

# Toxicowatch

## Toxicology Advice and Consulting

- ▶ POPs, EDCs and other environmental pollutants
- ▶ Safety for environmental, food and public health
- ▶ Bridge between public concern, industrial and governmental issues
- ▶ Foundation supported by private parties

[www.toxicowatch.org](http://www.toxicowatch.org)

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**Can be dioxins in such a paradise?**

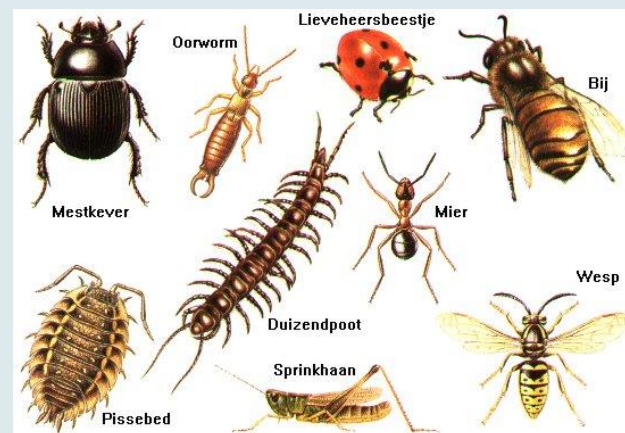


# Toxicowatch



**Pilot study dioxins Harlingen,  
the Netherlands**

