



Mycotoxins: The Impact on Processors

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BCPC

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Chair - FDF Emerging Issues & Incident Management Working Group

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Technical Chair – Oat Millers' Forum (Europe) within CEEREAL



Significant work with FSA /
FSS, European Commission
Plus UKFM, MAGB, AIC etc

Morning Foods

15th Generation Independent Family Business, established 1675 (Britain's 4th oldest registered business)

UK's largest oat miller – mills in Crewe, Cheshire (Morning Foods) & Boyndie, Aberdeenshire (Hamlyns of Scotland)

Breakfast Cereal production in Crewe and Buckley, Flintshire

Branded (Mornflake / Hamlyns) & Own-Label

- UK Retail

- UK Business to Business

- Export (76+ Countries)

Plus significant animal feed interests

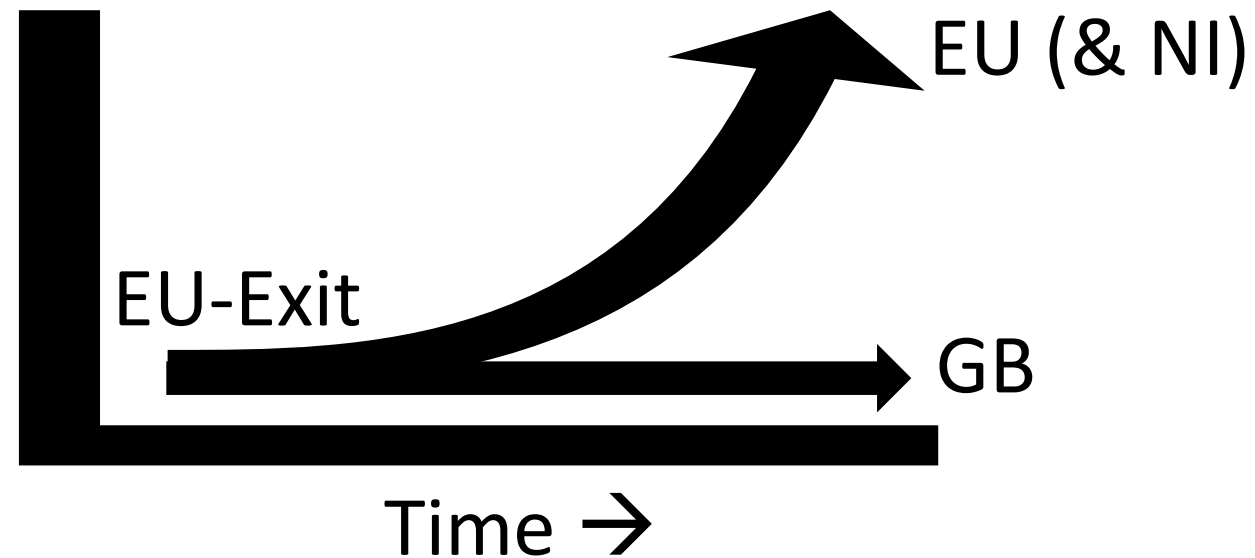


Mycotoxins

- Field vs Storage
- **Legislative Compliance**
 - A question of numbers / percentiles
 - Plus ability to mitigate
 - Field
 - Processing
 - Plus ability to test (sampling / analysis issues)

Legislative Compliance

- Clear parallels with legislation on plant protection products
- GB Regulation as of 11pm 31/12/2020 \equiv EU (Reg 1881/2006)



EU (& NI) Regulation

- Commission Regulation (EU) 2021/1399 of 24 August 2021
Ergot Sclerotia & Ergot Alkaloids (Effective 01/01/2022)
- *Commission Regulation (EU) 2021/1408 of 27 August 2021
Tropane Alkaloids (Effective 01/09/2022)*
- Commission Regulation (EU) 2022/1370 of 5 August 2022
Ochratoxin A (Effective 01/01/2023)
- **Advanced discussions on T-2/HT-2 & Deoxynivalenol.....**

GB Regulation

- No changes since EU-Exit
- GB Risk Analysis Process
 - FSA/FSS Priority list of Contaminants (Jan 2022)
 - Process now started on T-2/HT-2
 - Potential Divergence within GB
 - Specific stakeholder group in Scotland
- Risk of GB adoption of EU Regulations by Retailers to facilitate trade



