Main Sources of MOH contamination and entry points into the cocoa supply chain

Members view on mineral oil hydrocarbons in fine bakery wares and confectionery

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Stakeholder forum on mineral oil hydrocarbons in food
18th January 2024

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European Cocoa Association
European Association of Cocoa, Chocolate and Biscuits

European Cocoa Association (ECA)

Trade Association representing the European cocoa sector, regrouping the major companies involved in the cocoa bean trade and processing, in warehousing and related logistical activities. Member companies grind over two-thirds of Europe’s cocoa beans and account for 50% of Europe's industrial chocolate production.

European Association of Chocolate, Biscuits and Confectionery (CAOBISCO)

Association encompassing the Chocolate, Biscuits and Confectionery Industries of Europe, serving as an umbrella for over 13.000 companies, employing more than 280.000 workers and accounting for over 14 billion EUR in exports.

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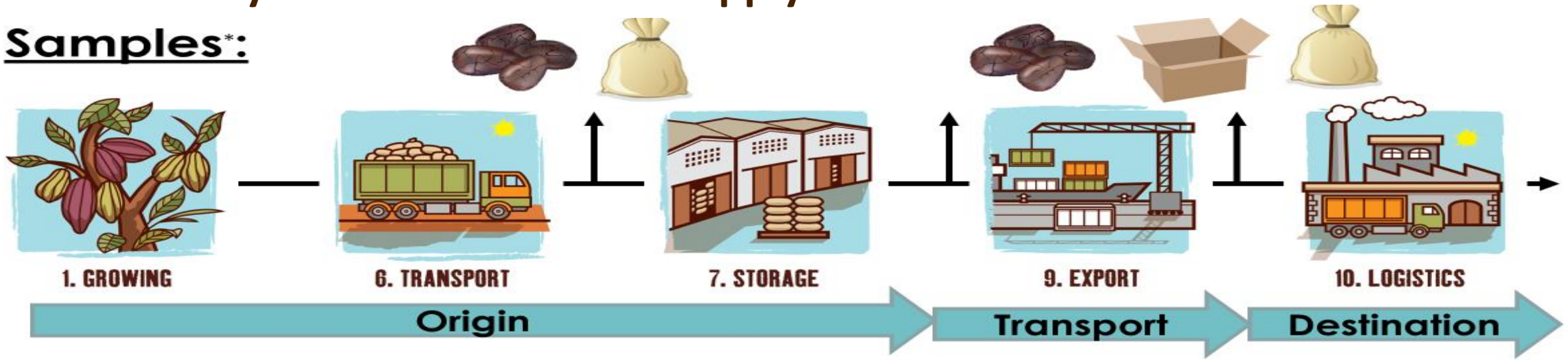
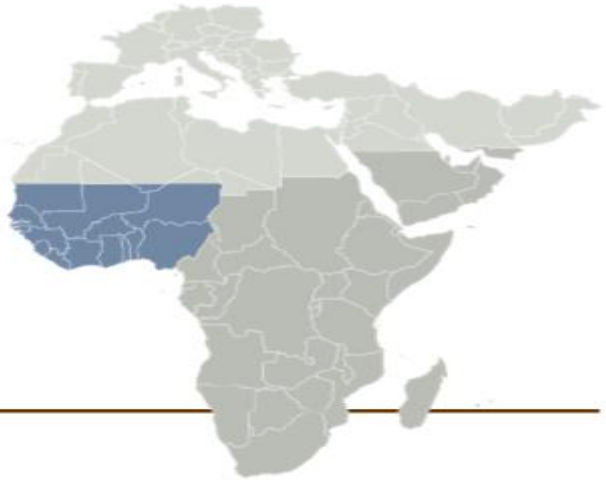
Industry study 2019-2021: Entry points mineral oil hydrocarbons in cocoa supply chain

Samples*:



Regional Focus:



*adapted from cocoafromghana.org

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JOINT COCOA RESEARCH FUND

Industry study 2019-2021: Entry points mineral oil hydrocarbons in cocoa supply chain