# Back yard chicken as biomarker of dioxin/PCB pollution





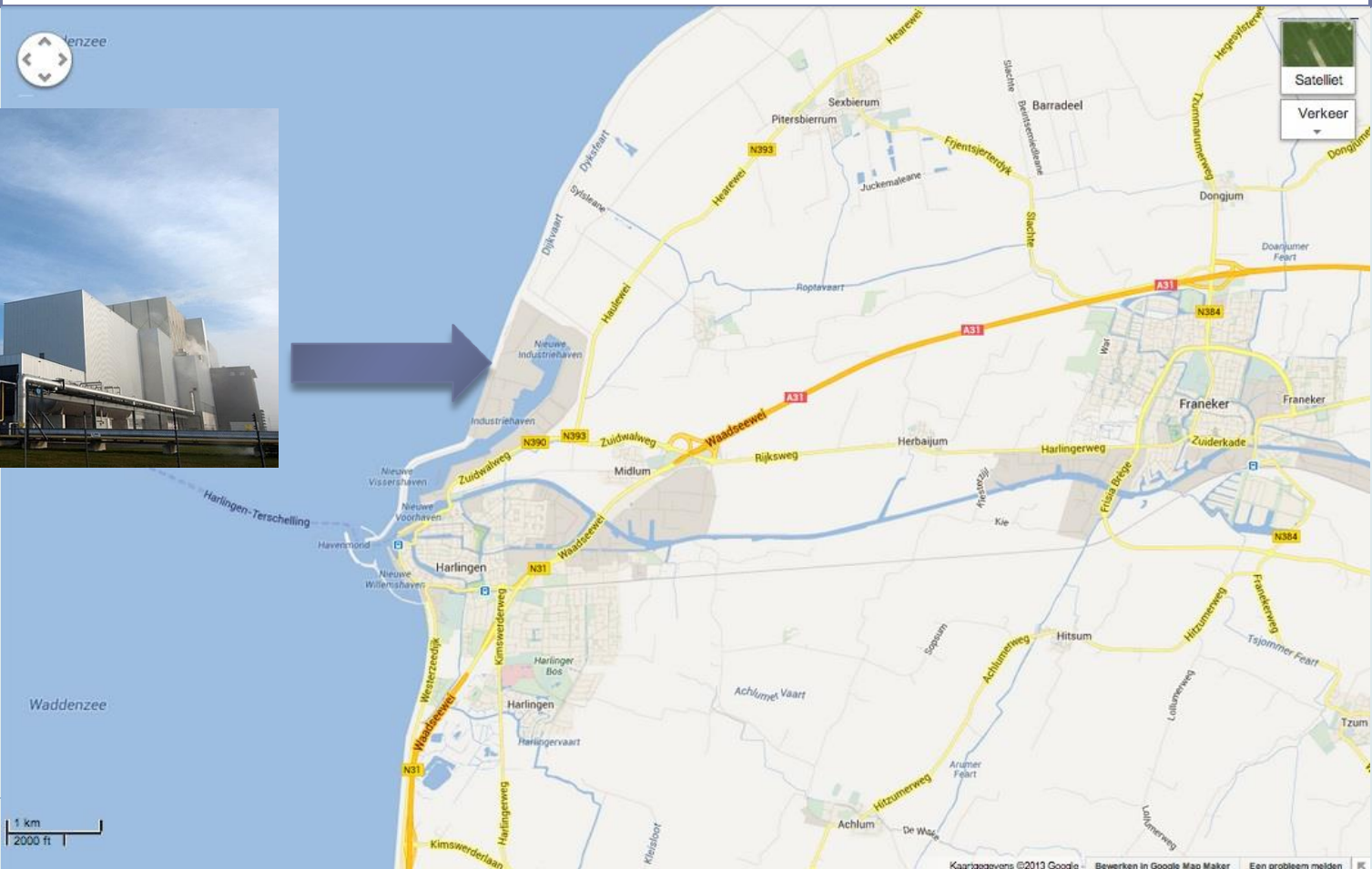
# History of the case

## Harlingen, the Netherlands



# History of the case

## Waste incinerator REC near centre of Harlingen





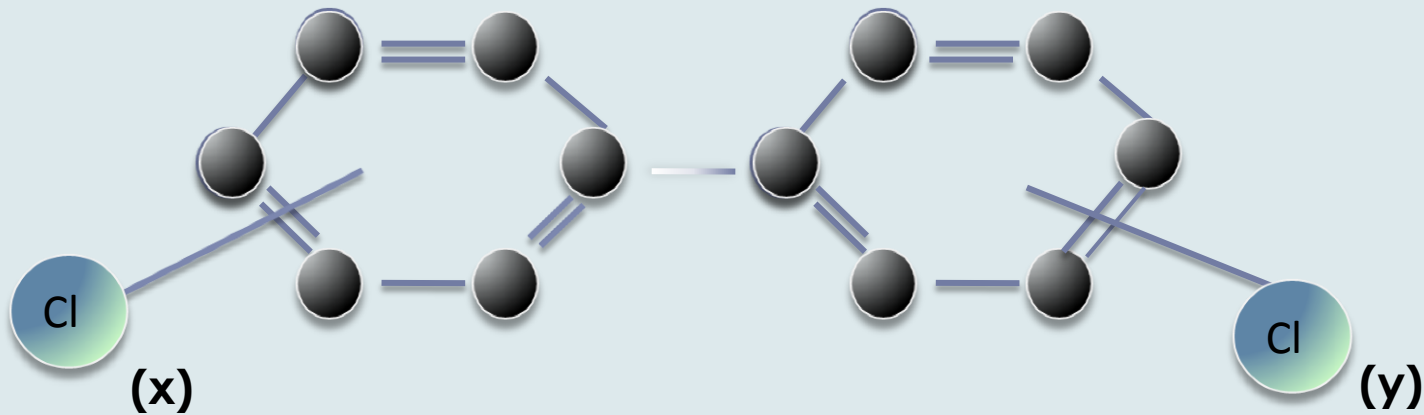
# History of the case



- Local public concern about dioxin emissions

# History of the case

- ▶ **Dioxin Emissions according to EU norm**
- ▶ **..but only twice/year (representing 12 hrs/365 days) and excl. dl-PCBs**





# History of the case



► ...no analysis of other WI wastes (e.g. ashes)

