been taken into account in the calculation of the exposure.

[3] As an example, pirimicarb was detected once in Chinese cabbage. But for other samples that concerned cabbage group, less details are given if the residue is not detected. Thus, pirimicarb was sought in 18 others samples of cabbages, not knowing these samples were samples of Chinese, Savoy, red or white cabbages.

Table 6 : Commodities selected for the deterministic approach

FoodCode A	FoodItem A	Consumption (g kg^{-1}BW day^{-1}) Average	P25	P75	P97,5	P99	Max
1	Apricots	0,01	0,00	0,00	0,00	0,00	4,2
3	Ananas	0,04	0,00	0,00	0,00	1,33	7,8
5	Sprinkles	0,02	0,00	0,00	0,00	0,95	4,9
6	Avocados	0,00	0,00	0,00	0,00	0,00	4,2
7	Bananas	0,20	0,00	0,00	2,36	3,16	8,0
9	Broccolis	0,04	0,00	0,00	0,00	1,87	4,9
10	Carrots	0,18	0,00	0,00	1,91	2,66	12,2
11	***Celeries***	0,01	0,00	0,00	0,00	0,30	4,8
12	Celeriac	0,01	0,00	0,00	0,00	0,15	4,1
14	***Cherries***	0,02	0,00	0,00	0,00	0,47	4,9
15	Mushrooms	0,05	0,00	0,00	0,64	1,27	4,9
16	Cos	0,18	0,00	0,00	2,59	3,60	9,4
17	***Cabbages***	0,10	0,00	0,00	1,55	2,53	6,4
18	Cauliflowers	0,08	0,00	0,00	1,39	2,49	6,8
20	***Lemons***	0,01	0,00	0,00	0,00	0,20	1,8
21	Cucumbers	0,04	0,00	0,00	0,68	1,25	5,5
22	***Cress***	0,00	0,00	0,00	0,00	0,00	0,5
23	Endives	0,02	0,00	0,00	0,00	0,00	8,0
24	Spinach	0,05	0,00	0,00	0,84	1,85	5,1
27	Figs	0,00	0,00	0,00	0,00	0,00	2,5
28	Strawberries	0,08	0,00	0,00	1,20	2,68	9,4
29	Raspberries	0,00	0,00	0,00	0,00	0,00	4,1
30	Passion fruits	0,00	0,00	0,00	0,00	0,00	0,5
31	***Currants***	0,00	0,00	0,00	0,00	0,00	3,6
32	***Beans***	0,11	0,00	0,00	1,52	2,51	9,8
33	Kiwis	0,06	0,00	0,00	1,14	1,50	8,7
36	***Lettuces and Salads***	0,08	0,00	0,00	0,80	1,11	2,5
37	Lychees	0,00	0,00	0,00	0,00	0,00	1,4
38	Mandarine orange	0,08	0,00	0,00	1,16	1,86	9,4
39	Mango	0,00	0,00	0,00	0,00	0,00	4,1
41	Nectarines	0,04	0,00	0,00	0,00	1,56	11,0
42	Onions	0,10	0,00	0,00	0,93	1,39	5,3
43	Oranges	0,22	0,00	0,00	2,58	3,42	12,9
44	Grapefruits	0,03	0,00	0,00	0,00	1,24	6,6
45	Parnish	0,00	0,00	0,00	0,00	0,00	1,7
46	Watermelon	0,01	0,00	0,00	0,00	0,00	7,0
47	Peaches	0,06	0,00	0,00	0,71	2,06	8,4
49	Hot peppers	0,00	0,00	0,00	0,00	0,00	0,4
51	Leek	0,06	0,00	0,00	0,72	2,08	10,5
52	Pears	0,16	0,00	0,00	2,49	3,06	9,4
53	***Peas***	0,04	0,00	0,00	0,55	1,28	6,0
54	***Peppers***	0,04	0,00	0,00	0,62	1,04	3,3
55	Apples	0,67	0,00	1,25	4,16	5,36	14,6
56	***Potatoes***	1,64	0,00	2,53	5,54	6,75	16,2
57	Radishes	0,00	0,00	0,00	0,00	0,00	1,2
58	Grapes	0,08	0,00	0,00	1,47	2,53	8,3
59	Rhubarb	0,01	0,00	0,00	0,00	0,00	5,3
60	Lettuce lamb	0,00	0,00	0,00	0,00	0,00	1,6
62	***Tomatoes***	0,51	0,00	0,71	3,38	4,38	11,2

in italic = agregated commodities (see annex)

Individual data are expressed in g commodity g^{-1}BW day^{-1}, by dividing raw consumption values for each consumer by its weight. However, for exposure calculations, consumption is expressed in kg BW day^{-1} in order to match ADI units. Consumption percentiles are calculated on the total amount of interviews.

4.2.2 Calculations

The intake is equal to the product of the residue concentration in a commodity by the consumption of this commodity. Therefore, exposure was calculated as presented in Figure 7. For a given combination residue Y/commodity Z, the residue concentration average value was multiplied by the average consumption as well as by different consumption percentiles. Since total exposure for the residue Y can be due to more than one commodity, total exposure for the residue Y was obtained by summing exposures from all combinations residue Y/authorized commodities.

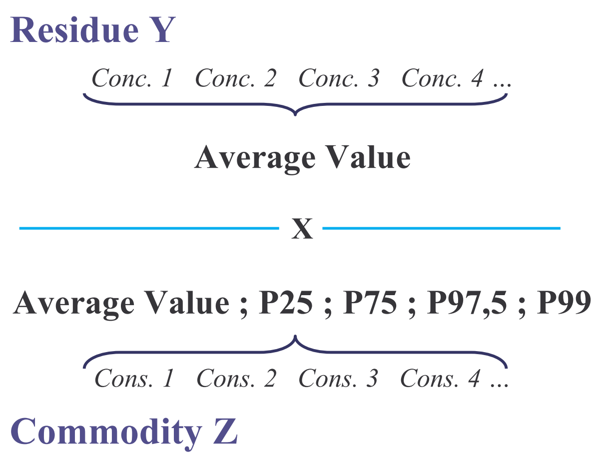

Figure 7 : Calculation of the exposure using residue concentrations and commodities consumption in the deterministic approach.

4.2.3 Results and Discussions

Calculation results gave the exposure to pesticide residues for an average consumption but also for consumption percentiles (P25, P75, P97,5 and P99). In Table 7, exposures (expressed in terms of % of ADI) are given according to an average consumption and a P97,5 consumption. One can notice that only chlorpropham, imazalil, dithiocarbamates and lambda-cyhalothrin chronic intakes are equal or above 1% of ADI for a scenario of a non-detected residue concentration of LOQ/2 and for an average consumption. Instead, intakes of chlormequat, cyprodinil, tebuconazole and tolclophos-methyl do not exceed 0,1% of ADI. More detailed results for each of the 25 residues are given in annex where individual data sheet summarizes intakes, commodities analyzed and samples where a given residue has been found although its application is not authorized. Figure 8 and 9 depict the situation in charts.

Table 7 : Results of the deterministic approach (expressed in % of ADI and considering an average residue concentration)

	Average Consumption			P 97,5 Consumption		
Residue	**0**	**LOQ/2**	**LOQ**	**0**	**LOQ/2**	**LOQ**
Azoxystrobin	0,0	0,1	0,2	0,0	1,3	2,5
Benomyl group	0,2	0,3	0,4	1,9	2,6	3,2
Boscalid	0,1	0,1	0,1	1,4	1,6	1,7
Bromide ion	0,1	0,3	0,5	1,0	3,0	5,0
Chlormequat	0,0	0,0	0,0	0,0	0,2	0,3
Chlorpropham	4,3	**4,4**	4,4	14,5	**14,8**	15,1
Chlorpyriphos	0,1	0,9	1,7	0,9	8,5	16,2
Cyprodinil	0,0	0,0	0,1	0,3	0,6	0,9
Dimethoat	0,3	0,5	0,6	2,4	9,9	17,5
Dithiocarbamates	0,3	**1,8**	3,4	2,7	**14,2**	25,6
Etephon	0,1	0,3	0,4	0,9	1,9	2,9
Imazalil	1,4	**1,8**	2,1	16,7	**18,8**	20,9
Imidacloprid	0,0	0,0	0,0	0,0	0,0	0,1
Iprodione	0,2	0,4	0,6	1,8	3,8	5,7
Lambda-cyhalothrin	0,0	**1,0**	2,0	0,1	**10,1**	20,2
Linuron	0,3	0,3	0,3	0,0	0,6	1,1
Methomyl	0,0	0,1	0,1	0,3	0,7	1,1
Oxadixyl	0,0	0,0	0,0	0,0	0,2	0,3
Pirimicarb	0,0	0,1	0,1	0,1	1,3	2,5
Procymidone	0,1	0,5	0,5	2,1	6,3	10,6
Propamocarb	0,0	0,1	0,1	0,1	0,6	1,0
Tebuconazole	0,0	0,0	0,0	0,1	0,3	0,4
Thiabendazole	0,2	0,3	0,3	2,8	3,0	3,2
Tolclophos-methyl	0,0	0,0	0,0	0,0	0,1	0,1
Tolylfluanid	0,0	0,1	0,1	0,5	0,7	0,9

