

# Issues concerning fusarium mycotoxins in the 2007 & 2008 UK wheat harvests

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# Acknowledgements

- Hans van Egmond (RIKILT) & Michele Solfrizzo (CNR-ISPA)
- MoniQA Network of Excellence  
– Contract Food-CT-2006-036337

# Field versus storage mycotoxins

## Field

- Produced by certain plant fungal pathogens
- Infection & mycotoxin production dependent on:
  - cereal variety
  - climate
  - agronomic practices

## Storage

- Associated with particular saprophagous fungi
- Infection & mycotoxin production dependent on:
  - moisture at harvest
  - post harvest hygiene
  - drying conditions

# Mycotoxins of concern (UK wheat)

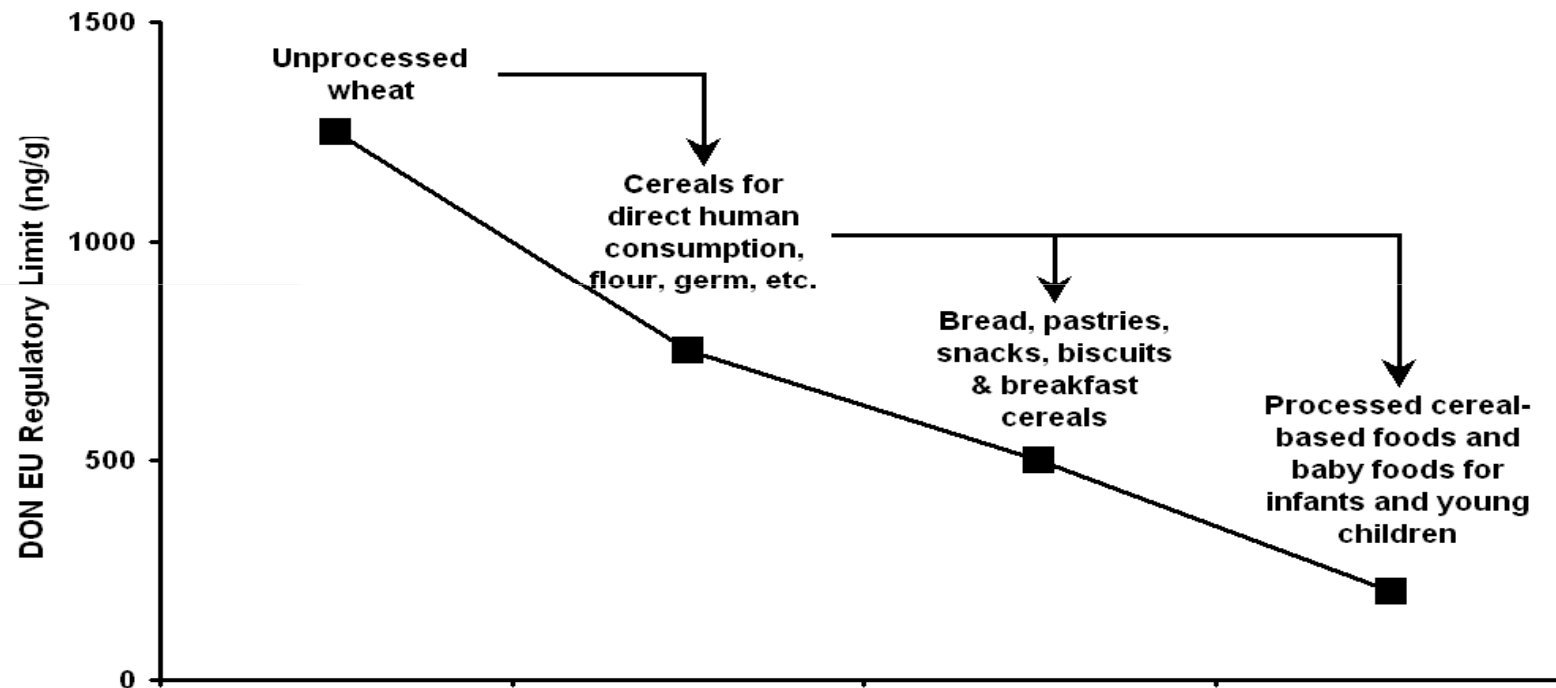
## Field

- Ergot
- Tricothecenes
  - Deoxynivalenol
  - HT-2/T-2
- Zearalenone

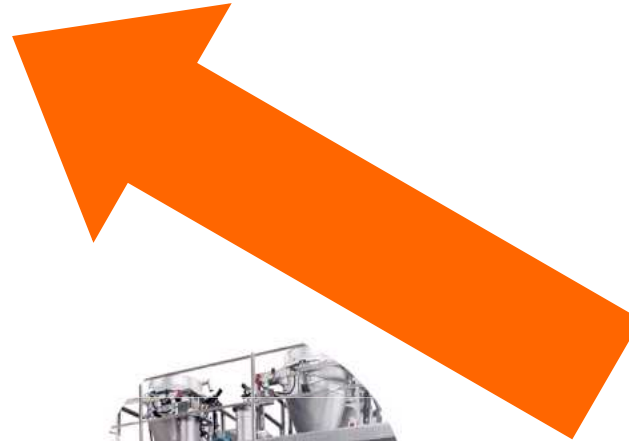
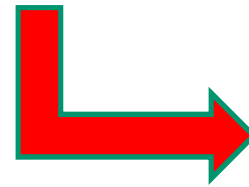
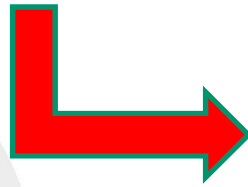
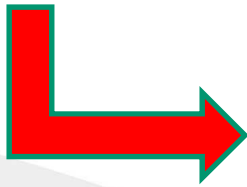
## Storage

