

**Investigation on  
PCDDs/PCDFs and several PCBs  
in milk samples**



**Analysis and report provided by  
ERGO Forschungsgesellschaft mbH, Germany  
for the Food Safety Authority of Ireland**

## **Table of contents**

1	Order .....	2
2	Sampling .....	2
3	Description of sample .....	2
4	General information about analytes.....	3
4.1	General information about PCDDs/PCDFs .....	3
4.2	General Information about PCBs.....	4
5	Analytical Procedure .....	6
5.1	Analytical procedure (PCDDs/PCDFs, "WHO-PCBs").....	6
5.2	Analytical procedure ("other PCBs" including "Marker"-PCBs).....	8
6	Results .....	9
7	Graphics.....	10
7.1	PCDDs/PCDFs.....	11
7.2	PCDDs/PCDFs and WHO-PCBs .....	12
7.3	Marker PCBs .....	13
7.4	Quality control samples (PCDDs/PCDFs).....	14
7.5	Quality Control Samples (PCDDs/PCDFs and WHO-PCBs).....	15
8	Final Remarks .....	16

## 1 Order

The order was given in writing on 21.12.2001 by the client mentioned above.

The order has the following internal project code: A-1048-01-400.

## 2 Sampling

The sampling was done respectively organized by the customer.

## 3 Description of sample

Sample code	Client code	Matrix	Receipt of sample	Date of the test performance
H-01-12-0333	1991 Harbor Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0334	1992 Harbor Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0335	1993 Harbor Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0336	1995 Harbor Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0337	1997 Harbor Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0338	1998 Harbor Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0339	1999 Harbor Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0340	2000 Harbor Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0341	2001 Harbor Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0342	1995 Control Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0343	1997 Control Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0344	1998 Control Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0345	1999 Control Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0346	2000 Control Herds	milk	12.12.2001	19.12.2001 – 28.03.2002
H-01-12-0347	2001 Control Herds	milk	12.12.2001	19.12.2001 – 28.03.2002

## 4 General information about analytes

### 4.1 General information about PCDDs/PCDFs

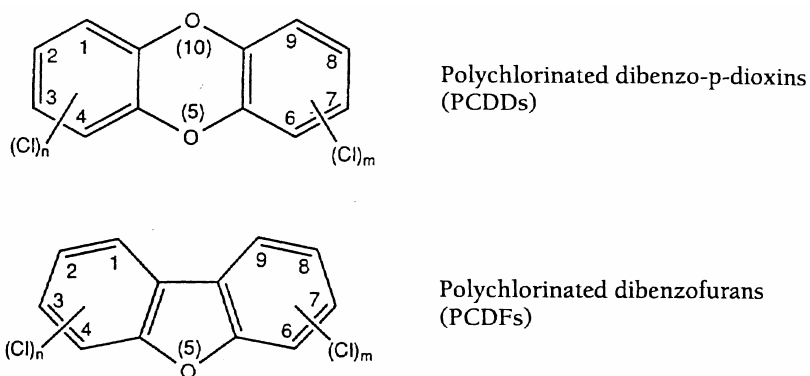
Polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) are unwanted by-products in a variety of industrial and thermal processes. However, their levels in the environment increased significantly with the beginning of the industrial chlorine industry in this century. Because of their many sources, PCDDs and PCDFs are ubiquitously distributed. The degree of chlorination of the tricyclic components varies between 1 and 8 atoms per molecule. The overall number of dioxins and furans is 75 and 135, respectively.

In humans, only the isomeres with 2,3,7,8-substitution are found, totaling seven dioxins and 10 furans. Humans may become contaminated with PCDD/PCDF through environmental (background), occupational, or accidental exposure.

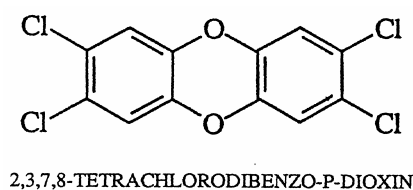
It is generally agreed that for the normal population, food represents the main route of environmental exposure to PCDD/s/PCDFs. Usually more than 90% of the total daily intake of these contaminants derives from food.

In contrast, exposure via other routes, such as inhalation and ingestion of particles from air, ingestion of contaminated soil, and dermal absorption, normally contributes less than 10% of daily intake. Because humans are the high end of the food chain, it becomes obvious that human tissue may contain relatively high amounts of xenobiotics such as PCDDs/PCDFs. Because of the lipophilic nature of these two classes of environmental contaminants, food-stuffs of animal origin are of special importance.

The following figure shows the general structure of polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs):

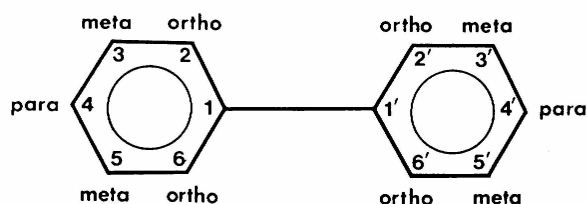


The following figure shows the formula of 2,3,7,8-Tetrachlorodibenzo-p-dioxin, the most toxic compound of PCDDs/PCDFs.



## 4.2 General Information about PCBs

The following figure shows the general structure of a biphenyl :



Polychlorinated biphenyls (PCBs) are produced by substituting chlorine atoms for some or all of the hydrogen atoms of biphenyl molecules. The overall number of polychlorinated biphenyls is 209. The degree of chlorination of the biphenyl varies between one and ten. Some years ago the TEF system has been broadened to include certain dioxin-like PCBs. In 1993 an international WHO committee agreed on TEFs for certain PCB congeners (which bind to the Ah-receptor). Most of the dioxin-like PCBs were assigned much lower TEF values than dioxins.

The following table shows the TEF values for human beings and mammals laid down by the WHO in 1997 :

### International TEFs for human beings and mammals

<b>PCDDs (dioxins)</b>		TEF	<b>PCBs with no chlorine at <i>ortho</i> positions ('coplanar' PCBs)</b>		TEF
2,3,7,8-TCDD ('TCDD')		1	3,3',4,4'-TCB		0.0001
1,2,3,7,8-PeCDD		1	3,4,4',5-TCB		0.0001
1,2,3,4,7,8-HxCDD		0.1	3,3',4,4',5-PeCB		0.1
1,2,3,7,8,9-HxCDD		0.1	3,3',4,4',5,5'-HxCB		0.01
1,2,3,6,7,8-HxCDD		0.1	<b>PCBs with one chlorine atom at <i>ortho</i> position</b>		
1,2,3,4,6,7,8-HpCDD		0.01	2,3,3',4,4'-PeCB		0.0001
OCDD		0.0001	2,3,4,4',5-PeCB		0.0005
<b>PCDFs (furans)</b>			2,3',4,4',5-PeCB		0.0001
2,3,7,8-TCDF		0.1	2',3,4,4',5-PeCB		0.0001
1,2,3,7,8-PeCDF		0.05	2,3,3',4,4',5-HxCB		0.0005
2,3,4,7,8-PeCDF		0.5	2,3,3',4,4',5'-HxCB		0.0005
1,2,3,4,7,8-HxCDF		0.1	2,3',4,4',5,5'-HxCB		0.00001
1,2,3,7,8,9-HxCDF		0.1	2,3,3',4,4',5,5'-HpCB		0.0001
1,2,3,6,7,8-HxCDF		0.1	T = tetra (4 chlorine atoms) Pe = penta (5 chlorine atoms) Hx = hexa (6 chlorine atoms) Hp = hepta (7 chlorine atoms) O = octa (8 chlorine atoms)		
2,3,4,6,7,8-HxCDF		0.1			
1,2,3,4,6,7,8-HpCDF		0.01			
1,2,3,4,7,8,9-HpCDF		0.01			
OCDF		0.0001			

Source : *Persistent Organic Pollutants*, Monitor 16, 2000, Swedish Environmental Protection Agency

## 5 Analytical Procedure

In the following the analytical procedures for the analysis of PCDDs/PCDFs, "Marker-PCBs" and "WHO-PCBs" are shown.

### 5.1 Analytical procedure (PCDDs/PCDFs, "WHO-PCBs")

We would like to mention, that the measurements are done *by high resolution mass spectrometry (HRMS)*, which guarantees high specificity and high sensitivity.

Prior the extraction following  $^{13}\text{C}$ -UL-labeled internal standards are added to the sample:

Internal standards ( $^{13}\text{C}$ -UL), PCDDs/PCDFs			
PCDDs		PCDFs	
2,3,7,8	-Tetra-CDD	2,3,7,8	-Tetra-CDF
1,2,3,7,8	-Penta-CDD	1,2,3,7,8	-Penta-CDF
		2,3,4,7,8	-Penta-CDF
1,2,3,4,7,8	-Hexa-CDD	1,2,3,4,7,8	-Hexa-CDF
1,2,3,6,7,8	-Hexa-CDD	1,2,3,6,7,8	-Hexa-CDF
1,2,3,7,8,9	-Hexa-CDD	1,2,3,7,8,9	-Hexa-CDF
		2,3,4,6,7,8	-Hexa-CDF
1,2,3,4,6,7,8	-Hepta-CDD	1,2,3,4,6,7,8	-Hepta-CDF
		1,2,3,4,7,8,9	-Hepta-CDF
1,2,3,4,6,7,8,9	-Octa-CDD	1,2,3,4,6,7,8,9	-Octa-CDF

	Internal standards ( $^{13}\text{C}$ -UL), WHO-PCBs		
	Compound		IUPAC Code
Non-ortho PCBs	3,3',4,4'	-Tetra-CB	PCB 77
	3,4,4',5	-Tetra-CB	PCB 81
	3,3',4,4',5	-Penta-CB	PCB 126
	3,3',4,4',5,5'	-Hexa-CB	PCB 169
Mono-ortho PCBs	2,3,3',4,4'	-Penta-CB	PCB 105
	2,3,4,4',5	-Penta-CB	PCB 114
	2,3',4,4',5	-Penta-CB	PCB 118
	2',3,4,4',5	-Penta-CB	PCB 123
	2,3,3',4,4',5	-Hexa-CB	PCB 156
	2,3,3',4,4',5'	-Hexa-CB	PCB 157
	2,3',4,4',5,5'	-Hexa-CB	PCB 167
	2,3,3',4,4',5,5'	-Hepta-CB	PCB 189

After spiking, the samples are extracted/solved with appropriate solvents for ultratrace-analyses (e.g. nanograde) by using a solid / lipid extraction.

The clean up is done on a multicolumn system (involving carbon-on-glasfibre). The measurement is done by means of high resolution gaschromatography and high resolution mass spectrometry (HRGC/HRMS) with VG-AutoSpec and/or Finnigan MAT 95 XL using DB-5 capillary columns.

For each component 2 isotope masses are measured. The quantification is carried out by the use of internal/external standard mixtures (isotope dilution method). Following PCDDs/PCDFs and PCBs are determined and reported.

<b>PCDDs/PCDFs</b>			
<b>PCDDs</b>		<b>PCDFs</b>	
2,3,7,8	-Tetra-CDD	2,3,7,8	-Tetra-CDF
1,2,3,7,8	-Penta-CDD	1,2,3,7,8 2,3,4,7,8	-Penta-CDF -Penta-CDF
1,2,3,4,7,8	-Hexa-CDD	1,2,3,4,7,8	-Hexa-CDF
1,2,3,6,7,8	-Hexa-CDD	1,2,3,6,7,8	-Hexa-CDF
1,2,3,7,8,9	-Hexa-CDD	1,2,3,7,8,9 2,3,4,6,7,8	-Hexa-CDF -Hexa-CDF
1,2,3,4,6,7,8	-Hepta-CDD	1,2,3,4,6,7,8 1,2,3,4,7,8,9	-Hepta-CDF -Hepta-CDF
1,2,3,4,6,7,8,9	-Octa-CDD	1,2,3,4,6,7,8,9	-Octa-CDF

	<b>WHO-PCBs</b>		
	<b>Compound</b>		<b>IUPAC Code</b>
<b>Non-ortho PCBs</b>	3,3',4,4'	-Tetra-CB	PCB 77
	3,4,4',5	-Tetra-CB	PCB 81
	3,3',4,4',5	-Penta-CB	PCB 126
	3,3',4,4',5,5'	-Hexa-CB	PCB 169
<b>Mono-ortho PCBs</b>	2,3,3',4,4'	-Penta-CB	PCB 105
	2,3,4,4',5	-Penta-CB	PCB 114
	2,3',4,4',5	-Penta-CB	PCB 118
	2',3,4,4',5	-Penta-CB	PCB 123
	2,3,3',4,4',5	-Hexa-CB	PCB 156
	2,3,3',4,4',5'	-Hexa-CB	PCB 157
	2,3',4,4',5,5'	-Hexa-CB	PCB 167
	2,3,3',4,4',5,5'	-Hepta-CB	PCB 189

In addition to the single results, calculations of the toxicity equivalents (TEQ) according to the WHO-system are carried out.



## 5.2 Analytical procedure ("other PCBs" including "Marker"-PCBs)

Within the scope of the investigation, the PCBs 18, 28, 31, 33, 37, 41, 44, 47, 49, 51, 52, 60, 66, 74, 87, 99, 101, 110, 118, 138, 141, 151, 153, 180, 183, 185, 187, 191, 193, 194, 201, 203, 206 and 209 are determined. Before the extraction the following  $^{13}\text{C}$ -UL-labeled internal standards are added to the sample:

2,4,4'-Tri-PCB (PCB-28)	$^{13}\text{C}$ -UL
2,2',5,5'-Tetra-PCB (PCB-52)	$^{13}\text{C}$ -UL
2,2',4,5,5'-Penta-PCB (PCB-101)	$^{13}\text{C}$ -UL
2,2',3,4,4',5'-Hexa-PCB (PCB-138)	$^{13}\text{C}$ -UL
2,2',4,4',5,5'-Hexa-PCB (PCB-153)	$^{13}\text{C}$ -UL
2,2',3,4,4',5,5'-Hepta-PCB (PCB-180)	$^{13}\text{C}$ -UL

After the spiking, the samples are extracted with appropriate solvents for ultratrace-analyses (e.g. nanograde). In the following, a column clean up is performed. The measurement is done by means of high resolution gaschromatography and mass spectrometry (HRGC/MS) using DB-5 capillary columns.