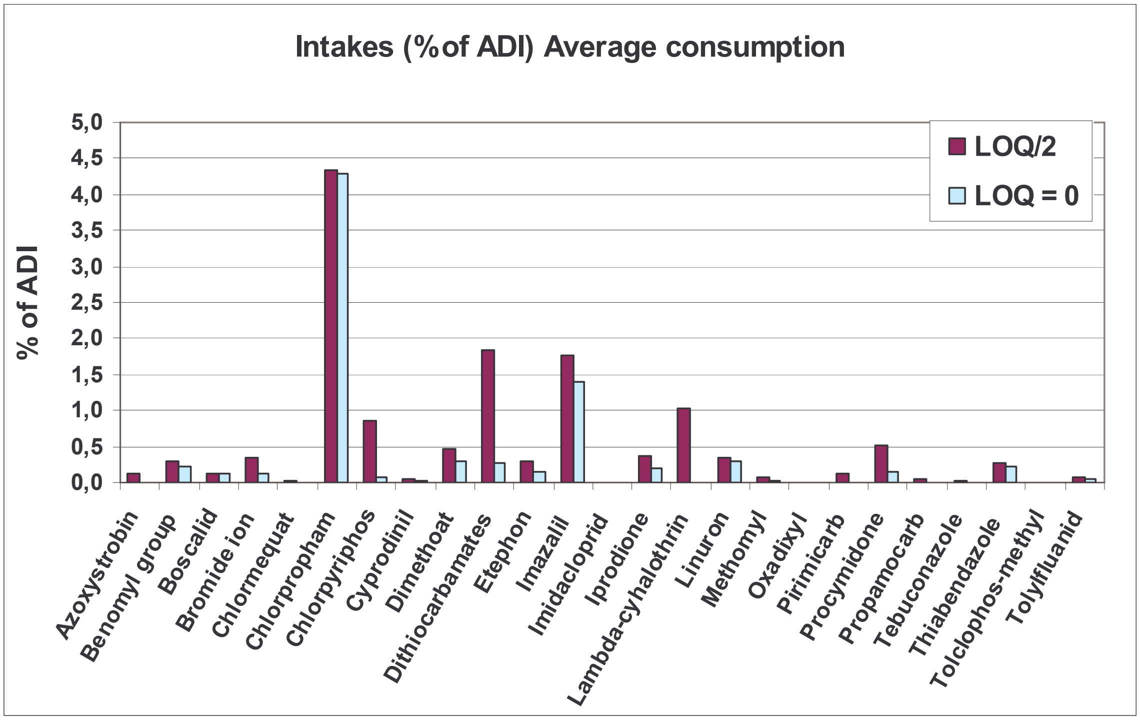

Figure 8 : Intakes for the low- and mid- scenario expressed in % of ADI for the 25 residues chosen and according to an average consumption (Deterministic approach).

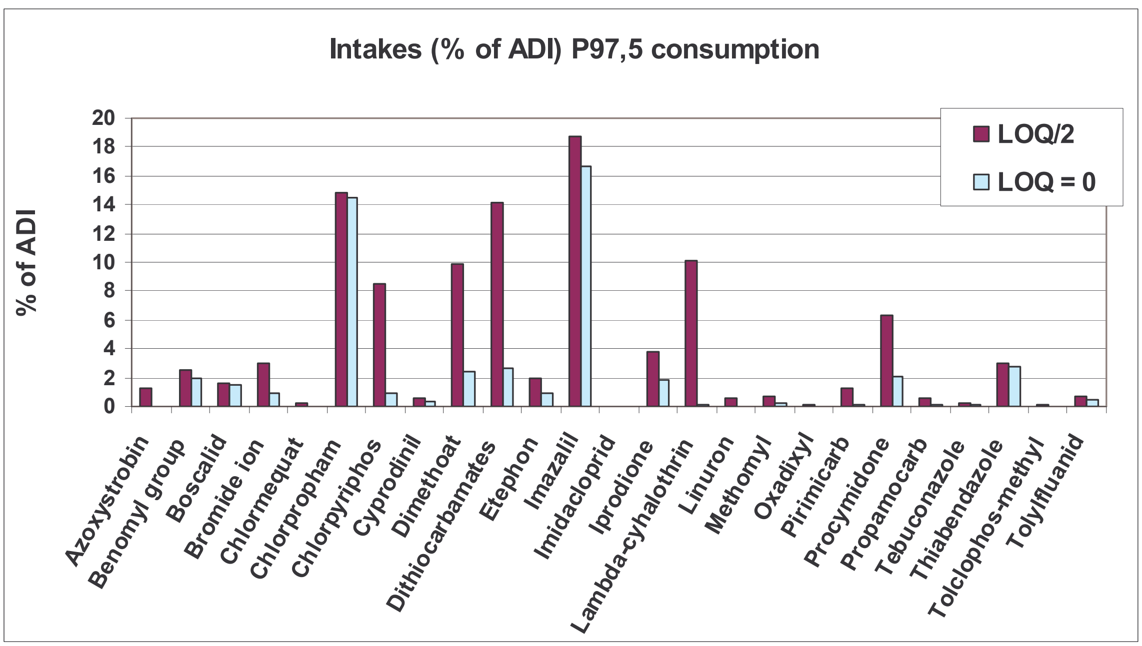

Figure 9 : Intakes for the low- and mid- scenario expressed in % of ADI for the 25 residues chosen and according to a P97,5 consumption (Deterministic approach).

In the Table 7, 3 different values are given for each residue/consumption profile. The columns 2,3,5 and 6 are calculated on the basis of a middle-bound (LOQ/2) and upper-bound (LOQ) residue concentration for non-detected samples. For residues which were sought in a high amount of commodities, calculations can lead to a important overestimation of the intake by attributing an hypothetical residue concentration in many samples although no residues were detected. That overestimation has to be reminded when analysing values of intake. This is why the first and the fourth columns, giving intakes from an average consumption based on a lower-bound residue concentration scenario, are useful to analyze results obtained. As an example, the situation in which a residue is having a high intake in column 2 (or 4) and a low intake in column 1 (or 3) can be understood as if the residue intake is relying on hypothesis of presence of the residue in non-detected samples. Another situation where a residue is showing a high intake in both columns 1 and 2 relies more on real values as the columns 1 is calculated with residue concentration actually measured.

Concerning high intakes, different profiles can be seen (see Annex for full details). Dithiocarbamates have a high intake both because commodities on which their use is authorized is high (30 different commodities) and because they are relatively often detected on these commodities. At the opposite, chlorpropham is only authorized for 3 crops, but the frequency of detection in potato samples is really high. This can be seen in column 1 since the intake is still high. It has to be noticed that the intake due to chlorpropham is only due to its detection in potatoes. For imazalil, all detections occurred in fresh fruit samples. Citrus are responsible for most of the intake, especially orange and mandarin orange.

Pesticides showing low intakes are generally authorized on a very limited number of crops. Besides, these crops are producing foodstuffs that are not highly consumed in the average diet. Examples of these commodities are mushrooms, cress, lettuce lamb, or currants.

A striking comparison can be made out of the two ranking of residues showed in Table 8. Left part in the table ranked residues according to the frequency of detection, whereas ranking in the right part was operated according to intakes.

Table 8 : Comparison of residues ranking if considered exposure (in % of ADI according to an average residue concentration and a lower bound scenario) or % of detection in samples tested in 2005 by the FASFC

Residue	% of samples with residues at or above reporting level
Bromide ion	17,6
Dithiocarbamates	16,3
Ethephon	14,3
Propamocarb	12,9
Iprodione	12,0
Benomyl group	9,4
Imazalil	8,6
Tolylfluanide	7,0
Pirimicarb	6,7
Chlorpropham	6,0
Thiabendazole	5,9
Procymidone	4,9
Cyprodinil	4,7
Methomyl	4,7
Boscalid	3,9
Imidacloprid	3,7
Tolclofos-methyl	3,5
Dimethoate	3,3
Chlormequat	3,2
Tebuconazole	3,1
Oxadixyl	2,4
Chlorpyriphos	2,3
Lambda-cyhalothrin	2,2
Azoxystrobin	2,1
Linuron	2,1

Residue	Intake* (% of ADI)
Chlorpropham	4,3
Imazalil	1,4
Dimethoat	0,3
Linuron	0,3
Dithiocarbamates	0,3
Thiabendazole	0,2
Benomyl group	0,2
Iprodione	0,2
Procymidone	0,1
Etephon	0,1
Bromide ion	0,1
Boscalid	0,1
Chlorpyriphos	0,1
Tolylfluanid	0,0
Methomyl	0,0
Cyprodinil	0,0
Propamocarb	0,0
Pirimicarb	0,0
Lambda-cyhalothrin	0,0
Tebuconazole	0,0
Azoxystrobin	0,0
Tolclophos-methyl	0,0
Chlormequat	0,0
Imidacloprid	0,0
Oxadixyl	0,0

** Intake is given according to an average consumption and a lower bound scenario*

Although a residue like chlorpropham is ranked 10th in terms of detection frequency, this residue is nevertheless first ranked if regarded the intake in % of ADI. This case is clearly highlighting among other effects the impact of toxicological data on residue ranking. A residue with a medium percentage of detection can be of utter importance for food safety if its ADI is low.

Another example brought by this comparison is linuron. Although its % of detection remain low, linuron is ranked 3rd in the Intake part of the table. Indeed, the low ADI of linuron added to the fact that it was sought and found once in celeriac (enhancing the average value for residue concentration) contribute to obtain this result.

4.2.4 Conclusion and discussion

As said previously, the ADI is a toxicological limit of reference. It values derives from the dose of exposure at which an effect can be seen on laboratory animals. This dose, called the No Adverse Observed Effect Level (NOAEL) is then generally divided by 10 to take account of the heterogeneity of the response between laboratory animals and humans, and then again divided by 10 as a uncertainty factor to take account of the heterogeneity of response within human population (children, elderly people,…).

Results shown allow us to think that chronic intakes are rather low compared to the ADI. In other words, intakes for the majority of the 25 residues analyzed in this project are 100 times lower than their ADI.

Public health in Belgium, based on the residue campaign of 2005 led by the FASFC, can be considered not at risk in terms of pesticide intakes. However, some residue should retain our attention. For a high consumer (P 97,5) the intake can reach 19% of the ADI for imazalil, 15% for chlorpropham, 14% for dithiocarbamates and 10% for lambda-cyhalothrin according to a scenario where the residue concentration of non-detected samples is equal to half the LOQ of the method used. The lower the value of the LOQ of a method used, the greater the accuracy.

It was clearly shown that observing the situation of pesticide residue exposure through the scope of detection frequency and MRLs exceedings is lacking information in terms of food safety. Indeed, consumer risk assessment linked with pesticide residues cannot rely only on MRLs exceedings. The approach followed in this project is useful to assess risk of the consumer on the basis of real exposure data. This is proving that MRLs exceedings are giving hints on residues and commodities to prospect but cannot be solely considered when dealing about food safety.

4.3 Probabilistic approach

This part of the project has been achieved in tight collaboration with the FASFC where exposure estimations were carried out with the software @RISK. With data coming from individual consumption and concentration database, the software accomplishes calculations according to the Monte-Carlo simulation. Compared with the deterministic approach, the software applies calculations on individual data and not anymore on average values.