FSA Priority List



UK Stakeholder
Position



An Example – T-2/HT-2 Toxins in Oats

ANNEX TO DRAFT REGULATION

In the Annex to Regulation (EC) No 1881/2006, section 2, entry 2.7 is replaced by the following:

'Foodstuffs 2.7	T-2 and HT-2 Toxin	Maximum level (µg/kg) Sum of T-2 and HT-2 Toxin
2.7.1	Unprocessed cereals <ul style="list-style-type: none">- Barley, maize and durum wheat with the exception of unprocessed maize intended to be processed by wet milling- Oats- Other cereals	100 1250 50
2.7.2	Cereals placed on the market for the final consumer <ul style="list-style-type: none">- oats, barley, maize and durum wheat- other cereals	50 20
2.7.3	Cereal milling products <ul style="list-style-type: none">- cereal bran, oat milling products (including oat flakes) and maize milling products- other cereal milling products	50 20
2.7.4	Breakfast cereals composed of at least 75 % of cereal bran, oat milling products, maize milling products and/or whole grains of oats, barley, maize and durum wheat	50
2.7.5	Bakery wares, pasta (dry), cereal snacks and breakfast cereals other than those referred to in 2.7.4	20
2.7.6	Processed cereal-based foods for infants and young children and baby foods	10
2.7.7	Dietary foods for special medical purposes intended for infants and young children	10'

T-2 / HT-2 Toxins in Oats



- Primary cause *Fusarium langsethiae*
- Symptomless disease in oats
- Relatively high in UK oats, especially in Scotland [.....Europe.....?]
- Levels show unpredictable year-to-year variation, with some “high” years (e.g., 2014 & 2015 harvests) and some “low” years (e.g., 2022)
- No commercially viable field mitigation
- Levels in field show significant variation
- Reduction through milling varies from c. 60-97% (cleaning & husk removal) – EC Proposal assumes 96% reduction (1250 → 50ppb)
- Reduction through milling is not batch-to-batch predictable

T-2 / HT-2 Toxins in Oats

- No reliable rapid test on oats – so testing is through LC-MS/MS at c. £120/sample and typical 5 working day lead time (Fera c. 30 days!)
- In a “high” year **10-30%** of UK unprocessed oats would be non-compliant
- In a “high” year c. **20%** of oat milling products would be non-compliant
- In a “high” years c. **20%** of composite products (breakfast cereals, biscuits etc) would be non-compliant

But identification of compliant vs non-compliant products is hugely challenging and carries a massive reputational / recall risk.



And

- Issues in UK oats are well understood – 15+ years of data collection, science, and lobbying
- Issues in wheat, barley, and maize less understood, but there will be compliance issues (recent RASFF on maize-based snack with high T-2/HT-2)
- Discussions on deoxynivalenol in EU will impact UK wheat
- But strong likelihood that GB (England) will not follow with changes on T-2/HT-2 & deoxynivalenol (local exposure data + correct use of risk / benefit principles) [Scotland??]
- Retailers hold the key

The Ongoing Work

- EU Work
 - Presentation to EC Member State Expert Working Group on Agricultural Contaminants 24th October in Brussels
 - Comprehensive Oat “Dossier” developed
- GB Work
 - FSA/FSS Risk Analysis work on T-2/HT-2 now started
 - Scottish Stakeholder Group
 - UK Cereal Trade Position



OMF Oat Dossier

Research must continue in several targeted areas:

- Collection of representative data from the major oat growing and milling member states. ensuring that terminology and sample provenance are clearly understood
- Breeding of milling oat varieties which are resistant to *Fusarium* infection (whilst ensuring that in mitigating against one issue, a different, potentially more significant issue is not created)
- Development of a reliable validated rapid (<10 minutes) test
- Epidemiology of *Fusarium langsethiae* infection, both of the oat plant and the oat grain
- Further investigation and recognition of the fact that smaller oat grains / kernels/groats tend to have higher levels of T-2 and HT-2 toxins than larger grains / kernels (groats)
- The potential impact of EU sustainability initiatives and climate change on mycotoxins





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