For each substance 2 isotope masses are measured. The quantification is carried out with the use of internal/external standard mixtures.

## 6 Results

You will find the detailed results in the following table (TEQ-value) respectively on the data sheets attached (detail-information). The results are valid for the analyzed samples only.

Laboratory code	Client code	Matrix	TEQ (WHO) in ng/kg (ppt), lipid based	
			PCDDs/PCDFs	PCDDs/PCDFs and WHO-PCBs
H-01-12-0333	1991 Harbor Herds	milk	0,81	1,7
H-01-12-0334	1992 Harbor Herds	milk	0,57	1,8
H-01-12-0335	1993 Harbor Herds	milk	0,35	0,99
H-01-12-0336	1995 Harbor Herds	milk	0,42	1,1
H-01-12-0337	1997 Harbor Herds	milk	0,32	0,82
H-01-12-0338	1998 Harbor Herds	milk	0,27	0,93
H-01-12-0339	1999 Harbor Herds	milk	0,31	0,85
H-01-12-0340	2000 Harbor Herds	milk	0,31	0,69
H-01-12-0341	2001 Harbor Herds	milk	0,31	0,57
H-01-12-0342	1995 Control Herds	milk	0,35	0,75
H-01-12-0343	1997 Control Herds	milk	0,36	0,67
H-01-12-0344	1998 Control Herds	milk	0,42	0,75
H-01-12-0345	1999 Control Herds	milk	0,35	0,84
H-01-12-0346	2000 Control Herds	milk	0,36	0,80
H-01-12-0347	2001 Control Herds	milk	0,28	0,47

## 7 Graphics

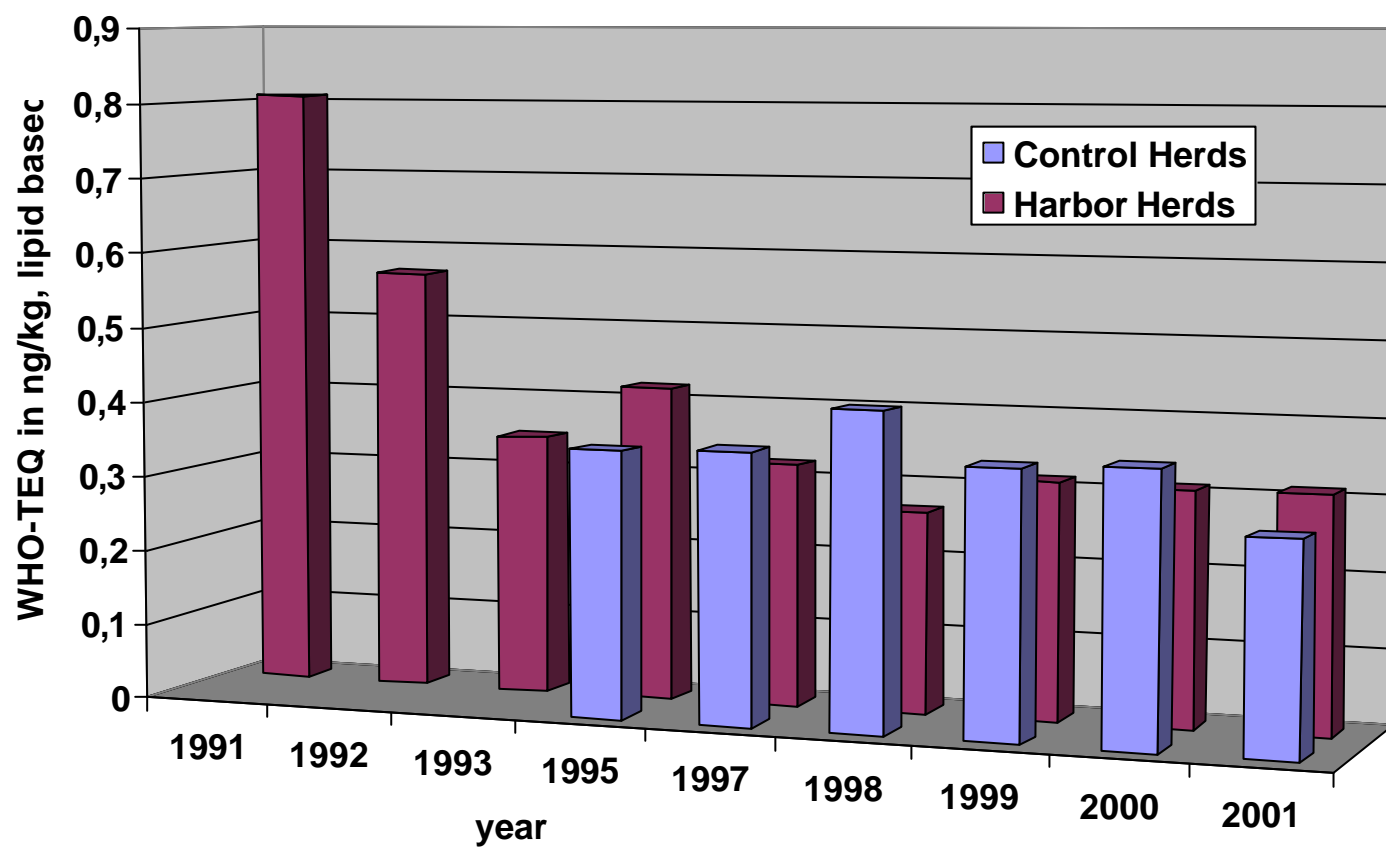
Data are presented as figures, showing the concentration of PCDDs/PCDFs (TEQ-value in ng/kg (ppt) lipid based), PCDDs/PCDFs *and* WHO-PCBs (TEQ-value in ng/kg (ppt) lipid based) and the sum of the Marker-PCBs (in µg/kg (ppb), lipid based) in harbor herd samples and control herd samples sorted by year (timeframe 1991 – 2001).

It can be seen that the graphics show a decrease for PCDDs/PCDFs, WHO-PCBs and Marker-PCBs from 1991/1992 to 1993 and the following years. The PCDD/PCDF-, WHO-PCB -and Marker-PCB-data of the control herd samples are quite in the same range of the harbor herd samples.

In addition quality control data of Butter pool samples are shown.

