

# T-2, HT-2 in soft wheat and rye

Sixth Fusarium Forum, February 2009



## The flour milling industry

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- Representing the interests of the European flour milling industry
- Members are the national flour milling associations from 25 countries (90% of total capacity)
- The industry is processing some 45 million tonnes of soft wheat and rye each year
- More than 3000 companies employing over 45 000 people, most of them are small & medium-sized companies



## Key points to consider

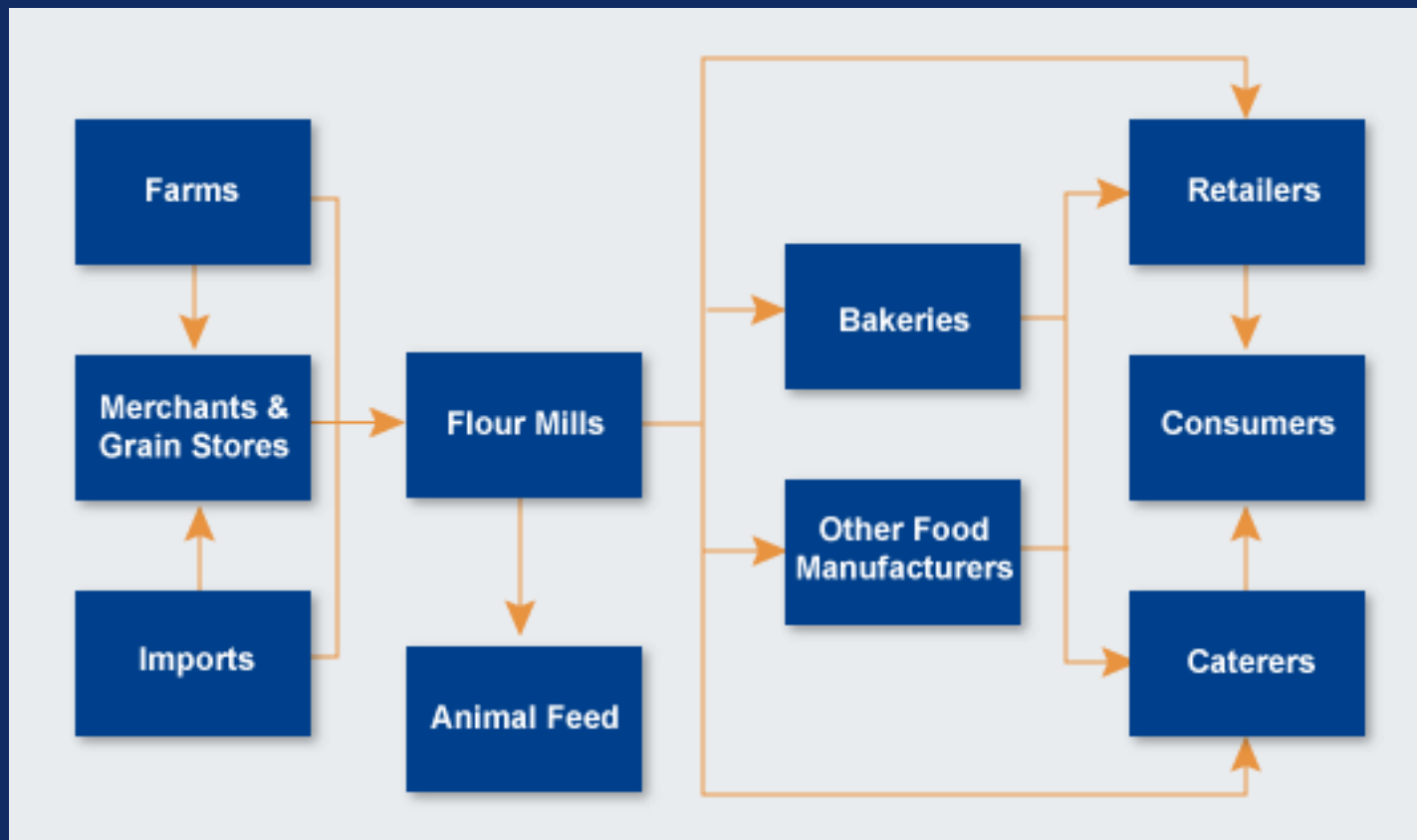
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Some prerequisites:

- **Toxicological basis:** consumers' exposure and the risk for the consumer has been insufficiently assessed
- **Understanding the formation of T-2 and HT-2 in crops is crucial: continued research is needed**
- **Validated methodology:** EU-standardised rapid analysis tests method are needed



## Good agricultural practices for PREVENTION and REDUCTION are key



## How to control the development of T-2, HT-2?

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- The mycotoxins are developing during the growing period in the field: we need to help farmers
- The reasons for development are still unknown
- So far, there exists no practical recommendation to farmers to prevent the development of the two toxins
- Suspecting the possible presence of T2, HT2 in the field is today impossible

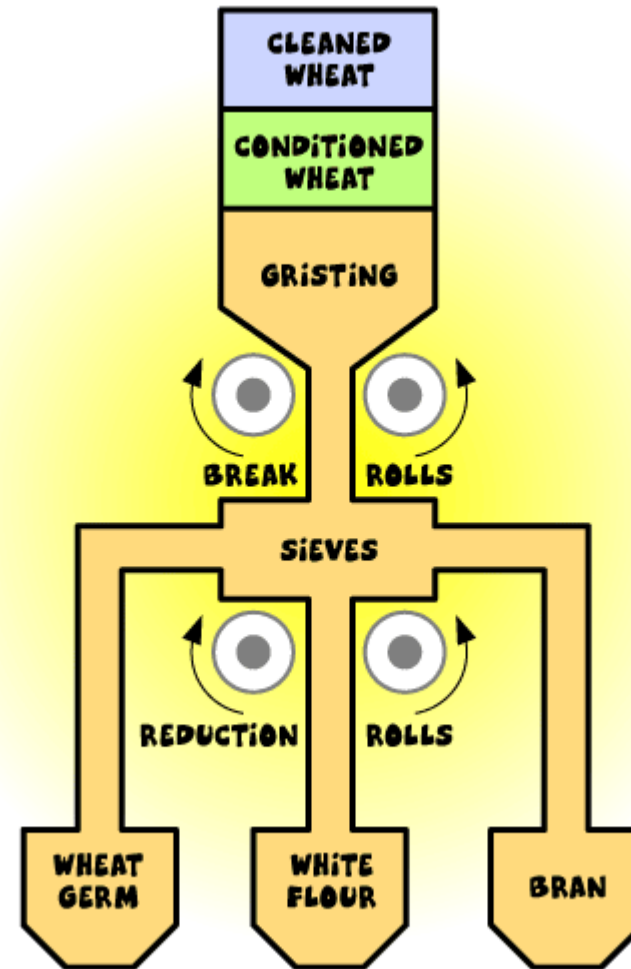


## T-2 & HT-2 at first processing level

- There are various possibilities to suspect the presence of DON or ZEA in grain and lots can be carefully examined: red or white spots on the grain, smell, type, growing conditions etc.
- Flour millers need practical methods to localise T2, HT2
- So far, millers do not know how to reduce the quantity of T2, HT2 during their process. There is still insufficient knowledge about reduction, as infected lots are scarce



