KARADENİZ İHRACATÇI BİRLİKLERİ
GENEL SEKRETERLİĞİ

Sayı : 35649853-TİM.KİB.GSK.TEŞVİK.2026/1211-2098 Giresun, 25/06/2026

Konu : MOAH'a İlişkin Yeni Avrupa Birliği Kuralları Webinarı Sunumları ve Bilgi Notu

E-POSTA

KARADENİZ İHRACATÇI BİRLİKLERİ ÜYELERİNE SİRKÜLER
2026 / 324

İlgi: 16/06/2026 tarih 306 sayılı sirkülerimiz.

Sayın üyemiz,

Bilindiği üzere, Mineral Yağ Aromatik Hidrokarbonlarına (MOAH) İlişkin Yeni Avrupa Birliği Kurallarına ilişkin olarak AGRINFO tarafından bilgilendirme webinarları gerçekleştirileceği hususu 16/06/2026 tarih 2026/306 numaralı sirkülerimiz ile duyurulmuştu.

Bu defa, 22/06/2026 tarihinde gerçekleştirilen webinara dair Genel Sekreterliğimiz tarafından hazırlanan bilgi notu ve webinarda yapılan sunumlar ilişikte paylaşılmakta olup söz konusu webinarın video kaydına aşağıdaki web adresinden ulaşılabilmektedir.

Webinar Kaydı: https://www.youtube.com/watch?v=Ja0JADQOqRE

Üyelerimizin, AB'ye yönelik ihracatlarında herhangi bir sorun yaşanmaması adına söz konusu yeni düzenlemeleri dikkate alarak MOAH risklerini tedarik, üretim, depolama, ambalajlama ve sevkiyat süreçleri boyunca değerlendirmeleri önem arz etmektedir. Bu bağlamda, ihracatçılarımız tarafından gerekli analiz, kontrol ve önleyici tedbirlere ilişkin hazırlıkların zamanında yapılmasında fayda görülmektedir.

Önemle bilgilerinize sunarız.

e-imzalıdır
Sertaç Ş. TORAMANOĞLU
Genel Sekreter

EKLER:
Ek.1 – MOAH 22.06.2026 Webinar Bilgi Notu
Ek.2 – AGRINFO_Webinar_MOAH_June_2026-Part_I
Ek.3 – AGRINFO-Webinar-MOAH-June-2026-Part-IIA
Ek.4 – AGRINFO-Webinar-MOAH-June-2026-Part-IIB

Karadeniz İhracatçı Birlikleri Genel Sekreterliği
Atatürk Bulvarı No:19/E PK.51 28200 GİRESUN
Telefon: 0.454.2162426 (PBX)
Faks: 0.454.2164842-2168890
e-posta: kib@kib.org.tr Kep: kib@hs01.kep.tr
Web : www.kib.org.tr

Ayrıntılı bilgi için: Hülya KOYUN YILMAZ - Uzman

Sertaç Ş. TORAMANOĞLU tarafından 5070 sayılı kanun gereğince güvenli elektronik imza ile imzalanmıştır.

MOSH – MOAH Bilgilendirme Semineri (AGRINFO) Bilgi Notu - 22.06.2026

Giriş Bölümü: AGRINFO Hakkında Genel Bilgilendirme
Chris Downes – AGRINFO

Birinci Bölüm: MOAH İçin Yeni Belirlenen Maksimum Limitler ve MOSH MOAH ile İlgili Tavsiyeler
Veerle Vanheusden – Avrupa Komisyonu Sağlık ve Gıda Güvenliği Genel Müdürlüğü

İkinci Bölüm: MOH Maksimum Limitlerine Hazırlık
Claus-Michael Brieber – Food QSafety First şirketinde Kıdemli Gıda Kalite Uzmanı

Giriş Bölümü: AGRINFO Hakkında Genel Bilgilendirme

AGRINFO, Avrupa Birliği tarafından fonlanan ve sürdürülebilir tarımı desteklemek ve üreticilerin ile işletmelerin kapasitesini geliştirmek için kurulmuş uluslararası bir kar-amacı gütmeyen kuruluş olan COLEAD tarafından uygulanan bir bilgi platformudur ve 2022 yılında geliştirilmiştir. Temel görevleri ilgili mevzuat değişikliklerini ve potansiyel etkilerini takip etmek, birçok farklı kaynaklar bilgiler edinerek bunları konsolide etmek ve hangi kuralların neden ve ne yönde değiştiğini basit ve anlaşılır bir şekilde sunmaktır.

AGRINFO programı tarafından hazırlanan tüm içeriklere ise www.agrinfo.eu adresinden erişmek mümkündür.

Birinci Bölüm: MOAH İçin Yeni Belirlenen Maksimum Limitler ve MOSH MOAH ile İlgili Tavsiyeler
Veerle Vanheusden – Avrupa Komisyonu Sağlık ve Gıda Güvenliği Genel Müdürlüğü

AGRINFO webinarında, Avrupa Birliği'nde **mineral yağ aromatik hidrokarbonları — MOAH** için getirilecek yeni maksimum limitler ve **MOSH/MOAH izleme tavsiyeleri** anlatılmıştır. Webinar iki ana bölümden oluşmuştur: ilk bölümde AB Komisyonu DG SANTE temsilcisi Veerle Vanheusden yeni MOAH limitlerini ve izleme yaklaşımını, ikinci bölümde Claus-Michael Brieber ise firmaların yeni kurallara hazırlık için dikkate alması gereken bulaşma kaynaklarını, önleme yöntemlerini ve analiz konularını aktarmıştır.

Mineral yağ hidrokarbonları iki ana grupta ele alınmıştır: **MOSH** ve **MOAH**. Sunumda MOAH'ın DNA'ya zarar verebileceği ve kanser riskiyle ilişkilendirildiği, MOSH'un ise organlarda birikebildiği, ancak mevcut değerlendirmede acil bir sağlık endişesi doğurmadığı belirtilmiştir. AB'nin düzenleyici odağının özellikle MOAH üzerinde olduğu ifade edilmiştir.

Mevcut durumda AB'de MOAH için bağlayıcı maksimum limit bulunmadığı, buna karşın gıdaların güvenli olması zorunluluğu kapsamında Üye Devletlerin LOQ seviyelerinin üzerindeki MOAH tespitlerinde ürünü piyasadan çekme veya geri çağırma gibi önlemler alabildiği anlatılmıştır. Daha önce uygulamada düşük yağlı kuru gıdalar için **0,5 mg/kg**, %4–50 yağ

içeren gıdalar için **1 mg/kg**, yağlar veya %50'den fazla yağ içeren ürünler için **2 mg/kg** LOQ yaklaşımı esas alınmaktaydı.

Yeni sistemde MOAH maksimum limitlerinin **ALARA — mümkün olan en düşük makul seviye** yaklaşımıyla belirlendiği belirtilmiştir. İyi uygulamalarla MOAH bulaşmasının önlenebileceği varsayımıyla birçok ürün grubunda limitlerin LOQ seviyesinde belirlendiği aktarılmıştır. Bu kapsamda yağlı tohumlar ve yağlı meyveler, bazı katı/sıvı yağlar, sert kabuklu meyveler, baklagiller, tahıllar ve türevleri, süt ve süt ürünleri, kakao ürünleri ile bebek ve küçük çocuk gıdaları ele alınmıştır.

1 Ocak 2027'den itibaren, **fındığın da dahil olduğu sert kabuklu meyveler için MOAH maksimum limitinin 2,0 mg/kg** olarak uygulanacağı belirtilmiştir. Aynı tabloda yağlı tohumlar ve yağlı meyveler için **2,0 mg/kg**, baklagiller için **0,50 mg/kg**, kakao kitlesi için **2,0 mg/kg**, kakao tozu için **1,0 mg/kg** limit yer almıştır.

Bazı ürünlerde limitlerin 1 Ocak 2027'den itibaren uygulanacağı, bazı ürünlerde ise daha ileri tarihler ve kademeli düşüşler öngörüldüğü anlatılmıştır. Belirli bitkisel yağlarda 2027'de LOQ üzerinde geçici limitler uygulanacak, ardından limitler kademeli olarak düşürülecektir. Baharatlar, kuru otlar, kuru çay/bitki infüzyonları ve gıda takviyeleri için 2027'de **10 mg/kg**, 2030'da **5 mg/kg** seviyesi paylaşılmıştır. Kakao çekirdeği için 2,0 mg/kg limitin 1 Ocak 2030'dan itibaren uygulanacağı belirtilmiştir.

İşlenmiş ve bileşik gıdalarda limitin ürünün toplam yağ/yağ içeriğine göre belirleneceği anlatılmıştır. Buna göre ürünün yağ içeriği %4'ün altındaysa **0,50 mg/kg**, %4–50 arasındaysa **1,0 mg/kg**, %50'nin üzerindeyse **2,0 mg/kg** yaklaşımı kullanılacaktır. Yetkili otoritelerin kontrolde etiket üzerindeki yağ içeriğini esas alacağı, etiket yoksa yağ içeriğini kendilerinin belirleyeceği ifade edilmiştir.

MOAH ve MOSH için ayrıca izleme tavsiyeleri anlatılmıştır. Bazı ürünlerde yeterli veri olmadığı için maksimum limit yerine **gösterge seviyeleri** önerildiği, bu seviyeler aşılırsa bulaşma kaynağının araştırılması gerektiği, ancak ürünün otomatik olarak piyasaya arz edilemeyeceği anlamına gelmediği belirtilmiştir. Bununla birlikte Üye Devletlerin çok yüksek seviyelerde, ulusal risk değerlendirmesine dayanarak ürünü piyasaya sokmama yetkisini koruduğu ifade edilmiştir.

MOSH izleme seviyeleri kapsamında sert kabuklu mevyeler için gösterge seviye **5 mg/kg** olarak sunulmuştur. Aynı grupta yağlı tohumlar, yağlı meyveler, baklagiller, tahıllar, süt ürünleri, kahve çekirdekleri, kuru bebek gıdaları ve işlenmiş meyve-sebzeler de 5 mg/kg seviyesinde yer almıştır.