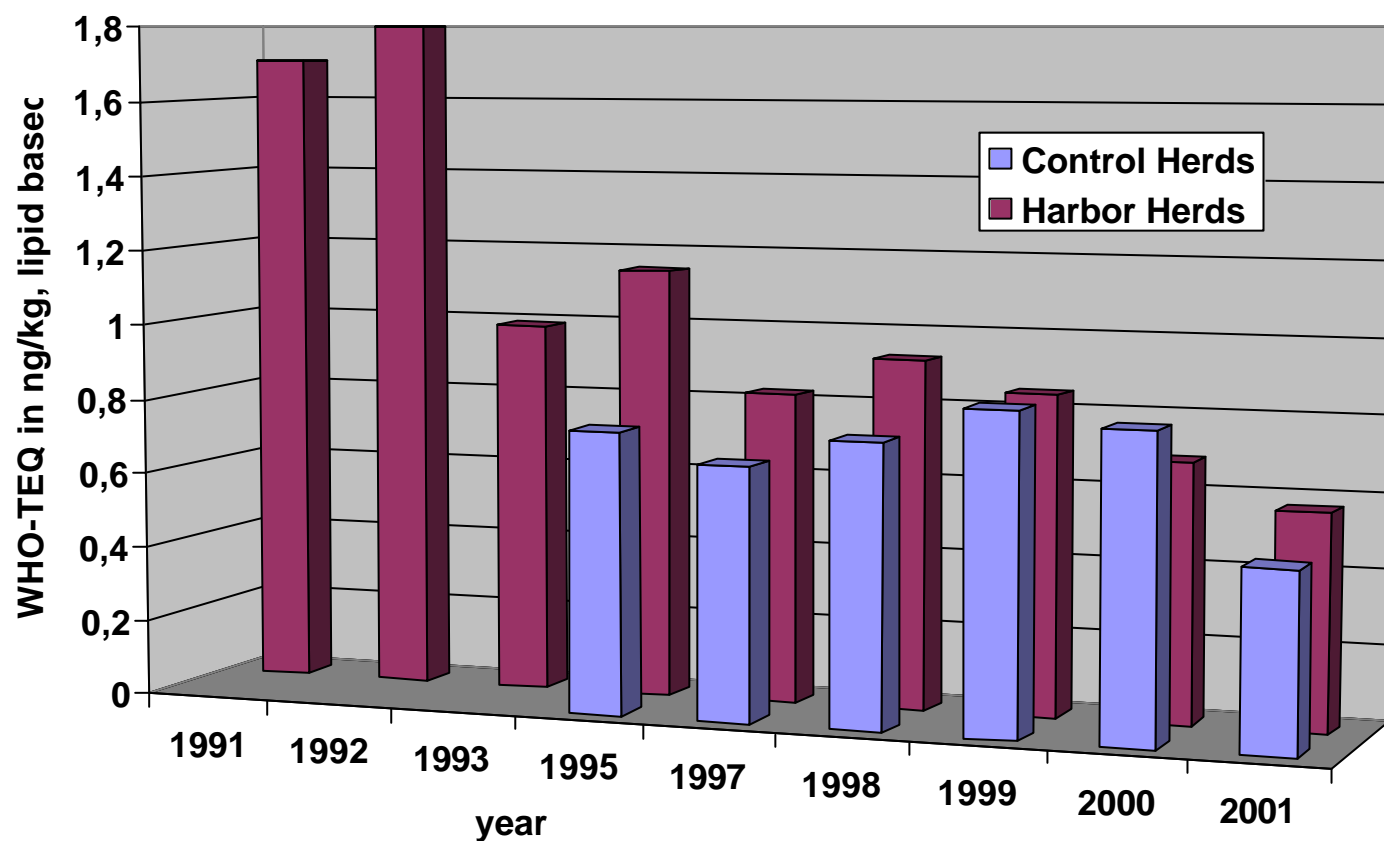
## 7.1 PCDDs/PCDFs

### PCDD/Fs in Milk Samples from Ireland WHO-TEQ (PCDDs/PCDFs)



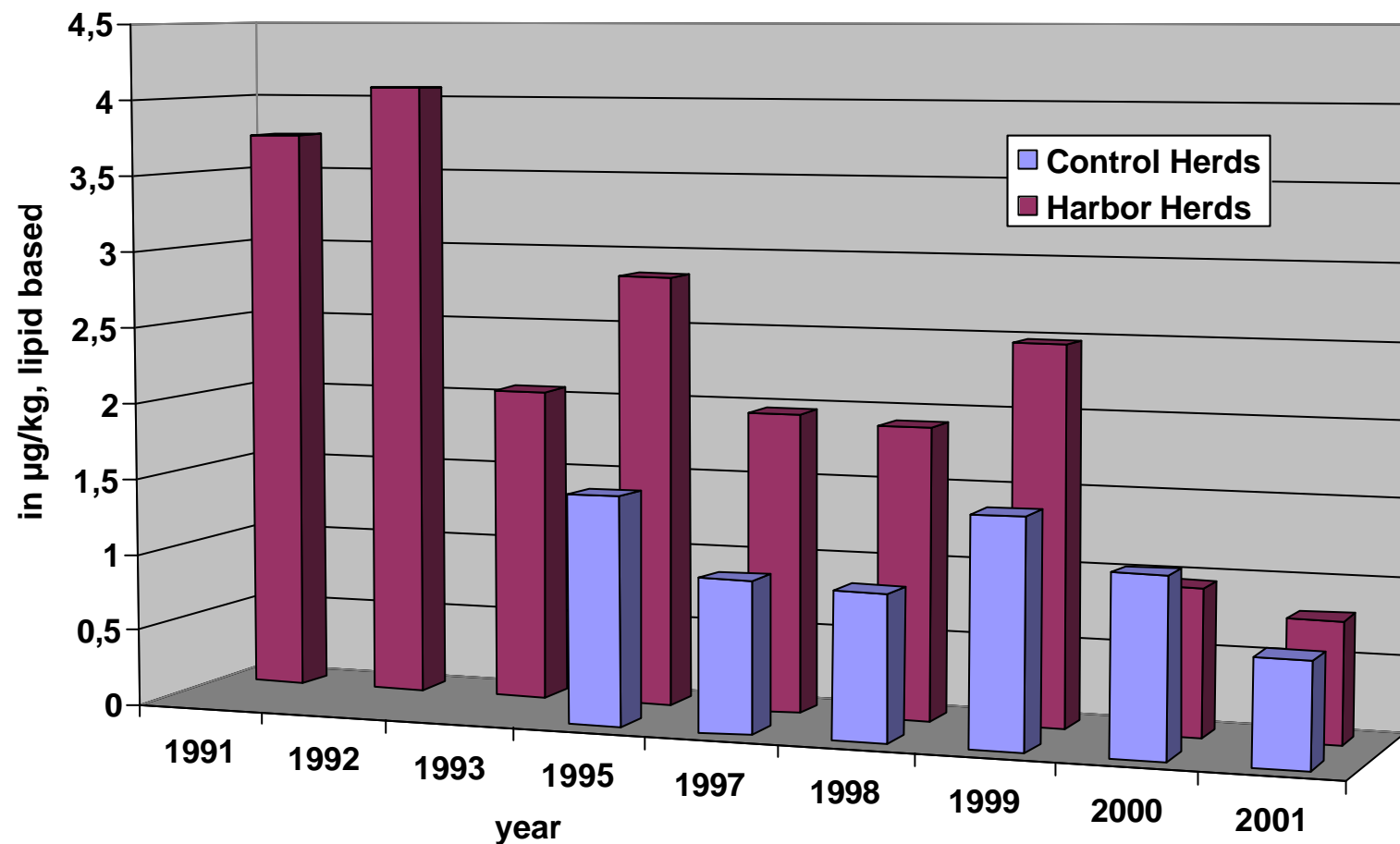
## 7.2 PCDDs/PCDFs and WHO-PCBs

### PCDD/Fs and WHO-PCBs in Milk Samples from Ireland Total WHO-TEQ (PCDDs/PCDFs and WHO-PCBs)



### 7.3 Marker PCBs

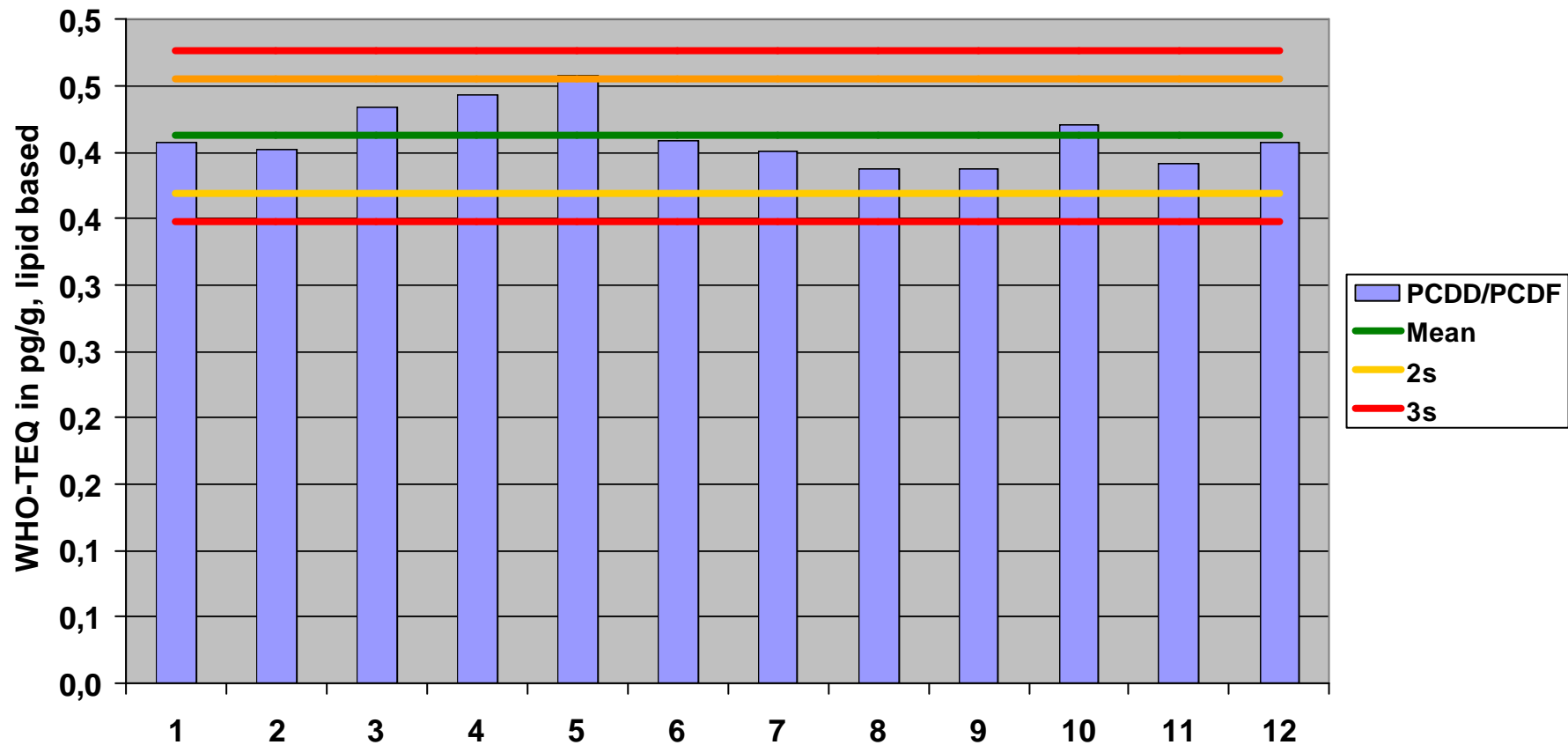
## Sum of Marker PCBs in Milk Samples from Ireland



For comparison : Sums include also detection limits ("n.d.")

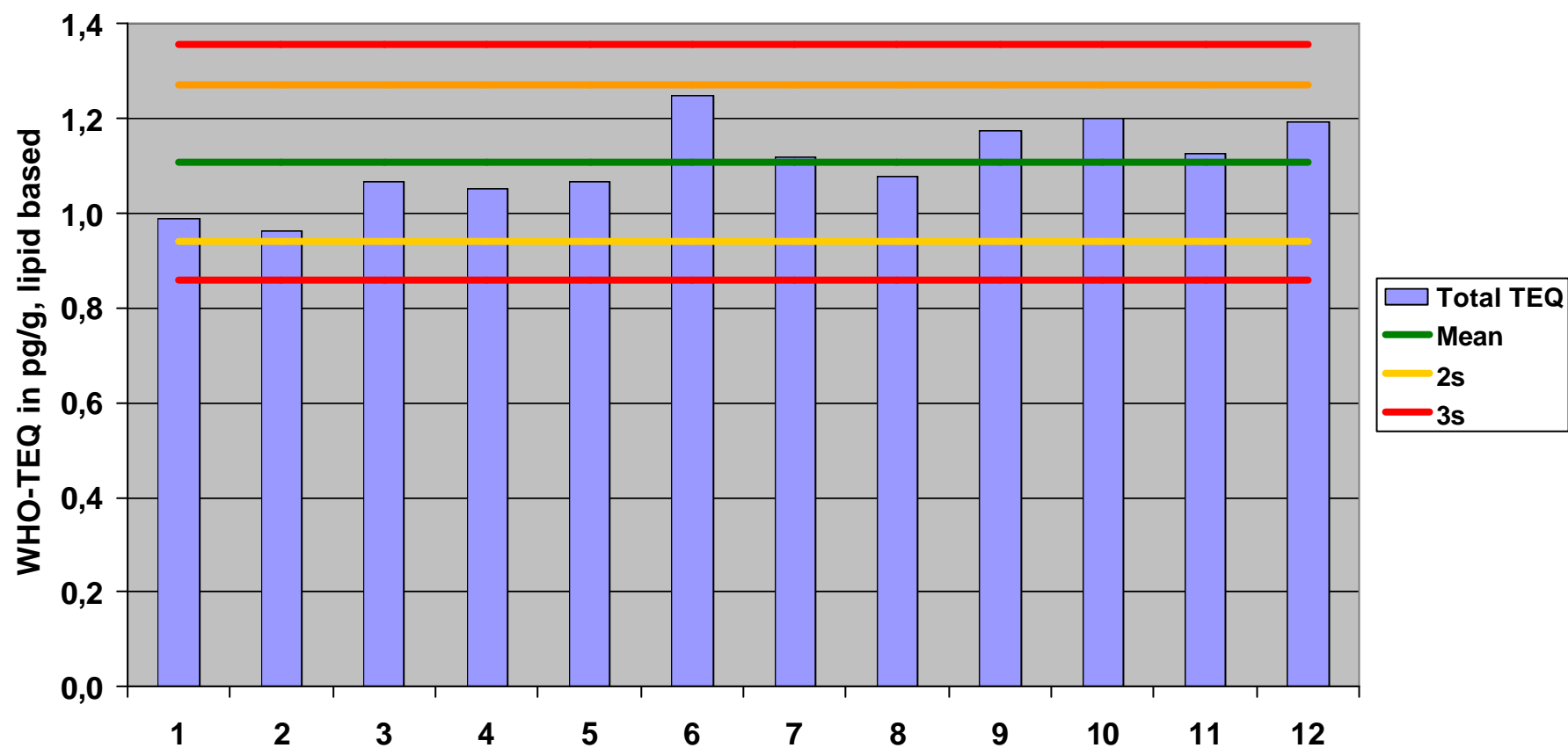
7.4 Quality control samples (PCDDs/PCDFs)

# Quality Control Samples PCDDs/PCDFs in Butter (Pools)



## 7.5 Quality Control Samples (PCDDs/PCDFs and WHO-PCBs)

### Quality Control Samples Total TEQ (PCDD/Fs and WHO-PCBs) in Butter (Pools)





## 8 Final Remarks

It is not allowed to duplicate the report in parts without written permission by ERGO Forschungsgesellschaft mbH.

The samples are stored – on dependence of the test parameters – not longer than three months after the date of the report.

Hamburg, 05.04.2002

**ERGO Forschungsgesellschaft mbH**

Olaf Pöpke  
*board member*

Claudia Collingro  
(official certified food analyst)  
*project manager*

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	1991 Harbor Herds
	Sample No. (ERGO)	H-01-12-0333
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	5.07

Remarks

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD			0.11	1.0	0.11
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD			0.30	1.0	0.30
	Accredited	**	1,2,3,4,7,8-Hexa-CDD			0.14	0.1	0.014
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.28	0.1	0.028
			1,2,3,7,8,9-Hexa-CDD			0.20	0.1	0.020
			1,2,3,4,6,7,8-Hepta-CDD			0.55	0.01	0.0055
			OCDD			1.2	0.0001	< 0.001
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.14	0.069	< LOQ	0.1	0.0069
	Accredited	**	1,2,3,7,8-Penta-CDF	0.12	0.061	< LOQ	0.05	0.0030
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.50	0.5	0.25
			1,2,3,4,7,8-Hexa-CDF			0.20	0.1	0.020
			1,2,3,6,7,8-Hexa-CDF			0.23	0.1	0.023
			1,2,3,7,8,9-Hexa-CDF	0.24	0.12	< LOQ	0.1	0.012
			2,3,4,6,7,8-Hexa-CDF			0.15	0.1	0.015
			1,2,3,4,6,7,8-Hepta-CDF			0.27	0.01	0.0027
			1,2,3,4,7,8,9-Hepta-CDF	0.11	0.054	< LOQ	0.01	0.00054
			OCDF			0.40	0.0001	< 0.001
	Total PCDD					2.7		0.47
	Total PCDF					1.8		0.33
	TEQ (WHO) (PCDDs and PCDFs)					4.5		0.81

Small differences on totals result from computer roundings

\* = see report, section "Methods"

\*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

## PCB-results in milk - lipid based -

1	Country	Ireland								
	Year	2001								
	Clients Code	1991 Harbor Herds								
	Sample No. (ERGO)	H-01-12-0333								
	Product									
	Tissue	milk								
	Expression of results									
	Stage of marketing									
	Type of sampling									
	Sample No.									
	Area									
	Number of subsamples									
	Fat content (%)	5.07								
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77			2.9	0,0001	< 0,001	
	Detection	HRGC/HRMS	PCB-	81			0.87	0.0001	< 0.001	
	Accredited	**	PCB-	126			7.2	0.1	0.72	
	Uncertainty (%)		PCB-	169			0.93	0.01	0.0093	
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			218	0.0001	0.022	
	Accredited	**	PCB-	114			22	0.0005	0.011	
	Uncertainty (%)		PCB-	118			868	0.0001	0.087	
			PCB-	123			n.a.	0.0001	-	
			PCB-	156			82	0.0005	0.041	
			PCB-	157			19	0.0005	0.0094	
			PCB-	167			41	0.00001	< 0.001	
			PCB-	189			7.2	0.0001	0.00072	
	Total non-ortho PCB						12	0.73		
	Total mono-ortho PCB						1257	0.17		
	Total WHO-PCB						1269	0.90		
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							1.7			
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	28	0.51	0.26	< LOQ			
	Accredited	**	PCB-	52	0.15	0.075	< LOQ			
	Uncertainty (%)		PCB-	101	0.16	0.081	< LOQ			
			PCB-	118			0.87			
			PCB-	138			1.00			
			PCB-	153			1.1			
PCB-			180			0.38				
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	18	0.83	0.42	< LOQ			
	Accredited	**	PCB-	31	0.39	0.20	< LOQ			
	Uncertainty (%)		PCB-	33	0.38	0.19	< LOQ			
			PCB-	37			0.018			
			PCB-	41	0.087	0.043	< LOQ			
			PCB-	44	0.099	0.049	< LOQ			
			PCB-	47	0.17	0.086	< LOQ			
			PCB-	49	0.087	0.044	< LOQ			
			PCB-	51	0.038	0.019	< LOQ			
			PCB-	60			0.022			
			PCB-	66			0.079			
			PCB-	74			0.22			
			PCB-	87	0.038	0.019	< LOQ			
			PCB-	99			0.33			
			PCB-	110	0.080	0.040	< LOQ			
			PCB-	141	0.033	0.017	< LOQ			
			PCB-	151	0.050	0.025	< LOQ			
			PCB-	183			0.080			
			PCB-	185	0.0037	0.0019	< LOQ			
			PCB-	187			0.022			
			PCB-	191			0.0064			
			PCB-	193			0.014			
			PCB-	194			0.046			
			PCB-	201			0.0089			
			PCB-	203			0.058			
			PCB-	206			0.016			
			PCB-	209			0.0062			
			Small differences on totals result from computer roundings							
	* = see report, section "Methods"									
	** = Accreditation in progress									
	(DACH 175/ERGO/20.06.00/00)									

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	1992 Harbor Herds
	Sample No. (ERGO)	H-01-12-0334
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	3.89