Conclusion study:

- Contact time with jute bags is determinant (beans can be stored very long time in jute bags on terminal market)
- Cardboard and jute bags: Similar overall contamination, jute bags are more responsible for contamination in cocoa beans

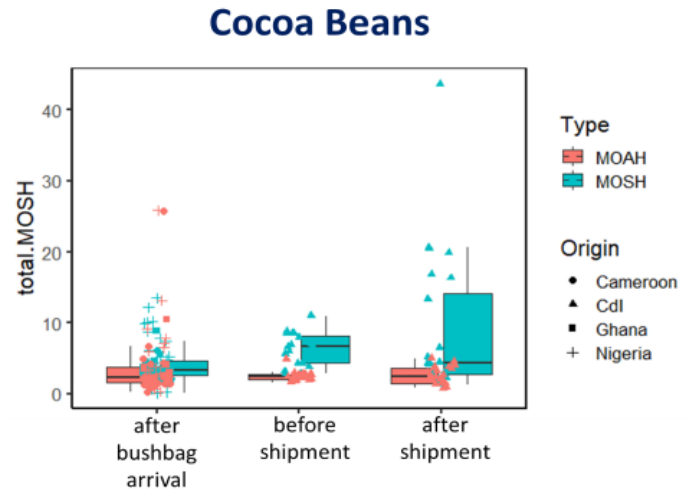
Validation impact jute bags on cocoa bean contamination:

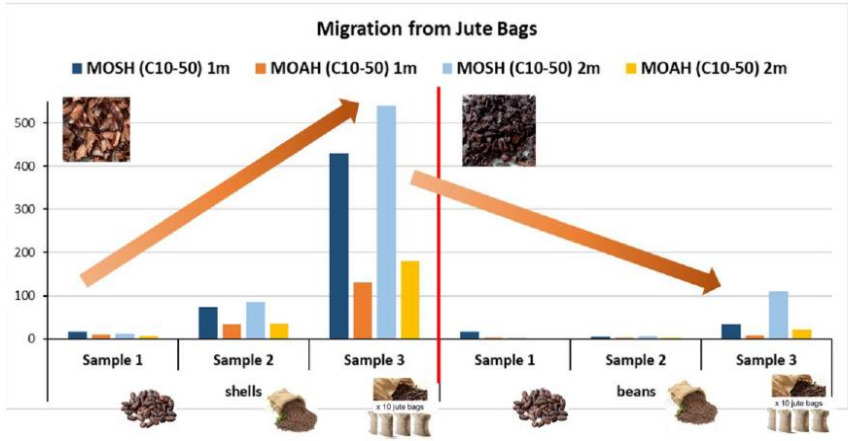
- Lab scale study confirmed impact of jute bags on contamination of cocoa beans through migration study

Decision to create a Technical Working Group (TWG) composed of Jute, Cocoa, Chocolate sectors' representatives

Objectives:

- To guarantee vegetable oil treated (VOT) jute bags which are virtual free of MOH in cocoa bean supply chain
- To establish benchmark level





Technical working group mineral oil

Risk assessment and sampling in Jute bag supply chain

Work paths:

1. Help the jute industry to risk assess contamination paths
2. Establish achievable BM levels by the Jute Industry for VOT treated jute bags with consideration of:
   - the current state of the jute industry
   - known rate of migration as identified in 2019-2021 industry study