4.3.1 Residues and Commodities chosen

The case study chosen used the same data of residue concentration and food consumption than for the deterministic approach. Individual residue concentration data were given by residue surveillance campaign on fresh fruits and vegetables led in 2005 by the FASFC, while individual consumption data were gathered by the IPH in 2004.

4.3.1.1 Residue data

In order to compare calculated intakes obtained by the software with those obtained through the deterministic approach, 4 residues were selected : chlorpropham, dithiocarbamates, iprodione and lambda-cyhalothrin.

These 4 residues are pointing out different profiles within the 25 residues chosen in the deterministic approaches. Chlorpropham is authorized for a small number of crops while samples exceeding MRLs stand for 6 % of the total samples were chlorpropham was sought. Opposite to this case is dithiocarbamates authorized for a large number of crops and 17,6% of the samples tested exceeded MRLS. Iprodione and lambda-cyhalothrin are intermediate of these two cases.

4.3.1.2 Consumption data

Individual consumption data used are those from the IPH databank. By dividing raw consumption values for each consumer by its weight, values for consumption are expressed in kg commodity kg^{-1}BW day^{-1}. Commodity aggregations as mentioned for the deterministic approach were used in this exposure estimation too.

4.3.2 Calculations

For the probabilistic approach, individual values were coupled randomly and multiplied by the software @RISK (Figure 10) using the Monte-Carlo simulation. Proceeding by iteration, several pairs individual residue concentration/individual commodity consumption were chosen and for each of them the intake were calculated. For a combination residue Y/commodity Z, a distribution of the exposure was then obtained. The total exposure of a given residue was calculated by summing every distribution where the residue Y was coupled with a commodity for which its use is authorized. This sum of distributions gave one distribution from which could be extracted the average exposure as well as exposure percentiles. Thus, in the case of the probabilistic approach, percentiles are not related to consumption percentiles as in the deterministic approach but to the exposure. This intake distribution is the source of the results presented further.

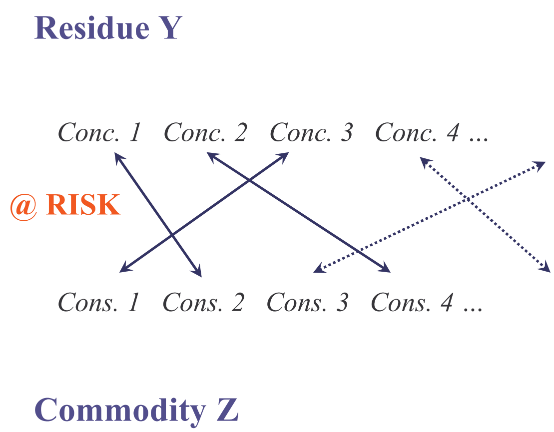

Figure 10 : Calculation of the exposure using individual residue concentrations and commodities consumption in the probabilistic approach.

4.3.3 Results and Discussion

Chlorpropham exposure stands for 4,5% of ADI according to an average consumption and a scenario middle-bound for non-detected residue samples (Table 9). Then comes dithiocarbamates (1,78% of ADI), lambda-cyhalothrin (1,01% of ADI) and eventually iprodione (0,36% of ADI). These exposure estimations are still low compare with the ADI.

High percentiles of the exposure distribution obtained by the probabilistic approach seem to confirm that the exposure is lower than the ADI for most consumers. However, chlorpropham P99.99 exposure is higher than the ADI for the three scenarios. Chlorpropham exposure value for the P99 indicates that at least 99% of Belgian adult consumers seem not at risk. High consumption and high residue concentrations are indeed factors that contribute to enhance exposure

Ratios P50/P99,9 shown in Table 9 give an idea on the type of distribution the exposure follows. In fact, high ratios tend to indicate that extreme values of residue concentration or commodity consumption can influence results. This consideration can be taken into account with more attention in future exposure estimations since it is an important issue for food safety and public health. Further analysis were not perform here due to the short term of the contract.

Table 9 : Results of the probabilistic approach : Average exposure as well as exposure percentiles expressed in % of ADI

Chlorpropham

	Average	P50	P95	P99	P99,9
0	4,2	0,0	17,3	55,9	175,4
LOQ/2	4,5	0,3	20,0	70,1	236,0
LOQ	4,2	0,4	19,0	63,8	175,1

Ratio P99,9/P50 (LOQ/2): 870,2

Iprodione

	Average	P50	P95	P99	P99,9
0	0,2	0,0	0,7	3,8	15,1
LOQ/2	0,4	0,2	1,0	4,2	14,9
LOQ	0,6	0,3	1,5	4,6	14,5

Ratio P99,9/P50 (LOQ/2): 83,9

Ditihiocarbamates

	Average	P50	P95	P99	P99,9
0	0,2	0,0	1,3	3,6	40,0
LOQ/2	1,8	1,5	4,5	6,8	23,6
LOQ	3,4	2,9	8,2	11,5	31,2

Ratio P99,9/P50 (LOQ/2): 15,2

Lambda-cyhalothrin

	Average	P50	P95	P99	P99,9
0	0,0	0,0	0,0	0,3	1,9
LOQ/2	1,0	0,5	3,5	5,6	8,8
LOQ	2,0	1,1	7,0	10,8	16,8

Ratio P99,9/P50 (LOQ/2): 16,1

4.3.4 Conclusion and discussion

The highest exposure value obtained is for chlorpropham in a middle-bound scenario. One can observed that this value is higher than the one of the scenario upper-bound from the same residue. This is reflecting the fact that combinations residue concentration/commodity consumed are made randomly. If high concentration or consumption values are chosen by the software iterations, the value of exposure is rising no matter other values for residue concentration or consumption.

Exposure percentiles of the distribution obtained reached 20% of the ADI for the middle-bound scenario for exposure, whereas for other residue the worst exposure stood for 8% of the ADI.

4.4 Comparison between the two approaches

Comparison between the deterministic and probabilistic approach is showed in Table 10. Although it is difficult to establish a reliable comparison between the two approaches, the following table gives a rough idea of the homogeneity of the results obtained. Indeed, it has to be noted that average intake for the probabilistic approach is really based on average exposure (obtained through a distribution), whereas what is named average exposure for the deterministic approach is in fact the exposure calculated by using average consumption data and average residue concentrations.

For the 4 residues analysed, most of exposure values obtained through the probabilistic approach were similar than those obtained by the deterministic approach. Nevertheless, straight comparison has to be considered with care since this exercise was the first trial for exposure estimation by the probabilistic approach.

Table 10 : Comparison between the two approaches (exposure expressed in % of ADI)

Chlorpropham		Intake (% of ADI)
0	Deterministic*	4,30
	Probabilistic	4,21
LOQ/2	Deterministic*	4,35
	Probabilistic	4,55
LOQ	Deterministic*	4,40
	Probabilistic	4,16

Iprodione		Intake (% of ADI)
0	Deterministic*	0,19
	Probabilistic	0,17
LOQ/2	Deterministic*	0,38
	Probabilistic	0,36
LOQ	Deterministic*	0,57
	Probabilistic	0,56

Dithiocarbamates		Intake (% of ADI)
0	Deterministic*	0,26
	Probabilistic	0,25
LOQ/2	Deterministic*	1,84
	Probabilistic	1,84
LOQ	Deterministic*	3,42
	Probabilistic	3,41

Lambda-cyhalothrin		Intake (% of ADI)
0	Deterministic*	0,01
	Probabilistic	0,01
LOQ/2	Deterministic*	1,03
	Probabilistic	1,01
LOQ	Deterministic*	2,05
	Probabilistic	2,01

**according to an average consumption*

4.5 Possible improvements

4.5.1 Processing factors

Consumers rarely consume raw fruits and vegetables. Indeed, actions such as peeling, boiling, cooking often occur during the consumption process. It has been widely proved that these actions tend to decrease residue concentration in foodstuffs (Timme et al., 2004). Thus, by ignoring these processing factors, results overestimate real residue concentration and therefore the exposure. In the future, integrating these processing factors in calculations could be an asset in order to gain accuracy.

4.5.2 LOQ

Estimation of residue concentration of a non-detected residue sample is certainly not easy. Concentration value is somewhere between 0 and LOQ's method. By choosing different bounds (0, LOQ/2, LOQ), concentration is determined arbitrarily and therefore does not reflect truthfully real concentration. But with national pesticide selling figures and results from pesticide applications studies, it is possible to tackle this issue more precisely. Crops from which applications of a given residue are frequent have a higher probability of residue presence than crops for which this pesticide is not often applied. These assumptions could be taken into account to fix a concentration value in the non-detected residue samples.

4.5.3 Targeted residue controls

The present study did not target other foodstuffs than fresh fruits and vegetables. It is therefore an underestimation of the total exposure but nonetheless it is covering all the most consumed commodities in Belgium.

Another parameter to enlighten is the commodity sampling achieved by the FASFC. For sure residue campaign elaboration takes account of many parameters regarding food safety and legislation, but it has to be sure that commodities tested are targeted also according to foodstuffs consumed.

5 Conclusions and Perspectives

Food safety for consumer regarding chronic exposure to pesticide residue seems to be under control in Belgium for the year 2005 as far as fresh fruits and vegetables are concerned. As residue campaigns gave similar results for 2003 and 2004, it can be alleged that food safety was assured for those years too. Indeed, consumer exposure to the 25 most frequently found residues in 2005 by the FASFC were relatively low, never exceeding 4,5% of the ADI (according to an average consumption and a non-detected sample residue concentration of LOQ/2). But for a high foodstuff consumption (P97,5), the deterministic approach pointed out that exposure can reach 19% for imazalil. These results on average exposure are confirmed by the probabilistic approach, whose results show a similar exposure.

Procedure followed to estimate the exposure can be repeated for other years with tools developed during the project. Toxicological and legal data can be upgraded. Indeed, in the context of FASFC missions, these exposure estimations contribute to keep watch over food safety. It is one task to control non-respects of the legislation (exceedings of MRLs), but it is another to remain vigilant of the food safety for consumers (exposure). Chapter four of this report shows clearly that MRL values are not always useful clues to guarantee food safety. It is proposed that such an assessment of chronic exposure to pesticide residue should be performed using the same methodology year after year in order to be able to identify some trends. More particularly, the tool could be used as an indicator of consumers risk (possible integration in PRIBEL indicator).