Remarks

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD			0.093	1.0	0.093
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD			0.16	1.0	0.16
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.16	0.081	< LOQ	0.1	0.0081
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.19	0.1	0.019
			1,2,3,7,8,9-Hexa-CDD	0.28	0.14	< LOQ	0.1	0.014
			1,2,3,4,6,7,8-Hepta-CDD	0.44	0.22	< LOQ	0.01	0.0022
			OCDD	1.8	0.91	< LOQ	0.0001	< 0.001
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.18	0.090	< LOQ	0.1	0.0090
	Accredited	**	1,2,3,7,8-Penta-CDF	0.093	0.046	< LOQ	0.05	0.0023
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.38	0.5	0.19
			1,2,3,4,7,8-Hexa-CDF			0.25	0.1	0.025
			1,2,3,6,7,8-Hexa-CDF			0.14	0.1	0.014
			1,2,3,7,8,9-Hexa-CDF	0.15	0.077	< LOQ	0.1	0.0077
			2,3,4,6,7,8-Hexa-CDF			0.17	0.1	0.017
			1,2,3,4,6,7,8-Hepta-CDF	0.41	0.20	< LOQ	0.01	0.0020
			1,2,3,4,7,8,9-Hepta-CDF	0.14	0.070	< LOQ	0.01	0.00070
			OCDF	0.99	0.49	< LOQ	0.0001	< 0.001
	Total PCDD					0.45		0.30
	Total PCDF					0.93		0.27
	TEQ (WHO) (PCDDs and PCDFs)					1.4		0.57

Small differences on totals result from computer roundings

\* = see report, section "Methods"

\*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

## PCB-results in milk - lipid based -

1	Country	Ireland								
	Year	2001								
	Clients Code	1992 Harbor Herds								
	Sample No. (ERGO)	H-01-12-0334								
	Product									
	Tissue	milk								
	Expression of results									
	Stage of marketing									
	Type of sampling									
	Sample No.									
	Area									
	Number of subsamples									
	Fat content (%)	3.89								
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77	6,3	3,1	< LOQ	0,0001	< 0,001	
	Detection	HRGC/HRMS	PCB-	81			0,83	0,0001	< 0,001	
	Accredited	**	PCB-	126			11	0,1	1,1	
	Uncertainty (%)		PCB-	169			0,88	0,01	0,0088	
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			261	0,0001	0,026	
	Accredited	**	PCB-	114			30	0,0005	0,015	
	Uncertainty (%)		PCB-	118			1069	0,0001	0,11	
			PCB-	123			n.a.	0,0001	-	
			PCB-	156			94	0,0005	0,047	
			PCB-	157			24	0,0005	0,012	
			PCB-	167			47	0,00001	< 0,001	
			PCB-	189			6,2	0,0001	0,00062	
	Total non-ortho PCB						12	1,1		
	Total mono-ortho PCB						1531	0,21		
	Total WHO-PCB						1543	1,3		
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							1,8			
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	28	0,67	0,33	< LOQ			
	Accredited	**	PCB-	52	0,20	0,098	< LOQ			
	Uncertainty (%)		PCB-	101	0,21	0,11	< LOQ			
			PCB-	118			1,1			
			PCB-	138			1,0			
			PCB-	153			1,1			
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	18	1,1	0,54	< LOQ			
	Accredited	**	PCB-	31	0,51	0,26	< LOQ			
	Uncertainty (%)		PCB-	33	0,50	0,25	< LOQ			
			PCB-	37	0,029	0,015	< LOQ			
			PCB-	41	0,11	0,056	< LOQ			
			PCB-	44	0,13	0,064	< LOQ			
			PCB-	47	0,22	0,11	< LOQ			
			PCB-	49	0,11	0,057	< LOQ			
			PCB-	51	0,050	0,025	< LOQ			
			PCB-	60	0,024	0,012	< LOQ			
			PCB-	66			0,058			
			PCB-	74			0,21			
			PCB-	87	0,050	0,025	< LOQ			
			PCB-	99			0,40			
			PCB-	110	0,10	0,052	< LOQ			
			PCB-	141	0,044	0,022	< LOQ			
			PCB-	151	0,065	0,032	< LOQ			
			PCB-	183			0,065			
			PCB-	185	0,0049	0,0024	< LOQ			
			PCB-	187	0,034	0,017	< LOQ			
			PCB-	191			0,0071			
			PCB-	193			0,0097			
			PCB-	194			0,021			
			PCB-	201	0,011	0,0053	< LOQ			
			PCB-	203			0,035			
			PCB-	206			0,012			
			PCB-	209			0,0042			
	Small differences on totals result from computer roundings * = see report, section "Methods" ** = Accreditation in progress (DACH 175/ERGO/20.06.00/00)									

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	1993 Harbor Herds
	Sample No. (ERGO)	H-01-12-0335
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.13

Remarks

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD	0.098	0.049	< LOQ	1.0	0.049
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD			0.12	1.0	0.12
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.15	0.073	< LOQ	0.1	0.0073
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.14	0.1	0.014
			1,2,3,7,8,9-Hexa-CDD	0.14	0.070	< LOQ	0.1	0.0070
			1,2,3,4,6,7,8-Hepta-CDD	0.41	0.21	< LOQ	0.01	0.0021
			OCDD	1.7	0.86	< LOQ	0.0001	< 0.001
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.17	0.085	< LOQ	0.1	0.0085
	Accredited	**	1,2,3,7,8-Penta-CDF	0.075	0.037	< LOQ	0.05	0.0019
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.19	0.5	0.097
			1,2,3,4,7,8-Hexa-CDF			0.13	0.1	0.013
			1,2,3,6,7,8-Hexa-CDF			0.099	0.1	0.0099
			1,2,3,7,8,9-Hexa-CDF	0.12	0.060	< LOQ	0.1	0.0060
			2,3,4,6,7,8-Hexa-CDF	0.17	0.084	< LOQ	0.1	0.0084
			1,2,3,4,6,7,8-Hepta-CDF			0.19	0.01	0.0019
			1,2,3,4,7,8,9-Hepta-CDF	0.13	0.066	< LOQ	0.01	0.00066
			OCDF	0.93	0.47	< LOQ	0.0001	< 0.001
	Total PCDD					0.26		0.20
	Total PCDF					0.61		0.15
	TEQ (WHO) (PCDDs and PCDFs)					0.88		0.35

Small differences on totals result from computer roundings

\* = see report, section "Methods"

\*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

## PCB-results in milk - lipid based -

1	Country	Ireland								
	Year	2001								
	Clients Code	1993 Harbor Herds								
	Sample No. (ERGO)	H-01-12-0335								
	Product									
	Tissue	milk								
	Expression of results									
	Stage of marketing									
	Type of sampling									
	Sample No.									
	Area									
	Number of subsamples									
	Fat content (%)	4.13								
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77	5,9	2,9	< LOQ	0,0001	< 0,001	
	Detection	HRGC/HRMS	PCB-	81			0,60	0,0001	< 0,001	
	Accredited	**	PCB-	126			5,6	0,1	0,56	
	Uncertainty (%)		PCB-	169			0,64	0,01	0,0064	
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			99	0,0001	0,0099	
	Accredited	**	PCB-	114			9,8	0,0005	0,0049	
	Uncertainty (%)		PCB-	118			363	0,0001	0,036	
			PCB-	123			n.a.	0,0001	-	
			PCB-	156			37	0,0005	0,019	
			PCB-	157			8,7	0,0005	0,0044	
			PCB-	167			19	0,00001	< 0,001	
			PCB-	189			4,6	0,0001	< 0,001	
	Total non-ortho PCB						6,9	0,57		
	Total mono-ortho PCB						540	0,074		
Total WHO-PCB						547	0,64			
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							0,99			
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	28	0,63	0,31	< LOQ			
	Accredited	**	PCB-	52	0,18	0,092	< LOQ			
	Uncertainty (%)		PCB-	101	0,20	0,099	< LOQ			
			PCB-	118			0,36			
			PCB-	138			0,48			
			PCB-	153			0,54			
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	18	1,0	0,51	< LOQ			
	Accredited	**	PCB-	31	0,48	0,24	< LOQ			
	Uncertainty (%)		PCB-	33	0,47	0,23	< LOQ			
			PCB-	37			0,014			
			PCB-	41	0,11	0,053	< LOQ			
			PCB-	44	0,12	0,061	< LOQ			
			PCB-	47	0,21	0,11	< LOQ			
			PCB-	49	0,11	0,053	< LOQ			
			PCB-	51	0,047	0,024	< LOQ			
			PCB-	60	0,022	0,011	< LOQ			
			PCB-	66	0,084	0,042	< LOQ			
			PCB-	74			0,16			
			PCB-	87	0,047	0,024	< LOQ			
			PCB-	99			0,18			
			PCB-	110	0,098	0,049	< LOQ			
			PCB-	141	0,041	0,021	< LOQ			
			PCB-	151	0,061	0,031	< LOQ			
			PCB-	183			0,042			
			PCB-	185	0,0046	0,0023	< LOQ			
			PCB-	187	0,032	0,016	< LOQ			
			PCB-	191			0,0024			
			PCB-	193			0,0062			
			PCB-	194			0,018			
			PCB-	201	0,0100	0,0050	< LOQ			
			PCB-	203			0,028			
			PCB-	206			0,0096			
			PCB-	209			0,0043			
	Small differences on totals result from computerroundings * = see report, section "Methods" ** = Accreditation in progress (DACH 175/ERGO/20.06.00/00)									

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	1995 Harbor Herds
	Sample No. (ERGO)	H-01-12-0336
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.43

[illegible]

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD			0.042	1.0	0.042
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD			0.14	1.0	0.14
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.11	0.057	< LOQ	0.1	0.0057
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.20	0.1	0.020
			1,2,3,7,8,9-Hexa-CDD	0.18	0.092	< LOQ	0.1	0.0092
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.16	0.079	< LOQ	0.1	0.0079
	Accredited	**	1,2,3,7,8-Penta-CDF	0.087	0.044	< LOQ	0.05	0.0022
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.27	0.5	0.13
			1,2,3,4,7,8-Hexa-CDF			0.19	0.1	0.019
			1,2,3,6,7,8-Hexa-CDF			0.14	0.1	0.014
			1,2,3,7,8,9-Hexa-CDF	0.12	0.060	< LOQ	0.1	0.0060
			2,3,4,6,7,8-Hexa-CDF			0.12	0.1	0.012
			1,2,3,4,6,7,8-Hepta-CDF			0.22	0.01	0.0022
			1,2,3,4,7,8,9-Hepta-CDF	0.12	0.061	< LOQ	0.01	0.00061
			OCDF			0.60	0.0001	< 0.001
	Total PCDD					0.73		0.22
	Total PCDF					1.5		0.20
	TEQ (WHO) (PCDDs and PCDFs)					2.3		0.42

Small differences on totals result from computer roundings

\* = see report, section "Methods"

\*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)



## PCB-results in milk - lipid based -

1	Country	Ireland							
	Year	2001							
	Clients Code	1995 Harbor Herds							
	Sample No. (ERGO)	H-01-12-0336							
	Product								
	Tissue	milk							
	Expression of results								
	Stage of marketing								
	Type of sampling								
	Sample No.								
	Area								
	Number of subsamples								
	Fat content (%)	4.43							
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ
	Methods	*	PCB-	77	5,5	2,7	< LOQ	0,0001	< 0,001
	Detection	HRGC/HRMS	PCB-	81			0,65	0,0001	< 0,001
	Accredited	**	PCB-	126			6,1	0,1	0,61
	Uncertainty (%)		PCB-	169			0,93	0,01	0,0093
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ
	Methods	*	PCB-	105			152	0,0001	0,015
	Accredited	**	PCB-	114			15	0,0005	0,0073
	Uncertainty (%)		PCB-	118			541	0,0001	0,054
			PCB-	123			n.a.	0,0001	-
			PCB-	156			52	0,0005	0,026
			PCB-	157			13	0,0005	0,0064
			PCB-	167			28	0,00001	< 0,001
			PCB-	189			4,8	0,0001	< 0,001
			Total non-ortho PCB				7,7		0,62
	Total mono-ortho PCB				804		0,11		
Total WHO-PCB				812		0,73			
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)						1,1			
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results		
	Methods	*	PCB-	28	0,59	0,29	< LOQ		
	Accredited	**	PCB-	52	0,17	0,086	< LOQ		
	Uncertainty (%)		PCB-	101	0,18	0,092	< LOQ		
			PCB-	118			0,54		
			PCB-	138			0,74		
			PCB-	153			0,83		
PCB-	180			0,26					
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results		
	Methods	*	PCB-	18	0,95	0,48	< LOQ		
	Accredited	**	PCB-	31	0,45	0,23	< LOQ		
	Uncertainty (%)		PCB-	33	0,44	0,22	< LOQ		
			PCB-	37			0,018		
			PCB-	41	0,099	0,050	< LOQ		
			PCB-	44	0,11	0,056	< LOQ		
			PCB-	47	0,20	0,098	< LOQ		
			PCB-	49	0,100	0,050	< LOQ		
			PCB-	51	0,044	0,022	< LOQ		
			PCB-	60			0,016		
			PCB-	66			0,077		
			PCB-	74			0,23		
			PCB-	87	0,044	0,022	< LOQ		
			PCB-	99			0,26		
			PCB-	110	0,091	0,046	< LOQ		
			PCB-	141	0,038	0,019	< LOQ		
			PCB-	151	0,057	0,029	< LOQ		
			PCB-	183			0,058		
			PCB-	185	0,0043	0,0021	< LOQ		
			PCB-	187			0,019		
			PCB-	191			0,0051		
			PCB-	193			0,013		
			PCB-	194			0,025		
			PCB-	201			0,0066		
			PCB-	203			0,040		
			PCB-	206			0,013		
			PCB-	209			0,0068		

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	1997 Harbor Herds
	Sample No. (ERGO)	H-01-12-0337
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.37

[illegible]