## The fate of T-2 & HT-2 during processing?

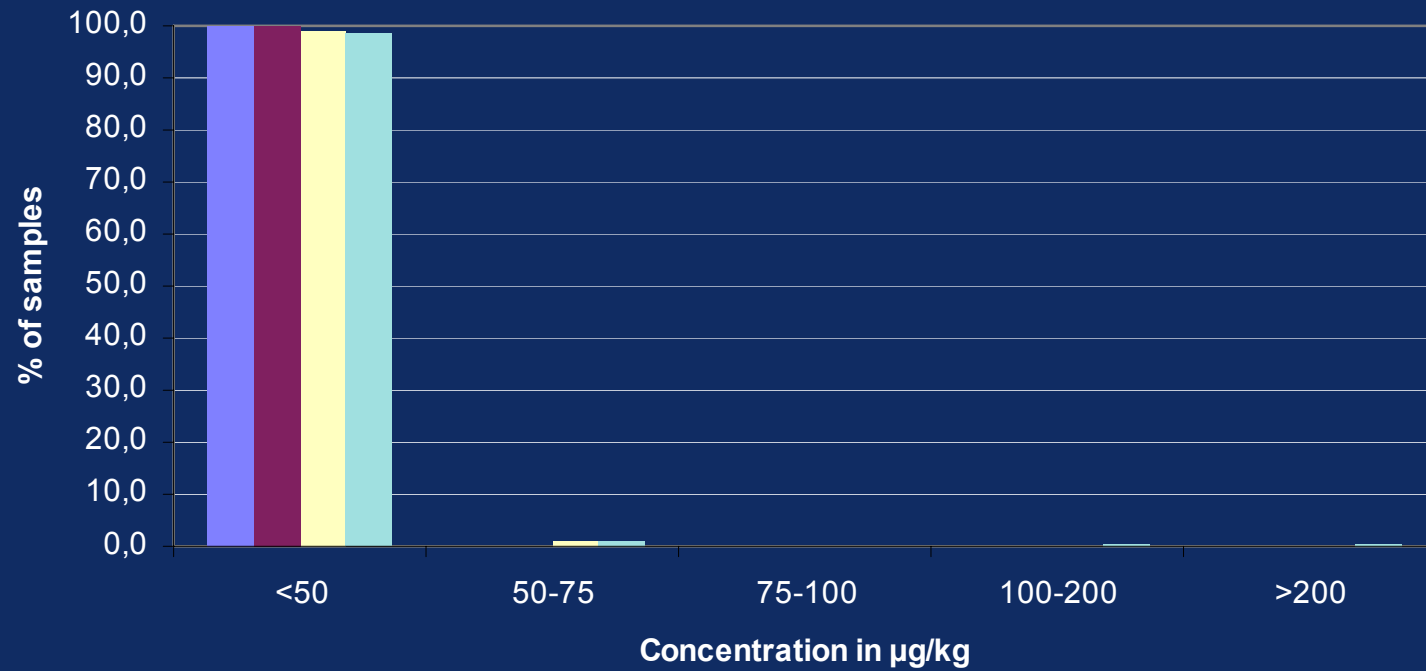


# Results of monitoring on soft wheat and rye from different origins done by flour milling national associations