	Sample		Process step	Sample	Type of machine lubricants/ oil/ ink used during process step	Details of oil/ ink/ lubricant	Food grade Y/N	Risk of contamination taking place	Likelihood of cross contamination to product (1 very low, 5 very high)
			Explanation		Purpose of oil : for instance hydraulic oil, gearbox oil, lubricant, heating oil etc etc.	Describe the technical name of the lubricant for instance Casside GL 220 fluid gearbox	In the MSDS of the lubricant used it should be clear if the lubricant are food grade or not, bear in mind if risk of contact is very low or not possible a food grade	Describe how possible contamination can occur, for instance lubricants for joints coming in contact with jute fibres	If lubricant cannot come in contact with jute the likelihood is very low, if lubricant will likely be in directy contact the likelihood is very high
			Raw jute	1					
			Assortment and Hackling						
			Batch Selection						
Batching oil	2	➡	Softening of emulsion		Batching oil				
			Conditioning or pilling	3					
			Carding						
			Drawing						
			Spinning						
			Winding	4					
			Beaming and singeing						
			Weaving						
			Finishing						
			Cutting and Sewing	5					
Printing Ink	6	➡	Printing	7	Printing Ink				
Secondary packaging	8	➡	Packing						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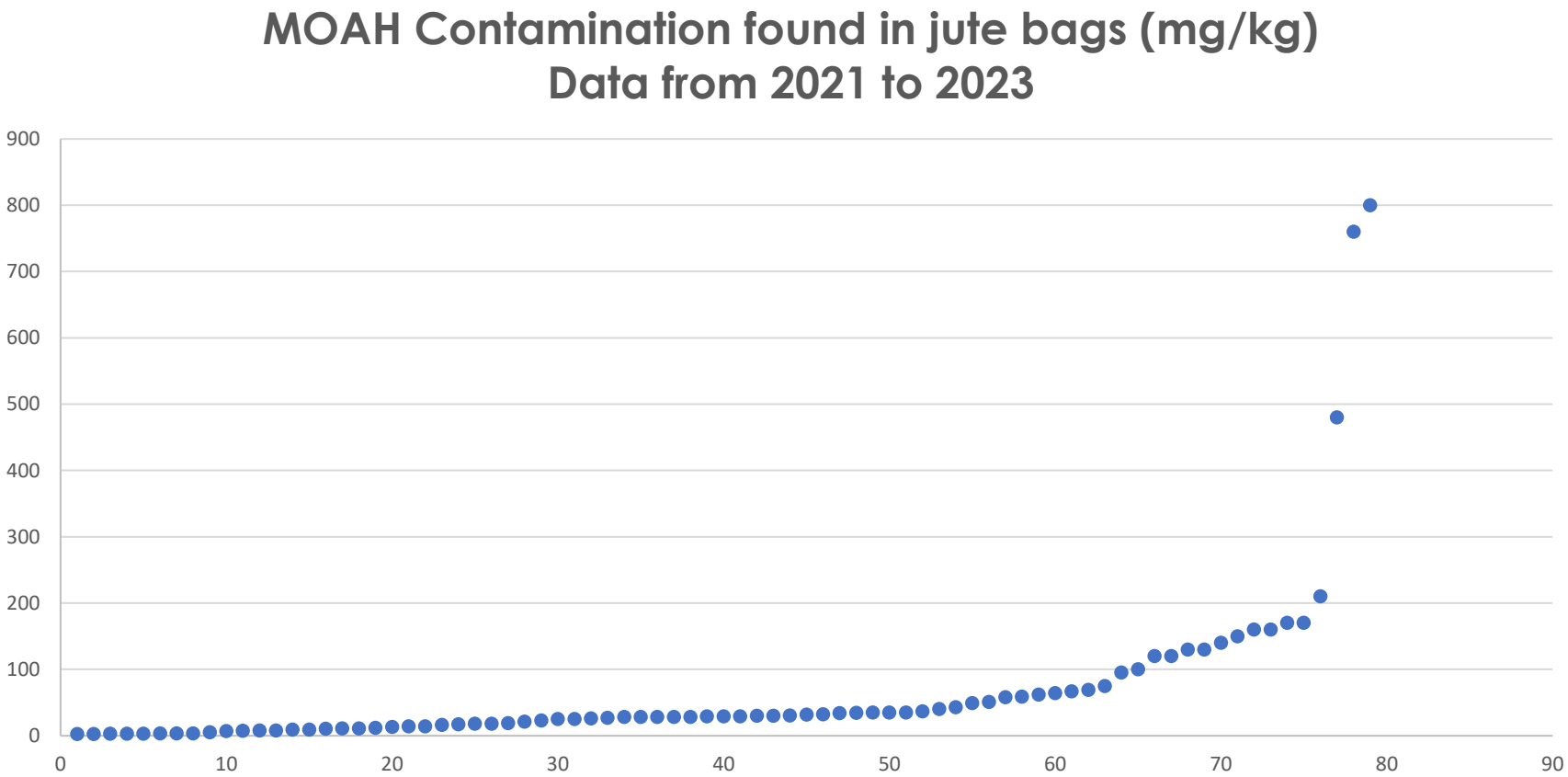
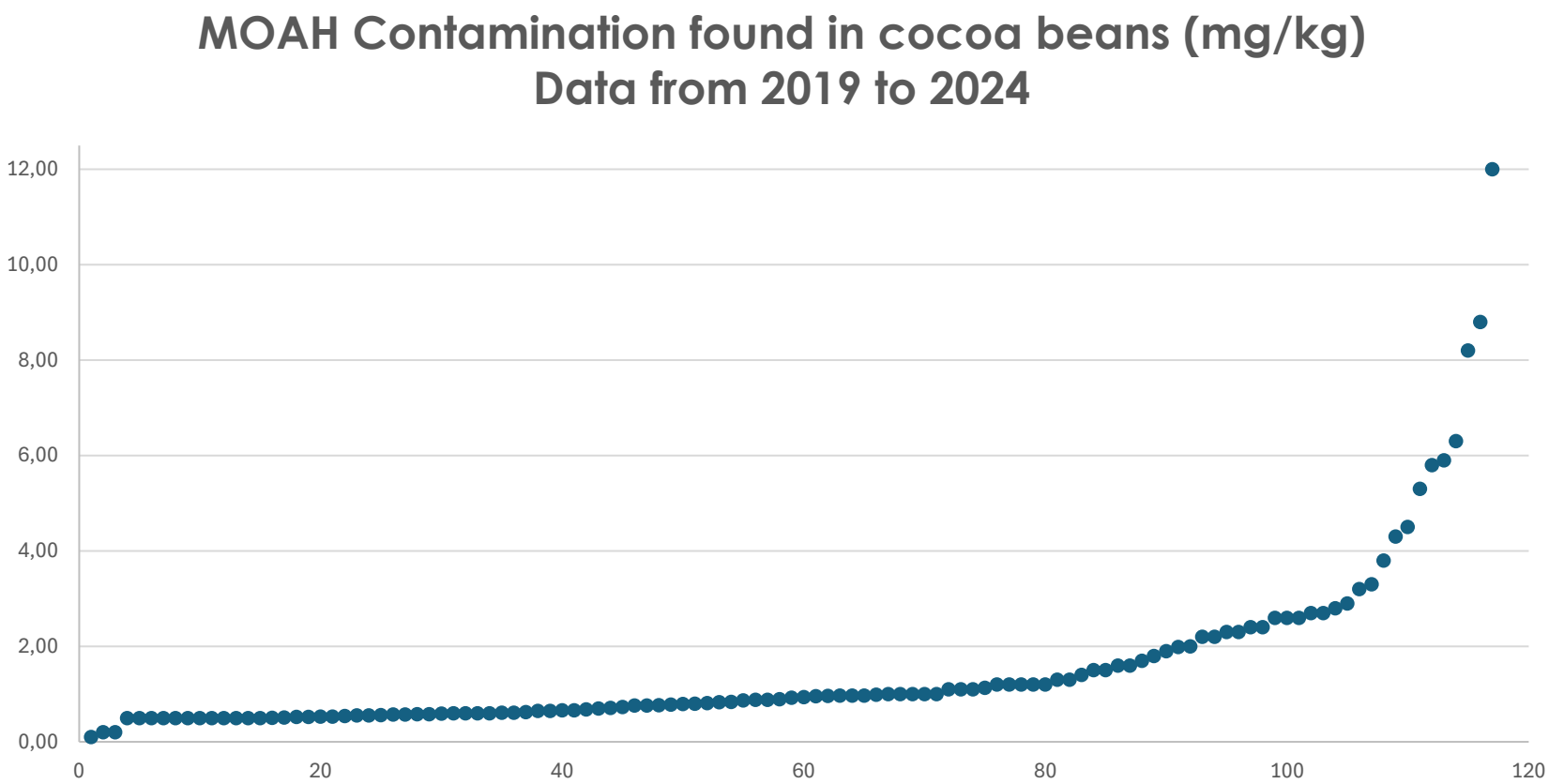
Data on MOAH – Jute bags