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD	0.15	0.075	< LOQ	1.0	0.075
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD	0.20	0.100	< LOQ	1.0	0.100
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.074	0.037	< LOQ	0.1	0.003
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.11	0.1	0.011
			1,2,3,7,8,9-Hexa-CDD	0.14	0.072	< LOQ	0.1	0.0072
			1,2,3,4,6,7,8-Hepta-CDD	0.39	0.20	< LOQ	0.01	0.0020
			OCDD	1.6	0.81	< LOQ	0.0001	< 0.001
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.16	0.080	< LOQ	0.1	0.0080
	Accredited	**	1,2,3,7,8-Penta-CDF	0.087	0.043	< LOQ	0.05	0.0022
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.16	0.5	0.078
			1,2,3,4,7,8-Hexa-CDF	0.12	0.061	< LOQ	0.1	0.0061
			1,2,3,6,7,8-Hexa-CDF	0.16	0.082	< LOQ	0.1	0.0082
			1,2,3,7,8,9-Hexa-CDF	0.24	0.12	< LOQ	0.1	0.012
			2,3,4,6,7,8-Hexa-CDF	0.16	0.080	< LOQ	0.1	0.0080
			1,2,3,4,6,7,8-Hepta-CDF	0.36	0.18	< LOQ	0.01	0.0018
			1,2,3,4,7,8,9-Hepta-CDF	0.12	0.062	< LOQ	0.01	0.00062
		QCDF			0.45	0.0001	< 0.001	
	Total PCDD				0.11		0.20	
	Total PCDF				0.60		0.12	
	TEQ (WHO) (PCDDs and PCDFs)				0.71		0.32	

Small differences on totals result from computer roundings  
 \* = see report, section "Methods"  
 \*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

## PCB-results in milk - lipid based -

1	Country	Ireland								
	Year	2001								
	Clients Code	1997 Harbor Herds								
	Sample No. (ERGO)	H-01-12-0337								
	Product									
	Tissue	milk								
	Expression of results									
	Stage of marketing									
	Type of sampling									
	Sample No.									
	Area									
	Number of subsamples									
	Fat content (%)	4.37								
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77	5,6	2,8	< LOQ	0,0001	< 0,001	
	Detection	HRGC/HRMS	PCB-	81			0,64	0,0001	< 0,001	
	Accredited	**	PCB-	126			4,2	0,1	0,42	
	Uncertainty (%)		PCB-	169			0,48	0,01	0,0048	
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			119	0,0001	0,012	
	Accredited	**	PCB-	114			12	0,0005	0,0061	
	Uncertainty (%)		PCB-	118			386	0,0001	0,039	
			PCB-	123			n.a.	0,0001	-	
			PCB-	156			35	0,0005	0,018	
			PCB-	157			9,5	0,0005	0,0047	
			PCB-	167			20	0,00001	< 0,001	
			PCB-	189			4,2	0,0001	< 0,001	
	Total non-ortho PCB						53	0,42		
	Total mono-ortho PCB						586	0,079		
Total WHO-PCB						591	0,50			
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							0,82			
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	28	0,59	0,30	< LOQ			
	Accredited	**	PCB-	52	0,17	0,087	< LOQ			
	Uncertainty (%)		PCB-	101	0,19	0,094	< LOQ			
			PCB-	118			0,39			
			PCB-	138			0,46			
			PCB-	153			0,51			
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	18	0,97	0,48	< LOQ			
	Accredited	**	PCB-	31	0,46	0,23	< LOQ			
	Uncertainty (%)		PCB-	33	0,44	0,22	< LOQ			
			PCB-	37	0,026	0,013	< LOQ			
			PCB-	41	0,10	0,050	< LOQ			
			PCB-	44	0,11	0,057	< LOQ			
			PCB-	47	0,20	0,099	< LOQ			
			PCB-	49	0,10	0,050	< LOQ			
			PCB-	51	0,044	0,022	< LOQ			
			PCB-	60	0,021	0,011	< LOQ			
			PCB-	66			0,049			
			PCB-	74			0,14			
			PCB-	87	0,045	0,022	< LOQ			
			PCB-	99			0,19			
			PCB-	110	0,093	0,046	< LOQ			
			PCB-	141	0,039	0,019	< LOQ			
			PCB-	151	0,058	0,029	< LOQ			
			PCB-	183			0,036			
			PCB-	185	0,0043	0,0022	< LOQ			
			PCB-	187	0,031	0,015	< LOQ			
			PCB-	191			0,0034			
			PCB-	193			0,0054			
			PCB-	194			0,016			
			PCB-	201	0,0094	0,0047	< LOQ			
			PCB-	203			0,025			
			PCB-	206			0,0070			
			PCB-	209			0,0034			
	Small differences on totals result from computerroundings									
	* = see report, section "Methods"									
	** = Accreditation in progress									
	(DACH 175/ERGO/20.06.00/00)									

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	1998 Harbor Herds
	Sample No. (ERGO)	H-01-12-0338
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.65

[illegible]

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD			0.056	1.0	0.056
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD			0.088	1.0	0.088
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.087	0.043	< LOQ	0.1	0.0043
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.071	0.1	0.0071
			1,2,3,7,8,9-Hexa-CDD	0.066	0.033	< LOQ	0.1	0.0033
			1,2,3,4,6,7,8-Hepta-CDD	0.37	0.18	< LOQ	0.01	0.0018
OCDD			1.5	0.76	< LOQ	0.0001	< 0.001	
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.15	0.075	< LOQ	0.1	0.0075
	Accredited	**	1,2,3,7,8-Penta-CDF	0.060	0.030	< LOQ	0.05	0.0015
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.14	0.5	0.072
			1,2,3,4,7,8-Hexa-CDF	0.11	0.057	< LOQ	0.1	0.0057
			1,2,3,6,7,8-Hexa-CDF	0.14	0.069	< LOQ	0.1	0.0069
			1,2,3,7,8,9-Hexa-CDF	0.060	0.030	< LOQ	0.1	0.0030
			2,3,4,6,7,8-Hexa-CDF	0.15	0.075	< LOQ	0.1	0.0075
			1,2,3,4,6,7,8-Hepta-CDF	0.34	0.17	< LOQ	0.01	0.0017
			1,2,3,4,7,8,9-Hepta-CDF	0.12	0.058	< LOQ	0.01	0.00058
			QCDF	0.83	0.41	< LOQ	0.0001	< 0.001
	Total PCDD					0.21		0.16
Total PCDF					0.14		0.11	
TEQ (WHO) (PCDDs and PCDFs)					0.36		0.27	

Small differences on totals result from computer roundings  
 \* = see report, section "Methods"  
 \*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

## PCB-results in milk - lipid based -

1	Country	Ireland								
	Year	2001								
	Clients Code	1998 Harbor Herds								
	Sample No. (ERGO)	H-01-12-0338								
	Product									
	Tissue	milk								
	Expression of results									
	Stage of marketing									
	Type of sampling									
	Sample No.									
	Area									
	Number of subsamples									
	Fat content (%)	4.65								
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77	5,2	2,6	< LOQ	0,0001	< 0,001	
	Detection	HRGC/HRMS	PCB-	81			0,97	0,0001	< 0,001	
	Accredited	**	PCB-	126			5,7	0,1	0,57	
	Uncertainty (%)		PCB-	169			0,54	0,01	0,0054	
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			137	0,0001	0,014	
	Accredited	**	PCB-	114			14	0,0005	0,0070	
	Uncertainty (%)		PCB-	118			429	0,0001	0,043	
			PCB-	123			n.a.	0,0001	-	
			PCB-	156			39	0,0005	0,019	
			PCB-	157			9,6	0,0005	0,0048	
			PCB-	167			21	0,00001	< 0,001	
			PCB-	189			3,6	0,0001	< 0,001	
	Total non-ortho PCB						7,2	0,57		
	Total mono-ortho PCB						652	0,088		
Total WHO-PCB						660	0,66			
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							0,93			
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	28	0,56	0,28	< LOQ			
	Accredited	**	PCB-	52	0,16	0,082	< LOQ			
	Uncertainty (%)		PCB-	101	0,18	0,088	< LOQ			
			PCB-	118			0,43			
			PCB-	138			0,45			
			PCB-	153			0,47			
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	18	0,91	0,45	< LOQ			
	Accredited	**	PCB-	31	0,43	0,21	< LOQ			
	Uncertainty (%)		PCB-	33	0,42	0,21	< LOQ			
			PCB-	37	0,024	0,012	< LOQ			
			PCB-	41	0,094	0,047	< LOQ			
			PCB-	44	0,11	0,054	< LOQ			
			PCB-	47	0,19	0,093	< LOQ			
			PCB-	49	0,095	0,047	< LOQ			
			PCB-	51	0,042	0,021	< LOQ			
			PCB-	60	0,020	0,0100	< LOQ			
			PCB-	66			0,077			
			PCB-	74			0,23			
			PCB-	87	0,042	0,021	< LOQ			
			PCB-	99			0,19			
			PCB-	110	0,087	0,043	< LOQ			
			PCB-	141	0,037	0,018	< LOQ			
			PCB-	151	0,054	0,027	< LOQ			
			PCB-	183			0,025			
			PCB-	185	0,0041	0,0020	< LOQ			
			PCB-	187	0,029	0,014	< LOQ			
			PCB-	191			0,0030			
			PCB-	193			0,0058			
			PCB-	194			0,015			
			PCB-	201	0,0089	0,0044	< LOQ			
			PCB-	203			0,018			
			PCB-	206			0,0066			
			PCB-	209			0,0031			
	Small differences on totals result from computerroundings * = see report, section "Methods" ** = Accreditation in progress (DACH 175/ERGO/20.06.00/00)									

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	1999 Harbor Herds
	Sample No. (ERGO)	H-01-12-0339
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.29

[illegible]

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD	0.13	0.065	< LOQ	1.0	0.065
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD	0.17	0.087	< LOQ	1.0	0.087
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.071	0.035	< LOQ	0.1	0.0035
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.10	0.1	0.010
			1,2,3,7,8,9-Hexa-CDD	0.12	0.058	< LOQ	0.1	0.0058
			1,2,3,4,6,7,8-Hepta-CDD			0.26	0.01	0.0026
		OCDD			1.5	0.0001	< 0.001	
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF			0.14	0.1	0.014
	Accredited	**	1,2,3,7,8-Penta-CDF	0.11	0.056	< LOQ	0.05	0.0028
	Uncertainty (%)		2,3,4,7,8-Penta-CDF	0.31	0.16	< LOQ	0.5	0.078
			1,2,3,4,7,8-Hexa-CDF			0.15	0.1	0.015
			1,2,3,6,7,8-Hexa-CDF			0.097	0.1	0.0097
			1,2,3,7,8,9-Hexa-CDF	0.18	0.092	< LOQ	0.1	0.0092
			2,3,4,6,7,8-Hexa-CDF	0.17	0.085	< LOQ	0.1	0.0085
			1,2,3,4,6,7,8-Hepta-CDF			0.24	0.01	0.0024
			1,2,3,4,7,8,9-Hepta-CDF	0.19	0.097	< LOQ	0.01	0.00097
		QCDF			0.54	0.0001	< 0.001	
	Total PCDD				1.9		0.17	
	Total PCDF				1.2		0.14	
	TEQ (WHO) (PCDDs and PCDFs)				3.1		0.31	

Small differences on totals result from computer roundings  
 \* = see report, section "Methods"  
 \*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

## PCB-results in milk - lipid based -

1	Country	Ireland										
	Year	2001										
	Clients Code	1999 Harbor Herds										
	Sample No. (ERGO)	H-01-12-0339										
	Product											
	Tissue	milk										
	Expression of results											
	Stage of marketing											
	Type of sampling											
	Sample No.											
	Area											
	Number of subsamples											
	Fat content (%)	4.29										
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ			
	Methods	*	PCB-	77			6.5	0,0001	0,00065			
	Detection	HRGC/HRMS	PCB-	81			1.2	0.0001	< 0.001			
	Accredited	**	PCB-	126			4.4	0,1	0,44			
	Uncertainty (%)		PCB-	169			0,54	0,01	0,0054			
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ			
	Methods	*	PCB-	105			122	0.0001	0.012			
	Accredited	**	PCB-	114			11	0.0005	0.0055			
	Uncertainty (%)		PCB-	118			411	0.0001	0.041			
			PCB-	123			n.a.	0.0001	-			
			PCB-	156			46	0.0005	0.023			
			PCB-	157			8,7	0.0005	0.0044			
			PCB-	167			25	0.00001	< 0.001			
			PCB-	189	0,020	0,010	< LOQ	0,0001	< 0,001			
			Total non-ortho PCB					13		0.45		
	Total mono-ortho PCB					624		0,086				
	Total WHO-PCB					637		0.53				
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							0.85					
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results					
	Methods	*	PCB-	28			0.21					
	Accredited	**	PCB-	52			0.063					
	Uncertainty (%)		PCB-	101			0.24					
			PCB-	118			0.41					
			PCB-	138			0.68					
			PCB-	153			0.66					
PCB-	180			0.22								
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results					
	Methods	*	PCB-	18	0.57	0.28	< LOQ					
	Accredited	**	PCB-	31	0.27	0.14	< LOQ					
	Uncertainty (%)		PCB-	33	0.27	0.14	< LOQ					
			PCB-	37			0.029					
			PCB-	41			0.056					
			PCB-	44			0.058					
			PCB-	47			0.11					
			PCB-	49			0.034					
			PCB-	51	0.032	0.016	< LOQ					
			PCB-	60			0.055					
			PCB-	66			0.16					
			PCB-	74			0.20					
			PCB-	87			0.078					
			PCB-	99			0.17					
			PCB-	110			0.17					
			PCB-	141			0.076					
			PCB-	151			0.078					
			PCB-	183			0.050					
			PCB-	185			0.0031					
			PCB-	187			0.061					
			PCB-	191			0.0042					
			PCB-	193			0.0063					
			PCB-	194			0.020					
			PCB-	201			0.011					
			PCB-	203			0.021					
			PCB-	206	0.011	0.0054	< LOQ					
			PCB-	209	0.0041	0.0020	< LOQ					
			Small differences on totals result from computerroundings									
			* = see report, section "Methods"									
	** = Accreditation in progress											
	(DACH 175/ERGO/20.06.00/00)											