- Ochratoxin A

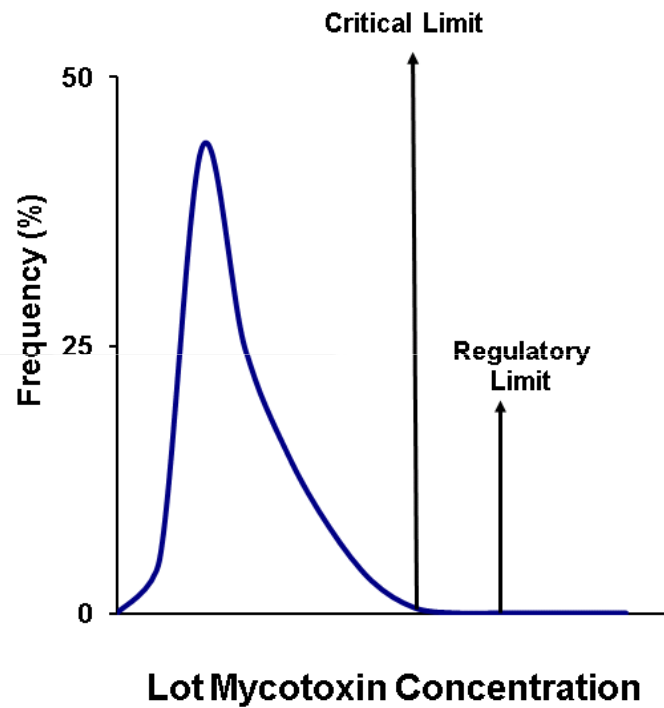
# Regulatory implications



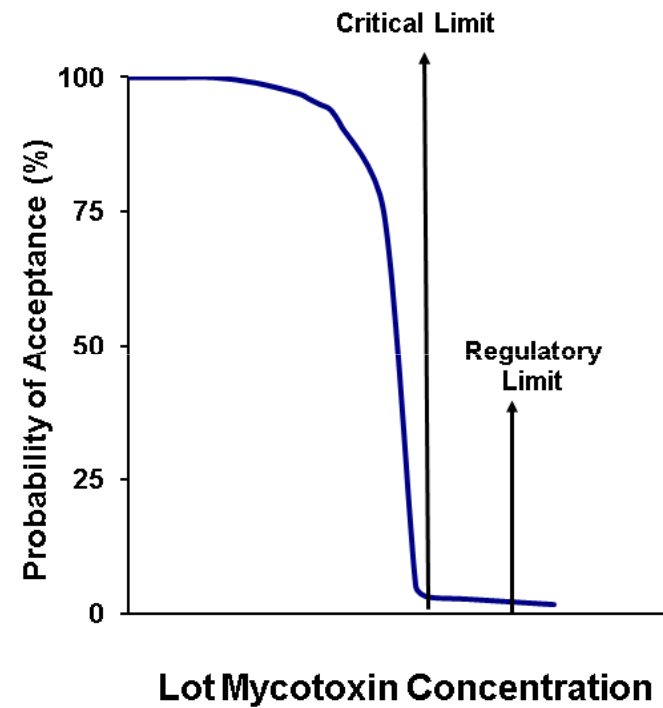
# The UK Grain Chain (SQA Implications)