## T-2 toxin in soft wheat in Germany

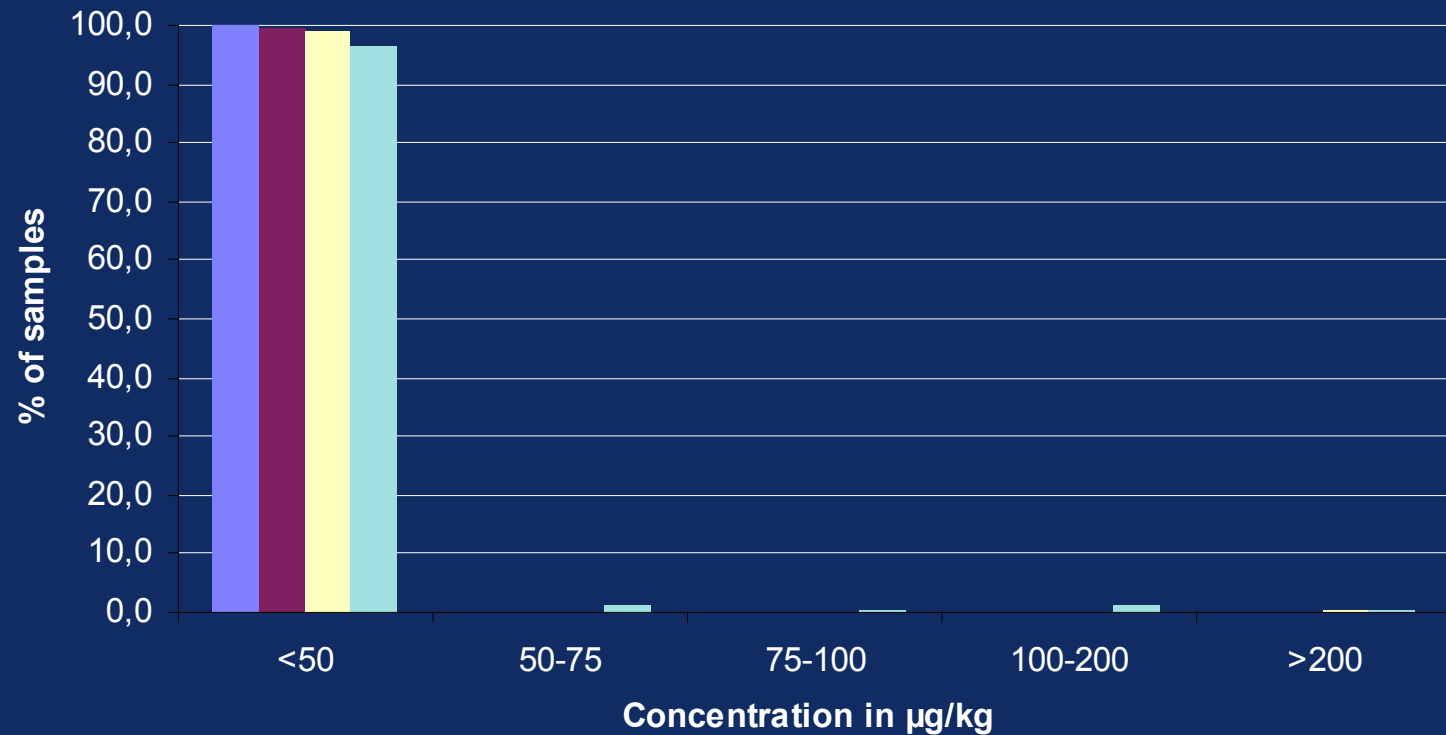


2003/04 2004/05 2005/06 2006/07

Number of samples: +/- 700 per year



## HT-2 toxin in soft wheat in Germany

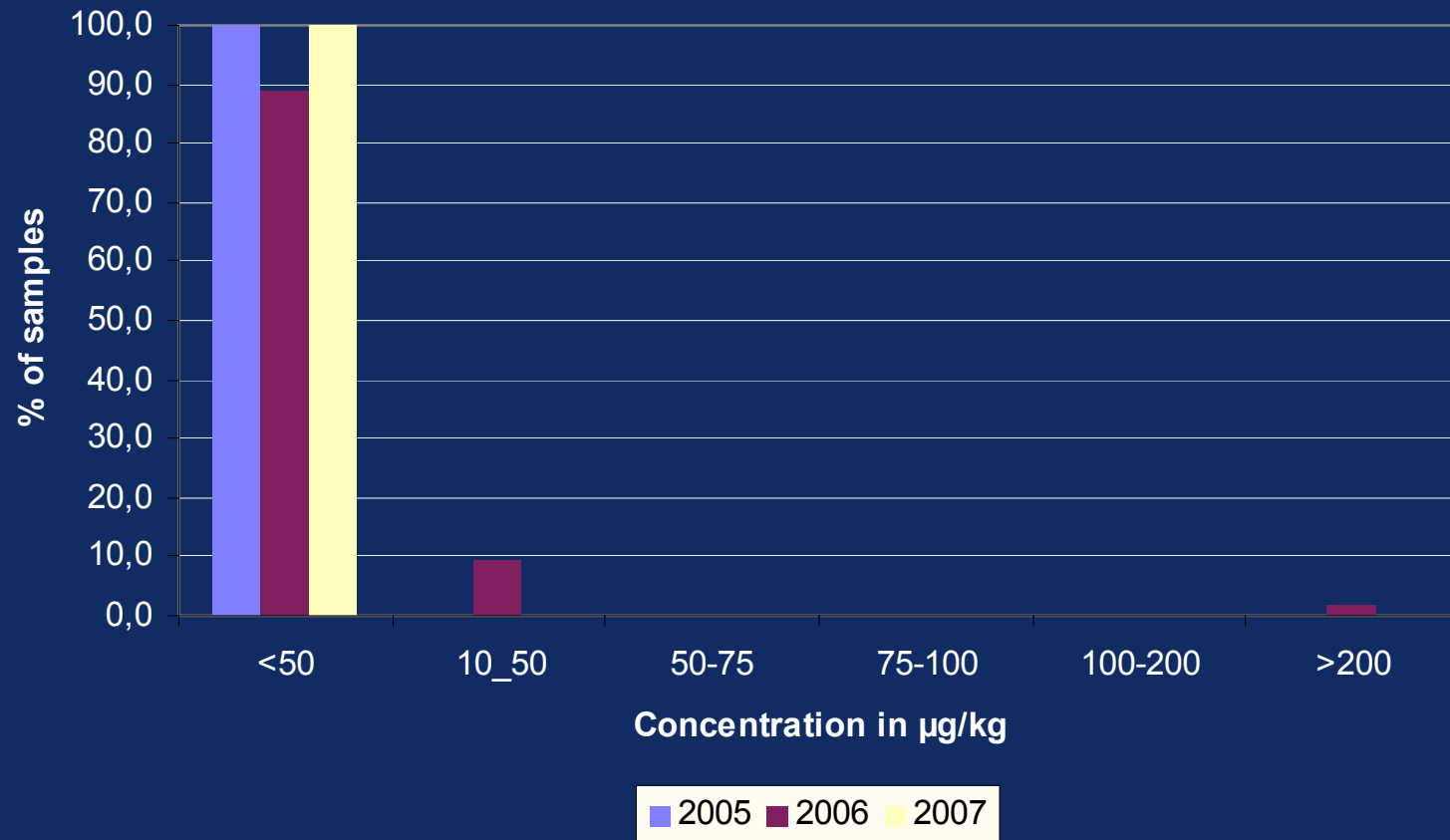