# Toxicowatch

- ▶ Set-up biomonitoring program for soil, feed, milk and eggs

by DR CALUX screening analysis

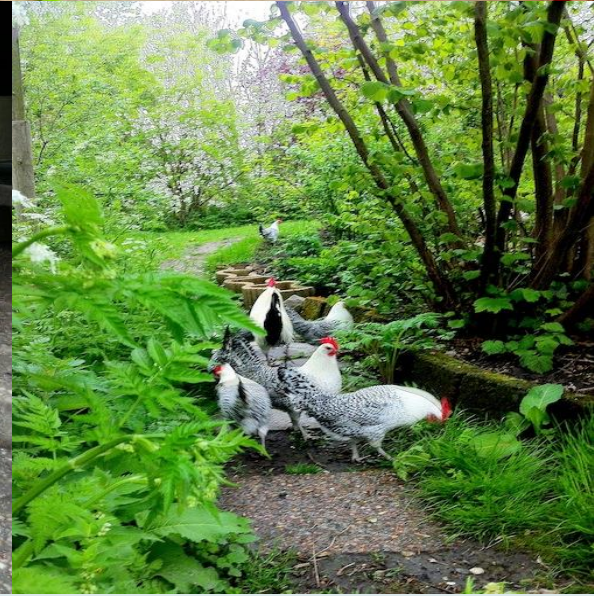




# Characteristics of tested backyard chickens

Nr	Locatie	Vuur korf	Aantal kippen	Uitloop m <sup>2</sup>	Binnenhok m <sup>2</sup>	Leeftijd in weken gemid.	Soort
1	Midlum (HM)	ja	12	1500	2	104	divers
2	Wijnaldum (AL)	ja	15	3000	4	104	Silverpel
3	Wijnaldum (SL)	ja	12	1000	8	104	divers
4	Wijnaldum (H2)	nee	8	2500	6	52	Silverpel
5	Hichtum	nee	4300	20.000	500	52	divers
6	Harlinger Straatweg (2)	nee	12	15	4	104	divers
7	Oude Trekweg (2)	nee	10	25	6	104	divers
8	Harlinger Zuid	ja	20	35	4	104	divers
9	Midlum (2)	nee	8	10	5	104	Silverpel
10	Kimswerd	nee	20	2000	6	52	Barneveld
11	Harlinger Spiker	nee	10	10	6	26	Brahma