İkinci Bölüm: MOH Maksimum Limitlerine Hazırlık
Claus-Michael Brieber – Food QSafety First şirketinde Kıdemli Gıda Kalite Uzmanı

Webinarın ikinci bölümünde, operatörlerin **1 Ocak 2027'ye kadar** yeni maksimum limitlere uyum için hazır olması gerektiği, MOH bulaşmasının kaynağında önlenmesi gerektiği, sonraki üretim aşamalarında önemli ölçüde giderilemediği, yalnızca bitkisel yağ rafinasyonunun kısmi bir istisna olduğu anlatılmıştır. Ayrıca AB genelinde MOAH kontrollerinin artmasının, limit aşımı halinde daha tutarlı bir yaptırım yaklaşımı oluşmasının ve AB'li alıcıların tedarikçilerden uygunluk kanıtı talep etmesinin beklendiği belirtilmiştir.

Bulaşma kaynakları olarak geri dönüştürülmüş kâğıt/karton ambalajlar ve baskı mürekkepleri, ambalajdan migrasyon, bitüm/asfalt zeminlerde dökme depolama, yağlama noktaları, ekipman sızıntıları, doğrudan kurutma sistemlerinde egzoz gazı teması, jüt çuvallar, katkı maddeleri ve proses yardımcıları örnek verilmiştir. Bitüm/asfalt zeminler yerine beton zemin veya branda/örtü kullanılması; doğrudan kurutma yerine egzoz gazından ayrılmış dolaylı kurutma veya güneş/solar kurutma alternatifleri anlatılmıştır.

Pratik hazırlık kapsamında firmaların kendi proseslerinde yağlama, ambalaj ve sızıntı risklerini azaltması, tedarikçilerle iletişim kurması, riskli tedarikçi ve ürünleri belirlemesi, iş birliğine açık tedarikçilerde problem odaklı denetim yapması, çiftlikten teslimata kadar aşama aşama test ve analiz yürütmesi gerektiği aktarılmıştır.

Analiz konusunda MOH testlerinin kaynak, zaman ve deneyim gerektirdiği, ihracatçı ülkede yeterli laboratuvar yoksa deneyimli laboratuvarlara alt yüklenici olarak başvurulabileceği; Avrupa'da ve Asya'da bu konuda yetkin laboratuvarlar bulunduğu belirtilmiştir. EURL-PC'nin gerekli LOQ seviyelerinde toplam MOAH analizi yapabilen laboratuvarlara ilişkin gösterge liste hazırladığı, listenin talep üzerine e-posta ile alınabileceği ifade edilmiştir.

Önerilen analiz yöntemi olarak JRC rehberine dayanan ve **DIN EN ISO 20122:2025-06** standardında yer alan **LC-GC-FID** yöntemi anlatılmıştır. Matrikse göre farklı ön işlemler gerekebileceği, bitkilerde doğal olarak bulunan biyojenik maddelerin, özellikle baharatlar, uçucu yağlar ve yağlarda analizi etkileyebileceği; deneyimsiz laboratuvarlarda yanlış pozitif veya yanlış negatif sonuçlar oluşabileceği; şüpheli durumlarda GC×GC ile doğrulama yapılabileceği belirtilmiştir.

Numune alma ve numune kabı kaynaklı bulaşma da ayrıca vurgulanmıştır. Numune alma, saklama ve taşıma sırasında kullanılan malzemelerin mineral yağ kalıntısı içermemesi ve interferans yaratmaması gerektiği, plastik kaplardan kaçınılması veya önceden kontrol edilmesi, cam/PTFE kapak veya alüminyum folyo tercih edilmesi, kauçuk halka kullanılmaması, kâğıt/plastik etiket ve kartondan kaçınılması gerektiği anlatılmıştır.

Takvim olarak taslak düzenlemenin **11 Mart 2026'da WTO SPS Komitesine bildirildiği**, **13 Mayıs 2026'da AB Üye Devletlerinin taslağa olumlu oy verdiği**, düzenlemenin **2026'nın üçüncü veya dördüncü çeyreğinde** resmen onaylanıp yayımlanmasının hedeflendiği ve kapsamdaki ürünlerin çoğu için maksimum limitlerin **1 Ocak 2027'den itibaren** uygulanacağı aktarılmıştır.

New EU rules on maximum levels for mineral oil aromatic hydrocarbons (MOAH)

22 and 25 June 2026

AGRINFO

Funded by the European Union

TODAY'S WEBINAR

Veerle Vanheusden,
Directorate-General for Health & Food Safety, European Commission

Claus-Michael Brieber
Quality Senior Expert Food
Food QSafety First

- Brief introduction to AGRINFO programme

- Part I: The new maximum levels for MOAH and recommendations on MOSH and MOAH
  - Why EU action on MOH?
  - Setting maximum levels for MOAH
  - Monitoring recommendations for MOAH/MOSH
  - Next steps & timeframe
  - Questions & Answers

- Part II: Preparing for MOH maximum levels
  - Potential risk to trade
  - Sources of contamination
  - Practical mitigation strategies
  - Analytical challenges
  - Questions & Answers

Further questions? e-mail: agrinfo@colead.link

AGRINFO IN BRIEF

Funded by the European Union

AGRİNFO

An information system that provides up-to-date information on all recent and upcoming changes to EU rules that have an impact on agri-food and fish value chains

2022	**142** PARTNER COUNTRIES	**6** YEARS	**€7** MILLION	**AGRI & FISH**

COLEAD

Funded by the EU

Implemented by COLEAD: an international non-profit association supporting the development of inclusive and sustainable agri-food systems

AGRINFO'S OBJECTIVES

Monitor

Many rule changes: identify what´s relevant

Consolidate

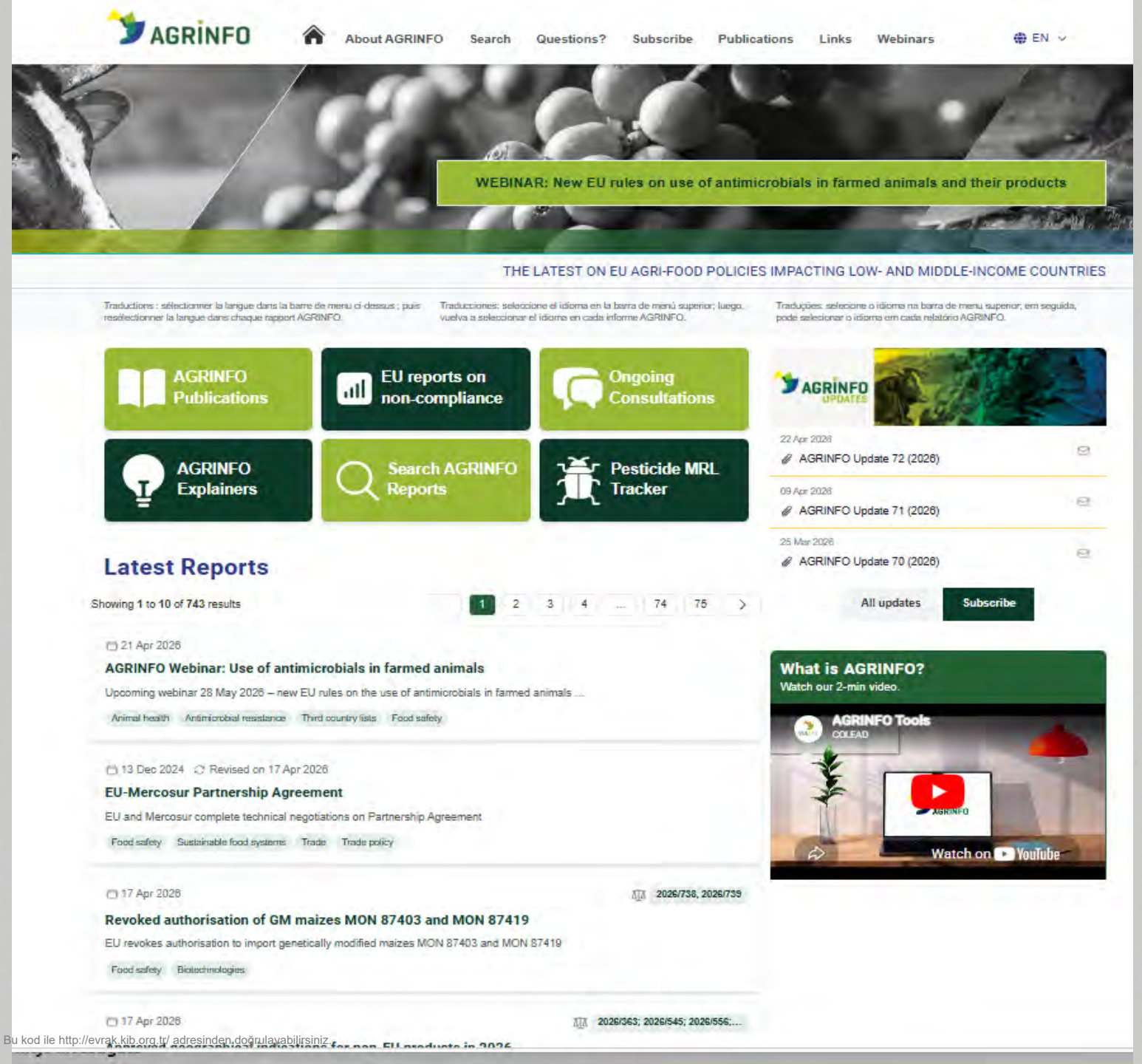
Simplify

Clear, accessible explanations of what rules are changing, why & the implications

"Get information to the people who need it, when they need it, in a form that is understandable"

THE WEBSITE

www.agrinfo.eu



01.

CONTEXT OF EU REGULATION ON MINERAL OIL HYDROCARBONS

Why EU action on mineral oil hydrocarbons?

