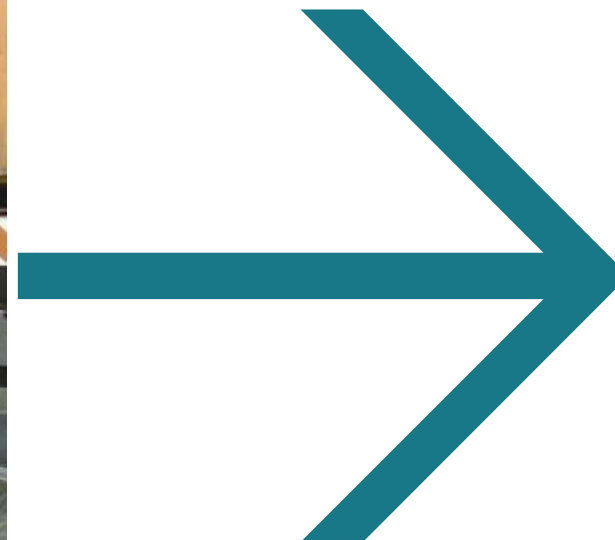
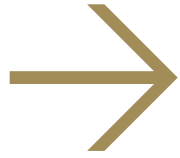


# TOXIC GASSES IN IMPORT CONTAINERS

Willem Veldman







# Treatment of containers

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## ISPM 15

- Methyl bromide or heat treatment
- One time treatment life time protection

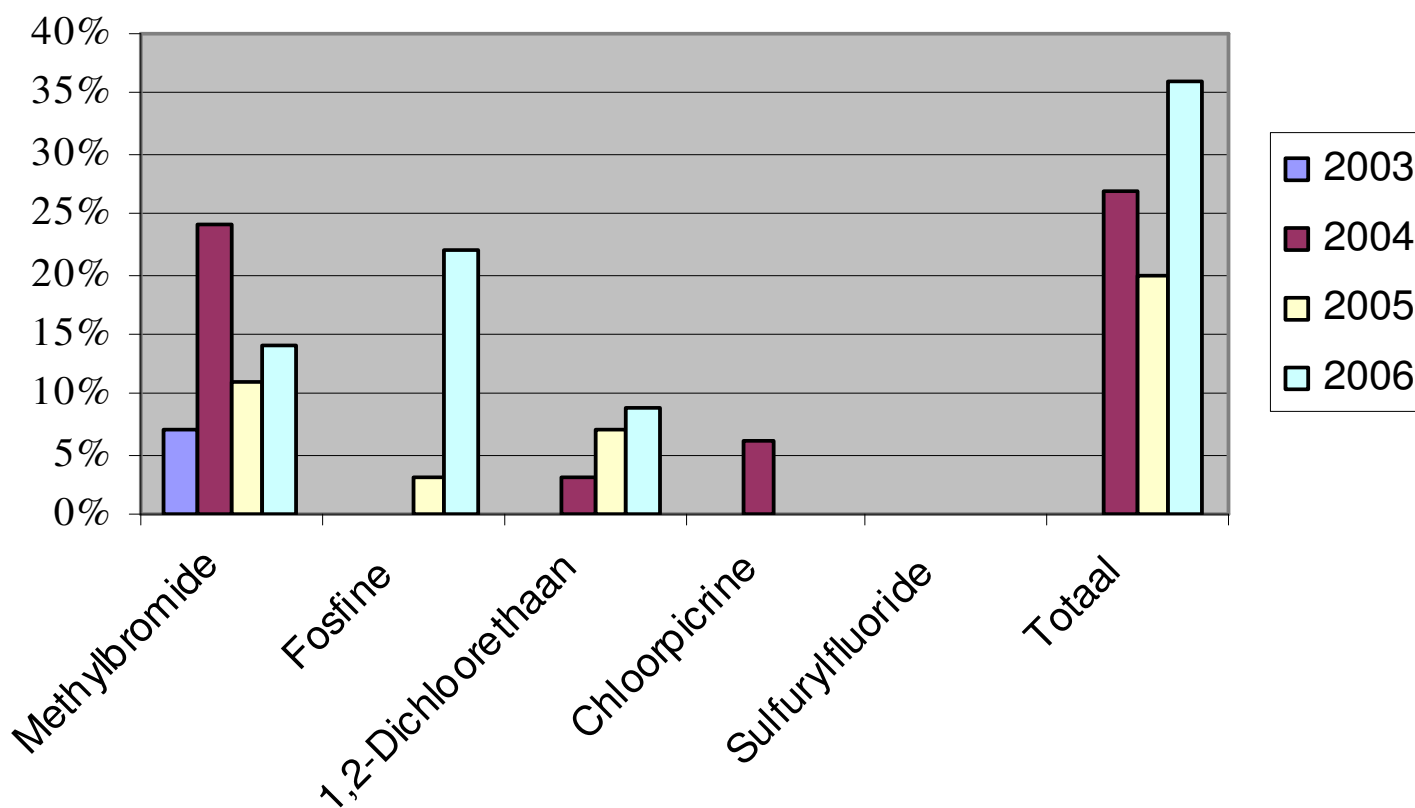
## Practice:

- fumigation is becoming a standard procedure, especially in south-east Asia
- No labeling
- Other fumigants then Methylbromide often used



