MEETING NOTES

EUROPEAN CARTON MAKERS ASSOCIATION

Food Safety Committee Visit FERA Laboratory

Date: 23 04 2024 **Time:** 10h30 - 16h00 CET **Venue:** York

FERA staff : Emma Bradley [EB], Claire Mckillen, Daniel Wright

ECMA Participants: Mathilde Gros (Graphic Packaging) [MG], Eliza Konecka-Matyjek (WestRock) [EK], Elaine Murray (WestRock) [EM], Annika Schrimp (Graphic Packaging) [AS], Caroline Seguin (Mayr Melnhof Packaging) [CSG], Jan Cardon (ECMA) [JC]

After a round of introductions 2 presentations were used to structure the discussion and cover the preannounced topics of particular interest :

ECMA "FERA Visit 24 04 2024" Annex 1
FERA "ECMA April 2024" Annex 2

The notes try to report - in a less structured way - in one flow on the essence of the very rich interactions at the meeting. Key outcomes have been underlined.
Of course, also in this purely technical meeting the ECMA Antitrust Guidelines have been respected.

- [EB] Laboratories are at the moment nearly entirely specialized in plastic testing and don't have anything else. At FERA, work was also done on can coatings. The basic approach when assessing materials is to do a solvent extraction and to look what is coming out of it.
Cardboard - depending on the application - covered with another material is an alternative for plastics. New ways of testing are needed. The FCMs involved degrade above 40°C. [CSG]
[EB] For getting acceptance of new testing procedures, obtaining evidence is needed and this involves costs.

FERA Slides 3 - 4 Joint Venture. Facilities, partners and operations

- FERA exists 100 years, has a staff of over 400 employees (375 scientists) and is working 60% for authorities (FSA Food Safety Agency) and 40% for industry. Currently 75% owned by Bridgepoint (private equity) and 25% by Defra. FERA acts as the UK national reference laboratory. Food safety represents the majority of the work.
- Was in the past deeply involved in many EU projects (FACET, biocides …) and in EFSA Committees (BPA …) alongside Fraunhofer and TNO. Since Brexit, FERA lost its access to those groups. This means FERA is informed much later on the developments in EU projects and committees.

Slide 7

- Many different centres of expertise. The impact of chemicals on plants. Entomology, what about the chemical contaminants in food waste used to feed insects in bioreactors ending up as proteins from insects? Allergens present in feed for the insects, what to expect in the food?
- Monitoring of the adulteration risk by horizon scanning. A significantly increasing trade or sharply rising prices of commodities are indicators of potential adulteration. Where is this used for?

Slide 8 & 12 Worldclass analytical capabilities

- 19 LCMS, 14 GCMS … at the Thomson Suite. [Sir Joseph John Thomson 1856-1940, British Nobel Prize winning physicist, credited with the invention of mass spectrometry]
- Testing approach per type of substance: volatile, semi-volatile, non-volatile and polar.
- Research and method development!

Slide 13 Food and feed safety risks - Monitoring plans

- Typical in the RASFF alerts is the impact of increased analytical capabilities. With the development from GCMS to LCMS lower detection limits were achieved, with e.g. Sweden introducing different alerts on acrylamide.

Slide 14 Supporting government

- Around "biobased" there is a lot of greenwashing. Polypropylene with just some substances added to partly dissolve the material …

Publication available "Review of biobased food contact materials."

Slides 21-24 Science Advisory Committees

- Since the UK left the EU, FSA is doing at national level, the EFSA work. Advisory committees have been established. FSA is similarly in the process of approving the plastic recycling processes …

When collected ocean bound plastic is used in recycled plastics, is this CMR safe …

The publications from those advisory committees are publicly available.

Slides 25-27 Divergence

At Brexit, all EU Food Safety Regulations were implemented as GB law, with however no changes since the EU exit. At the EU level the legislation is being further developed.

Currently there are already diverging rules for recycled plastics and the EU is reviewing its FCM legislation …

All this is leading to strange situations, with e.g. packs on the UK market mentioning "not for the EU", while the packs are produced in the EU, because of Northern Ireland, which has to fulfil both legislations EU and the UK.

FERA has always had and still has excellent relationships with European colleagues, but structurally the UK is now considered as any other third country.

Slides 29-31 European evaluation of FCMs

- [EB] It is idealistic to count on DOCs and an ideal information exchange in supply chains. How will it happen? There are deficiencies in DOCs. The need for DOC checks.

[CSG] Chinese photo initiators being not compliant. In the context of the board supply problem, exotic boards were considered without even a company website! What about compliance with European legislation …?

- Critical in NIAS assessments is getting information on the starting substances. The plastic sector developed databases, but still - when analysing - there remain many unknown peaks.

FERA has a standardised approach for assessing NIAS and is delivering analytical reports, which are however not in the form of a certificate of safety.

This is also somehow the position suppliers to the carton industry are in. In view of the uncertainties, the ink suppliers are e.g. not prepared to sign for compliance with the French MO regulation … [CSG]

- The lack of knowledge is clearly also a difficulty! When asking as a converter too specific questions, some suppliers come with googled replies.

At the other end customers need to be educated. Food safety requests should not be limited to a yes/no exercise, but leave room for open correct information sharing. In supply chains one should talk to each other.