Substances derived from crude oil or produced synthetically from coal, natural gas and biomass

Mineral Oil Hydrocarbons

Mineral Oil Aromatic Hydrocarbons **(MOAH)**

EFSA
MOAH in food can damage DNA in cells and may cause cancer

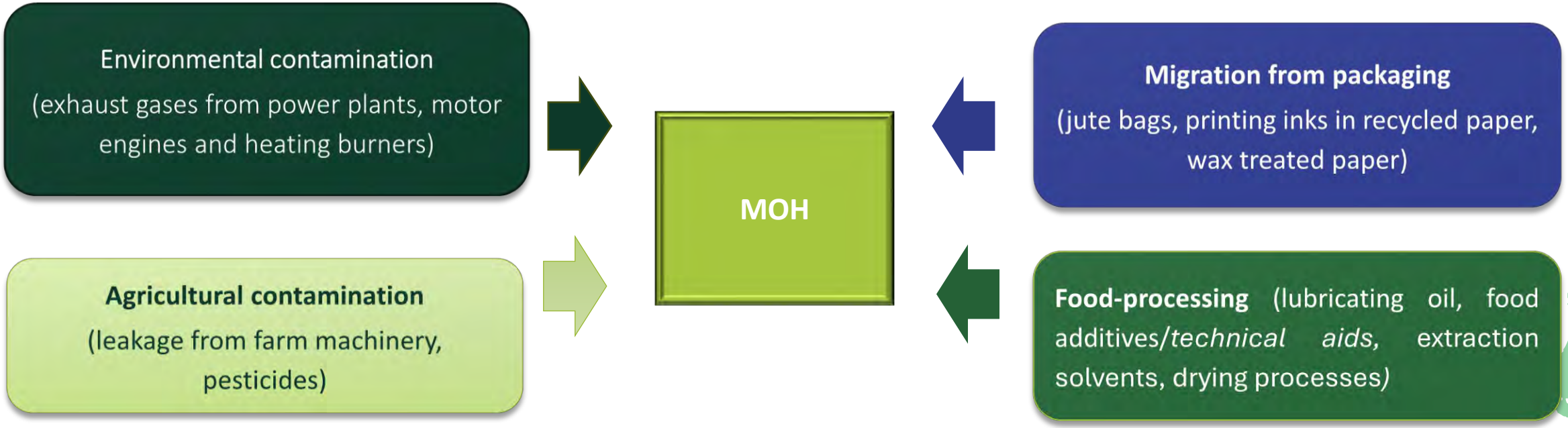
Maximum levels & monitoring recommendations

Mineral Oil Saturated Hydrocarbons (**MOSH**)

EFSA
MOSH accumulate in organs - no immediate health concerns, but potential exposure risks

No maximum levels, but monitoring and steps to reduce presence

Sources of mineral oil hydrocarbons



MOAH maximum levels will apply regardless of the source of the contamination

The rules today

- No maximum levels
- **But** all food on the EU market must be safe*
- In light of the EFSA evaluation, Commission/ Member States agree common approach to managing MOAH in food**
- EU Member States to take action e.g. withdraw, and if necessary, recall products where they detected levels of MOAH in food > Limit of Quantification (LOQ)

→

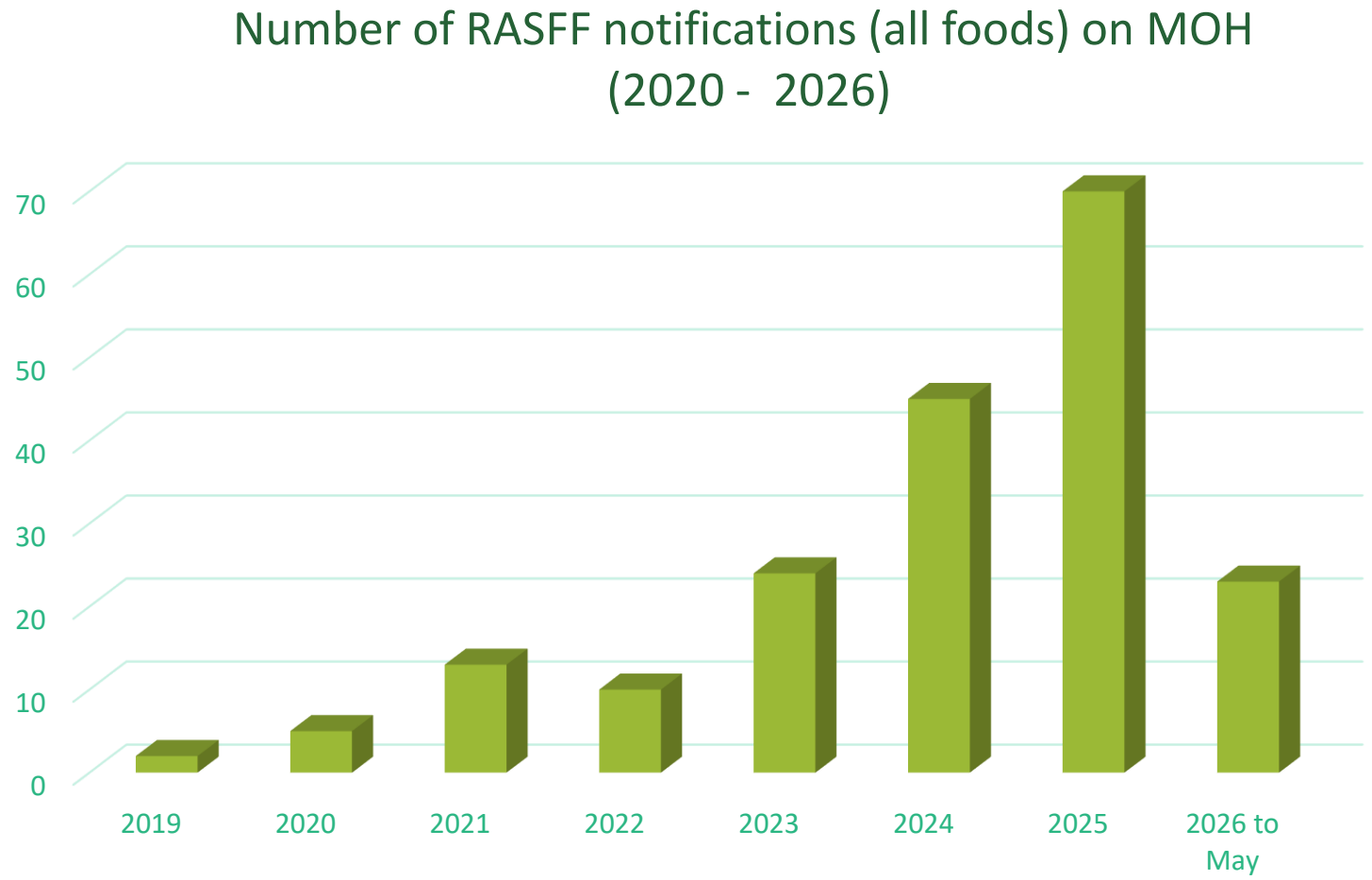
- **0.5 mg/kg** for dry foods with a low fat/oil content (≤4% fat/oil)
- **1 mg/kg** for foods with a higher fat/oil content (>4% fat/oil, ≤50% fat/oil)
- **2 mg/kg** for fats/oils or foods with >50% fat/oil

*Article 14 of General Food Law (Regulation 178/2002)

* * Statements of the Standing Committee Plants, Animals, Food and Feed (June 2020, April 2022, October 2022)

Controls of products for mineral oil contamination

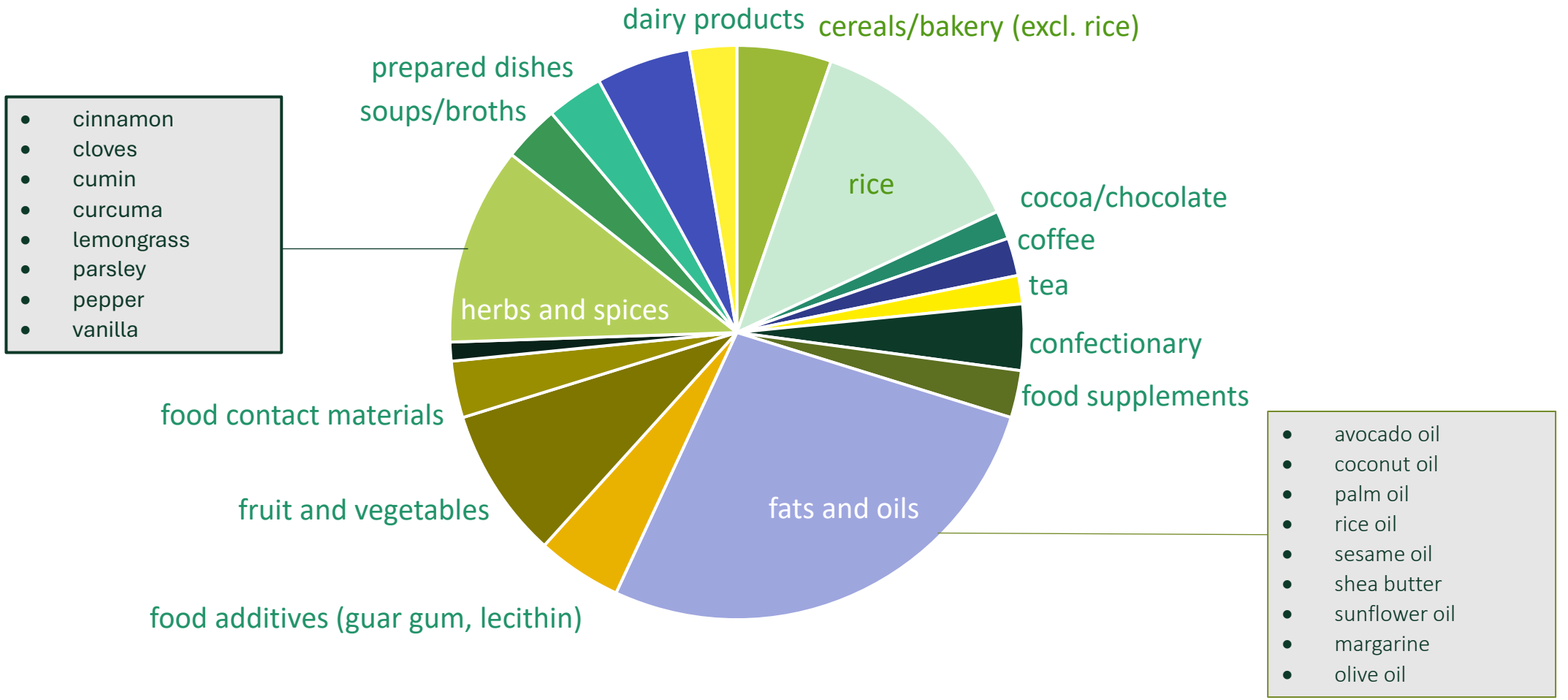
Increase in controls and findings of MOH



Source: *Rapid Alert System for Food and Feed*

In which products have MOH been found?