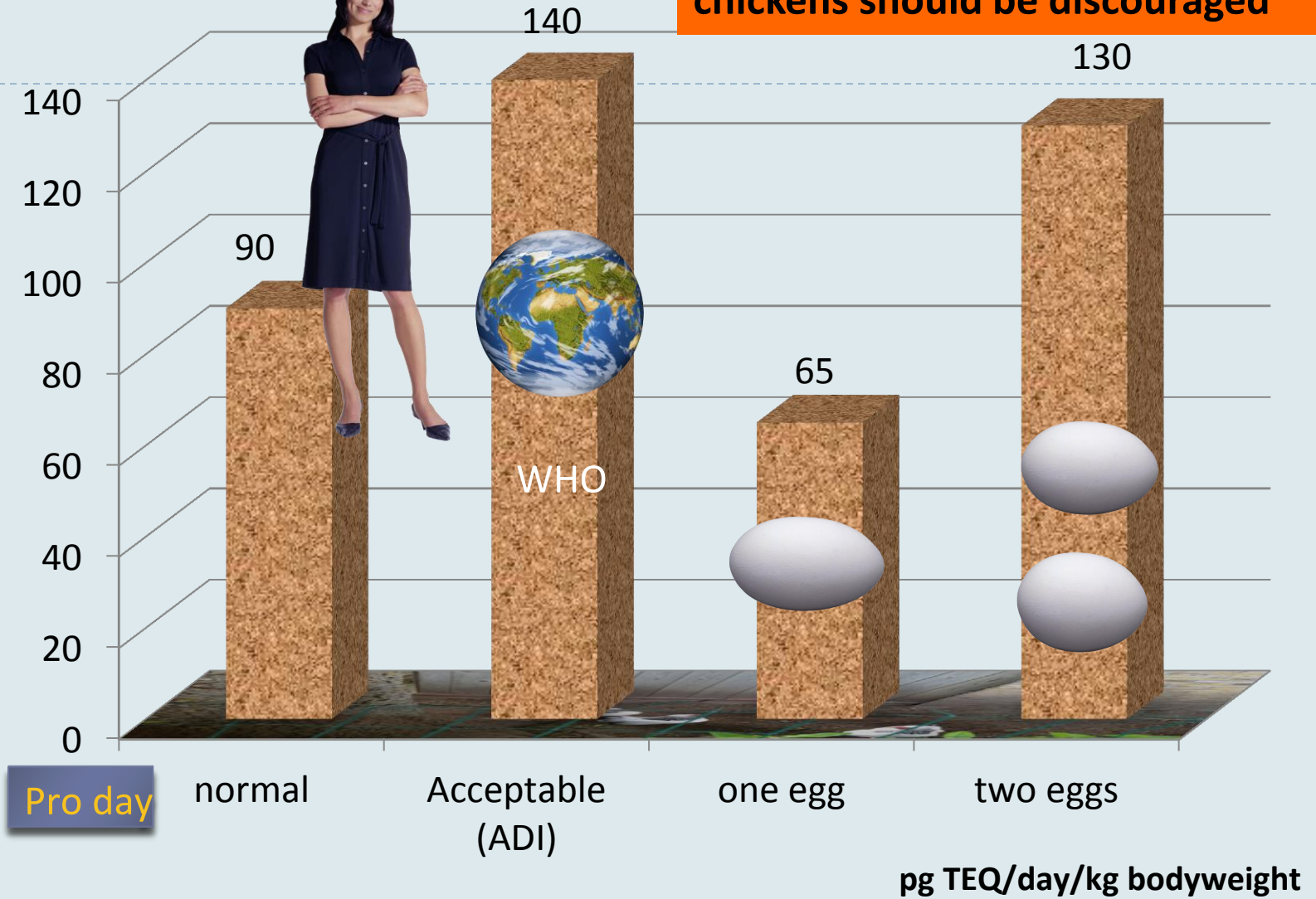




**Results Dr Calux in eggs of backyard chickens**



**Consumption eggs backyard chickens should be discouraged**



**Acceptable daily intake adult woman of 70 kg**



# Results

## Separated PCDD/Fs and dl-PCBs in eggs backyard chickens (DR CALUX)

Nr.	Location Backyard chickens	PCDD/Fs	dl-PCBs	Total PCDD/F dl-PCBs
1	Midlum (HM)	2,6	8,4	11
2	Wijnaldum (AL)	0,6	3,1	3,7
3	Wijnaldum (SL)	0,5	2,4	2,9
4	Wijnaldum (H2)	0,5	1,2	1,7
5	Hichtum	0,1	0,6	0,7
6	Harlinger Straatweg (2)	1,5	1,6	3,1
7	Spiker	0,1	0,6	0,7
8	Oude Trekweg (2)	0,8	4,2	5,0
9	Harlingen Zuid	1,1	4,6	5,7
10	Midlum (2)	1,3	5	6,3
11	Kimswerd	0,1	2	2,1