■ 2003/04 ■ 2004/05 ■ 2005/06 ■ 2006/07

Number of samples: +/- 700 per year



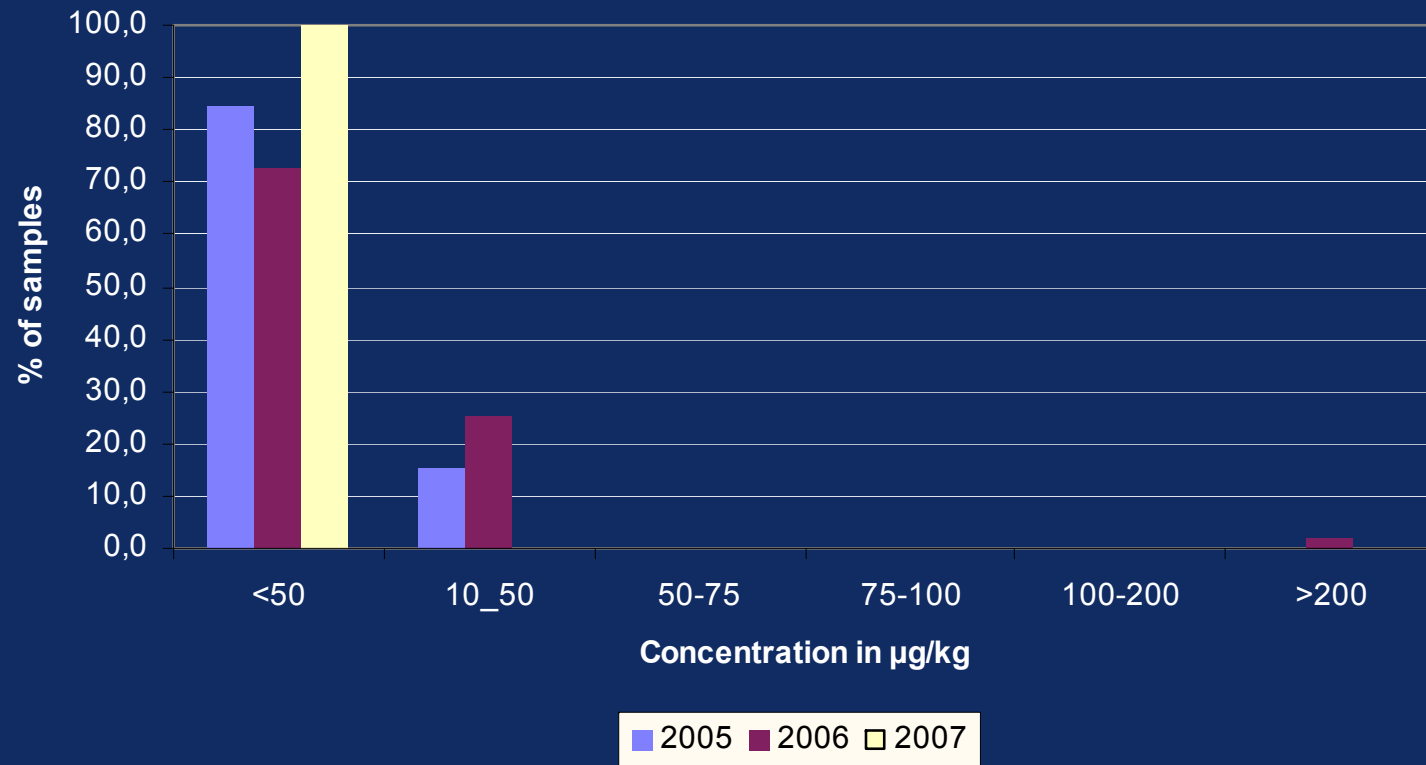
## T-2 toxin in soft wheat in Scandinavian countries