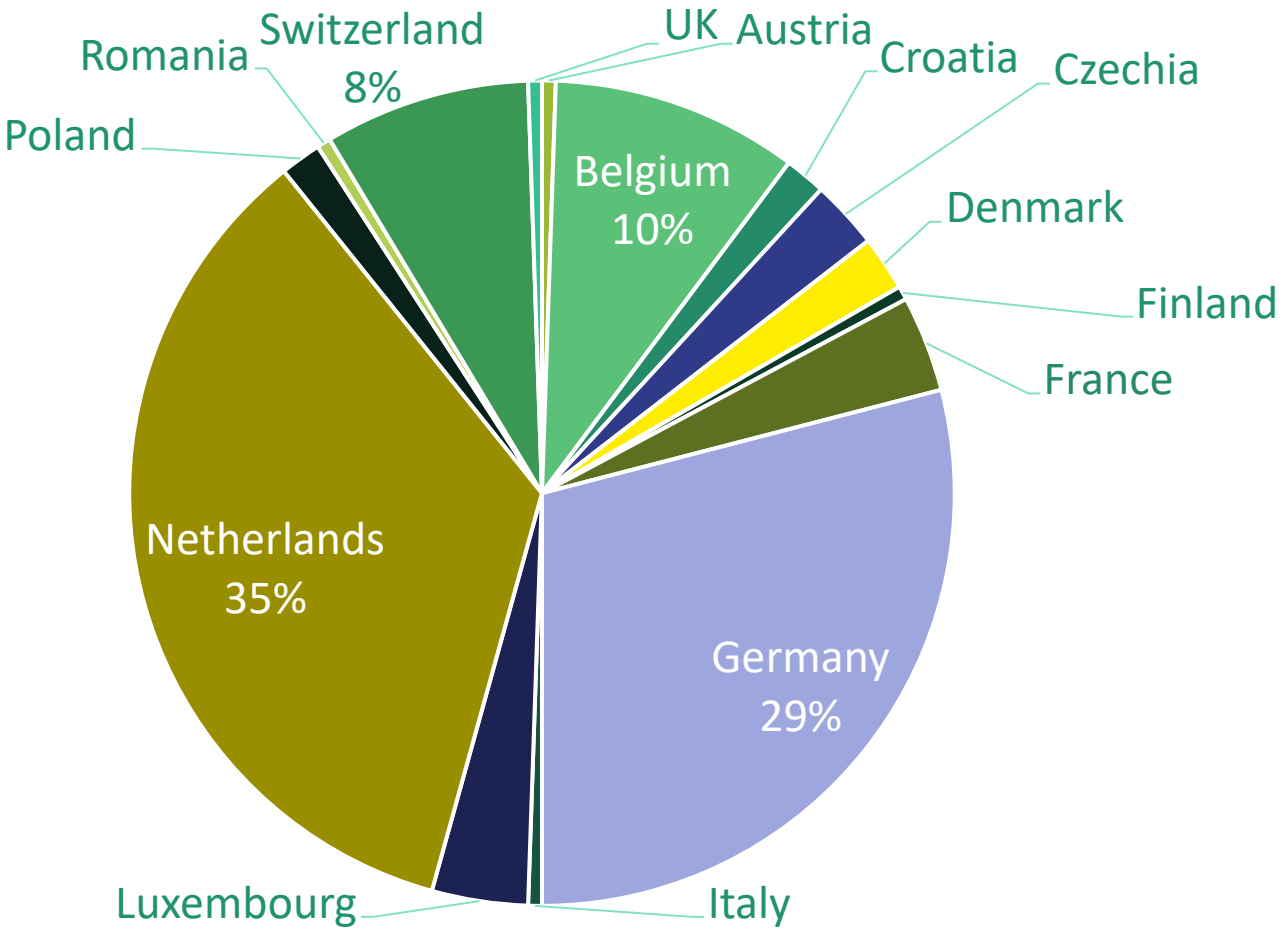
Products that have been subject to RASFF notifications 2019-2026



Source: *Rapid Alert System for Food and Feed*

Which countries have reported MOH findings?

Countries reporting RASFF notifications on MOH 2020-2026



Source: *Rapid Alert System for Food and Feed*

02.

SETTING MOAH MAXIMUM LEVELS

Approach to setting maximum levels (MLs)

Basic principle:

- MLs set 'As Low As Reasonably Achievable' (ALARA)
- **MLs for MOAH:** when following good practices MOAH in food can be avoided ➔ MLs at limit of quantification (LOQ)

Taking into consideration:

- Concentrations below the LOQ not currently possible for all foods
- LOQs may be higher for certain products than others due to specific analytical complexities

LOQ MLs from January 2027

- oilseeds and oil fruits
- certain fats and oils
- tree nuts and pulses
- cereal grains and derived products
- milk and dairy products
- cocoa mass/cocoa powder
- foods for infants/young children

Food additives: MLs apply taking into account a processing factor

MLs higher than LOQ from January 2027 & ML reduction timelines

- certain vegetable fats and oils
- spices, dried herbs, dry tea/herbal infusions used as ingredients in food, dry instant tea/herbal infusions
- food supplements

Certain MLs only apply from a later date

- cocoa beans (1 January 2030)
- oils destined for further refining and labelled as such (1 January 2030)
- olive pomace oil and refined olive pomace oil (1 March 2028), other olive oils (1 March 2027)

LOQ MLs from January 2027: Milk and dairy products

Category	Product		ML (mg/kg)
5.5.6	Milk		0.50
5.5.2.1	Dairy butter and fat		2.0
5.5.7	Other dairy products	< 4% fat/oil content	0.50
		≥ 4% and ≤ 50% fat/oil content	1.0
		> 50% fat/oil content	2.0

Cocoa butter not dairy product; ML for 'other oils and fats' applies

MLs at the LOQ from January 2027: Cereals

Cereal grains including rice (raw materials)

0.50 mg/kg from 01/01/2027

- "Derived products" = products containing > 80% cereals (not including oils derived from cereals). The MLs are, for those containing fat/oil content:
  - < 4% : 0.50 mg/kg from 01/01/2027
  - ≥ 4% and ≤ 50%: 1.0 mg/kg from 01/01/2027

- MLs not applicable to cereals used for beer production, if residue not sold as food. If residue is sold as food, the cereal grain ML of 0.50 mg/kg applies, taking into account processing factors

MLs at the LOQ from January 2027: Foods for infants/young children

Category	Product		ML (mg/kg)
5.5.7	• Infant formulae • Follow-on formulae • Young-child formulae • Food for special medical purposes intended for infants and young children • Baby food • Processed cereal-based food for infants and young children(• Drinks for infants and young children	< 4% fat/oil content	0.50
		≥ 4% and ≤ 50% fat/oil content	1.0
		> 50% fat/oil content	2.0

MLs from January 2027: Food additives

- Producers of food additives must ensure that, if they are using raw materials for which MOAH MLs are set, the raw material is compliant with those MLs. When food additives produced from:
  - **oil or fats,** raw material must comply with MLs for that specific oil as sold to the final consumer or used as a food ingredient
  - other foods with MLs, the raw material must comply with the relevant ML

- The ML for the food additive can be calculated, taking into account a processing factor.

MLs at the LOQ from January 2027: Others

Category	Product		ML (mg/kg)
5.5.1	Oilseeds and oil fruits		2.0
5.5.3	Tree nuts		2.0
5.5.4	Pulses		0.50
5.5.8	Cocoa products (not beans)	Cocoa mass	2.0
		Cocoa powder (including fat reduced)	1.0

MLs >LOQ in January 2027 & ML reduction timelines
Vegetable fats and oils

General approach

- Capacity for industry to comply with LOQ by January 2027 can vary depending on the type of oil
- For certain oils, MLs are set at a level higher than the LOQ in January 2027 with a gradual reduction over time and MLs at the LOQ applying in 2030
- These MLs apply to oils sold to the consumer and “used as an ingredient in food”, for example, used by the food industry without further refining of the oil. Oils for refining and labelled as such are exempted until 31 December 2029
- MOAH presence can be reduced to a certain extent during refining, however the most toxic MOAH fractions are not removed
- Applying MLs to crude oils in 2027 might compromise supply of certain oils to the EU. Therefore MLs, set at the LOQ, will only apply to crude oils from 2030
- This allows time for the industry to adapt

MLs for vegetable and animal fats and oils

Category	Type of oil	ML (mg/kg) from January 1 *(or March 1)*		
		2027	2028 (2029)	2030
5.5.2.1.1	Maize, rapeseed, sunflower, soybean and linseed	2.0		
5.5.2.2.1	Groundnut, sesame, coconut, cereal germ and cereal bran	6.0	4.0	2.0
5.5.2.3.1	Grape seed, cotton seed, blackcurrant seed and argan	10.0	5.0	2.0
5.5.2.4	Olive pomace oil(7) and refined olive pomace oil(7)		10.0 *(01/03/2028)* 5.0 *(01/03/ 2029)*	2.0 *(01/01/2030)*
5.5.2.6	Other olive oils*	4.0 *(01/03/2027)*	2.0 (01/01/2028)	
5.5.2.5	Fish and other marine organisms and algae	10.0		5.0
5.5.2.7	Other fats/oils**	4.0	2.0	

* other than lampante and crude olive pomace oil ** other than essential oils, lampante and crude crude olive pomace oil

MLs >LOQ in Jan. 2027 & reduction timelines
Spices, Herbs, Teas, Herbal infusions and Food Supplements

Spices, Herbs, Teas and Herbal Infusions

- Spices, dried herbs, dry tea and dry herbal infusions that are used as an ingredient in food, dry instant tea and dry instant herbal infusions
  - 10.0 mg/kg from 01/01/27
  - 5.0 mg/kg from 01/01/30