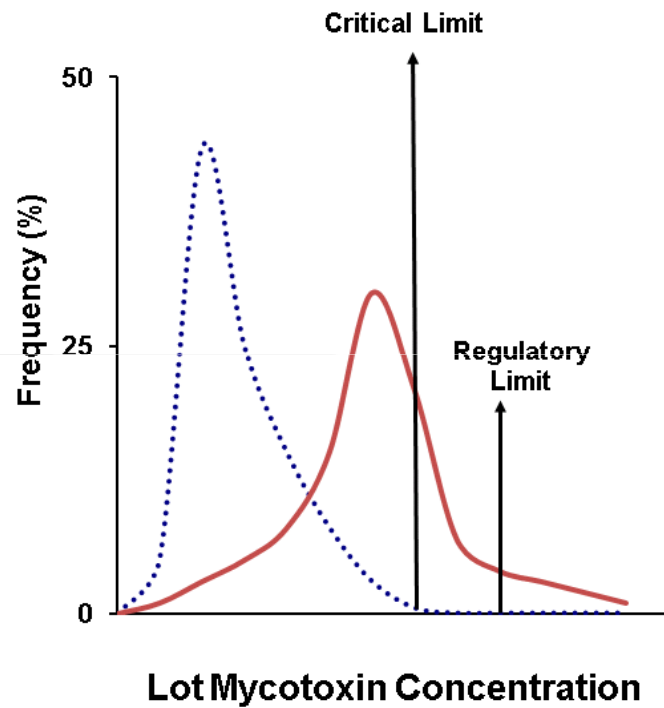
## Supply Characteristics



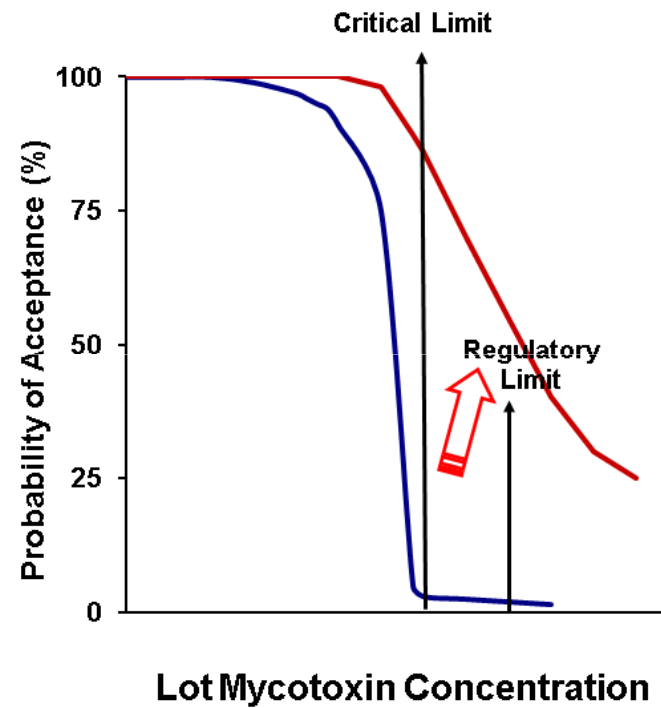
## System Efficiency



# Supply