# Trends

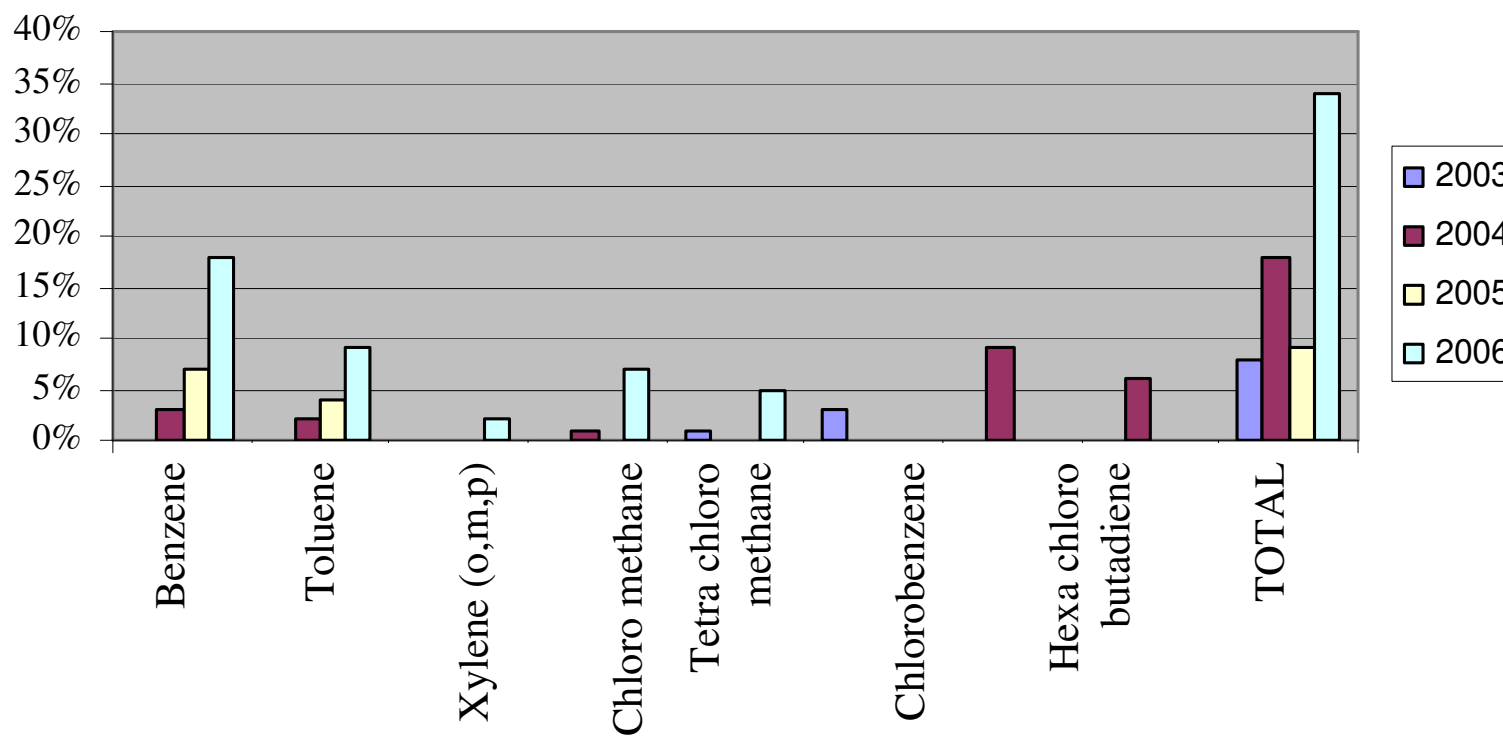
## Containers with fumigants exceeding the MAC value





# Trends (others)

## Containers with solvents exceeding the MAC value





# Trend:

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**The number of substances used, increases**

**The concentration in import containers increases**

**Indication: benzene and toluene used to  
prevent moulding  
(shoes)**

**Goods absorb fumigants/solvents and release may  
continue at consumers home**



## Results (extra) investigated containers 2007

57 % of the containers contained toxic gasses,  
16% above mac-value

product-group	Investigated containers									
		methyl-bro-mide	1,2-di-chloor-ethaan	Ben-zene	toluene	carbon-disulfide	formal-de-hyde	chloor-picrine	methy-leenchlo-ride	fosfine
shoes	14	1	4	4	4	4	0	0	0	0
matrasses	38	1	5	10	2	6	1	0	2	0
clothing	42	2	5	8	7	6	0	0	0	0
food	44	22	0	0	0	2	3	16	1	2
tabacco	4	4	0	0	0	0	0	0	0	0
toys	49	3	5	6	6	0	4	0	0	0
medicines	2	1	0	0	0	1	0	0	0	0
others	136	5	8	14	5	17	4	0	4	0
total	329	39	27	42	24	36	12	16	7	2



## example concentrations 2007/2008

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Methylbromide	: 750	ppm
Fosfine	: 1100	ppm
1,2 dichloroethane:	450	ppm
Benzene	: 800	ppm
Toluene	: 110000	ppm
Formaldehyde	: 24	ppm





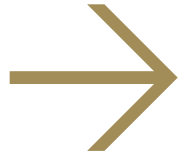
# Environment

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Methylbromide and 1,2 dichloroethane are ozone depleting gasses.

25% of the worldwide use of methylbromide is used for container fumigations.

ca. 500 mT methylbromide is used each year for containers imported in the harbors of the Netherlands.



# Thank you