- No ML for tea for use in aqueous brews, as MOAH do not transfer to the brew

Food supplements

- 10.0 mg/kg from 01/01/2027
- 5.0 mg/kg from 01/01/2030

MLs from a later date: Oils destined for further refining

Category	Type of oil	ML (mg/kg)
5.5.2.1.1	Maize, rapeseed, sunflower, soybean linseed	2.0 from 1 January 2030
5.5.2.2.1	Groundnut, sesame, coconut, cereal germ and cereal bran	
5.5.2.3.1	Grape seed, cotton seed, blackcurrant seed and argan	
5.5.2.4	Olive pomace oil and refined olive pomace oil	
5.5.2.6	Other olive oils other than lampante and crude olive pomace oil	
5.5.2.7	Other oils	
5.5.2.5	Fish and other marine organisms and algae	5.0 from 1 January 2030

Only from 1 January 2030 MLs apply for oils:

- ❑ destined for further refining and
- ❑ labelled as destined for further refining

MLs from a later date: olive oils and cocoa beans

Olive oils:

- 1 March 2028 for olive pomace oil and refined olive pomace oil
- 1 March 2027 for other olive oils
- No MLs are set for crude olive pomace oil and lampante

Cocoa beans

- ML of 2.0 mg/kg to apply from 1 January, 2030, to give third countries more time to implement mitigation measures, such as the use of vegetable oil treated jute bags instead of mineral oil treated ones.
- As the MLs for cocoa mass and cocoa powder apply from 1 January 2027, these MLs will also apply to chocolate and confectionary, taking into account a processing factor.

Processed & compound foods – products derived from certain fats and oils

From 1 January 2028

- ML of 2.0 mg/kg to apply from 1 January, 2028, for products containing > 50% fat/oil content and only containing the following oils/fats

5.5.2.1	Maize, rapeseed, sunflower, soybean, linseed and dairy butter
5.5.2.6	“Other” olive oils (not olive pomace oil and refined olive pomace oil)
5.5.2.7	Other: for example palm oil, walnut oil hemp seed oil, … (NOT groundnut, sesame, coconut, cereal germ and cereal bran, grape seed, cotton seed, blackcurrant seed and argan, fish and other marine organisms and algae)

Processed & compound foods - all

From 1 January 2030

- ML depends on the fat/oil content of the **total** product
- Where a food product contains ingredients for which MOAH MLs are set, the ML for the **whole** food depends on the fat/oil content:
  - < 4% fat/oil content: 0.50 mg/kg
  - ≥ 4% and ≤ 50% fat/oil content: 1.0 mg/kg
  - > 50% fat/oil content: 2.0 mg/kg
- During controls, the labelled fat/oil content will be the reference point for competent authorities, or if not labelled, the fat content will be determined by competent authorities

Processed & compound foods

From 1 January 2027 -31 December 2029

- Where no specific ML is set, the applicable ML must take into account*:
  - changes in the MOAH concentration resulting from drying, diluting or other processing
  - the proportion of the ingredients in product
  - the LOQ (ML cannot be below the LOQ)

Regulation (EU) 2023/915, Art.3

Compound foods: example

If a food contains multiple ingredients, some with and some without MLs, the compound food's ML depends on the quantities of ingredients e.g. grilled paprika

Product	Maximum level (mg/kg)	Maximum level x proportion of the ingredient (mg/kg)
Sunflower oil (20%)	2.0	0.40
Paprikas (80%)	No maximum level set	0

As the LOQ for a product with 20% fat content is 1.0 mg/kg, and 0.40 < 1 the ML for grilled paprikas would be **1.0 mg/kg**

Further examples are provided in the Annex to the Commission's FAQ on MOH

03.

RECOMMENDATIONS FOR MONITORING MOAH & MOSH

Monitoring recommendations for MOAH and MOSH

- For some foods, insufficient data available to set MOAH maximum levels.
- For MOSH, while no health concerns today, the margin for safe exposure is limited. Further measures required to prevent an increase in MOSH
- Need to collect further data on MOSH and MOAH through monitoring.
- This requires collaboration between competent authorities and food business operators during the period 2026 – 2029
- Monitoring includes processed and compound foods: typically higher levels of contamination than raw materials; need to be included in monitoring

The MOAH/MOSH monitoring process

- For MOSH and MOAH for foods without maximum levels, indicative levels (ILs) are recommended. When indicative levels are exceeded:
  - source of contamination should be investigated
  - **but** food may still be placed on the market
  - Member States retain the right to not allow products on the market if the levels of MOSH and MOAH are very high, following a national risk assessment*

*on the basis of Article 14 of General Food Law (Regulation 178/2002)

Which foods should be monitored for MOAH?

Food	Indicative level (mg/kg)
• coffee beans, instant coffee (dried products) • cereal grains used for the production of beer or distillates	1
• processed fruits and vegetables, processed meat and offal • processed fish and other seafood, processed eggs • animal and vegetable based fats and oils destined for further refining	2
• tea and herbal infusions (other than instant or ingredients for use in food	5
• essential oils	10

Which foods should be monitored for MOSH? (1)

Food	Indicative level (mg/kg)
• Oils: olive pomace oil, grapeseed, blackcurrant seed, cottonseed, cereal germ, safflower, essential/fish/marine organisms/algae • Products derived from these fats and oils	50
• Oils: Linseed, maize, rapeseed, sunflower, soybean • Products derived from these fats and oils • Cocoa butter • Spices • Dried herbs, tea (dried products), herbal infusions (dried products) • Food supplements	15
• Other animal and vegetable fats/oils • Products derived from these fats/oils	30

Which foods should be monitored for MOSH? (2)

Food	Indicative level (mg/kg)
• Cocoa beans, cocoa and chocolate products other than cocoa butter, confectionary other than cocoa and chocolate products • Processed meat and offal • Processed fish and other seafood, processed eggs:	10
• Oilseeds, oil fruits • Tree nuts • Pulses • Cereal grains, cereal based foods • Milk, dairy, eggs • Coffee beans • Dry food for infants and young children and bayfood • Processed fruit and vegetables,	5
• Liquid formulae and drinks for infants and young children	1

Should ILs be calculated for processed/compound foods?

ILs **should** be calculated for:

- MOAH in processed and compound foods that **only** contain ingredients without MOAH MLs (e.g. processed fruit/vegetables, processed meat/offal, processed fish/seafood, processed eggs).
- MOSH in processed and compound foods for which no specific IL is set.

ILs **should** not be calculated for:

- MOAH in compound foods that contain ingredients with MOAH MLs: MLs should be calculated not ILs

04.

NEXT STEPS

EU MOAH maximum levels: next steps

Target timeframe

March 11 2026	EU notifies WTO SPS Committee of draft Regulation
May 13, 2026	EU Member States vote in favour of proposed Regulation
Q3 – Q4 2026	Formal approval and publication of Regulation
January 1 2027	Maximum levels apply for the majority of covered products

WTO country members submit comments to WTO SPS Committee. Information provided taken into consideration.

QUESTIONS & ANSWERS

Thank you

Follow-up questions can be sent to agrinfo@colead.link

AGRINFO is implemented by COLEAD and funded by the European Union.
This publication has been produced with the financial support of the EU. Its contents are the sole responsibility of COLEAD and can under no circumstances be regarded as reflecting the position of the EU.

AGRİNFO

Funded by the European Union

Part 2:

How can food sectors prepare for MOH maximum levels?

AGRİNFO

Agenda:

1. Who am I?
2. What are the implications for trading partners of MOAH MLs?
3. Routes of entry into foods – Toolbox
4. Practical mitigations strategies – What can we do?
5. Ways to find a good reliable lab: complexity of analytics
6. Questions / Discussion

AGRİNFO

01.

Who am I?
May I introduce myself?

1. Short introduction:

Claus-Michael Brieber
Quality Senior Expert Food
Over 30 years experience in food-industry – worldwide

Independent consultant – freelancer
„Food QSafety First“
https://foodqsafetyfirst.jimdosite.com/

02.

What are the implications for trading partners of EU MOAH MLs?

2. Impact on trading partners?

- Operators must be ready by January 2027 to comply with new maximum-levels. This will require action by trading partners to ensure no negative impacts on trade.

- Mineral oil hydrocarbons **must be mitigated at source;** they cannot be significantly removed at later steps in the process.
  One exception: Refining vegetable oils can partially remove MOH.*
- Multiple paths of MOH migration into food and different solutions for each.

*Bieber (2024)

2. Impact on trading partners?

Some advantages of maximum levels in legislation and some challenges

- Clearer rules with specific maximum levels for specific products
- For certain foods temporary **higher enforcement limits / MLs will apply** compared with the former LOQ-limits of the SCoPAFF-statement
- Probable increase in controls of MOAH across the EU
- More consistent approach to enforcement of foods containing MOAH > ML
- Increased demands from European companies to suppliers of evidence of compliance with MOAH maximum levels

03.

Routes of entry into foods

Toolbox

3. Sources of contamination

Toolbox*

Reference: [1.]

*Food Drink Europe (2018)

3. Sources of contamination: Toolbox

ROUTES OF ENTRY INTO FOODS

From the described sources, MOSH, MOSH analogues and MOAH can migrate along the entire process chain into foods using different routes.