The way exposure is currently calculated is a worst-case compared to real exposure. Yet some parameters can be added in the method. Processing factors, results from pesticide applications could be integrated in calculations to deliver a more reliable exposure.

As a first try for the probabilistic approach in the context of residue exposure, results obtained were close from those obtained through de deterministic approach. As many parameters have to be set out, the blossoming expertise of the software @Risk will surely contribute to a better handling of the data. Other software can also be tested in order to compare results obtained.

Following actions are recommended :

- Performance of exposure calculations every year to guarantee of food safety for the consumers
- Implementation of research focusing on commodity factors, pesticide application studies
- Update of toxicological data or legal authorizations in the procedure if changes occur

6 References

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7 Annexes

7.1 Acronyms

ADI	Acceptable Daily Intake
FASFC	Federal Agency for the Security of the Food Chain (AFSCA-FAVV)
IPH	Scientific Institute for Public Health (ISP-WIV)
LOQ	Limit Of Quantification
MRL	Maximum Residue Limit
RASFF	Rapid Alert System for Food and Feed

7.2 List of aggregated commodities

Food Item A	FoodCode A	Food Item IPH	FoodCode IPH
Celeries	11	celery white	122
		celery green	123
Cherries	14	cherry	193
		cherry sour	194
Cabbages	17	cabbage, chinese	90
		cabbage, savoy	91
		cabbage, red	92
		cabbage, sauerkraut	93
		cabbage, white	94
		brussel sprout	96
Cress	22	watercress	30
		garden cress	31
Currants	31	blackcurrant	187
		redcurrant	189
Beans	32	bean, French	61
		bean, runner	59
Lemons	20	lemon	156
		lime	159
Lettuces and salads	36	lettuce "kroop"	17
		lettuce iceberg	20
		green salad, with redish leaves	22
		lollo bioda	25
		lollo rossa	26
Peas	53	pod, mange-tout	58
		pea, fresh	110
Peppers	54	pepper sweet n.s.	64
		pepper sweet, green	65
		pepper sweet, red	66
		pepper sweet, yellow	67
Potatoes	56	potato	2
		french fries	4
		potato croquette	5
Tomatoes	62	tomato	68
		tomato cherry	69
		tomato purree	70

7.3 List of authorized applications

Synthesis of legislation as it is mentionned in fytoweb.be (http://www.fytoweb.fgov.be) and as described (food groups) in European Legislation (Annex 1) (http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_029/l_02920060202en00030025.pdf)

Authorized applications

Residue	Food Code A	Food Item A
Azoxystrobin	7	Bananas
Azoxystrobin	10	Carrots
Azoxystrobin	11	Celeries
Azoxystrobin	12	Celeriac
Azoxystrobin	16	Cos
Azoxystrobin	17	Cabbages
Azoxystrobin	20	Lemons
Azoxystrobin	21	Cucumbers
Azoxystrobin	22	Cress
Azoxystrobin	23	Endives
Azoxystrobin	28	Strawberries
Azoxystrobin	29	Raspberries
Azoxystrobin	32	Beans
Azoxystrobin	36	Lettuces and Salads
Azoxystrobin	38	Mandarine orange
Azoxystrobin	39	Mango
Azoxystrobin	42	Onions
Azoxystrobin	43	Oranges
Azoxystrobin	44	Grapefruits
Azoxystrobin	45	parsnip
Azoxystrobin	46	Watermelon
Azoxystrobin	49	Hot peppers
Azoxystrobin	51	Leek
Azoxystrobin	53	Peas
Azoxystrobin	54	Peppers
Azoxystrobin	57	Radishes
Azoxystrobin	58	Grapes
Azoxystrobin	60	Lettuce lamb
Azoxystrobin	62	Tomatoes
Benomyl group	1	Apricots
Benomyl group	14	Cherries
Benomyl group	17	Cabbages
Benomyl group	32	Beans
Benomyl group	41	Nectarines
Benomyl group	47	Peaches
Benomyl group	52	Pears
Benomyl group	53	Peas
Benomyl group	55	Apples
Benomyl group	58	Grapes
Benomyl group	62	Tomatoes
Boscalid	9	Broccolis

Synthesis of legislation as it is mentionned in fytoweb.be (http://www.fytoweb.fgov.be) and as described (food groups) in European Legislation (Annex 1) (http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_029/l_02920060202en00030025.pdf)

Authorized applications

Residue	Food Code A	Food Item A
Imazalil	7	Bananas
Imazalil	20	Lemons
Imazalil	21	Cucumbers
Imazalil	38	Mandarine orange
Imazalil	43	Oranges
Imazalil	44	Grapefruits
Imazalil	52	Pears
Imazalil	55	Apples
Imazalil	56	Potatoes
Imazalil	62	Tomatoes
Imidacloprid	17	Cabbages
Imidacloprid	31	Currants
Imidacloprid	55	Apples
Iprodione	1	Apricots
Iprodione	7	Bananas
Iprodione	10	Carrots
Iprodione	14	Cherries
Iprodione	16	Cos
Iprodione	17	Cabbages
Iprodione	20	Lemons
Iprodione	21	Cucumbers
Iprodione	22	Cress
Iprodione	22	Cress
Iprodione	23	Endives
Iprodione	28	Strawberries
Iprodione	31	Currants
Iprodione	32	Beans
Iprodione	33	Kiwis
Iprodione	36	Lettuces and Salads
Iprodione	38	Mandarine orange
Iprodione	42	Onions
Iprodione	45	parsnip
Iprodione	47	Peaches
Iprodione	49	Hot peppers
Iprodione	52	Pears
Iprodione	53	Peas
Iprodione	54	Peppers
Iprodione	55	Apples
Iprodione	57	Radishes
Iprodione	58	Grapes
Iprodione	59	Rhubarb

Boscalid	10	Carrots
Boscalid	17	Cabbages
Boscalid	18	Cauliflowers
Boscalid	28	Strawberries
Boscalid	36	Lettuces and Salads
Boscalid	45	parsnip
Boscalid	51	Leek
Boscalid	52	Pears
Boscalid	55	Apples
Boscalid	60	Lettuce lamb
Bromide (inorganic)	5	Sprinkles
Bromide (inorganic)	9	Broccolis
Bromide (inorganic)	10	Carrots
Bromide (inorganic)	11	Celeries
Bromide (inorganic)	12	Celeriac
Bromide (inorganic)	15	Mushrooms
Bromide (inorganic)	16	Cos
Bromide (inorganic)	17	Cabbages
Bromide (inorganic)	18	Cauliflowers
Bromide (inorganic)	21	Cucumbers
Bromide (inorganic)	22	Cress
Bromide (inorganic)	23	Endives
Bromide (inorganic)	24	Spinach
Bromide (inorganic)	28	Strawberries
Bromide (inorganic)	32	Beans
Bromide (inorganic)	36	Lettuces and Salads
Bromide (inorganic)	42	Onions
Bromide (inorganic)	45	parsnip
Bromide (inorganic)	46	Watermelon
Bromide (inorganic)	49	Hot peppers
Bromide (inorganic)	51	Leek
Bromide (inorganic)	53	Peas
Bromide (inorganic)	54	Peppers
Bromide (inorganic)	56	Potatoes
Bromide (inorganic)	57	Radishes
Bromide (inorganic)	59	Rhubarb
Bromide (inorganic)	60	Lettuce lamb
Bromide (inorganic)	62	Tomatoes
Carbendazim	1	Apricots
Carbendazim	14	Cherries
Carbendazim	17	Cabbages
Carbendazim	32	Beans
Carbendazim	41	Nectarines
Carbendazim	47	Peaches
Carbendazim	52	Pears
Carbendazim	53	Peas
Carbendazim	55	Apples
Carbendazim	58	Grapes
Carbendazim	62	Tomatoes
Chlormequat	15	Mushrooms
Chlormequat	52	Pears
Chlorpropham	10	Carrots
Chlorpropham	45	parsnip
Chlorpropham	56	Potatoes

Iprodione	60	Lettuce lamb
Iprodione	62	Tomatoes
Lambda-cyhalothrin	1	Apricots
Lambda-cyhalothrin	11	Celeries
Lambda-cyhalothrin	12	Celeriac
Lambda-cyhalothrin	14	Cherries
Lambda-cyhalothrin	15	Mushrooms
Lambda-cyhalothrin	17	Cabbages
Lambda-cyhalothrin	20	Lemons
Lambda-cyhalothrin	21	Cucumbers
Lambda-cyhalothrin	22	Cress
Lambda-cyhalothrin	24	Spinach
Lambda-cyhalothrin	28	Strawberries
Lambda-cyhalothrin	31	Currants
Lambda-cyhalothrin	32	Beans
Lambda-cyhalothrin	36	Lettuces and Salads
Lambda-cyhalothrin	38	Mandarine orange
Lambda-cyhalothrin	41	Nectarines
Lambda-cyhalothrin	43	Oranges
Lambda-cyhalothrin	44	Grapefruits
Lambda-cyhalothrin	46	Watermelon
Lambda-cyhalothrin	47	Peaches
Lambda-cyhalothrin	51	Leek
Lambda-cyhalothrin	52	Pears
Lambda-cyhalothrin	53	Peas
Lambda-cyhalothrin	54	Peppers
Lambda-cyhalothrin	55	Apples
Lambda-cyhalothrin	57	Radishes
Lambda-cyhalothrin	58	Grapes
Lambda-cyhalothrin	60	Lettuce lamb
Lambda-cyhalothrin	62	Tomatoes
Linuron	10	Carrots
Linuron	11	Celeries
Linuron	12	Celeriac
Linuron	32	Beans
Linuron	45	parsnip
Linuron	53	Peas
Methomyl	1	Apricots
Methomyl	9	Broccolis
Methomyl	14	Cherries
Methomyl	20	Lemons
Methomyl	24	Spinach
Methomyl	36	Lettuces and Salads
Methomyl	38	Mandarine orange
Methomyl	41	Nectarines
Methomyl	43	Oranges
Methomyl	44	Grapefruits
Methomyl	47	Peaches
Methomyl	52	Pears
Methomyl	54	Peppers
Methomyl	55	Apples
Methomyl	57	Radishes
Methomyl	60	Lettuce lamb
Methomyl	62	Tomatoes