Number of samples: +/- 60 per year



## HT-2 toxin in soft wheat in Scandinavian countries



Number of samples: +/- 60 per year



## T-2 toxin in soft wheat (ppb) in France

T-2	<i>Min.</i>	<i>Max.</i>	<i>Average</i>	<i>Total samples</i>	<i>Samples &gt; LQ</i>
2003	16	21	21.3	108	6
2004	13	16	18.85	93	2
2005	<LD	<LD	<LD	88	0
2006	1	14	14.16	177	17
2007	—	—	—	—	—



## HT-2 toxin in soft wheat (ppb) in France

HT-2	<i>Min.</i>	<i>Max.</i>	<i>Average</i>	<i>Total samples</i>	<i>Samples &gt; LQ</i>
2003	17	34	21.52	109	6
2004	12	18	18.86	96	3
2005	<LD	<LD	<LD	92	0
2006	4	269	16.11	172	27
2007	—	—	—	—	—



## T-2 toxin in soft wheat (ppb) in the UK

<i>T-2</i>	<i>Min.</i>	<i>Max.</i>	<i>Average</i>	<i>Total samples</i>
2003	<10	20	7.2	60
2004	<10	21	4	50
2005	5	14	7.1	45
2006	N/A	N/A	N/A	N/A
2007	<10	<10	<10	50



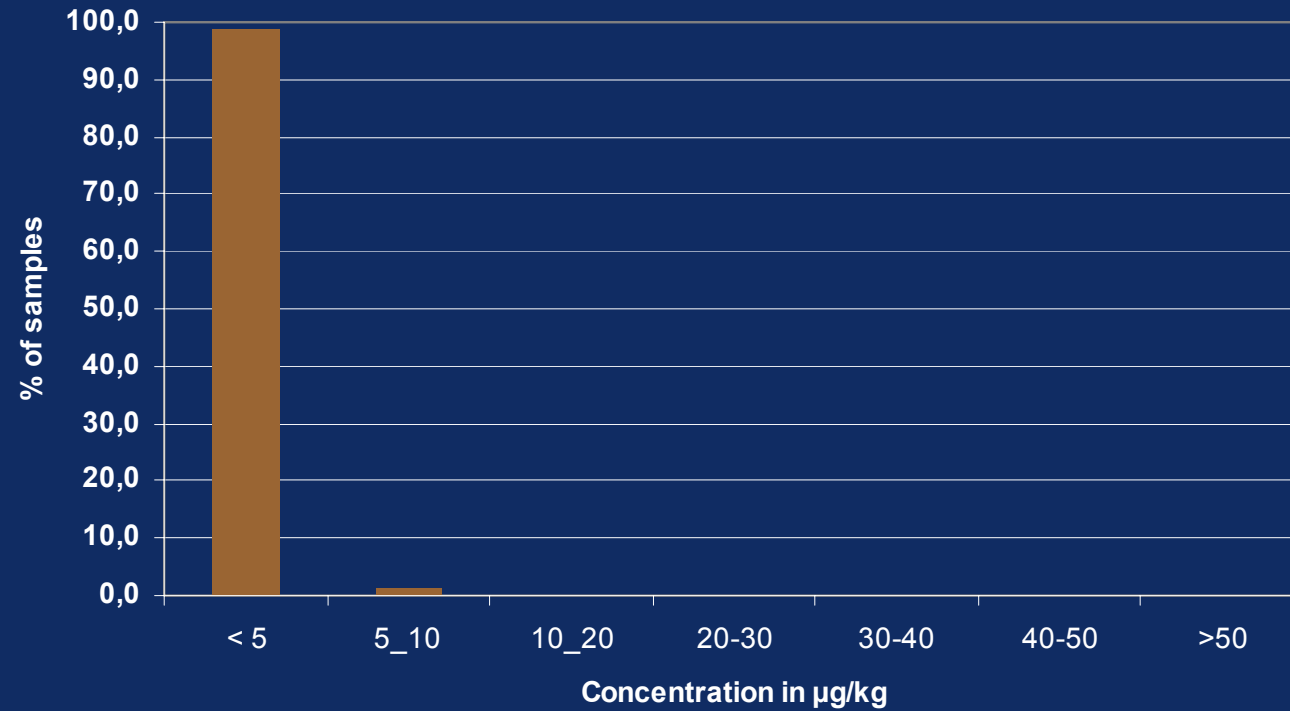
## HT-2 toxin in soft wheat (ppb) in the UK