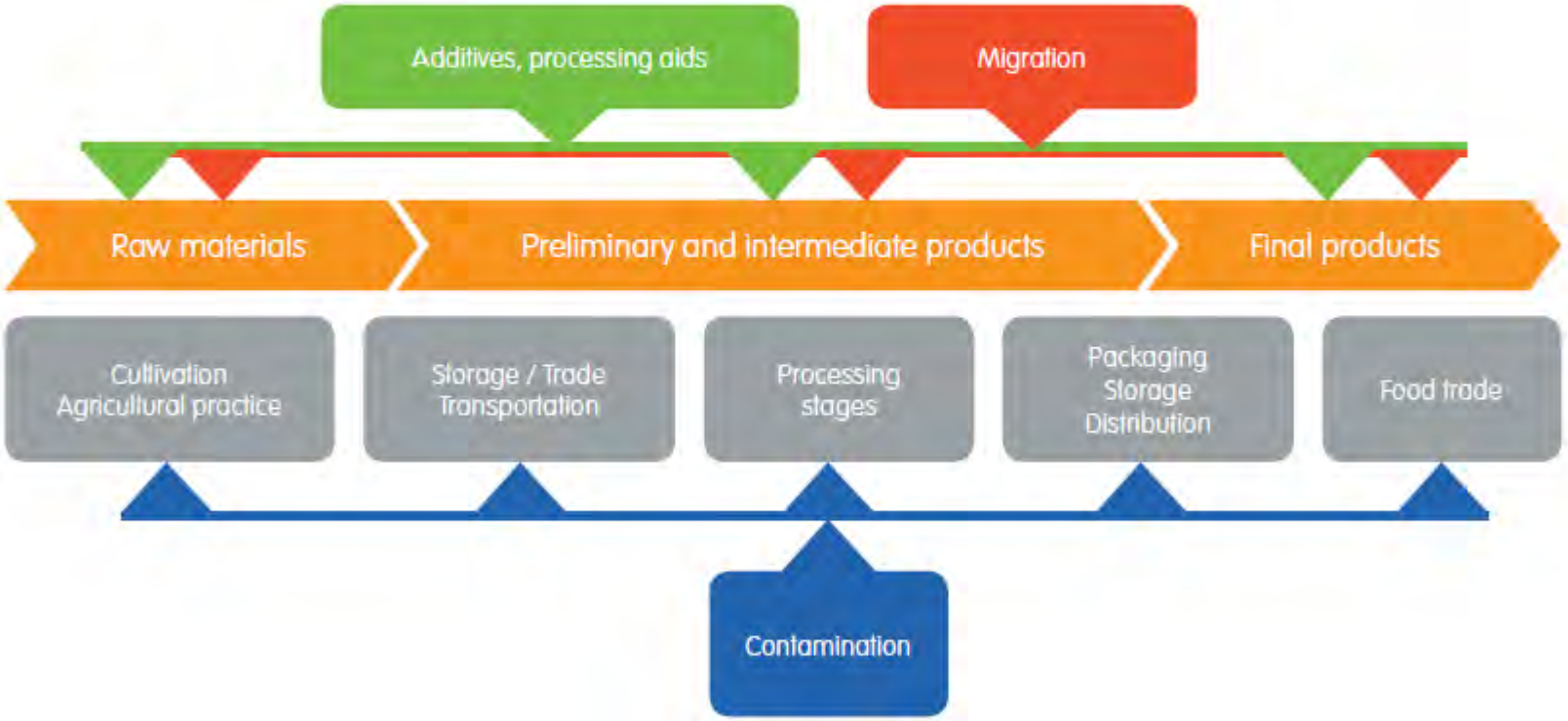


Figure 1: Systematic illustration of the routes of entry of MOSH/MOSH analogues and MOAH into food (according to [4])

FOODDRINK EUROPE
Enjoy food, today and tomorrow

SEPTEMBER 2018

3. Sources of contamination

Toolbox: Migration – mainly packagings

Source	Route of entry/ cause	Saturated and unsaturated mineral oil hydrocarbons/groups	Tool	Notes/examples
Paper/ carton/board	Primary packaging	**MOSH/MOAH**	Where necessary, use **fresh fibre products**: Bags, folding boxes and corrugated board made from fresh fibres	• Consider recommendations (BfR or CoE) for the production and use of papers, cartons and cardboard that come into contact with food; GMP guidelines of the associations for folding boxes and prints. • Not all fresh fibres are free from MOSH/MOAH because entry through processing aids used in paper production is possible; fresh fibre fraction can absorb MOSH/MOAH during storage; fresh fibre is not a barrier. • Ex: Specified primary fibre cartons according to DIN, such as GC1, GC2, GN4 and others.
Paper/ carton/board	Primary packaging	**MOSH/MOAH**	Where necessary, use **functional barriers** for final product packaging: coatings, bag-in-box systems or liners (Kraft bags), corrugated boards Applies also to packaging of upstream products	• Use barrier materials suitable for raw materials/ upstream and intermediate products: • coatings: co-extruded plastics or surface finish of cartons, e.g. in cartons or paper bags • Ex: Barrier optimised products, e.g. for folding boxes or corrugated paper cartons. • EVOH, PVDC, PA, PET, BOPP for bag-in-box

Recyled paper / cardbox:

MOSH/MOAH is contained via the printing inks (pure MOH!)

FOODDRINK EUROPE
Enjoy food, today and tomorrow

SEPTEMBER 2018

03.

Sources of contamination

Toolbox: Migration – mainly packagings

Source	Route of entry/ cause	Saturated and unsaturated mineral oil hydrocarbons/groups	Tool	Notes/examples
Paper/ carton/board	Container linings/ liners	**MOSH/MOAH**	Use of low mineral oil linings (dressings), in particular for sea transport	• Container dressings for the transport of bulk and bagged goods in containers or open bulk goods should be free from mineral oils and free from waste paper substances or equipped with functional barriers. • Concretise FCC guidelines.
Paper/ carton/board	Container liners	**MOSH/MOAH**	Use alternative materials for the absorption of moisture/humidity in transport containers	• Refrain from using carton dressings made from waste paper or based on recycling materials.

FOODDRINK EUROPE
Enjoy food, today and tomorrow
SEPTEMBER 2018

3. Sources of contamination

Toolbox: Migration – mainly packagings

Source	Route of entry/ cause	Saturated and unsaturated mineral oil hydrocarbons/groups	Tool	Notes/examples
Jute and sisal fibres	Bags	**MOSH/MOAH**	Request use of suitable jute bags according to IJP (food grade) and use of vegetable batching oils	• Refers to e.g. transport of bulk goods such as cocoa beans, grains, spices in jute bags from countries of origin; no sufficient definition of "food grade quality". • Comply with IJO Standards, no quality standards as regards MOSH/MOAH levels.

But also „bulk / hump“storage on bitumen & asphalt floors: use concrete floors or cover with tarpaulins.

FOODDRINK EUROPE
Enjoy food, today and tomorrow
SEPTEMBER 2018

3. Sources of contamination

Toolbox: Contamination

FOODDRINK EUROPE
Enjoy food, today and tomorrow

SEPTEMBER 2018

Source	Route of entry/cause	Saturated and unsaturated mineral oil hydrocarbons/groups	Tool	Note
Lubricants in food processing (food grade incidental food contact)	Damage, contamination, continuous entry	**MOSH/MOAH** **MOSH analogues (PAO, MORE)**	Use specified and internationally certified NSF lubricants (NSF-H1) or synthetic lubricants. Minimise technically inevitable entry (instructions, staff training). Adhere to hygienic design of equipment (lubrication cup, motors etc.) by maintenance	• "Food grade" lubricants for machines and equipment, use in food production without intended food contact. • Lubricants on mineral oil basis may contain MOSH as well as MOAH. MOAH-free products are available; according to FDA: maximum residue of 10 mg "mineral oils"/ kg food for H1 lubricants. PAO will deliver false positive results after damage. Synthetic lubricants are more homogeneous, not free from MOSH and PAO, free from MOAH.

03.

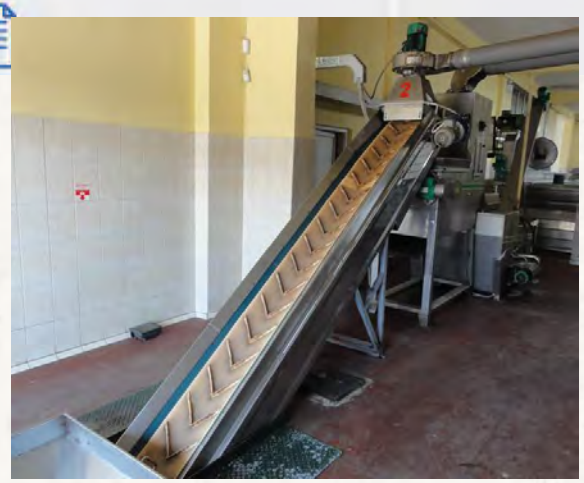
Sources of contamination

Toolbox: Contamination

FOODDRINK EUROPE
Enjoy food, today and tomorrow

SEPTEMBER 2018

Source	Route of entry/cause	Saturated and unsaturated mineral oil hydrocarbons/groups	Tool	Note
Technical lubricants	Continuous entry through harvesters or damage	**MOSH/MOAH** **MOSH analogues (PAO)**	Avoid/reduce leaks that may result in the entry of lubricants Use suitable lubricants (NSG-H1/ NSF-H2) at all primary production levels, if possible	• Elaborate maintenance and damage action plans in case of leaks and accidents. • Ex: Use of harvesters e.g. combines, and conveyors in harvesters.
Technical lubricants	Transport chain	**MOSH/MOAH** **MOSH analogues (PAO)**	Prevent/minimise entry of lubricants. All pneumatic and belt conveyors are concerned. Use H1 lubricants within the entire transport chain, if possible	• Even when using H1 lubricants, MOSH and PAO may enter, e.g. conveyors, fork lifts, contaminated transport containers or carriers (e. g. returnable pallets).



3. Sources of contamination

Toolbox: Contamination

FOODDRINK EUROPE
Enjoy food, today and tomorrow
SEPTEMBER 2018

Source	Route of entry/cause	Saturated and unsaturated mineral oil hydrocarbons/groups	Tool	Note
Lubricants - technical quality	Compressed air Pneumatic plants	**MOSH/MOAH** **MOSH analogues (PAO, MORE)**	Check compressed air for oil penetration on a regular basis Use oil-free compressors, and if possible, draw in zero-emission environmental air	• The quality of compressed air is stipulated in the Standards DIN ISO 8573 ff. According to ISO 8573-1 a maximum residue oil level of 0.01 mg/sqm was defined for compressed air with food contact. • Ex: Use of compressed air for spray drying, pneumatic conveying plants for the transport of granulates or powders (e. g. filling and emptying of silos); contact of food with compressed air in filling/packaging lines.
Smoke, gases from drying/ combustion	Drying methods	**MOSH/MOAH**	Avoid direct drying of raw materials with combustion gases dependent on the energy source	• Concerns mainly entry of volatile hydrocarbons and PAH during drying processes, e.g. spices, grain products.