Mean	33,63
No. Samples	79

* 100 % of jute bags are medium to heavily contaminated with MOAH > 2 mg/kg with a mean at 33.6 mg/kg

Data on MOAH – Cocoa beans



Mean	1,12
No. Samples*	120

*MOAH was found in 120 samples out of 602 analyzed. **13% would not comply**. 2023 grind stats 1.444.533 MT cocoa beans consumption in EU would mean **187.795 MT of cocoa** would be rejected

Exemption for cocoa beans

Applying MOAH-limits on whole cocoa beans is not realistic:

- MOH contamination is (very) unevenly spread over a lot of cocoa beans which results in requirement of very extensive sampling to get a representative sample -> major impact on resources and material
- Insufficient testing capacity prior to shipment to EU due to a lack of accredited laboratories at origin
- Entire non-EU jute bag industry need to make a major shift (in terms of investment & governance): Even jute bags acclaimed vegetable oil treated "food grade" could be contaminated with mineral oil
- No food grade requirement for jute bags for the domestic market in the jute (bag) producing countries
- Benchmark level for MOAH in jute bags (output of the research project) is not yet established, adhered to and enforced
- IJO98 standard not sufficient to limit contamination in jute bags as data shows
- Producing countries are responsible for distributing jute bags to the farmers, industry has no control
- No alternative solution for jute bags available (PP bags other challenges, POSH/MOSH, breathability)
- Industry buys cocoa from cooperations/ farmers, with very little direct influence on Good Agricultural Practices

Exemption for cocoa beans

Consequences that establishing MLs for cocoa beans would have in the short and long term:

- Serious concern with physical cocoa stored in warehouses and terminal market of cocoa → waste?
- In case of court case and RASFF: Major difficulties to identify exact sources of contamination/ responsibilities due to many possible contamination entry points
- Circumvention risk: Cocoa processing activities might relocate to non-EU countries with less stringent requirements at longer term
- Cocoa shortage in the EU due to the below points:
  - Decreased supply into EU due to requirements that are not applicable elsewhere (MOH, EUDR, OTA, Cd, PAHs)
  - Current lower yield to climatic changes
  - Increased demand in growing markets (Asia)
- Increased prices of food on the market for final consumer, as there will be availability issues and lack of flexibility in the supply chain
- To cover the food safety risk, compliance to the MOAH limits is managed by EU B2B companies while ensuring all products placed on the market for sale to B2C companies are compliant

Transition period

Urgent need for a **reasonable transition period**, exempting products produced prior to the setting of MLs, for the following reasons:

- Cocoa and chocolate products are long shelf-life products
- No impact assessment on raw material was performed by the European Commission
- Third-country stakeholders (producing countries) were not included in the discussion
- Important difference in timing between B2B products placed on the market and the B2C sales
- Major waste if products no longer comply after setting of the MLs
- Risk of relocation of production of some ingredients outside the EU

Closing remarks

- ECA supports the Commission objective to tackle the problem of MOH in food.
- ECA members are committed to continuing investigating and mitigating the presence of MOH in food as demonstrated by:

  - Founding of projects aimed at finding entry points of MOH contamination in the supply and production chain
  - Close collaboration with all stakeholders involved in the supply and production chain
  - Data submission to EFSA

- We encourage the European Commission to:

- Exempt cocoa beans from the MOAH limits set
- Perform an impact assessment which includes third-country stakeholders
- Provide a reasonable transition period to ensure compliance from the whole supply chain
- Exclude indicative action levels for MOSH as there is no scientific rationale as concluded by EFSA in its opinion (2023) based on dietary exposure assessment