Characteristics



# System Efficiency



# Mycotoxins & climate change

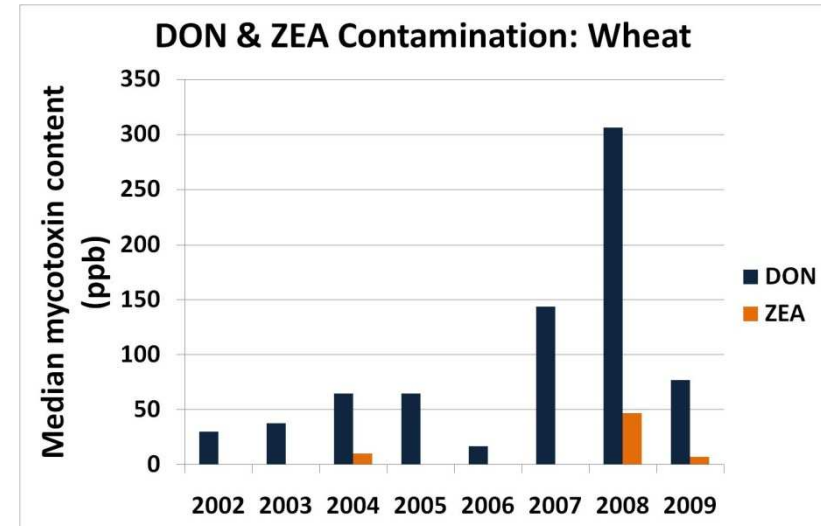
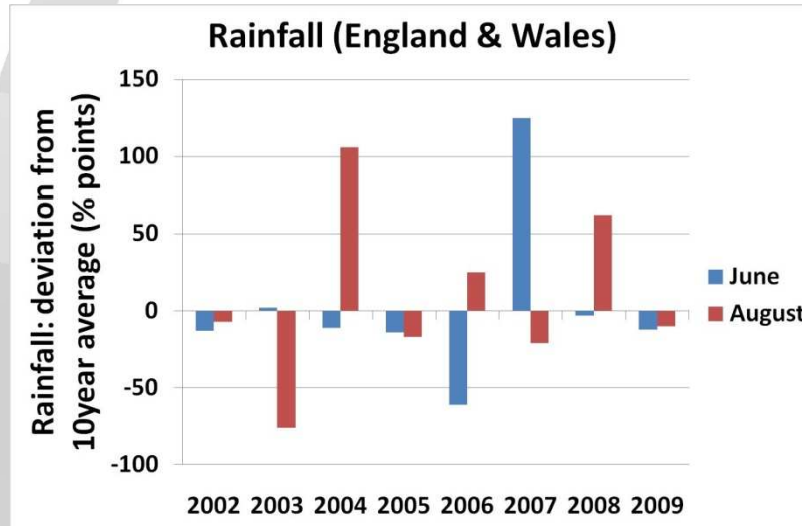