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	2000 Harbor Herds
	Sample No. (ERGO)	H-01-12-0340
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.444

[illegible]

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD	0.093	0.047	< LOQ	1.0	0.047
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD			0.097	1.0	0.097
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.10	0.050	< LOQ	0.1	0.0050
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.078	0.1	0.0078
			1,2,3,7,8,9-Hexa-CDD	0.12	0.062	< LOQ	0.1	0.0062
			1,2,3,4,6,7,8-Hepta-CDD			0.31	0.01	0.0031
		OCDD			1.5	0.0001	< 0.001	
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.16	0.078	< LOQ	0.1	0.0078
	Accredited	**	1,2,3,7,8-Penta-CDF			0.076	0.05	0.0038
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.15	0.5	0.077
			1,2,3,4,7,8-Hexa-CDF			0.25	0.1	0.025
			1,2,3,6,7,8-Hexa-CDF			0.100	0.1	0.0100
			1,2,3,7,8,9-Hexa-CDF	0.14	0.070	< LOQ	0.1	0.0070
			2,3,4,6,7,8-Hexa-CDF	0.16	0.082	< LOQ	0.1	0.0082
			1,2,3,4,6,7,8-Hepta-CDF			0.32	0.01	0.0032
			1,2,3,4,7,8,9-Hepta-CDF	0.29	0.14	< LOQ	0.01	0.0014
		QCDF			0.89	0.0001	< 0.001	
	Total PCDD				2.0		0.17	
	Total PCDF				1.8		0.14	
	TEQ (WHO) (PCDDs and PCDFs)				3.8		0.31	

Small differences on totals result from computer roundings  
 \* = see report, section "Methods"  
 \*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)



## PCB-results in milk - lipid based -

1	Country	Ireland								
	Year	2001								
	Clients Code	2000 Harbor Herds								
	Sample No. (ERGO)	H-01-12-0340								
	Product									
	Tissue	milk								
	Expression of results									
	Stage of marketing									
	Type of sampling									
	Sample No.									
	Area									
	Number of subsamples									
	Fat content (%)	4.444								
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77			2.1	0,0001	< 0,001	
	Detection	HRGC/HRMS	PCB-	81			0.49	0.0001	< 0.001	
	Accredited	**	PCB-	126			3.3	0.1	0.33	
	Uncertainty (%)		PCB-	169			0,51	0,01	0,0051	
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			47	0.0001	0.0047	
	Accredited	**	PCB-	114			6.5	0.0005	0.0033	
	Uncertainty (%)		PCB-	118			181	0.0001	0.018	
			PCB-	123			n.a.	0.0001	-	
			PCB-	156			16	0.0005	0.0079	
			PCB-	157			4.0	0.0005	0.0020	
			PCB-	167			6.9	0.00001	< 0.001	
			PCB-	189			2.6	0.0001	< 0.001	
	Total non-ortho PCB						6.4	0.34		
	Total mono-ortho PCB						264	0.036		
	Total WHO-PCB						270	0.38		
	TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							0.69		
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	28	0.32	0.16	< LOQ			
	Accredited	**	PCB-	52	0.085	0.042	< LOQ			
	Uncertainty (%)		PCB-	101	0.14	0.069	< LOQ			
			PCB-	118			0.18			
			PCB-	138			0.19			
			PCB-	153			0.24			
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	18	0.55	0.27	< LOQ			
	Accredited	**	PCB-	31	0.26	0.13	< LOQ			
	Uncertainty (%)		PCB-	33	0.26	0.13	< LOQ			
			PCB-	37	0.046	0.023	< LOQ			
			PCB-	41	0.063	0.032	< LOQ			
			PCB-	44	0.061	0.031	< LOQ			
			PCB-	47	0.11	0.056	< LOQ			
			PCB-	49	0.046	0.023	< LOQ			
			PCB-	51	0.030	0.015	< LOQ			
			PCB-	60	0.014	0.0068	< LOQ			
			PCB-	66			0.029			
			PCB-	74			0.078			
			PCB-	87	0.053	0.026	< LOQ			
			PCB-	99			0.097			
			PCB-	110	0.10	0.051	< LOQ			
			PCB-	141	0.064	0.032	< LOQ			
			PCB-	151	0.051	0.026	< LOQ			
			PCB-	183			0.015			
			PCB-	185	0.0057	0.0028	< LOQ			
			PCB-	187	0.050	0.025	< LOQ			
			PCB-	191	0.0032	0.0016	< LOQ			
			PCB-	193	0.0071	0.0036	< LOQ			
			PCB-	194			0.0058			
			PCB-	201	0.0093	0.0046	< LOQ			
			PCB-	203			0.012			
			PCB-	206	0.0073	0.0036	< LOQ			
			PCB-	209	0.0042	0.0021	< LOQ			
	Small differences on totals result from computer roundings * = see report, section "Methods" ** = Accreditation in progress (DACH 175/ERGO/20.06.00/00)									

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	2001 Harbor Herds
	Sample No. (ERGO)	H-01-12-0341
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.266

[illegible]

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD	0.10	0.052	< LOQ	1.0	0.052
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD	0.20	0.099	< LOQ	1.0	0.099
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.15	0.073	< LOQ	0.1	0.0073
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.13	0.1	0.013
			1,2,3,7,8,9-Hexa-CDD	0.12	0.059	< LOQ	0.1	0.0059
			1,2,3,4,6,7,8-Hepta-CDD	0.40	0.20	< LOQ	0.01	0.0020
		OCDD	0.89	0.45	< LOQ	0.0001	< 0.001	
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.16	0.081	< LOQ	0.1	0.0081
	Accredited	**	1,2,3,7,8-Penta-CDF			0.082	0.05	0.0041
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.16	0.5	0.082
			1,2,3,4,7,8-Hexa-CDF			0.15	0.1	0.015
			1,2,3,6,7,8-Hexa-CDF	0.11	0.054	< LOQ	0.1	0.0054
			1,2,3,7,8,9-Hexa-CDF	0.14	0.068	< LOQ	0.1	0.0068
			2,3,4,6,7,8-Hexa-CDF	0.17	0.086	< LOQ	0.1	0.0086
			1,2,3,4,6,7,8-Hepta-CDF	0.26	0.13	< LOQ	0.01	0.0013
			1,2,3,4,7,8,9-Hepta-CDF	0.24	0.12	< LOQ	0.01	0.0012
			QCDF	0.94	0.47	< LOQ	0.0001	< 0.001
Total PCDD					0.13		0.18	
Total PCDF					0.40		0.13	
TEQ (WHO) (PCDDs and PCDFs)					0.53		0.31	

Small differences on totals result from computer roundings  
 \* = see report, section "Methods"  
 \*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

## PCB-results in milk - lipid based -

1	Country	Ireland								
	Year	2001								
	Clients Code	2001 Harbor Herds								
	Sample No. (ERGO)	H-01-12-0341								
	Product									
	Tissue	milk								
	Expression of results									
	Stage of marketing									
	Type of sampling									
	Sample No.									
	Area									
	Number of subsamples									
	Fat content (%)	4.266								
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77			1.6	0,0001	< 0,001	
	Detection	HRGC/HRMS	PCB-	81			0.39	0.0001	< 0.001	
	Accredited	**	PCB-	126			2.3	0.1	0.23	
	Uncertainty (%)		PCB-	169			0.42	0.01	0.0042	
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			39	0.0001	0.0039	
	Accredited	**	PCB-	114			5.0	0.0005	0.0025	
	Uncertainty (%)		PCB-	118			133	0.0001	0.013	
			PCB-	123			n.a.	0.0001	-	
			PCB-	156			13	0.0005	0.0066	
			PCB-	157			2.3	0.0005	0.0012	
			PCB-	167			4.8	0.00001	< 0.001	
			PCB-	189			2.9	0.0001	< 0.001	
	Total non-ortho PCB						4.7	0.23		
	Total mono-ortho PCB						200	0.027		
	Total WHO-PCB						204	0.26		
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							0.57			
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	28	0.34	0.17	< LOQ			
	Accredited	**	PCB-	52	0.088	0.044	< LOQ			
	Uncertainty (%)		PCB-	101	0.14	0.072	< LOQ			
			PCB-	118			0.13			
			PCB-	138	0.29	0.14	< LOQ			
			PCB-	153			0.16			
PCB-			180	0.13	0.067	< LOQ				
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	18	0.57	0.29	< LOQ			
	Accredited	**	PCB-	31	0.27	0.14	< LOQ			
	Uncertainty (%)		PCB-	33	0.27	0.14	< LOQ			
			PCB-	37	0.047	0.024	< LOQ			
			PCB-	41	0.066	0.033	< LOQ			
			PCB-	44	0.064	0.032	< LOQ			
			PCB-	47			0.077			
			PCB-	49	0.048	0.024	< LOQ			
			PCB-	51	0.032	0.016	< LOQ			
			PCB-	60	0.014	0.0071	< LOQ			
			PCB-	66			0.032			
			PCB-	74			0.074			
			PCB-	87	0.055	0.027	< LOQ			
			PCB-	99			0.072			
			PCB-	110	0.11	0.054	< LOQ			
			PCB-	141	0.066	0.033	< LOQ			
			PCB-	151	0.054	0.027	< LOQ			
			PCB-	183	0.027	0.013	< LOQ			
			PCB-	185	0.0059	0.0029	< LOQ			
			PCB-	187	0.052	0.026	< LOQ			
			PCB-	191	0.0033	0.0017	< LOQ			
			PCB-	193	0.0074	0.0037	< LOQ			
			PCB-	194	0.011	0.0054	< LOQ			
			PCB-	201	0.0096	0.0048	< LOQ			
			PCB-	203			0.013			
			PCB-	206			0.0058			
			PCB-	209	0.0060	0.0030	< LOQ			
			Small differences on totals result from computerroundings * = see report, section "Methods" ** = Accreditation in progress (DACH 175/ERGO/20.06.00/00)							

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	1995 Control Herds
	Sample No. (ERGO)	H-01-12-0342
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.7

[illegible]

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD			0.068	1.0	0.068
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD			0.074	1.0	0.074
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.17	0.085	< LOQ	0.1	0.0085
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.17	0.1	0.017
			1,2,3,7,8,9-Hexa-CDD	0.15	0.073	< LOQ	0.1	0.0073
			1,2,3,4,6,7,8-Hepta-CDD	0.36	0.18	< LOQ	0.01	0.0018
		OCDD			0.51	0.0001	< 0.001	
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.15	0.074	< LOQ	0.1	0.0074
	Accredited	**	1,2,3,7,8-Penta-CDF	0.062	0.031	< LOQ	0.05	0.0015
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.24	0.5	0.12
			1,2,3,4,7,8-Hexa-CDF			0.20	0.1	0.020
			1,2,3,6,7,8-Hexa-CDF			0.12	0.1	0.012
			1,2,3,7,8,9-Hexa-CDF	0.064	0.032	< LOQ	0.1	0.0032
			2,3,4,6,7,8-Hexa-CDF			0.11	0.1	0.011
			1,2,3,4,6,7,8-Hepta-CDF			0.19	0.01	0.0019
			1,2,3,4,7,8,9-Hepta-CDF	0.22	0.11	< LOQ	0.01	0.0011
		OCDF	0.85	0.43	< LOQ	0.0001	< 0.001	
	Total PCDD				0.82		0.18	
	Total PCDF				0.85		0.18	
	TEQ (WHO) (PCDDs and PCDFs)				1.7		0.35	

Small differences on totals result from computer roundings  
 \* = see report, section "Methods"  
 \*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

## PCB-results in milk - lipid based -

1	Country	Ireland								
	Year	2001								
	Clients Code	1995 Control Herds								
	Sample No. (ERGO)	H-01-12-0342								
	Product									
	Tissue	milk								
	Expression of results									
	Stage of marketing									
	Type of sampling									
	Sample No.									
	Area									
	Number of subsamples									
	Fat content (%)	4.688								
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77			1,6	0,0001	< 0,001	
	Detection	HRGC/HRMS	PCB-	81			0,35	0,0001	< 0,001	
	Accredited	**	PCB-	126			3,4	0,1	0,34	
	Uncertainty (%)		PCB-	169			0,56	0,01	0,0056	
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			68	0,0001	0,0068	
	Accredited	**	PCB-	114			7,1	0,0005	0,0036	
	Uncertainty (%)		PCB-	118			272	0,0001	0,027	
			PCB-	123			n.a.	0,0001	-	
			PCB-	156			26	0,0005	0,013	
			PCB-	157			6,1	0,0005	0,0030	
			PCB-	167			11	0,00001	< 0,001	
			PCB-	189			3,7	0,0001	< 0,001	
	Total non-ortho PCB						5,8		0,34	
	Total mono-ortho PCB						394		0,053	
Total WHO-PCB						399		0,39		
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)								0,75		
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	28	0,31	0,15	< LOQ			
	Accredited	**	PCB-	52			0,049			
	Uncertainty (%)		PCB-	101	0,13	0,065	< LOQ			
			PCB-	118			0,27			
			PCB-	138			0,34			
			PCB-	153			0,48			
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	18	0,52	0,26	< LOQ			
	Accredited	**	PCB-	31	0,25	0,12	< LOQ			
	Uncertainty (%)		PCB-	33	0,25	0,12	< LOQ			
			PCB-	37	0,043	0,022	< LOQ			
			PCB-	41	0,060	0,030	< LOQ			
			PCB-	44	0,058	0,029	< LOQ			
			PCB-	47	0,11	0,053	< LOQ			
			PCB-	49	0,044	0,022	< LOQ			
			PCB-	51	0,029	0,014	< LOQ			
			PCB-	60			0,0086			
			PCB-	66			0,047			
			PCB-	74			0,10			
			PCB-	87	0,050	0,025	< LOQ			
			PCB-	99			0,15			
			PCB-	110	0,097	0,049	< LOQ			
			PCB-	141	0,060	0,030	< LOQ			
			PCB-	151	0,049	0,024	< LOQ			
			PCB-	183			0,033			
			PCB-	185	0,0053	0,0027	< LOQ			
			PCB-	187	0,047	0,023	< LOQ			
			PCB-	191	0,0030	0,0015	< LOQ			
			PCB-	193			0,0059			
			PCB-	194			0,015			
			PCB-	201	0,0088	0,0044	< LOQ			
			PCB-	203			0,022			
			PCB-	206			0,0100			
			PCB-	209			0,0061			
	Small differences on totals result from computerroundings * = see report, section "Methods" ** = Accreditation in progress (DACH 175/ERGO/20.06.00/00)									