Chlorpyriphos	7	Bananas
Chlorpyriphos	10	Carrots
Chlorpyriphos	14	Cherries
Chlorpyriphos	17	Cabbages
Chlorpyriphos	20	Lemons
Chlorpyriphos	28	Strawberries
Chlorpyriphos	29	Raspberries
Chlorpyriphos	31	Currants
Chlorpyriphos	33	Kiwis
Chlorpyriphos	38	Mandarine orange
Chlorpyriphos	41	Nectarines
Chlorpyriphos	42	Onions
Chlorpyriphos	43	Oranges
Chlorpyriphos	44	Grapefruits
Chlorpyriphos	47	Peaches
Chlorpyriphos	49	Hot peppers
Chlorpyriphos	52	Pears
Chlorpyriphos	54	Peppers
Chlorpyriphos	55	Apples
Chlorpyriphos	57	Radishes
Chlorpyriphos	58	Grapes
Chlorpyriphos	62	Tomatoes
Chlorpyriphos-ethyl	7	Bananas
Chlorpyriphos-ethyl	10	Carrots
Chlorpyriphos-ethyl	14	Cherries
Chlorpyriphos-ethyl	17	Cabbages
Chlorpyriphos-ethyl	20	Lemons
Chlorpyriphos-ethyl	28	Strawberries
Chlorpyriphos-ethyl	29	Raspberries
Chlorpyriphos-ethyl	31	Currants
Chlorpyriphos-ethyl	33	Kiwis
Chlorpyriphos-ethyl	38	Mandarine orange
Chlorpyriphos-ethyl	41	Nectarines
Chlorpyriphos-ethyl	42	Onions
Chlorpyriphos-ethyl	43	Oranges
Chlorpyriphos-ethyl	44	Grapefruits
Chlorpyriphos-ethyl	47	Peaches
Chlorpyriphos-ethyl	49	Hot peppers
Chlorpyriphos-ethyl	52	Pears
Chlorpyriphos-ethyl	54	Peppers
Chlorpyriphos-ethyl	55	Apples
Chlorpyriphos-ethyl	57	Radishes
Chlorpyriphos-ethyl	58	Grapes
Chlorpyriphos-ethyl	62	Tomatoes
Cyprodinil	14	Cherries
Cyprodinil	28	Strawberries
Cyprodinil	29	Raspberries
Cyprodinil	31	Currants
Cyprodinil	32	Beans
Cyprodinil	36	Lettuces and Salads
Cyprodinil	53	Peas
Cyprodinil	58	Grapes
Cyprodinil	60	Lettuce lamb
Dimethoate	14	Cherries

Oxamyl	7	Bananas
Oxamyl	21	Cucumbers
Oxamyl	22	Cress
Oxamyl	32	Beans
Oxamyl	36	Lettuces and Salads
Oxamyl	46	Watermelon
Oxamyl	49	Hot peppers
Oxamyl	54	Peppers
Oxamyl	60	Lettuce lamb
Oxamyl	62	Tomatoes
Pirimicarb	10	Carrots
Pirimicarb	11	Celeries
Pirimicarb	12	Celeriac
Pirimicarb	14	Cherries
Pirimicarb	16	Cos
Pirimicarb	17	Cabbages
Pirimicarb	21	Cucumbers
Pirimicarb	22	Cress
Pirimicarb	23	Endives
Pirimicarb	24	Spinach
Pirimicarb	28	Strawberries
Pirimicarb	29	Raspberries
Pirimicarb	31	Currants
Pirimicarb	32	Beans
Pirimicarb	36	Lettuces and Salads
Pirimicarb	41	Nectarines
Pirimicarb	47	Peaches
Pirimicarb	52	Pears
Pirimicarb	53	Peas
Pirimicarb	54	Peppers
Pirimicarb	55	Apples
Pirimicarb	57	Radishes
Pirimicarb	60	Lettuce lamb
Pirimicarb	62	Tomatoes
Prochloraz	3	Ananas
Prochloraz	6	Avocados
Prochloraz	15	Mushrooms
Prochloraz	20	Lemons
Prochloraz	22	Cress
Prochloraz	36	Lettuces and Salads
Prochloraz	38	Mandarine orange
Prochloraz	39	Mango
Prochloraz	43	Oranges
Prochloraz	44	Grapefruits
Prochloraz	60	Lettuce lamb
Procymidone	1	Apricots
Procymidone	16	Cos
Procymidone	21	Cucumbers
Procymidone	22	Cress
Procymidone	23	Endives
Procymidone	28	Strawberries
Procymidone	29	Raspberries
Procymidone	32	Beans
Procymidone	33	Kiwis

Dimethoate	17	Cabbages
Dimethoate	18	Cauliflowers
Dimethoate	36	Lettuces and Salads
Dimethoate	42	Onions
Dimethoate	53	Peas
Dithiocarbamates	1	Apricots
Dithiocarbamates	10	Carrots
Dithiocarbamates	11	Celeries
Dithiocarbamates	12	Celeriac
Dithiocarbamates	14	Cherries
Dithiocarbamates	16	Cos
Dithiocarbamates	17	Cabbages
Dithiocarbamates	20	Lemons
Dithiocarbamates	21	Cucumbers
Dithiocarbamates	22	Cress
Dithiocarbamates	23	Endives
Dithiocarbamates	28	Strawberries
Dithiocarbamates	31	Currants
Dithiocarbamates	32	Beans
Dithiocarbamates	36	Lettuces and Salads
Dithiocarbamates	38	Mandarine orange
Dithiocarbamates	41	Nectarines
Dithiocarbamates	42	Onions
Dithiocarbamates	43	Oranges
Dithiocarbamates	44	Grapefruits
Dithiocarbamates	46	Watermelon
Dithiocarbamates	47	Peaches
Dithiocarbamates	51	Leek
Dithiocarbamates	52	Pears
Dithiocarbamates	53	Peas
Dithiocarbamates	54	Peppers
Dithiocarbamates	55	Apples
Dithiocarbamates	56	Potatoes
Dithiocarbamates	57	Radishes
Dithiocarbamates	58	Grapes
Dithiocarbamates	60	Lettuce lamb
Dithiocarbamates	62	Tomatoes
Ethephon	3	Ananas
Ethephon	14	Cherries
Ethephon	31	Currants
Ethephon	52	Pears
Ethephon	54	Peppers
Ethephon	55	Apples
Ethephon	62	Tomatoes
Fosethyl	16	Cos
Fosethyl	20	Lemons
Fosethyl	23	Endives
Fosethyl	28	Strawberries
Fosethyl	38	Mandarine orange
Fosethyl	43	Oranges
Fosethyl	44	Grapefruits
Fosethyl	52	Pears
Fosethyl	58	Grapes

Procymidone	36	Lettuces and Salads
Procymidone	41	Nectarines
Procymidone	42	Onions
Procymidone	46	Watermelon
Procymidone	47	Peaches
Procymidone	49	Hot peppers
Procymidone	52	Pears
Procymidone	53	Peas
Procymidone	54	Peppers
Procymidone	58	Grapes
Procymidone	60	Lettuce lamb
Procymidone	62	Tomatoes
Propamocarb	16	Cos
Propamocarb	17	Cabbages
Propamocarb	18	Cauliflowers
Propamocarb	21	Cucumbers
Propamocarb	22	Cress
Propamocarb	23	Endives
Propamocarb	36	Lettuces and Salads
Propamocarb	46	Watermelon
Propamocarb	54	Peppers
Propamocarb	60	Lettuce lamb
Propamocarb	62	Tomatoes
Tebuconazole	10	Carrots
Tebuconazole	14	Cherries
Tebuconazole	17	Cabbages
Tebuconazole	45	parsnip
Tebuconazole	51	Leek
Thiabendazole	6	Avocados
Thiabendazole	7	Bananas
Thiabendazole	9	Broccolis
Thiabendazole	15	Mushrooms
Thiabendazole	20	Lemons
Thiabendazole	38	Mandarine orange
Thiabendazole	39	Mango
Thiabendazole	43	Oranges
Thiabendazole	44	Grapefruits
Thiabendazole	52	Pears
Thiabendazole	55	Apples
Thiabendazole	56	Potatoes
Tolclophos-methyl	17	Cabbages
Tolclophos-methyl	22	Cress
Tolclophos-methyl	36	Lettuces and Salads
Tolclophos-methyl	57	Radishes
Tolclophos-methyl	60	Lettuce lamb
Tolylfluanid	21	Cucumbers
Tolylfluanid	28	Strawberries
Tolylfluanid	29	Raspberries
Tolylfluanid	31	Currants
Tolylfluanid	36	Lettuces and Salads
Tolylfluanid	49	Hot peppers
Tolylfluanid	52	Pears
Tolylfluanid	54	Peppers
Tolylfluanid	55	Apples

Tolylfluanid	60	Lettuce lamb
Tolylfluanid	62	Tomatoes

7.4 List of non authorized detections

Residue	Residue Code	Food Item A	Food Code A	Residue concentration (mg residue kg^{-1} commodity)	Tolerance level (MRL)
carbendazim	27	Céleris	11	0,5	2
carbendazim	27	Champignons frais	15	0,06	1
carbendazim	27	Citrons	20	0,01	5
carbendazim	27	Citrons	20	0,02	5
carbendazim	27	Citrons	20	0,03	5
carbendazim	27	Citrons	20	0,04	5
carbendazim	27	Citrons	20	0,04	5
carbendazim	27	Citrons	20	0,04	5
carbendazim	27	Citrons	20	0,08	5
carbendazim	27	Citrons	20	0,09	5
carbendazim	27	Citrons	20	0,13	5
carbendazim	27	Citrons	20	0,17	5
carbendazim	27	Citrons	20	0,44	5
carbendazim	27	Groseilles (Toutes)	31	0,5	0,1
carbendazim	27	Groseilles (Toutes)	31	1,5	0,1
carbendazim	27	Laitues	36	0,01	5
carbendazim	27	Laitues	36	0,04	5
carbendazim	27	Laitues	36	0,06	5
carbendazim	27	Laitues	36	0,1	5
carbendazim	27	Laitues	36	0,4	5
carbendazim	27	Mandarine	38	0,03	5
carbendazim	27	Mandarine	38	0,11	5
carbendazim	27	Orange	43	0,02	5
carbendazim	27	Orange	43	0,05	5
carbendazim	27	Orange	43	0,12	5
carbendazim	27	Salade de blé	60	0,03	0,1
chloorprofam*	34	Céleris	11	0,01	0,05
chlorpyriphos-ethyl	35	Broccoli	9	0,03	0,05
chloorpyrifos-ethyl*	35	Panais	45	0,01	0,05
cyprodinil	47	Nectarine	41	0,04	0,02
cyprodinil	47	Nectarine	41	0,18	0,02
cyprodinil	47	Pêches	47	0,04	0,02
cyprodinil	47	Poires	52	0,01	0,02
dimethoaat zie code SDO	68	Orange	43	0,19	0,02
som dimethoaat + omethoaat	69	Abricots	1	0,02	0,02
som dimethoaat + omethoaat	69	Céleris	11	0,01	0,02
som dimethoaat + omethoaat	69	Céleris	11	0,03	0,02
som dimethoaat + omethoaat	69	Céleris	11	0,05	0,02
som dimethoaat + omethoaat	69	Endives	23	0,04	0,02
som dimethoaat + omethoaat	69	Epinards	24	0,01	0,02
som dimethoaat + omethoaat	69	Fruits de la passion	30	0,19	0,02
som dimethoaat + omethoaat	69	Pommes	55	0,03	0,02
imazalil	120	Avocats	6	0,01	
imazalil	120	Laitues	36	0,028	0,02
imazalil	120	Lychees	37	0,01	0,02