July 2007



August 2008

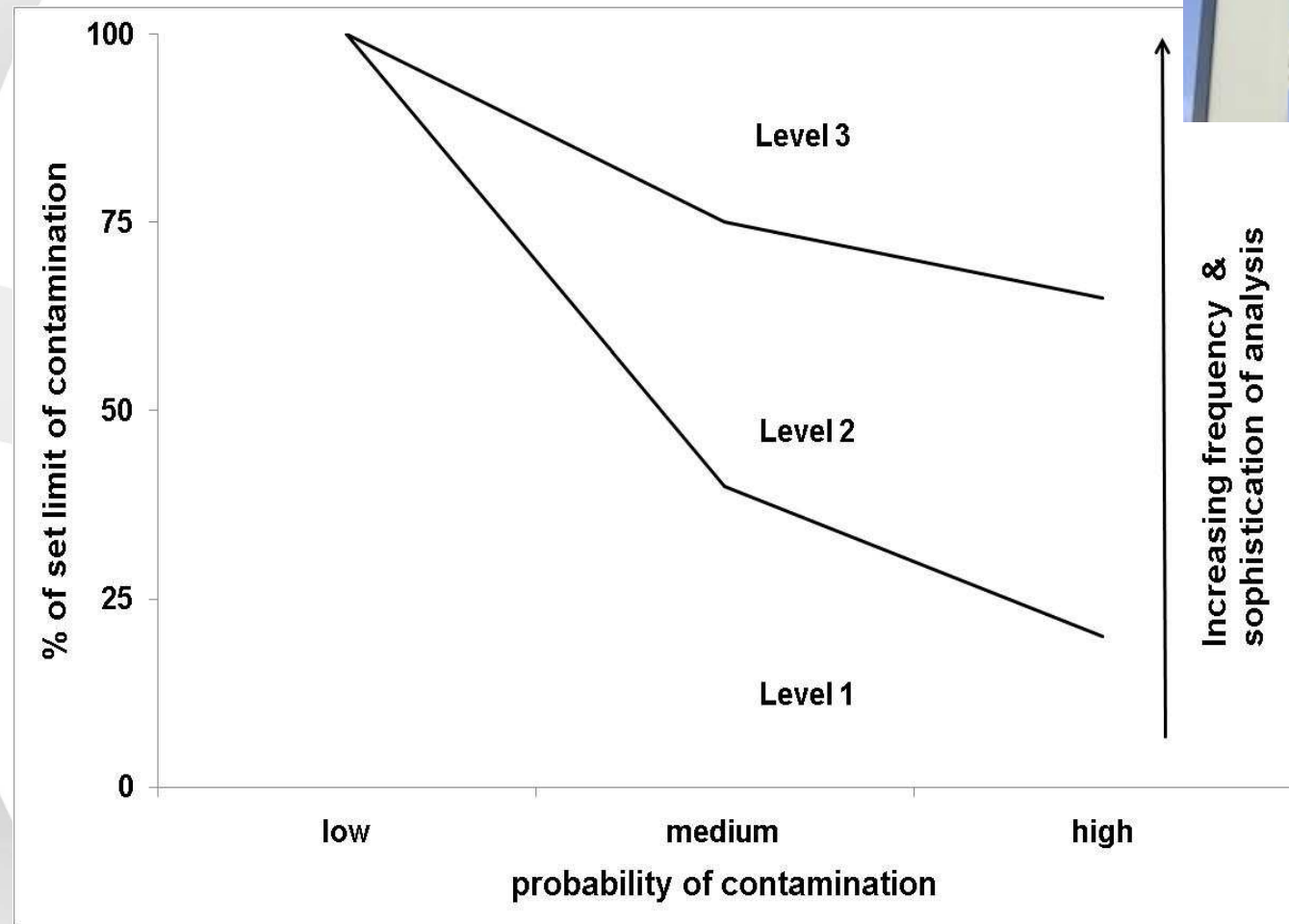
# Climate & mycotoxin contamination



# Stakeholder responses

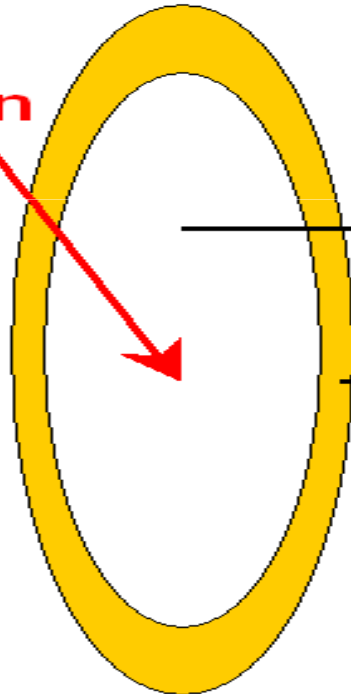
- SQA refinements
  - HGCA risk assessment
- Use of rapid test kits at weigh-bridge
- Food Standards Agency Involvement
  - 265 Article-19 referrals
- Supplier certificates of analysis