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	1997 Control Herds
	Sample No. (ERGO)	H-01-12-0343
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.3

Remarks

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD	0.12	0.058	< LOQ	1.0	0.058
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD	0.31	0.16	< LOQ	1.0	0.16
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.30	0.15	< LOQ	0.1	0.015
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD	0.16	0.078	< LOQ	0.1	0.0078
			1,2,3,7,8,9-Hexa-CDD	0.18	0.088	< LOQ	0.1	0.0088
			1,2,3,4,6,7,8-Hepta-CDD	0.39	0.20	< LOQ	0.01	0.0020
			OCDD			1.00	0.0001	< 0.001
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.16	0.080	< LOQ	0.1	0.0080
	Accredited	**	1,2,3,7,8-Penta-CDF	0.11	0.056	< LOQ	0.05	0.0028
	Uncertainty (%)		2,3,4,7,8-Penta-CDF	0.25	0.13	< LOQ	0.5	0.063
			1,2,3,4,7,8-Hexa-CDF	0.16	0.080	< LOQ	0.1	0.0080
			1,2,3,6,7,8-Hexa-CDF	0.19	0.096	< LOQ	0.1	0.0096
			1,2,3,7,8,9-Hexa-CDF	0.16	0.078	< LOQ	0.1	0.0078
			2,3,4,6,7,8-Hexa-CDF	0.17	0.084	< LOQ	0.1	0.0084
			1,2,3,4,6,7,8-Hepta-CDF	0.25	0.13	< LOQ	0.01	0.0013
			1,2,3,4,7,8,9-Hepta-CDF	0.32	0.16	< LOQ	0.01	0.0016
			OCDF	0.93	0.46	< LOQ	0.0001	< 0.001
	Total PCDD					1.00		0.25
	Total PCDF					< LOQ		0.11
	TEQ (WHO) (PCDDs and PCDFs)					1.00		0.36

Small differences on totals result from computer roundings

\* = see report, section "Methods"

\*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

## PCB-results in milk - lipid based -

1	Country	Ireland									
	Year	2001									
	Clients Code	1997 Control Herds									
	Sample No. (ERGO)	H-01-12-0343									
	Product										
	Tissue	milk									
	Expression of results										
	Stage of marketing										
	Type of sampling										
	Sample No.										
	Area										
	Number of subsamples										
	Fat content (%)	4.3									
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ		
	Methods	*	PCB-	77			2.5	0,0001	< 0,001		
	Detection	HRGC/HRMS	PCB-	81			0.41	0.0001	< 0.001		
	Accredited	**	PCB-	126			2.7	0,1	0,27		
	Uncertainty (%)		PCB-	169			0,50	0,01	0,0050		
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ		
	Methods	*	PCB-	105			43	0.0001	0.0043		
	Accredited	**	PCB-	114			6.6	0.0005	0.0033		
	Uncertainty (%)		PCB-	118			158	0.0001	0.016		
			PCB-	123			n.a.	0.0001	-		
			PCB-	156			16	0.0005	0.0081		
			PCB-	157			3.4	0.0005	0.0017		
			PCB-	167			7.4	0.00001	< 0.001		
			PCB-	189			3.9	0.0001	< 0.001		
	Total non-ortho PCB						6.2	0.28			
	Total mono-ortho PCB						238	0.033			
Total WHO-PCB						244	0.31				
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							0.67				
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results				
	Methods	*	PCB-	28	0.33	0.17	< LOQ				
	Accredited	**	PCB-	52	0.087	0.043	< LOQ				
	Uncertainty (%)		PCB-	101	0.14	0.071	< LOQ				
			PCB-	118			0.16				
			PCB-	138			0.19				
			PCB-	153			0.28				
		PCB-	180			0.083					
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results				
	Methods	*	PCB-	18	0.56	0.28	< LOQ				
	Accredited	**	PCB-	31	0.27	0.13	< LOQ				
	Uncertainty (%)		PCB-	33	0.27	0.13	< LOQ				
			PCB-	37	0.047	0.023	< LOQ				
			PCB-	41	0.065	0.032	< LOQ				
			PCB-	44	0.063	0.031	< LOQ				
			PCB-	47	0.12	0.058	< LOQ				
			PCB-	49	0.047	0.024	< LOQ				
			PCB-	51	0.031	0.016	< LOQ				
			PCB-	60			0.0074				
			PCB-	66			0.033				
			PCB-	74			0.069				
			PCB-	87	0.054	0.027	< LOQ				
			PCB-	99			0.080				
			PCB-	110	0.11	0.053	< LOQ				
			PCB-	141	0.065	0.033	< LOQ				
			PCB-	151	0.053	0.026	< LOQ				
			PCB-	183			0.019				
			PCB-	185	0.0058	0.0029	< LOQ				
			PCB-	187	0.051	0.025	< LOQ				
			PCB-	191	0.0033	0.0016	< LOQ				
			PCB-	193	0.0073	0.0036	< LOQ				
			PCB-	194			0.015				
			PCB-	201	0.0095	0.0047	< LOQ				
			PCB-	203			0.017				
			PCB-	206			0.0068				
			PCB-	209	0.0049	0.0024	< LOQ				
		Small differences on totals result from computer roundings * = see report, section "Methods" ** = Accreditation in progress (DACH 175/ERGO/20.06.00/00)									

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	1998 Control Herds
	Sample No. (ERGO)	H-01-12-0344
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.22

Remarks

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD			0.096	1.0	0.096
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD			0.14	1.0	0.14
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.12	0.060	< LOQ	0.1	0.0060
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD	0.14	0.069	< LOQ	0.1	0.0069
			1,2,3,7,8,9-Hexa-CDD	0.077	0.038	< LOQ	0.1	0.0038
			1,2,3,4,6,7,8-Hepta-CDD	0.40	0.20	< LOQ	0.01	0.0020
			OCDD	0.90	0.45	< LOQ	0.0001	< 0.001
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.16	0.082	< LOQ	0.1	0.0082
	Accredited	**	1,2,3,7,8-Penta-CDF	0.060	0.030	< LOQ	0.05	0.0015
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.23	0.5	0.12
			1,2,3,4,7,8-Hexa-CDF			0.18	0.1	0.018
			1,2,3,6,7,8-Hexa-CDF			0.070	0.1	0.0070
			1,2,3,7,8,9-Hexa-CDF	0.075	0.037	< LOQ	0.1	0.0037
			2,3,4,6,7,8-Hexa-CDF	0.17	0.086	< LOQ	0.1	0.0086
			1,2,3,4,6,7,8-Hepta-CDF	0.26	0.13	< LOQ	0.01	0.0013
			1,2,3,4,7,8,9-Hepta-CDF	0.12	0.062	< LOQ	0.01	0.00062
			OCDF	0.95	0.48	< LOQ	0.0001	< 0.001
	Total PCDD					0.23		0.25
	Total PCDF					0.49		0.17
	TEQ (WHO) (PCDDs and PCDFs)					0.72		0.42

Small differences on totals result from computer roundings

\* = see report, section "Methods"

\*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)



## PCB-results in milk - lipid based -

1	Country	Ireland								
	Year	2001								
	Clients Code	1998 Control Herds								
	Sample No. (ERGO)	H-01-12-0344								
	Product									
	Tissue	milk								
	Expression of results									
	Stage of marketing									
	Type of sampling									
	Sample No.									
	Area									
	Number of subsamples									
	Fat content (%)	4.22								
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77	2,5	1,3	< LOQ	0,0001	< 0,001	
	Detection	HRGC/HRMS	PCB-	81			0,41	0,0001	< 0,001	
	Accredited	**	PCB-	126			2,9	0,1	0,29	
	Uncertainty (%)		PCB-	169			0,51	0,01	0,0051	
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			44	0,0001	0,0044	
	Accredited	**	PCB-	114			6,3	0,0005	0,0032	
	Uncertainty (%)		PCB-	118			157	0,0001	0,016	
			PCB-	123			n.a.	0,0001	-	
			PCB-	156			18	0,0005	0,0091	
			PCB-	157			4,7	0,0005	0,0023	
			PCB-	167			9,4	0,00001	< 0,001	
			PCB-	189			4,3	0,0001	< 0,001	
	Total non-ortho PCB						3,8	0,29		
	Total mono-ortho PCB						245	0,035		
Total WHO-PCB						249	0,33			
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							0,75			
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	28	0,34	0,17	< LOQ			
	Accredited	**	PCB-	52	0,089	0,045	< LOQ			
	Uncertainty (%)		PCB-	101	0,15	0,073	< LOQ			
			PCB-	118			0,16			
			PCB-	138			0,16			
			PCB-	153			0,26			
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	18	0,58	0,29	< LOQ			
	Accredited	**	PCB-	31	0,28	0,14	< LOQ			
	Uncertainty (%)		PCB-	33	0,28	0,14	< LOQ			
			PCB-	37	0,048	0,024	< LOQ			
			PCB-	41	0,067	0,033	< LOQ			
			PCB-	44	0,064	0,032	< LOQ			
			PCB-	47	0,12	0,059	< LOQ			
			PCB-	49	0,049	0,024	< LOQ			
			PCB-	51	0,032	0,016	< LOQ			
			PCB-	60	0,014	0,0071	< LOQ			
			PCB-	66	0,049	0,025	< LOQ			
			PCB-	74			0,057			
			PCB-	87	0,055	0,028	< LOQ			
			PCB-	99			0,097			
			PCB-	110	0,11	0,054	< LOQ			
			PCB-	141	0,067	0,034	< LOQ			
			PCB-	151	0,054	0,027	< LOQ			
			PCB-	183			0,018			
			PCB-	185	0,0060	0,0030	< LOQ			
			PCB-	187	0,052	0,026	< LOQ			
			PCB-	191	0,0034	0,0017	< LOQ			
			PCB-	193	0,0075	0,0037	< LOQ			
			PCB-	194			0,017			
			PCB-	201	0,0097	0,0049	< LOQ			
			PCB-	203			0,020			
			PCB-	206			0,0086			
			PCB-	209	0,0043	0,0022	< LOQ			
	Small differences on totals result from computerroundings									
	* = see report, section "Methods"									
	** = Accreditation in progress									
	(DACH 175/ERGO/20.06.00/00)									

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	1999 Control Herds
	Sample No. (ERGO)	H-01-12-0345
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	2.954

Remarks

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD	0.15	0.074	< LOQ	1.0	0.074
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD	0.14	0.069	< LOQ	1.0	0.069
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.13	0.066	< LOQ	0.1	0.0066
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.13	0.1	0.013
			1,2,3,7,8,9-Hexa-CDD	0.10	0.052	< LOQ	0.1	0.0052
			1,2,3,4,6,7,8-Hepta-CDD	0.77	0.38	< LOQ	0.01	0.0038
			OCDD	1.7	0.86	< LOQ	0.0001	< 0.001
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.31	0.16	< LOQ	0.1	0.016
	Accredited	**	1,2,3,7,8-Penta-CDF	0.090	0.045	< LOQ	0.05	0.0022
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.23	0.5	0.11
			1,2,3,4,7,8-Hexa-CDF			0.13	0.1	0.013
			1,2,3,6,7,8-Hexa-CDF			0.081	0.1	0.0081
			1,2,3,7,8,9-Hexa-CDF	0.15	0.073	< LOQ	0.1	0.0073
			2,3,4,6,7,8-Hexa-CDF	0.33	0.16	< LOQ	0.1	0.016
			1,2,3,4,6,7,8-Hepta-CDF	0.50	0.25	< LOQ	0.01	0.0025
			1,2,3,4,7,8,9-Hepta-CDF	0.22	0.11	< LOQ	0.01	0.0011
			OCDF	1.8	0.90	< LOQ	0.0001	< 0.001
	Total PCDD					0.13		0.17
	Total PCDF					0.44		0.18
	TEQ (WHO) (PCDDs and PCDFs)					0.57		0.35

Small differences on totals result from computer roundings

\* = see report, section "Methods"