<i>T-2</i>	<i>Min.</i>	<i>Max.</i>	<i>Average</i>	<i>Total samples</i>
2003	<10	29	12.5	60
2004	<10	70	10	50
2005	5	24	9.6	45
2006	N/A	N/A	N/A	N/A
2007	<10	<10	<10	50





## T-2 toxin in rye in Germany + Austria (2007/08)

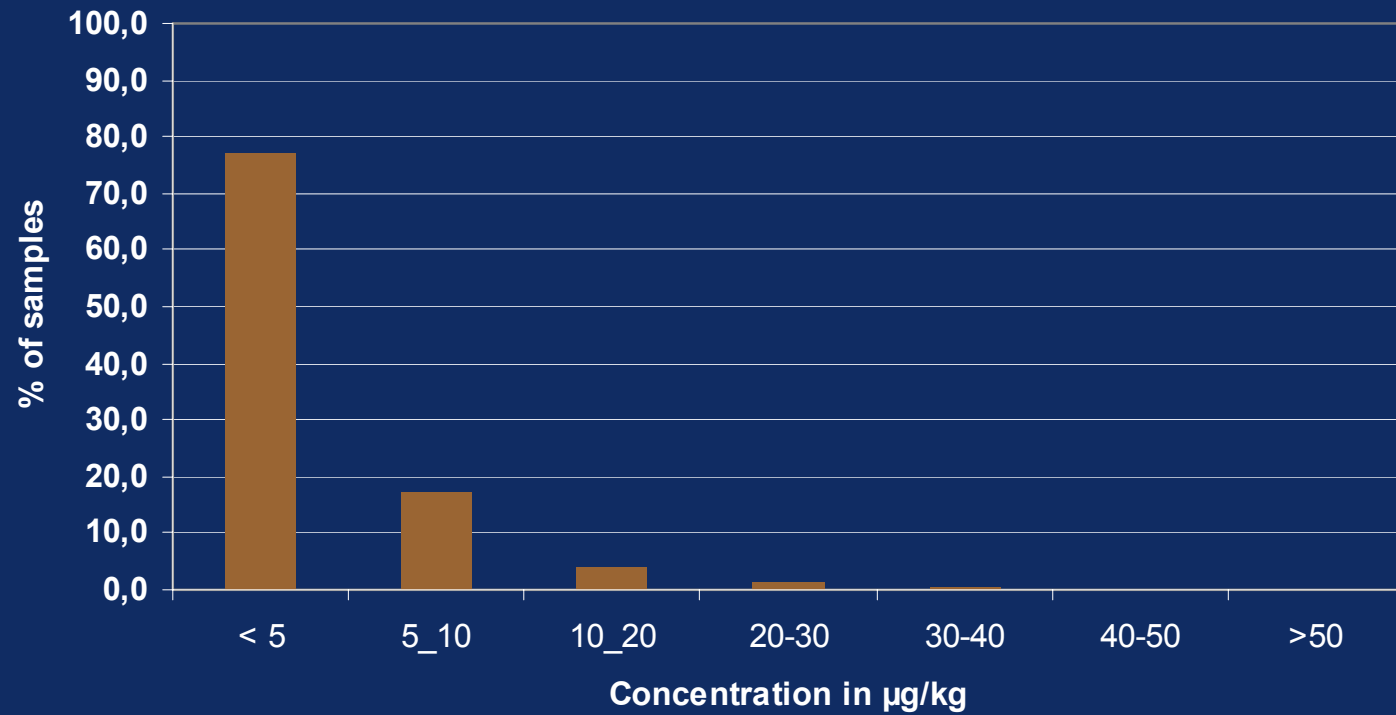


2007/08

Number of samples: 155



## HT-2 toxin in rye in Germany + Austria (2007/08)



2007/08

Number of samples: 121



## No correlation between T2/HT2 and other mycotoxins

DON	ZEA	Nivalenol	T2	HT2
5943	83	99	n.d.	15
1455	53	24	n.d.	5
436	n.d.	24	17	9
160	n.d.	25	n.d.	21
54	n.d.	n.d.	n.d.	10
50	n.d.	11	n.d.	6

Wheat – SGS, Germany 2007

n.d.=not detected



## Conclusion and recommendation

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Data do not at this stage justify the establishment of maximum limits for T-2 and HT-2 in soft wheat & rye or soft wheat & rye processed products.

In any event, consumer exposure would appear to be low.