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Industry engagement

- Research projects
- Data collection and submission
- Toolbox (FoodDrinkEurope)
- Collaboration with producing countries
- EFSA opinion

Current challenges

- Industry is heavily reliant on availability of compliant ingredients from 3rd countries (e.g. tropical oils and cocoa)
- High risk of production moving outside Europe and market disruption
- Inconsistency between MLs for ingredients and for finished products
- Analytical challenges:
  - Discrepancy between laboratories
  - Testing capacity and timelines
  - Measurement uncertainty

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Industry is heavily reliant on availability of compliant ingredients from 3rd countries

Mitigation measure in EU production environment

FoodDrinkEurope toolbox

Mitigation measure in producing countries

?

Official involvement of producing countries in the whole process

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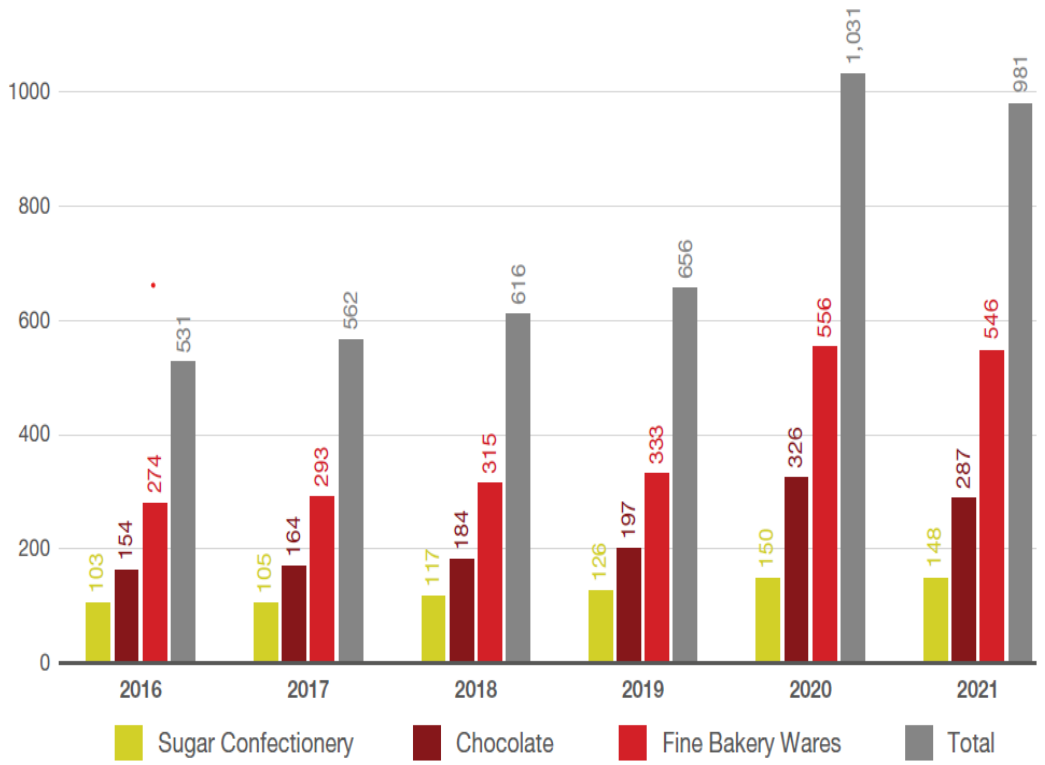
High risk of production moving outside Europe and market disruption

SUGAR CONFECTIONERY, CHOCOLATE & FINE BAKERY WARES EU IMPORTS (000' TONS)
EU28 (2016-2019) & EU27 (2020-2021)