\*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

# PCB-results in milk - lipid based -

1	Country	Ireland							
	Year	2001							
	Clients Code	1999 Control Herds							
	Sample No. (ERGO)	H-01-12-0345							
	Product								
	Tissue	milk							
	Expression of results								
	Stage of marketing								
	Type of sampling								
	Sample No.								
	Area								
	Number of subsamples								
	Fat content (%)	2.954							
2	non-ortho PCBs (ppt)		PCB congeners	LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77	4,8	2,4	< LOQ	0,0001	< 0,001
	Detection	HRGC/HRMS	PCB-	81			0,74	0,0001	< 0,001
	Accredited	**	PCB-	126			4,4	0,1	0,44
	Uncertaintyv (%)		PCB-	169			0,60	0,01	0,0060
3	mono-ortho PCBs (ppt)		PCB congeners	LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			78	0,0001	0,0078
	Accredited	**	PCB-	114			10	0,0005	0,0052
	Uncertainty (%)		PCB-	118			260	0,0001	0,026
			PCB-	123			n.a.	0,0001	-
			PCB-	156			20	0,0005	0,0098
			PCB-	157			4,2	0,0005	0,0021
			PCB-	167			10	0,00001	< 0,001
			PCB-	189			3,3	0,0001	< 0,001
	Total non-ortho PCB					5,7		0,44	
	Total mono-ortho PCB					386		0,051	
Total WHO-PCB					392		0,49		
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							0,84		
4	PCB-7 (6) (ppb)		PCB congeners	LOQ	LOD	Results			
	Methods	*	PCB-	28	0,65	0,32	< LOQ		
	Accredited	**	PCB-	52	0,17	0,085	< LOQ		
	Uncertainty (%)		PCB-	101	0,28	0,14	< LOQ		
			PCB-	118			0,26		
			PCB-	138	0,55	0,28	< LOQ		
			PCB-	153			0,27		
5	Other PCBs (ppb)		PCB congeners	LOQ	LOD	Results			
	Methods	*	PCB-	18	1,1	0,55	< LOQ		
	Accredited	**	PCB-	31	0,52	0,26	< LOQ		
	Uncertainty (%)		PCB-	33	0,52	0,26	< LOQ		
			PCB-	37	0,091	0,045	< LOQ		
			PCB-	41	0,13	0,063	< LOQ		
			PCB-	44	0,12	0,061	< LOQ		
			PCB-	47			0,12		
			PCB-	49	0,092	0,046	< LOQ		
			PCB-	51			0,034		
			PCB-	60	0,027	0,014	< LOQ		
			PCB-	66	0,093	0,047	< LOQ		
			PCB-	74			0,10		
			PCB-	87	0,11	0,053	< LOQ		
			PCB-	99			0,11		
			PCB-	110	0,20	0,10	< LOQ		
			PCB-	141	0,13	0,064	< LOQ		
			PCB-	151	0,10	0,051	< LOQ		
			PCB-	183	0,051	0,026	< LOQ		
			PCB-	185	0,011	0,0056	< LOQ		
			PCB-	187	0,099	0,049	< LOQ		
			PCB-	191	0,0064	0,0032	< LOQ		
			PCB-	193	0,014	0,0071	< LOQ		
			PCB-	194	0,021	0,010	< LOQ		
			PCB-	201	0,018	0,0092	< LOQ		
			PCB-	203	0,023	0,012	< LOQ		
			PCB-	206	0,0089	0,0045	< LOQ		
			PCB-	209	0,0047	0,0023	< LOQ		
	Small differences on totals result from computerroundings								
	* = see report, section "Methods"								
	** = Accreditation in progress								
	(DACH 175/ERGO/20.06.00/00)								

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	2000 Control Herds
	Sample No. (ERGO)	H-01-12-0346
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.426

[illegible]

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD			0.059	1.0	0.059
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD			0.12	1.0	0.12
	Accredited	**	1,2,3,4,7,8-Hexa-CDD			0.054	0.1	0.0054
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD			0.084	0.1	0.0084
			1,2,3,7,8,9-Hexa-CDD			0.052	0.1	0.0052
			1,2,3,4,6,7,8-Hepta-CDD	0.38	0.19	< LOQ	0.01	0.0019
		OCDD	0.86	0.43	< LOQ	0.0001	< 0.001	
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.16	0.078	< LOQ	0.1	0.0078
	Accredited	**	1,2,3,7,8-Penta-CDF			0.043	0.05	0.0021
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.24	0.5	0.12
			1,2,3,4,7,8-Hexa-CDF			0.15	0.1	0.015
			1,2,3,6,7,8-Hexa-CDF			0.069	0.1	0.0069
			1,2,3,7,8,9-Hexa-CDF	0.060	0.030	< LOQ	0.1	0.0030
			2,3,4,6,7,8-Hexa-CDF	0.16	0.082	< LOQ	0.1	0.0082
			1,2,3,4,6,7,8-Hepta-CDF	0.25	0.12	< LOQ	0.01	0.0012
			1,2,3,4,7,8,9-Hepta-CDF	0.11	0.053	< LOQ	0.01	0.00053
		QCDF	0.91	0.45	< LOQ	0.0001	< 0.001	
	Total PCDD				0.36		0.19	
	Total PCDF				0.50		0.16	
	TEQ (WHO) (PCDDs and PCDFs)				0.86		0.36	

Small differences on totals result from computer roundings  
 \* = see report, section "Methods"  
 \*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

## PCB-results in milk - lipid based -

1	Country	Ireland								
	Year	2001								
	Clients Code	2000 Control Herds								
	Sample No. (ERGO)	H-01-12-0346								
	Product									
	Tissue	milk								
	Expression of results									
	Stage of marketing									
	Type of sampling									
	Sample No.									
	Area									
	Number of subsamples									
	Fat content (%)	4.426								
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77			1,8	0,0001	< 0,001	
	Detection	HRGC/HRMS	PCB-	81			0,51	0,0001	< 0,001	
	Accredited	**	PCB-	126			3,9	0,1	0,39	
	Uncertaintyv (%)		PCB-	169			0,68	0,01	0,0068	
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			67	0,0001	0,0067	
	Accredited	**	PCB-	114			6,5	0,0005	0,0033	
	Uncertainty (%)		PCB-	118			218	0,0001	0,022	
			PCB-	123			n.a.	0,0001	-	
			PCB-	156			20	0,0005	0,010	
			PCB-	157			4,1	0,0005	0,0021	
			PCB-	167			12	0,00001	< 0,001	
			PCB-	189			3,3	0,0001	< 0,001	
	Total non-ortho PCB						6,9	0,40		
	Total mono-ortho PCB						332	0,044		
	Total WHO-PCB						339	0,45		
TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							0,80			
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	28	0,33	0,16	< LOQ			
	Accredited	**	PCB-	52	0,085	0,042	< LOQ			
	Uncertainty (%)		PCB-	101	0,14	0,069	< LOQ			
			PCB-	118			0,22			
			PCB-	138			0,26			
			PCB-	153			0,33			
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	18	0,55	0,27	< LOQ			
	Accredited	**	PCB-	31	0,26	0,13	< LOQ			
	Uncertainty (%)		PCB-	33	0,26	0,13	< LOQ			
			PCB-	37	0,046	0,023	< LOQ			
			PCB-	41	0,064	0,032	< LOQ			
			PCB-	44	0,061	0,031	< LOQ			
			PCB-	47	0,11	0,056	< LOQ			
			PCB-	49	0,046	0,023	< LOQ			
			PCB-	51	0,031	0,015	< LOQ			
			PCB-	60			0,0094			
			PCB-	66			0,032			
			PCB-	74			0,080			
			PCB-	87	0,053	0,026	< LOQ			
			PCB-	99			0,11			
			PCB-	110	0,10	0,051	< LOQ			
			PCB-	141	0,064	0,032	< LOQ			
			PCB-	151	0,051	0,026	< LOQ			
			PCB-	183			0,019			
			PCB-	185	0,0057	0,0028	< LOQ			
			PCB-	187	0,050	0,025	< LOQ			
			PCB-	191	0,0032	0,0016	< LOQ			
			PCB-	193	0,0071	0,0036	< LOQ			
			PCB-	194			0,0074			
			PCB-	201	0,0093	0,0046	< LOQ			
			PCB-	203			0,012			
			PCB-	206			0,0054			
			PCB-	209	0,0049	0,0024	< LOQ			
	Small differences on totals result from computerroundings * = see report, section "Methods" ** = Accreditation in progress (DACH 175/ERGO/20.06.00/00)									

**PCDDs/PCDFs in milk**  
**- lipid based -**

1	Country	Ireland
	Year	2001
	Clients Code	2001 Control Herds
	Sample No. (ERGO)	H-01-12-0347
	Product	
	Tissue	milk
	Expression of results	
	Stage of marketing	
	Type of sampling	
	Sample No.	
	Area	
	Number of subsamples	
	Fat content (%)	4.454

Remarks

2	PCDDs (ppt)		PCDD congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDD	0.12	0.060	< LOQ	1.0	0.060
	Detection	HRGC/HRMS	1,2,3,7,8-Penta-CDD	0.14	0.069	< LOQ	1.0	0.069
	Accredited	**	1,2,3,4,7,8-Hexa-CDD	0.21	0.10	< LOQ	0.1	0.010
	Uncertainty (%)		1,2,3,6,7,8-Hexa-CDD	0.15	0.076	< LOQ	0.1	0.0076
			1,2,3,7,8,9-Hexa-CDD	0.12	0.059	< LOQ	0.1	0.0059
			1,2,3,4,6,7,8-Hepta-CDD	0.38	0.19	< LOQ	0.01	0.0019
			OCDD			0.48	0.0001	< 0.001
3	PCDFs (ppt)		PCDF congeners	LOQ	LOD	Results	TEF	TEQ
	Methods	*	2,3,7,8-Tetra-CDF	0.16	0.078	< LOQ	0.1	0.0078
	Accredited	**	1,2,3,7,8-Penta-CDF	0.060	0.030	< LOQ	0.05	0.0015
	Uncertainty (%)		2,3,4,7,8-Penta-CDF			0.16	0.5	0.078
			1,2,3,4,7,8-Hexa-CDF			0.12	0.1	0.012
			1,2,3,6,7,8-Hexa-CDF	0.12	0.062	< LOQ	0.1	0.0062
			1,2,3,7,8,9-Hexa-CDF	0.14	0.072	< LOQ	0.1	0.0072
			2,3,4,6,7,8-Hexa-CDF	0.16	0.082	< LOQ	0.1	0.0082
			1,2,3,4,6,7,8-Hepta-CDF	0.25	0.12	< LOQ	0.01	0.0012
			1,2,3,4,7,8,9-Hepta-CDF	0.22	0.11	< LOQ	0.01	0.0011
			OCDF	0.90	0.45	< LOQ	0.0001	< 0.001
	Total PCDD					0.48		0.15
	Total PCDF					0.27		0.12
	TEQ (WHO) (PCDDs and PCDFs)					0.75		0.28

Small differences on totals result from computer roundings

\* = see report, section "Methods"

\*\* = Accreditation in progress (DACH 175/ERGO/20.06.00/00)

**PCB-results in milk**  
**- lipid based -**

1	Country	Ireland								
	Year	2001								
	Clients Code	2001 Control Herds								
	Sample No. (ERGO)	H-01-12-0347								
	Product									
	Tissue	milk								
	Expression of results									
	Stage of marketing									
	Type of sampling									
	Sample No.									
	Area									
	Number of subsamples									
Fat content (%)	4.454									
2	non-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	77	2.4	1.2	< LOQ	0.0001	< 0.001	
	Detection	HRGC/HRMS	PCB-	81			0.32	0.0001	< 0.001	
	Accredited	**	PCB-	126			1.7	0.1	0.17	
	Uncertainty (%)		PCB-	169			0.33	0.01	0.0033	
3	mono-ortho PCBs (ppt)		PCB congeners		LOQ	LOD	Results	TEF	TEQ	
	Methods	*	PCB-	105			20	0.0001	0.0020	
	Accredited	**	PCB-	114			3.0	0.0005	0.0015	
	Uncertainty (%)		PCB-	118			89	0.0001	0.0089	
			PCB-	123			n.a.	0.0001	-	
			PCB-	156	14	7.1	< LOQ	0.0005	0.0036	
			PCB-	157	3.2	1.6	< LOQ	0.0005	0.00081	
			PCB-	167	9.0	4.5	< LOQ	0.00001	< 0.001	
			PCB-	189	0.020	0.010	< LOQ	0.0001	< 0.001	
		Total non-ortho PCB					2.4		0.18	
	Total mono-ortho PCB					111		0.017		
	Total WHO-PCB					114		0.19		
	TEQ (WHO) (PCDDs/PCDFs and WHO-PCBs)							0.47		
4	PCB-7 (6) (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	28	0.32	0.16	< LOQ			
	Accredited	**	PCB-	52	0.084	0.042	< LOQ			
	Uncertainty (%)		PCB-	101	0.14	0.069	< LOQ			
			PCB-	118			0.089			
			PCB-	138	0.28	0.14	< LOQ			
			PCB-	153	0.23	0.12	< LOQ			
			PCB-	180	0.13	0.064	< LOQ			
5	Other PCBs (ppb)		PCB congeners		LOQ	LOD	Results			
	Methods	*	PCB-	18	0.55	0.27	< LOQ			
	Accredited	**	PCB-	31	0.26	0.13	< LOQ			
	Uncertainty (%)		PCB-	33	0.26	0.13	< LOQ			
			PCB-	37	0.045	0.023	< LOQ			
			PCB-	41	0.063	0.032	< LOQ			
			PCB-	44	0.061	0.030	< LOQ			
			PCB-	47	0.11	0.056	< LOQ			
			PCB-	49	0.046	0.023	< LOQ			
			PCB-	51	0.030	0.015	< LOQ			
			PCB-	60	0.014	0.0068	< LOQ			
			PCB-	66	0.047	0.023	< LOQ			
			PCB-	74			0.036			
			PCB-	87	0.052	0.026	< LOQ			
			PCB-	99			0.044			
			PCB-	110	0.10	0.051	< LOQ			
			PCB-	141	0.064	0.032	< LOQ			
			PCB-	151	0.051	0.026	< LOQ			
			PCB-	183	0.026	0.013	< LOQ			
			PCB-	185	0.0056	0.0028	< LOQ			
			PCB-	187	0.049	0.025	< LOQ			
			PCB-	191	0.0032	0.0016	< LOQ			
			PCB-	193	0.0071	0.0035	< LOQ			
			PCB-	194	0.010	0.0052	< LOQ			
			PCB-	201	0.0092	0.0046	< LOQ			
			PCB-	203	0.012	0.0058	< LOQ			
			PCB-	206	0.0068	0.0034	< LOQ			
			PCB-	209	0.0043	0.0022	< LOQ			
	Small differences on totals result from computer roundings									
	* = see report, section "Methods"									
	** = Accreditation in progress (DACH 175/ERGO/20.06.00/00)									

- End of Report 2002-0229cc.doc -