**Red exceed action level of 2 pg BEQ/gr fat  
in commercial eggs**

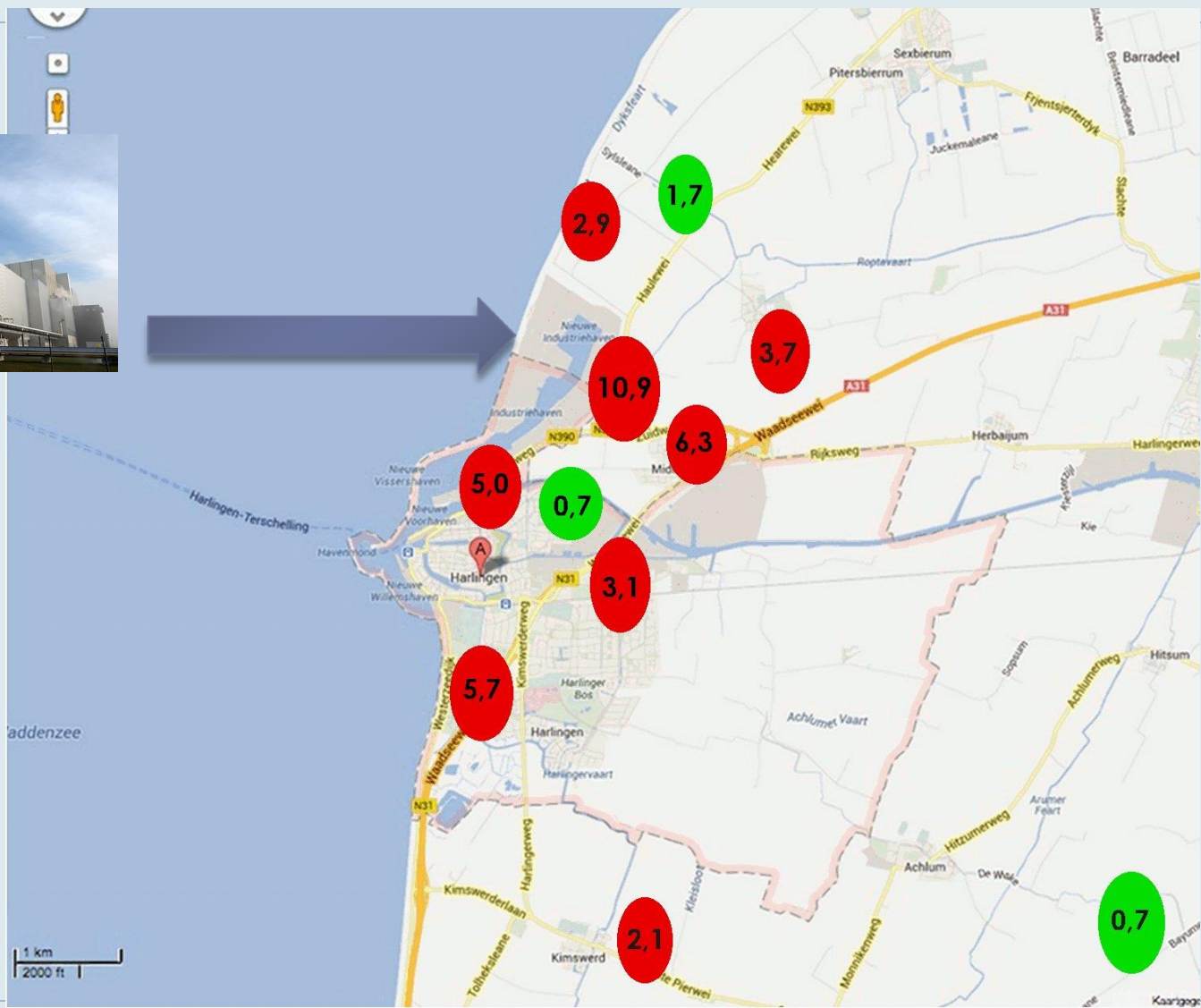
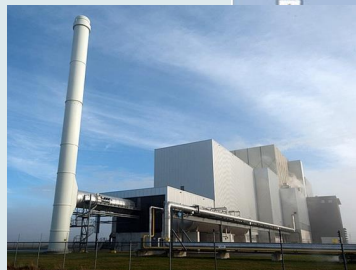
## Verification with GC/HRMS Of the results with DR CALUX

Nr.	Location Backyard chickens	PCDD/Fs	dl-PCBs	Total PCDD/F dl-PCBs
1b	Midlum (HM) GC/HRMS	4,8	6,1	10,9
1a	Midlum (HM)	2,6	8,4	11