SOURCE: EUROSTAT



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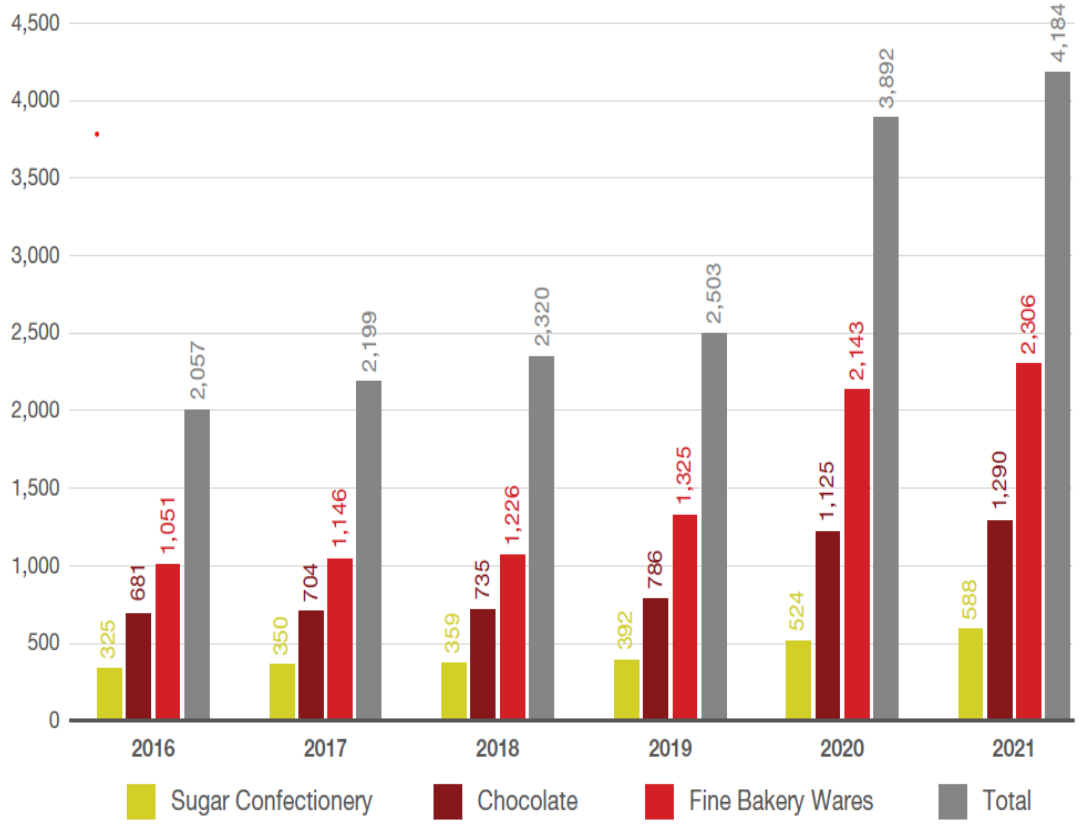