03.

Sources of contamination

Toolbox: Contamination

FOODDRINK EUROPE
Enjoy food, today and tomorrow

SEPTEMBER 2018

Source	Route of entry/cause	Saturated and unsaturated mineral oil hydrocarbons/groups	Tool	Note
Technical lubricants	Damage or systematic contamination	**MOSH/MOAH** **MOSH analogues (PAO)**	Prevent contact between raw materials and storage areas/floors contaminated with lubricants No raw materials from contaminated cultivation areas	• Occurs during handling of raw materials in the country of production (e. g. drying) or during transportation (e. g. loading platforms).
Exhaust gases	Environmental air ventilation	**MOSH/MOAH**	Avoid contamination by exhaust gases. Check vehicle fleet, check external air inlets	• Prevent trucks from backing up to storage areas, turn off motors, etc.

3. Sources of contamination

Toolbox: Additives – Processing aids

FOODDRINK EUROPE
Enjoy food, today and tomorrow
SEPTEMBER 2018

Source	Route of entry/ cause	Saturated and unsaturated mineral oil hydrocarbons/ groups	Notes/examples
Dust control agents	Spraying of mineral-oil based oils	**MOSH/MOAH**	• Used with dusting bulk goods that are food raw materials such as soya beans, grains, rape seeds and other oil seeds. • Alternatively use mineral oil-free dust control agents based on vegetable oils. • For dusting food with flours or powders, only use dust control agents on a vegetable oil basis or substances according to Regulation (EC) No 1333/2008.
Pesticide formulations	Use of pesticides based on paraffin oil	**MOSH/MOAH** **MOSH analogues (MORE)**	• Use and presence as MOSH analogue within the area of vegetable raw materials possible.
Release agent	Hard paraffin or microcrystalline waxes	**MOSH analogues (PAO, MORE)**	• Used with e.g. confectionery, fruits. • Is harmless when used as approved; however, relevant to analysis as MOSH analogues. • Where necessary, use alternative waxes such as carnauba wax or beeswax, which are also relevant as MOSH analogues in analysis.

— Animal drug components (by-products in vaccines)

3. Sources of contamination

Toolbox: Additives – Processing aids

FOODDRINK EUROPE
Enjoy food, today and tomorrow
SEPTEMBER 2018

Microcrystalline waxes/hard paraffins	E 905
Carnauba wax	E 903
Candelilla wax	E 902
Beeswax	E 901
Siloxane	E 900
Oxidised polyethylene wax	E 914
Hydrogenated poly-1-decene	E 907

04.

Practical mitigation strategies – what can we do?

4. Practical mitigation strategies

The food industry must put considerable effort into tackling MOH contamination, focussing on:

- mitigating risk in their own processes (lubrification, packaging, leakages)
- communicating with suppliers (**worldwide**!)
- mitigating risk in cooperation with “willing” suppliers:

1. Identify “risky” suppliers / products
2. Problem-auditing of those suppliers, prioritisingthose, that are “willing” and cooperating
3. “step-testings & analytics” from farm to delivery

4. Practical mitigation strategies
Example 1

Linseed / flaxseed (Kazachstan) – seed delivered to Germany and pressed in Germany

Steps in Kazachstan:

harvesting → unloading → sieving → (drying) → storage

Steps in Germany:

pressing → filling

4. Sources of MOH

harvesting → unloading → sieving → (drying) → storage

diesel & lub

(indirect) drying

leakages on the concrete-floor contact with asphalt-floor?

Migration path: Extensive Lub in Bearings!

4. Practical mitigation strategies
Example 2

Coconut-oil from the Philippines – raw oil pressed in the Philippines, refining in Europe.

Steps in the Philippines:

harvesting → crackting the nuts → drying of the „meat“→ copra → pressing

Steps in Europe:

refining → filling

4. Sources of MOH

harvesting → cracking the nuts → drying of the „meat“→ copra → next page

direct drying

sundrying / sun is always shining?

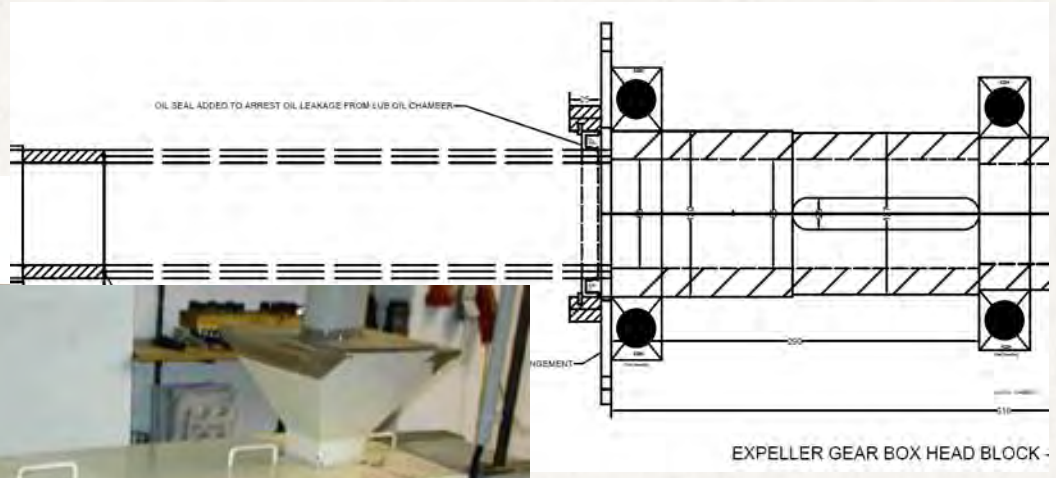
4. Sources of MOH

last page → drying of the „meat“→ copra → pressing

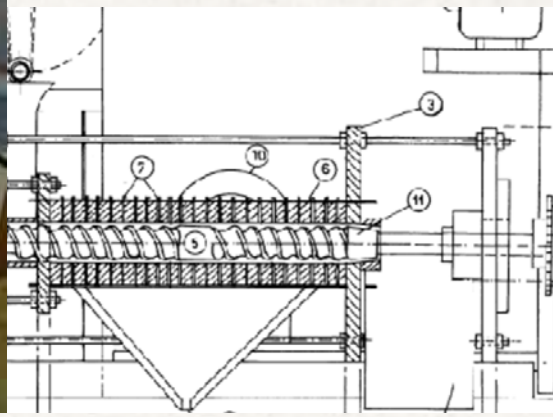
indirect drying

reused bags

expeller presses (leakages / lub)



EXPELLER GEAR BOX HEAD BLOCK -

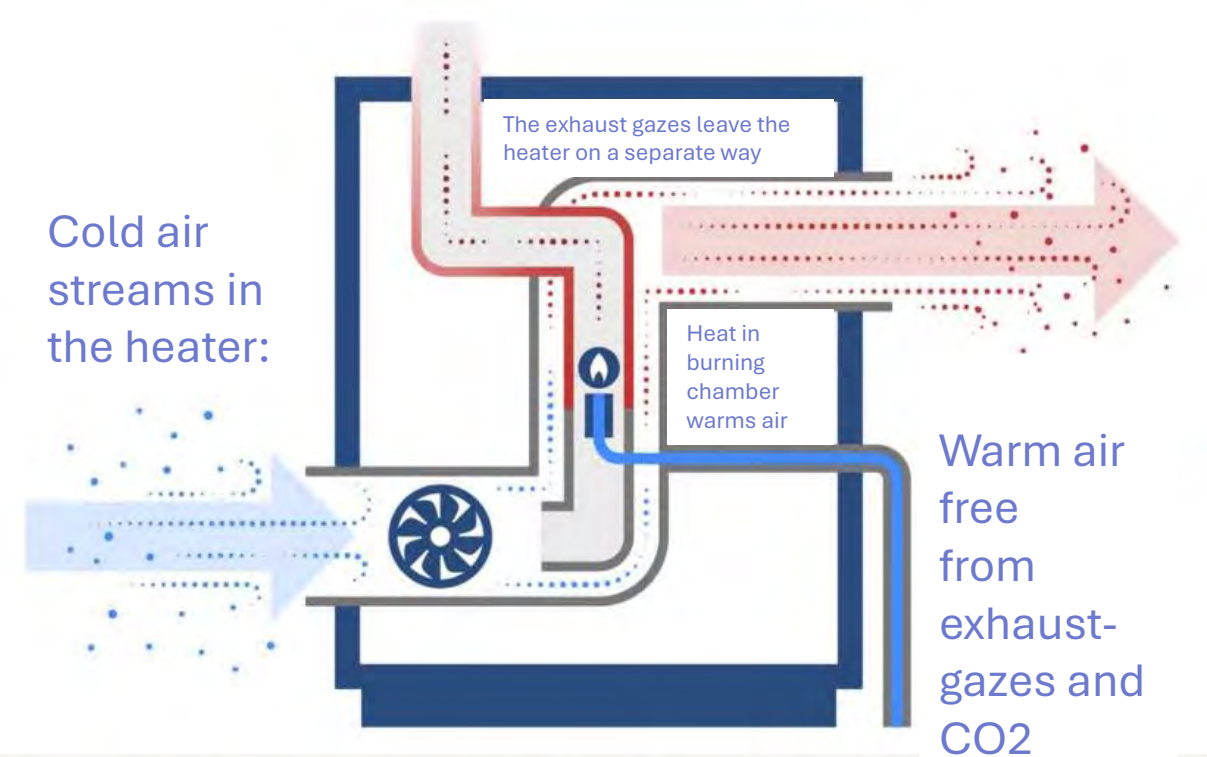


Migration path: Exhaust fumes from direct drying!

04.

What steps can be taken?

Indirect drying is key to avoid contamination



Alternative: solar-drying!

4. Practical mitigation strategies
Example 3

Olive oil from Europe – harvesting and pressing in Southern Europe

Steps in Southern Europe:

harvesting → collecting → milling → malaxation → centrifuging
→ filtration / decanting (tank)

4. Sources of MOH

exhaust-fumes of harvesting machines

hydraulic system of harvesters (leakages)

04.