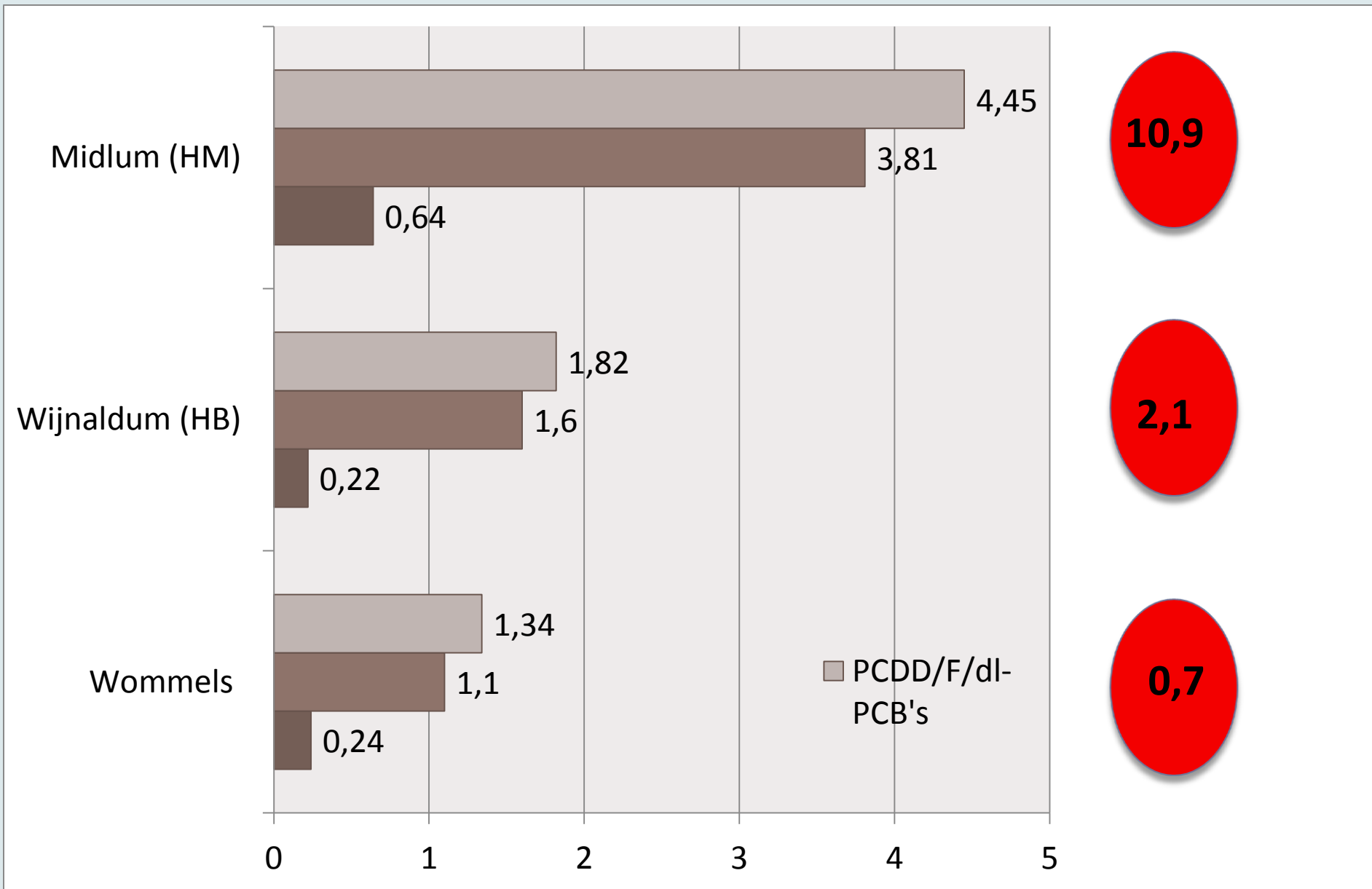


# Results

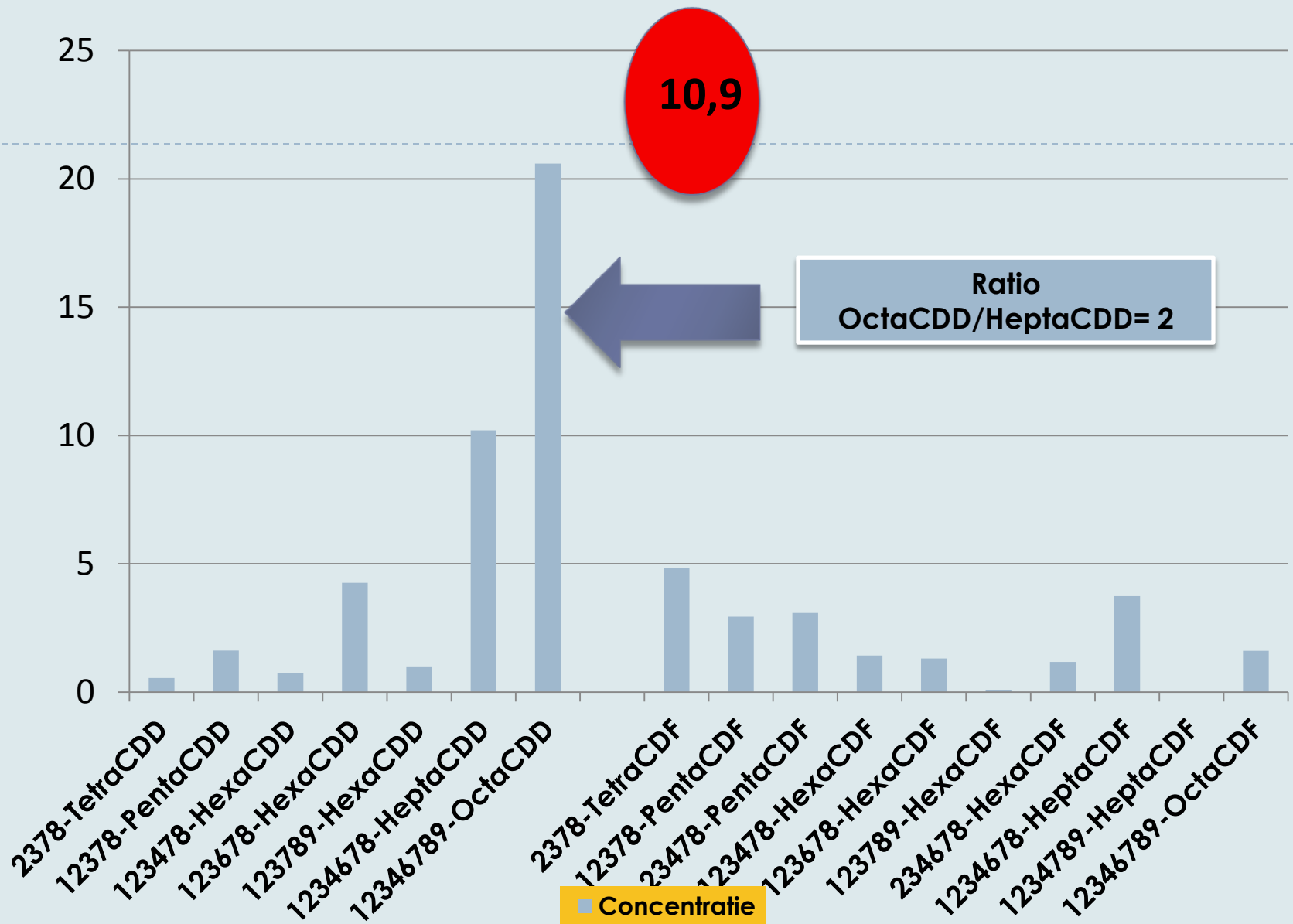
## PCDD/Fs and dl-PCBs (DR CALUX) in eggs of backyard chickens, Harlingen



Concentration (pg LIA/g)