imazalil	120	Lychees	37	0,01		0,02
imazalil	120	Pêches	47	0,01		0,02
iprodion	123	Epinards	24	1,8		0,02
iprodion	123	Framboises	29	0,5		5
iprodion	123	Nectarine	41	1		5
iprodion	123	Nectarine	41	2,3		5
iprodione	123	Nectarine	41	0,5		
iprodion	123	Poireaux	51	0,02		0,02
lambda-cyhalothrin	127	Endives	23	0,04		1
linuron	129	Choux (Tous)	17	0,01		0,05
linuron	129	Poireaux	51	0,04		0,05
dithiocarbamaten	132	Broccoli	9	0,098		1
dithiocarbamaten	132	Broccoli	9	0,222		1
dithiocarbamaten	132	Broccoli	9	0,222		1
dithiocarbamaten	132	Choux-fleurs	18	0,055		1
dithiocarbamaten	132	Choux-fleurs	18	0,29		1
dithiocarbamaten	132	Choux-fleurs	18	0,3		1
dithiocarbamaten	132	Choux-fleurs	18	0,6		1
dithiocarbamaten	132	Fruits de la passion	30	0,3		0,05
dithiocarbamaten	132	Fruits de la passion	30	0,3		0,05
dithiocarbamates	132	Fruits de la passion	30	0,3		0,05
methomyl*	144	Fruits de la passion	30	0,03		0,05
methomyl*	144	Piments forts	49	0,14		0,05
methomyl*	144	Raisins de table	58	0,23		0,05
procymidone	179	Epinards	24	0,01		0,02
procymidone	179	Radis	57	0,08		0,02
propamocarb	183	Céleris	11	1,9		0,1
tebuconazool	204	Céleris	11	0,01		0,05
tebuconazole	204	Pêches	47	0,06		
tebuconazool	204	Pêches	47	0,07		0,05
tebuconazool	204	Pêches	47	0,07		0,05
tebuconazool	204	Pêches	47	0,14		0,05
tolclofos-methyl	222	Céleris	11	0,02		0,01
tolclofos-methyl	222	Céleris	11	0,16		0,01
tolclofos-methyl	222	Céleris	11	0,17		0,01
tolclofos-methyl	222	Choux-fleurs	18	0,03		0,01
tolylfluanide*	223	Cerises	14	0,09		0,05
tolylfluanid	223	Raisins de table	58	0,18	0*	
tolylfluanid	223	Raisins de table	58	0,31	0*	

7.5 Individual Residue Datasheets

Azoxystrobin

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	azoxystrobin
ADI (mgresidue/kgBW/day)	0,1

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	**P25**	**P75**	**P97,5**	**P99**
0	0,00	0,00	0,00	0,04	0,08
LOQ/2	0,11	0,00	0,02	1,30	2,12
LOQ	0,22	0,00	0,05	2,55	4,17

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Tomatoes	1,8E-05
Cos	1,6E-05
Carrots	1,3E-05
Oranges	1,2E-05
Onions	7,8E-06
Strawberries	7,5E-06
Lettuces and Salads	5,0E-06
Peas	4,8E-06
Bananas	4,6E-06
Grapes	4,5E-06
Beans	4,2E-06
Mandarine orange	3,5E-06
Leek	3,1E-06
Cabbages	3,0E-06
Cucumbers	1,2E-06
Peppers	1,2E-06
Watermelon	1,0E-06
Endives	8,0E-07
Celeries	7,4E-07
Celeriac	3,5E-07
Grapefruits	3,5E-07
Lemons	2,7E-07
Radishes	1,7E-07
Raspberries	1,7E-07
Mango	1,6E-07
Lettuce lamb	1,3E-07
Parsnip	4,5E-08
Cress	2,3E-08
Hot peppers	7,4E-09

** Intake for average consumption and non detection scenario LOQ/2*

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
None		

Benomyl group

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	carbendazim
ADI (mgresidue/kgBW/day)	0,02

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	P25	P75	P97,5	P99
0	0,22	0,00	0,27	1,92	2,63
LOQ/2	0,29	0,00	0,34	2,56	3,71
LOQ	0,36	0,00	0,41	3,20	4,79

Pesticide authorized	
Commodities with/*without* detection	**Intake*** (mgresidue/kgBW/day)
Apples	3,3E-05
Pears	1,3E-05
Grapes	4,7E-06
Tomatoes	4,7E-06
Apricots	2,0E-06
Beans	1,2E-06
Nectarines	9,7E-07
Peas	7,5E-07
Peaches	6,4E-07
Cabbages	4,8E-07
Cherries	4,0E-07

** Intake for average consumption and non detection scenario LOQ/2*

Pesticide non authorized		
Commodities with detection	**Residue concentration** (mgresidue / kgcommodity)	**MRL** (mgresidue / kgcommodity)
Celeries	0,5	2
Mushrooms	0,06	1
Lemons	0,01	5
Lemons	0,02	5
Lemons	0,03	5
Lemons	0,04	5
Lemons	0,04	5
Lemons	0,04	5
Lemons	0,08	5
Lemons	0,09	5
Lemons	0,13	5
Lemons	0,17	5
Lemons	0,44	5
Currants	0,5	0,1
Currants	1,5	0,1
Lettuces and Salads	0,01	5
Lettuces and Salads	0,04	5
Lettuces and Salads	0,06	5
Lettuces and Salads	0,1	5
Lettuces and Salads	0,4	5
Mandarine orange	0,03	5
Mandarine orange	0,11	5
Oranges	0,02	5
Oranges	0,05	5
Oranges	0,12	5
Lettuce lamb	0,03	0,1

Boscalid

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	boscalid
ADI (mgresidue/kgBW/day)	0,04

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles: Average	P25	P75	P97,5	P99
0	0,11	0,00	0,03	1,45	3,06
LOQ/2	0,13	0,00	0,05	1,60	3,31
LOQ	0,14	0,00	0,06	1,75	3,55

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Strawberries	3,2E-05
Apples	9,9E-06
Lettuces and Salads	4,3E-06
Leek	1,3E-06
Carrots	8,9E-07
Pears	8,1E-07
Cabbages	4,8E-07
Endives	3,8E-07
Broccolis	2,1E-07
Lettuce lamb	1,7E-08
Parsnip	1,7E-09

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
None		

** Intake for average consumption and non detection scenario LOQ/2*

Bromide

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Bromide
ADI (mgresidue/kgBW/day)	1

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles: Average	P25	P75	P97,5	P99
0	0,13	0,00	0,12	0,95	1,66
LOQ/2	0,34	0,00	0,27	2,97	4,70
LOQ	0,55	0,00	0,43	5,00	7,75

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Tomatoes	2,0E-03
Cos	4,5E-04
Lettuces and Salads	3,4E-04
Spinach	1,8E-04
Celeries	1,5E-04
Peppers	1,4E-04
Cucumbers	1,1E-04
Endives	4,3E-05
Lettuce lamb	1,9E-05
Radishes	6,3E-06
Cress	1,8E-06
Hot peppers	1,1E-06

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
None		

** Intake for average consumption and non detection scenario LOQ/2*

Chlormequat

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Chlormequat
ADI (mgresidue/kgBW/day)	0,05

	Intakes (% of ADI) according to consumption percentiles				
Non-detection Scenario	**Average**	**P25**	**P75**	**P97,5**	**P99**
0	0,00	0,00	0,00	0,04	0,05
LOQ/2	0,01	0,00	0,00	0,18	0,25
LOQ	0,02	0,00	0,00	0,32	0,45

Pesticide authorized	
Commodities with/*without* detection	**Intake*** (mgresidue/kgBW/day)
Pears	4,9E-06
Mushrooms	1,3E-06

Pesticide non authorized		
Commodities with detection	**Residue concentration** (mgresidue / kgcommodity)	**MRL** (mgresidue / kgcommodity)
None		

** Intake for average consumption and non detection scenario LOQ/2*

Chlorpropham

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Chlorpropham
ADI (mgresidue/kgBW/day)	0,05

	Intakes (% of ADI) according to consumption percentiles				
Non-detection Scenario	**Average**	**P25**	**P75**	**P97,5**	**P99**
0	4,30	0,00	6,64	14,52	17,71
LOQ/2	4,35	0,00	6,70	14,83	18,12
LOQ	4,40	0,00	6,76	15,13	18,52

Pesticide authorized	
Commodities with/*without* detection	**Intake*** (mgresidue/kgBW/day)
Potatoes	2,2E-03
Carrots	8,3E-06
Parsnip	1,7E-09

Pesticide non authorized		
Commodities with detection	**Residue concentration** (mgresidue / kgcommodity)	**MRL** (mgresidue / kgcommodity)
Celeries	0,01	0,05

** Intake for average consumption and non detection scenario LOQ/2*

Chlorpyriphos-ethyl

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	chlorpyrifos-ethyl
ADI (mgresidue/kgBW/day)	0,01