# Cost & benefit: Analyte choice & frequency of test



# Specification limits and product type

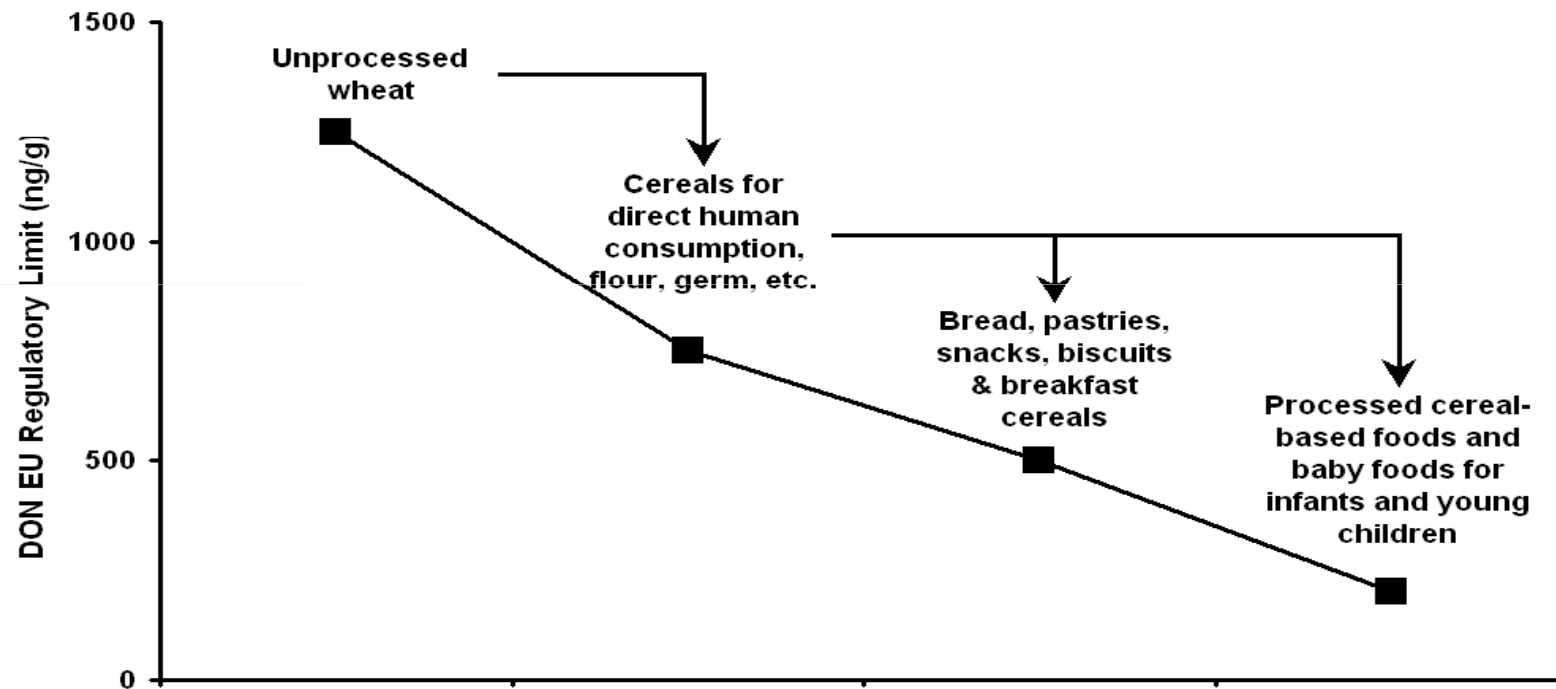
**Mycotoxin  
Gradient**



**Endosperm**

**Bran Layers**

# Regulatory compliance



# Zearalenone, wheat bran & breakfast cereals: *Flexibility in Brussels!*

- **March/April 2009: Increasing difficulty in sourcing wheat bran for breakfast cereals due to excessive ZEA contamination.**
- **Breakfast cereal industry applies for derogation**
- **Derogations granted until 31 October 2009**
  - 75 µg to 125µg kg<sup>-1</sup> (wheat bran)
  - 50µg to 100µg kg<sup>-1</sup> (breakfast cereals)
- **EFSA approached to consider food-safety implications on changing regulation permanently**

# Closing thoughts

1. The system works!
2. Investment in fusarium mycotoxins research pays dividends!
3. Analysis is an important tool in verifying efficacy of SQA.
4. Regulatory flexibility - without compromising public safety.