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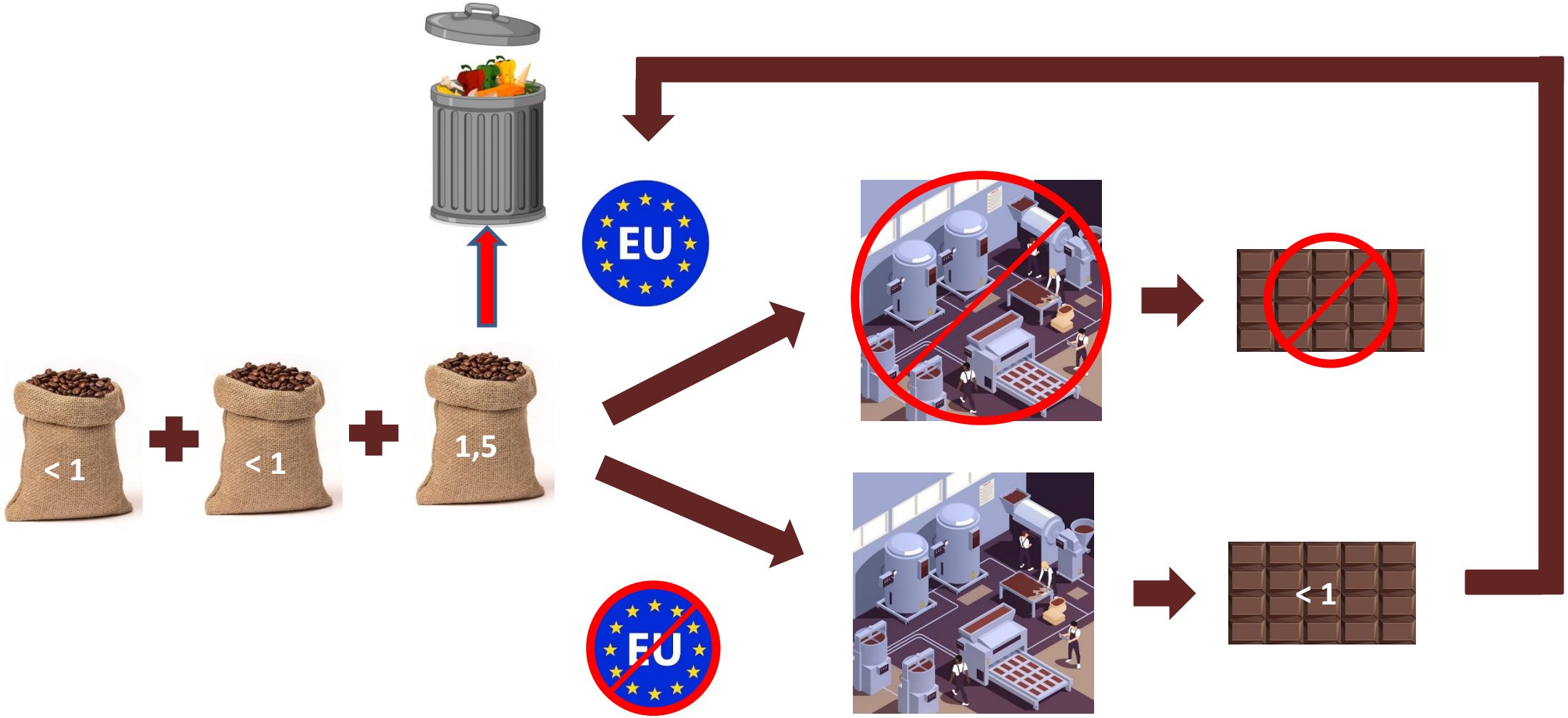

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Inconsistency between MLs for ingredients and for finished products

Compliant ingredients → Non compliant finished products

Ingredients*	% in product	MOAH in finished product
Ingredients with ML 1 mg/kg	25%	0,25
Ingredients with ML 2 mg/kg	45%	0,9
Ingredients with ML 0.5	30%	0,15
Final product	100 %	1,3 mg/kg

*ingredients are grouped based on MLs

Ingredients*	% in product	MOAH in finished product
Ingredients with ML 0.5 mg/kg	65	0.325
Ingredients with ML 2 mg/kg	35	0.7
Final product	100 %	1.025 mg/kg

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Closing remarks

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CAOBISCO members are committed to continuing investigating and mitigating the presence of MOH in food as demonstrated by:

- Founding of projects aimed at finding entry points of MOH contamination in the supply and production chain
- Close collaboration with all stakeholders involved in the supply and production chain
- Data submission to EFSA

We encourage the European Commission to:

- Set MLs on MOAH based on ALARA and not on LOQs
- Establish robust analytical methods (including measurement uncertainty guidance)
- Exclude indicative action levels for MOSH as there is no scientific rationale as concluded by EFSA in its opinion (2023) based on dietary exposure assessment

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Closing remarks

Considering the uniqueness of chocolate, we encourage the European Commission to:

- Perform an **impact assessment** which includes third-country stakeholders
- Provide a **reasonable transition period** to ensure compliance from the whole supply chain (EU, non-EU, FCM, FA)
- Review the impact on product innovation and **loss of products** due to double regulation

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