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	P25	P75	P97,5	P99
0	0,07	0,00	0,00	0,94	1,68
LOQ/2	0,87	0,00	0,63	8,55	13,77
LOQ	1,66	0,00	1,27	16,15	25,86

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Apples	2,3E-05
Tomatoes	1,5E-05
Oranges	7,1E-06
Carrots	6,3E-06
Pears	6,3E-06
Mandarine orange	3,7E-06
Strawberries	3,7E-06
Peppers	3,5E-06
Onions	3,3E-06
Bananas	3,1E-06
Grapes	2,9E-06
Kiwis	2,0E-06
Peaches	1,9E-06
Cabbages	1,9E-06
Nectarines	1,4E-06
Cherries	1,0E-06
Grapefruits	4,5E-07
Lemons	2,2E-07
Currants	1,4E-07
Raspberries	9,0E-08
Radishes	8,9E-08
Hot peppers	8,9E-09

** Intake for average consumption and non detection scenario LOQ/2*

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
Broccolis	0,03	0,05
Parsnip	0,01	0,05

Cyprodinil

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Cyprodinil
ADI (mgresidue/kgBW/day)	0,03

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	P25	P75	P97,5	P99
0	0,02	0,00	0,00	0,33	0,65
LOQ/2	0,05	0,00	0,00	0,63	1,25
LOQ	0,07	0,00	0,00	0,93	1,85

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Grapes	4,4E-06
Strawberries	3,9E-06
Beans	1,6E-06
Lettuces and Salads	1,3E-06
Peas	1,1E-06
Cherries	6,8E-07
Raspberries	3,8E-07
Currants	1,7E-07
Lettuce lamb	4,5E-08

** Intake for average consumption and non detection scenario LOQ/2*

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
Nectarines	0,04	0,02
Nectarines	0,18	0,02
Peaches	0,04	0,02
Peers	0,01	0,02

Dimethoate

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	dimethoat
ADI (mgresidue/kgBW/day)	0,001

	Intakes (% of ADI) according to consumption percentiles				
Non-detection Scenario	**Average**	**P25**	**P75**	**P97,5**	**P99**
0	0,29	0,00	0,00	1,23	5,69
LOQ/2	0,46	0,00	0,00	3,50	9,39
LOQ	0,64	0,00	0,00	5,77	13,09

Pesticide authorized	
Commodities with/*without* detection	**Intake*** (mgresidue/kgBW/day)
Cherries	1,8E-06
Lettuces and Salads	1,4E-06
Onions	5,2E-07
Cabbages	4,8E-07
Cauliflowers	4,4E-07

** Intake for average consumption and non detection scenario LOQ/2*

Pesticide non authorized		
Commodities with detection	**Residue concentration** (mgresidue / kgcommodity)	**MRL** (mgresidue / kgcommodity)
Oranges	0,19	0,02
Apricots	0,02	0,02
Celeries	0,01	0,02
Celeries	0,03	0,02
Celeries	0,05	0,02
Endives	0,04	0,02
Spinach	0,01	0,02
Passion fruits	0,19	0,02
Apples	0,03	0,02

Dithiocarbamates

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Dithiocarbamates
ADI (mgresidue/kgBW/day)	0,05

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	P25	P75	P97,5	P99
0	0,26	0,00	0,11	2,69	4,53
LOQ/2	1,84	0,00	1,74	14,15	22,92
LOQ	3,42	0,00	3,37	25,61	41,30

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Potatoes	3,2E-04
Apples	1,2E-04
Tomatoes	1,1E-04
Lettuces and Salads	4,8E-05
Oranges	3,9E-05
Cos	3,1E-05
Pears	3,1E-05
Carrots	2,9E-05
Beans	2,4E-05
Cabbages	2,2E-05
Leek	2,0E-05
Grapes	1,8E-05
Onions	1,7E-05
Mandarine orange	1,6E-05
Strawberries	1,3E-05
Peaches	1,2E-05
Peas	1,2E-05
Cucumbers	9,3E-06
Nectarines	8,9E-06
Grapefruits	5,2E-06
Endives	3,4E-06
Apricots	3,2E-06
Celeries	2,8E-06
Cherries	2,6E-06
Watermelon	1,6E-06
Lettuce lamb	1,2E-06
Currants	9,7E-07
Lemons	7,3E-07
Radishes	5,2E-07
Cress	1,7E-07

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
Broccolis	0,10	1
Broccolis	0,22	1
Broccolis	0,22	1
Cauliflowers	0,06	1
Cauliflowers	0,29	1
Cauliflowers	0,30	1
Cauliflowers	0,60	1
Passion fruits	0,30	0,05
Passion fruits	0,30	0,05
Passion fruits	0,30	0,05

** Intake for average consumption and non detection scenario LOQ/2*

Ethephon

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Ethephon
ADI (mgresidue/kgBW/day)	0,03

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	P25	P75	P97,5	P99
0	0,14	0,00	0,20	0,95	1,23
LOQ/2	0,29	0,00	0,40	1,91	2,48
LOQ	0,43	0,00	0,60	2,88	3,74

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Tomatoes	8,6E-05

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
None		

** Intake for average consumption and non detection scenario LOQ/2*

Imazalil

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Imazalil
ADI (mgresidue/kgBW/day)	0,03

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	**P25**	**P75**	**P97,5**	**P99**
0	1,39	0,00	0,00	16,68	27,86
LOQ/2	1,76	0,00	0,52	18,79	30,55
LOQ	2,12	0,00	1,05	20,90	33,23

Pesticide authorized	
Commodities with/*without* detection	**Intake*** (mgresidue/kgBW/day)
Oranges	2,1E-04
Mandarine orange	1,5E-04
Potatoes	5,8E-05
Apples	3,4E-05
Bananas	3,0E-05
Grapefruits	1,7E-05
Lemons	1,5E-05
Pears	1,0E-05
Tomatoes	2,5E-06
Cucumbers	9,1E-07

Pesticide non authorized		
Commodities with detection	**Residue concentration** (mgresidue / kgcommodity)	**MRL** (mgresidue / kgcommodity)
Avocados	0,01	0,02
Lettuces and Salads	0,03	0,02
Lychees	0,01	0,02
Lychees	0,01	0,02
Peaches	0,01	0,02

** Intake for average consumption and non detection scenario LOQ/2*

Imidacloprid

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	imidacloprid
ADI (mgresidue/kgBW/day)	0,06

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	**P25**	**P75**	**P97,5**	**P99**
0	0,00	0,00	0,00	0,00	0,00
LOQ/2	0,01	0,00	0,01	0,05	0,07
LOQ	0,01	0,00	0,02	0,10	0,13

Pesticide authorized	
Commodities with/*without* detection	**Intake*** (mgresidue/kgBW/day)
Apples	3,34E-06
Cabbages	4,83E-07
Currants	5,17E-08

Pesticide non authorized		
Commodities with detection	**Residue concentration** (mgresidue / kgcommodity)	**MRL** (mgresidue / kgcommodity)
None		

** Intake for average consumption and non detection scenario LOQ/2*

Iprodione

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Iprodione
ADI (mgresidue/kgBW/day)	0,06

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	**P25**	**P75**	**P97,5**	**P99**
0	0,19	0,00	0,00	1,79	2,88
LOQ/2	0,34	0,00	0,09	3,49	5,53
LOQ	0,49	0,00	0,17	5,18	8,18

Pesticide authorized	
Commodities with/*without* detection	**Intake*** (mgresidue/kgBW/day)
Lettuces and Salads	7,3E-05
Apples	2,8E-05
Tomatoes	2,0E-05
Grapes	1,5E-05
Peaches	9,4E-06
Cos	9,0E-06
Carrots	7,5E-06
Lettuce lamb	7,4E-06
Pears	7,2E-06
Bananas	6,9E-06
Beans	5,2E-06
Currants	4,9E-06
Endives	4,8E-06
Onions	4,3E-06
Strawberries	3,8E-06
Kiwis	3,7E-06
Mandarine orange	2,9E-06
Cabbages	2,8E-06
Apricots	2,3E-06
Cherries	2,3E-06
Peas	1,9E-06
Peppers	1,6E-06
Cucumbers	1,5E-06
Rhubarb	3,5E-07
Lemons	3,4E-07
Radishes	1,1E-07
Cress	2,5E-08
Hot peppers	1,7E-08
Parsnip	1,5E-08

** Intake for average consumption and non detection scenario LOQ/2*

Pesticide non authorized		
Commodities with detection	**Residue concentration** (mgresidue / kgcommodity)	**MRL** (mgresidue / kgcommodity)
Spinach	1,8	0,02
Raspberries	0,5	5
Nectarines	1	5
Nectarines	2,3	5
Nectarines	0,5	5
Leek	0,02	0,02

Lambda-cyhalothrin

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Lambda-cyhalothrin
ADI (mgresidue/kgBW/day)	0,005

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	P25	P75	P97,5	P99
0	0,01	0,00	0,00	0,12	0,22
LOQ/2	0,83	0,00	0,55	8,66	15,29
LOQ	1,65	0,00	1,11	17,20	30,37

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Apples	1,5E-05
Tomatoes	8,5E-06
Oranges	4,6E-06
Pears	4,3E-06
Strawberries	2,1E-06
Beans	2,0E-06
Grapes	1,8E-06
Lettuces and Salads	1,7E-06
Mandarine orange	1,4E-06
Cabbages	1,3E-06
Peas	1,3E-06
Spinach	1,2E-06
Peaches	9,5E-07
Leek	8,5E-07
Cherries	8,0E-07
Mushrooms	7,2E-07
Nectarines	6,2E-07
Cucumbers	5,9E-07
Peppers	5,8E-07
Celeries	3,0E-07
Watermelon	2,9E-07
Grapefruits	2,2E-07
Apricots	1,7E-07
Lemons	1,3E-07
Currants	8,1E-08
Celeriac	5,9E-08
Lettuce lamb	5,5E-08
Radishes	4,5E-08
Cress	8,5E-09

** Intake for average consumption and non detection scenario LOQ/2*

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
Endives	0,04	1

Linuron

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	linuron
ADI (mgresidue/kgBW/day)	0,003

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	P25	P75	P97,5	P99
0	0,28	0,00	0,00	0,00	3,56
LOQ/2	0,33	0,00	0,00	0,57	4,46
LOQ	0,38	0,00	0,00	1,14	5,36