Also, within the own companies, the sales staff is just coming with

requirements as “My customer needs this …” [CSG, MG, …]
- A typical behaviour in markets is to require as a prerequisite the confirmation that all types of exclusion lists are respected, with as an example Proposition 65. [MG, EM …]
The converter can phase the difficulty that substances are in the materials used but with no warning from upstream … Such lists are also evolving over time and converters don’t know always the exact use of the cartons.
The safety assessment costs can require serious budgets (10 000 € …) for just a single product of a customer. Testing done by the customer can be a positive way to go for converters.
Large customers with locations in different countries (Italy, Switzerland …) come with different legislations to fulfil … Some don’t believe the statements made and are asking after all our suppliers …
- Around confidentiality, there are concerns with experts having an e-mail address from the customer, but who are in fact independent consultants. In such cases where is the detailed knowledge sharing with customers, ending up? [EM]
- In the current context with many questions from customers, the laboratories are not reactive enough.
It takes on average 16 weeks to obtain migration test results from laboratories. [EM]
The methods for testing in an accurate way cartons, are not yet there. [MG…]
In the course of the discussion, it became clear that this is even so for FERA but that all equipment is available for methodology development.
[EB] The way to handle, is to apply best practices and state of the art approaches. Reference is made to the ILSI publication “Guidance on Best Practices on the risk assessment of non-intentionally added substances (NIAS) in food contact materials and articles.”
https://ilsi.eu/publication/guidance-on-best-practices-on-the-risk-assessment-of-non-intentionally-added-substances-nias-in-food-contact-materials-and-articles/
- With the ever more sensitive equipment, the TTC concept is helpful to reduce the number of substances to be checked.
[EB] In recent discussions with ANSES, which very low levels need to be reached? When is enough, enough? In the end you can detect everything in any material.
To apply TTC, analytical tests need to indicate the migration of substances remains well below the thresholds.
Excluding genotoxicity is important and bioassays can be complementary to analytical testing. FERA has for instance contacts on this with OFI and a Finnish laboratory.
- The needed frequency of testing? [EM, MG, CSG]
Needs to be performed in accordance with GMP.
Testing is also needed in case of any change in the composition which may be modifying the safety of the product. Change? One of the difficulties can be that suppliers sometimes use different CAS numbers for the same materials.

Slide 33 PFAS

FERA developed its capability for testing PFAS. In lots of foods background levels can be found and some foods can contain high contamination levels. Even in the laboratories, contamination can occur, with as an experienced example at FERA a modified storage cupboard with a type of PFAS treatment on …
The FSA Committee on toxicity has been looking into PFAS. A position paper is public on their website.

Slide 34 BPA

The TDI established in the new EFSA opinion (0,2 nanograms) leading to a level of 12 ppt in food is not possible to verify at the moment. FERA’s view? [EK]

The UK is following the BfR in this respect. A statement on BPA will come in due course.
With such a low TDI at the EU level the only option is a ban on the intentional use, with however no analytical methods available for enforcement to verify.

Slide 35 Mineral oil

All necessary equipment is now in place at FERA, but it takes 18 months to do it right. The interpretation is essential. FERA is not involved any longer in the EURL network, but they provided anyway the samples for proficiency testing.

Slides 40/43 Migration testing

- FERA starts typically with an extraction as a worst-case approach. A second phase is a single sided migration test into Tenax to be agreed with the customer.
FERA is currently performing accelerated tests for LT @ RT at 40 °C for 10 or even only 6 days.
A last step to demonstrate compliance - in case this is necessary - is testing in the food product itself.
- Again, the issue of the testing frequency is brought up in the discussion. Batches can differ.
[EB] If for instance the detected concentrations are close to the TTC threshold, this will require more regular testing.
- For looking into the sources for the presence of certain substances, e.g. the phthalates, FERA applies for the packaging also the sliced approach as is done for food. For packaging the inks are for instance scrapped from the finished carton … and this is analysed separately. Finaly, you end up with the material itself.
The unprinted cardboard can also be compared with test results for the printed cartons …
- Once again, the comment is made there is a serious gap to cover. [MG] In markets there is a clear transition towards paper and board, but appropriate testing methodologies are missing.
[EB] In essence the scientific work needs to be financed by the involved products or/and the government and paper and board is currently not in the focus of the UK government.

Slides 45-56 NIAS

- The NIAS workflow starts with the development of a database, based on the available information, the starting materials, the impurities … Algorithms allow to identify from there the potential reaction products.
For the development of a carton specific methodology, fundamental research is needed to generate scientific evidence. Collaborative studies are needed.

Closing discussion related to the upfront listed topics to cover. ECMA presentation slides 33-34

- The content of the analytical reports. The details are provided. **See slide 37**
- FERA is in a good position to support the sector in developing new methodologies.
- FERA can perform tests on the barrier efficiency and the compliance of multi-materials, but did - up to now - no direct work in this area (barrier coatings …).
- Work was done in the past for sector associations, the can coatings, CEPI and Plastics Europe. There has been no - external or within the supply chain - communication on the NIAS work for CEPI (?)
[EB] What was done at the time is a NIAS assessment for different types of paper and board, and the reports were delivered to CEPI.
- FERA could well build a database with the NIAS which may appear in the materials carton makers are using, starting from what is reported by the suppliers and how some substances may react together. In such a project FERA has the appropriate knowledge to provide further scientific input from available packaging databases for public information.

Such a database can remain confidential for the own sector. The outcome can be given back to the customer or kept at FERA on a confidential basis, and requires afterwards updating.
- Allergens? Recently wheat proteins were found in paper straws. [EB]
- Food contamination and microbiological testing are probably not that important in view of the recycling process conditions. [EB]
- How to assess the safety of the final product, the combination of the materials, the printed cartons? … Which migration limits to respect?
- What about packaging which is used in pharma applications with gamma radiation? [CSG]
FERA has not this type of equipment. This is outsourced.

At the end of the meeting and impressive visit of the facility, FERA and all participating, were especially thanked for the excellent discussion.