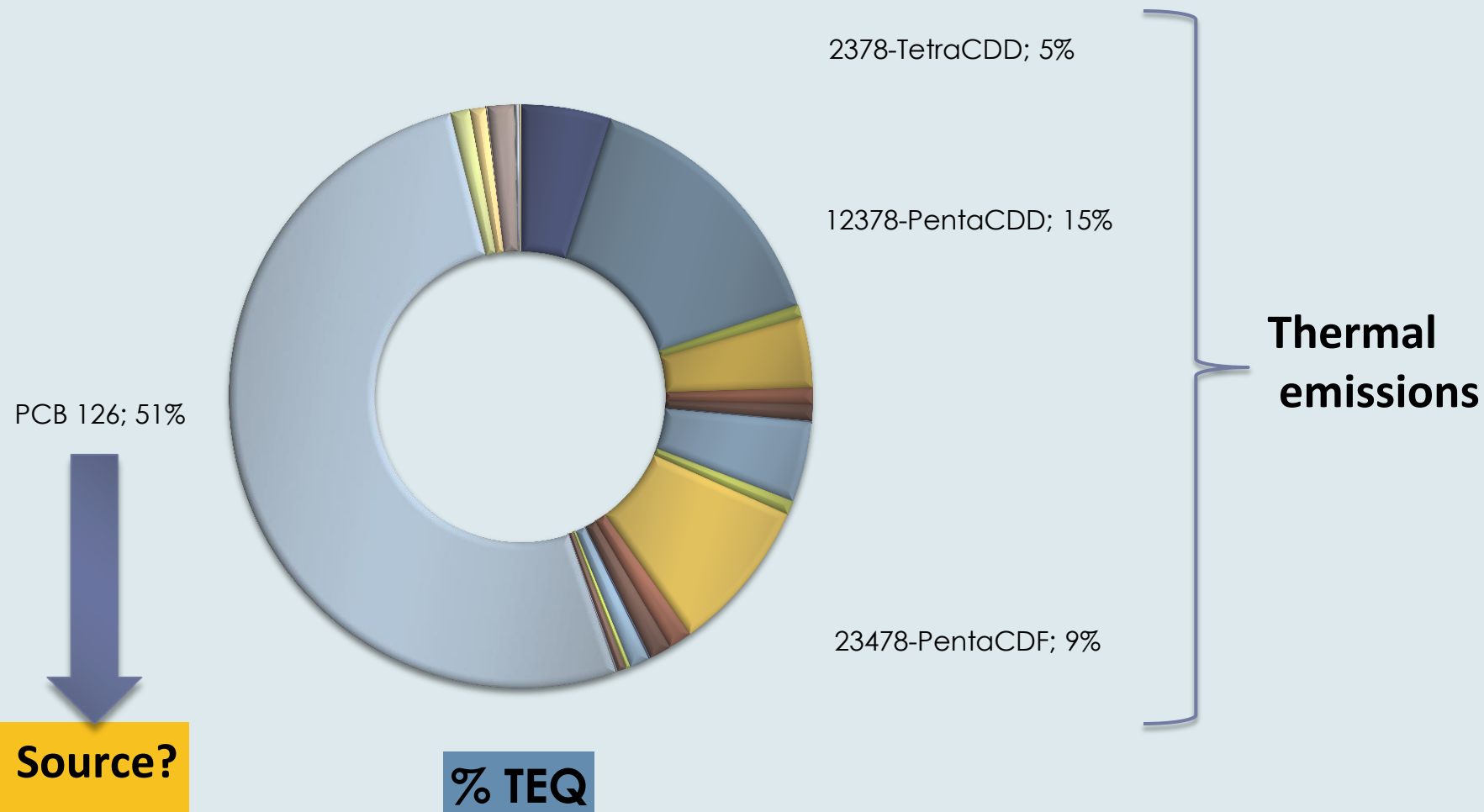






Congener pattern of PCDD/Fs in polluted egg

# Congener patterns in eggs backyard chickens Midlum (HM)





## Take home message

- ▶ Evaluating of the impact of an incinerator to the neighborhoods is difficult (cooperation with incinerator company was neglected)
- ▶ Biomonitoring study with milk and eggs showed elevated levels in the eggs
- ▶ Further source identification via soil sampling did not yet link the PCB contamination in the eggs to the source
- ▶ Further research needed..
- ▶ Governmental support was neglected – only private & local support so far
- ▶ **Any similar experiences....and questions ?**

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Political party *Frisse Wind***





**www.  
Toxicowatch.org**