Pesticide authorized	
Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Cerleriac	8,5E-06
Carrots	8,9E-07
Beans	5,4E-07
Celeries	1,3E-07
Parsnip	1,7E-09

Pesticide non authorized		
Commodities with detection	Residue concentration (mgresidue / kgcommodity)	**MRL** (mgresidue / kgcommodity)
Cabbages	0,01	0,05
Leek	0,04	0,05

** Intake for average consumption and non detection scenario LOQ/2*

Methomyl

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Methomyl
ADI (mgresidue/kgBW/day)	0,02

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	P25	P75	P97,5	P99
0	0,02	0,00	0,00	0,26	0,38
LOQ/2	0,07	0,00	0,05	0,67	1,10
LOQ	0,12	0,00	0,10	1,08	1,82

Pesticide authorized	
Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Lettuces and Salads	5,0E-06
Apples	3,3E-06
Tomatoes	2,5E-06
Oranges	1,1E-06
Pears	8,1E-07
Mandarine orange	4,0E-07
Peppers	3,4E-07
Peaches	3,4E-07
Spinach	2,6E-07
Broccolis	2,1E-07
Nectarines	2,0E-07
Grapefruits	1,5E-07
Cherries	1,1E-07
Apricots	6,8E-08
Lemons	3,7E-08
Lettuce lamb	1,6E-08

Pesticide non authorized		
Commodities with detection	Residue concentration (mgresidue / kgcommodity)	**MRL** (mgresidue / kgcommodity)
Passion fruits	0,03	0,05
Hot peppers	0,14	0,05
Grapes	0,23	0,05

** Intake for average consumption and non detection scenario LOQ/2*

Oxadixyl

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Oxadixyl
ADI (mgresidue/kgBW/day)	0,125

	Intakes (% of ADI) according to consumption percentiles				
Non-detection Scenario	**Average**	**P25**	**P75**	**P97,5**	**P99**
0	0,00	0,00	0,00	0,00	0,01
LOQ/2	0,02	0,00	0,02	0,15	0,24
LOQ	0,04	0,00	0,04	0,30	0,47

Pesticide authorized	
Commodities with/*without* detection	**Intake*** (mgresidue/kgBW/day)
Potatoes	8,2E-06
Apples	3,3E-06
Tomatoes	2,5E-06
Oranges	1,1E-06
Bananas	1,0E-06
Carrots	8,9E-07
Pears	8,1E-07
Beans	5,4E-07
Onions	5,2E-07
Cabbages	4,8E-07
Leek	4,2E-07
Grapes	4,2E-07
Strawberries	4,0E-07
Mandarine orange	4,0E-07
Lettuces and Salads	3,9E-07
Cauliflowers	3,8E-07
Kiwis	3,1E-07
Peppers	2,8E-07
Spinach	2,6E-07
Mushrooms	2,6E-07
Cucumbers	2,1E-07
Broccolis	2,1E-07
Grapefruits	1,5E-07
Endives	1,1E-07
Celeries	8,1E-08
Celeriac	5,9E-08
Apricots	5,1E-08
Watermelon	5,1E-08
Lemons	3,7E-08
Lettuce lamb	2,5E-08
Currants	2,1E-08
Radishes	1,3E-08
Raspberries	1,2E-08
Cress	3,6E-09
Hot peppers	2,2E-09
Parsnip	1,7E-09

** Intake for average consumption and non detection scenario LOQ/2*

Pesticide non authorized		
Commodities with detection	**Residue concentration** (mgresidue / kgcommodity)	**MRL** (mgresidue / kgcommodity)
None		

Pirimicarb

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Pirimicarb
ADI (mgresidue/kgBW/day)	0,035

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	P25	P75	P97,5	P99
0	0,01	0,00	0,02	0,08	0,12
LOQ/2	0,13	0,00	0,10	1,28	2,12
LOQ	0,25	0,00	0,18	2,47	4,11

Pesticide authorized	
Commodities with/*without* detection	**Intake*** (mgresidue/kgBW/day)
Apples	1,6E-05
Pears	4,2E-06
Carrots	4,1E-06
Cos	4,0E-06
Tomatoes	2,5E-06
Strawberries	2,1E-06
Beans	1,8E-06
Lettuces and Salads	1,7E-06
Cabbages	1,5E-06
Peas	1,3E-06
Spinach	1,0E-06
Peaches	8,8E-07
Cherries	7,0E-07
Nectarines	5,8E-07
Cucumbers	5,5E-07
Peppers	5,5E-07
Endives	4,3E-07
Celeries	3,8E-07
Lettuce lamb	6,8E-08
Celeriac	5,9E-08
Currants	3,8E-08
Raspberries	2,4E-08
Radishes	1,3E-08
Cress	3,6E-09

Pesticide non authorized		
Commodities with detection	**Residue concentration** (mgresidue / kgcommodity)	**MRL** (mgresidue / kgcommodity)
None		

** Intake for average consumption and non detection scenario LOQ/2*

Procymidone

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Procymidone
ADI (mgresidue/kgBW/day)	0,025

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles: Average	P25	P75	P97,5	P99
0	0,15	0,00	0,00	2,11	3,25
LOQ/2	0,51	0,00	0,12	6,33	10,04
LOQ	0,86	0,00	0,24	10,55	16,84

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Tomatoes	2,2E-05
Kiwis	1,9E-05
Cos	1,3E-05
Pears	1,3E-05
Grapes	1,3E-05
Lettuces and Salads	9,0E-06
Onions	6,8E-06
Strawberries	6,7E-06
Endives	5,2E-06
Beans	5,1E-06
Peas	4,8E-06
Peaches	2,3E-06
Nectarines	1,8E-06
Cucumbers	1,4E-06
Peppers	1,3E-06
Watermelon	9,2E-07
Apricots	4,3E-07
Lettuce lamb	2,7E-07
Raspberries	1,4E-07
Cress	1,7E-08
Hot peppers	7,2E-09

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
Spinach	0,01	0,02
Radishes	0,08	0,02

** Intake for average consumption and non detection scenario LOQ/2*

Propamocarb

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Propamocarb
ADI (mgresidue/kgBW/day)	0,4

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles: Average	P25	P75	P97,5	P99
0	0,01	0,00	0,00	0,10	0,14
LOQ/2	0,06	0,00	0,04	0,56	0,83
LOQ	0,10	0,00	0,07	1,02	1,52

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Tomatoes	1,0E-04
Lettuces and Salads	4,8E-05
Cabbages	1,9E-05
Cos	1,5E-05
Cauliflowers	1,2E-05
Peppers	9,7E-06
Endives	9,4E-06
Cucumbers	9,2E-06
Lettuce lamb	9,4E-07

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
Celeries	1,90	0,10

** Intake for average consumption and non detection scenario LOQ/2*

Tebuconazole

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Tebuconazole
ADI (mgresidue/kgBW/day)	0,03

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	P25	P75	P97,5	P99
0	0,01	0,00	0,00	0,11	0,31
LOQ/2	0,02	0,00	0,00	0,26	0,59
LOQ	0,04	0,00	0,00	0,41	0,86

Pesticide authorized	
Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Carrots	3,1E-06
Leek	3,0E-06
Cherries	5,3E-07
Cabbages	4,8E-07
Parsnip	1,7E-09

Pesticide non authorized		
Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
Celeries	0,01	0,05
Pears	0,06	0,05
Pears	0,07	0,05
Pears	0,07	0,05
Pears	0,14	0,05

** Intake for average consumption and non detection scenario LOQ/2*

Thiabendazole

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Thiabendazole
ADI (mgresidue/kgBW/day)	0,1

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles				
	Average	P25	P75	P97,5	P99
0	0,23	0,00	0,00	2,80	4,29
LOQ/2	0,26	0,00	0,04	2,98	4,53
LOQ	0,29	0,00	0,08	3,16	4,77

Pesticide authorized	
Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Orange	1,2E-04
Mandarine orange	6,9E-05
Bananas	3,1E-05
Potatoes	1,7E-05
Apples	9,1E-06
Grapefruits	5,5E-06
Pears	3,2E-06
Lemons	3,0E-06
Mushrooms	3,4E-07
Mango	2,7E-07
Broccolis	2,1E-07
Avocados	6,5E-08

Pesticide non authorized		
Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
None		

** Intake for average consumption and non detection scenario LOQ/2*

Tolclophos-methyl

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Tolclophos-methyl
ADI (mgresidue/kgBW/day)	0,064

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles: Average	P25	P75	P97,5	P99
0	0,00	0,00	0,00	0,03	0,05
LOQ/2	0,01	0,00	0,00	0,07	0,11
LOQ	0,01	0,00	0,00	0,11	0,17

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Lettuces and Salads	3,0E-06
Cabbages	1,0E-06
Lettuce lamb	4,9E-08
Radishes	3,2E-08
Cress	5,7E-09

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
Celeries	0,02	0,01
Celeries	0,16	0,01
Celeries	0,17	0,01
Cauliflowers	0,03	0,01

** Intake for average consumption and non detection scenario LOQ/2*

Tolylfluanid

CONSUMERS EXPOSURE - PROJECT 2	
Pesticide	Tolylfluanid
ADI (mgresidue/kgBW/day)	0,1

Non-detection Scenario	Intakes (% of ADI) according to consumption percentiles: Average	P25	P75	P97,5	P99
0	0,05	0,00	0,03	0,51	0,68
LOQ/2	0,07	0,00	0,05	0,68	0,92
LOQ	0,09	0,00	0,08	0,85	1,17

Pesticide authorized

Commodities with/*without* detection	Intake* (mgresidue/kgBW/day)
Pears	2,0E-05
Apples	2,0E-05
Tomatoes	1,2E-05
Lettuces and Salads	9,9E-06
Strawberries	2,9E-06
Peppers	7,4E-07
Cucumbers	6,9E-07
Currants	4,0E-07
Lettuce lamb	4,5E-08
Raspberries	4,2E-08
Hot peppers	8,9E-09

Pesticide non authorized

Commodities with detection	Residue concentration (mgresidue / kgcommodity)	MRL (mgresidue / kgcommodity)
Cherries	0,09	0,05
Grapes	0,18	0,05
Grapes	0,31	0,05

** Intake for average consumption and non detection scenario LOQ/2*