Sources of MOH

cutting of the trees (with olives)
(exhaust fumes)

storing in jutebags in the plantations

Sources of MOH

bearings at hoppers

hydraulic mecanisms at hoppers (leakages)

lubrification of malaxeurs /presses (leakages)

gearboxes

Migration path: Jute bags!

04.

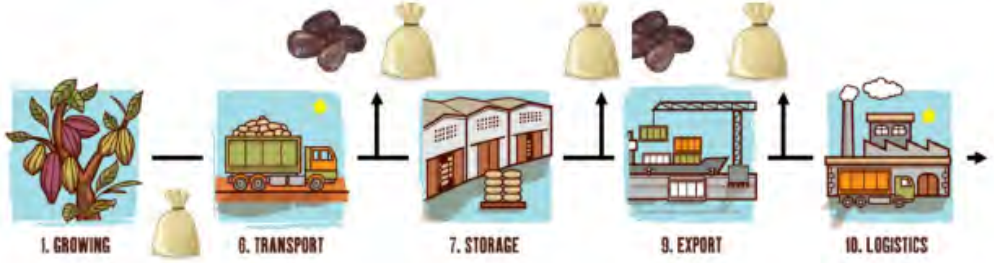
Jute bags: What steps can be taken?

SOURCES OF MOH CONTAMINATION IN COCOA

Research conducted by University of Liège and IJIRA on behalf of cocoa and jute sectors

Phase 1 (2020-2021). Identification of MOH entry points in transport and storage & migration studies

- Contamination during **storage** & **transport** → **contact time** matters!
- Migration through **shell to fat** components in beans
- **Jute bags main contributor to contamination**



Phase 2 (2023-2024). Survey of jute bags in supply chain & development of specification for suitable jute bags

- **Used bags** more contaminated than new/export bags
- Similar contamination in IJO98-compliant bags & mineral oil-batched bags → **IJO98 standard inadequate**
- Need to consider **lubricating oils and cross-contamination** in production environment as contamination sources

Executive summaries available at jointcocoaresearchfund.eu

JOINT COCOA RESEARCH FUND

eca european cocoa association

04.

Jute bags: What steps can be taken?

SHORT TERM ACTION: ADOPTION OF INDUSTRY SPECIFICATION

eca european cocoa association

Industry Specification

Jute Bags – Jute Yarns for Use in Cocoa Supply Chains

- Based on 2023-2024 study by University of Liège
- Current alternative to IJO98 standard
- Goal: minimise MOH contamination through jute bags
- Analytical criteria
  - MOAH: < 25 mg/kg
  - MOSH: < 250 mg/kg
- Also **important** to prevent contamination:
  - Good manufacturing practices
  - Food-safe processing materials (batching oils, printing inks, lubricants)

➔ Widely promoted within the sector
➔ Interest from other sectoral associations in endorsement / adoption
➔ Available on ECA website

04.

Jute bags: What steps can be taken?

ROADMAP TO ADDRESS MOH CONTAMINATION
MEDIUM-LONG TERM ACTION: DEVELOPMENT OF STANDARD

1st step

WTO Standards & Trade Development Facility (STDF) Project Preparation Grant

Developing and implementing a new standard for food safe jute for use in the cocoa sector

Partners

ICCO

Indian Jute Industries' Research Association

Implemented by

eca european cocoa association

Objectives

1. Develop framework for **standard** for food safe jute for use in cocoa
2. Prepare full **project proposal** to

2nd step

- Strengthen **capacity** to comply with such standard
- Develop **Code of Practice** incl. for (re-)use of bags

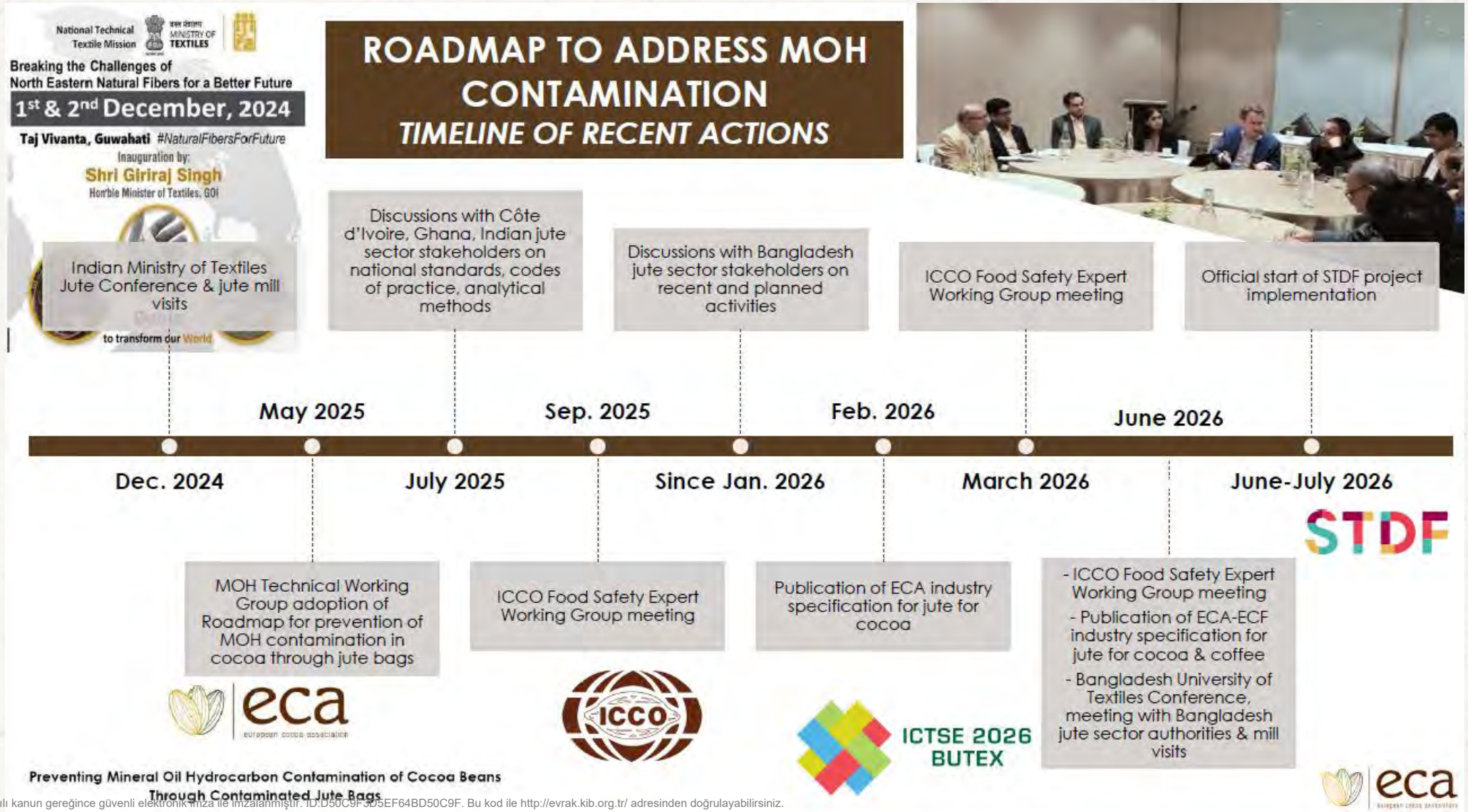
PPG Activities

- **Review** of jute bags manufacturing/use & MOAH contamination in jute & cocoa producing countries
- **Assess capacity** for food grade jute bags production & testing
- **Stakeholder engagement** for standard development

eca

04.

Jute bags: What steps can be taken?



4. Analytic results

PRÜFERGEBNISSE

Physikalisch-chemische Untersuchung

MOSH/POSH (gesättigt, kurzkettig) C10-16	<0,6	*	mg/kg
MOSH/POSH (gesättigt, mittelkettig) C16-20	<0,6	*	mg/kg
MOSH/POSH (gesättigt, längerkettig) C20-25	<0,6	*	mg/kg
MOSH/POSH (gesättigt, längerkettig) C25-35	<0,6	*	mg/kg
MOSH/POSH (gesättigt, längerkettig) C35-40	<0,6	*	mg/kg
MOSH/POSH (gesättigt, längerkettig) C40-50	<0,6	*	mg/kg
MOSH/POSH C10-50	<0,6	*	mg/kg
MOSH/POSH nachgewiesen im Bereich von	-		
MOAH (aromatisch) C10-16	<0,15	*	mg/kg
MOAH (aromatisch) C16-C25	<0,15	*	mg/kg
MOAH (aromatisch) C25-35	<0,15	*	mg/kg
MOAH (aromatisch) C35-50	<0,15	*	mg/kg
MOAH C10-50	<0,15	*	mg/kg
MOAH nachgewiesen im Bereich von	-		

04. Analytics – What happened here?

PRÜFERGEBNISSE

Physikalisch-chemische Untersuchung

MOSH/POSH (gesättigt, kurzkettig) C10-16	<0,6	*	mg/kg
MOSH/POSH (gesättigt, mittelkettig) C16-20	<0,6	*	mg/kg
MOSH/POSH (gesättigt, längerkettig) C20-25	1,2		mg/kg
	± 0,7		mg/kg
MOSH/POSH (gesättigt, längerkettig) C25-35	4,1		mg/kg
	± 1,6		mg/kg
MOSH/POSH (gesättigt, längerkettig) C35-40	0,80		mg/kg
	± 0,49		mg/kg
MOSH/POSH (gesättigt, längerkettig) C40-50	0,72		mg/kg
	± 0,46		mg/kg
MOSH/POSH C10-50	7,4		mg/kg
	± 2,8		mg/kg
MOSH/POSH nachgewiesen im Bereich von	C16-C52		
MOAH (aromatisch) C10-16	<0,15	*	mg/kg
MOAH (aromatisch) C16-C25	0,69		mg/kg
	± 0,29		mg/kg
MOAH (aromatisch) C25-35	1,3		mg/kg
	± 0,6		mg/kg
MOAH (aromatisch) C35-50	1,2		mg/kg
	± 0,5		mg/kg
MOAH C10-50	3,2		mg/kg
	± 1,2		mg/kg
MOAH nachgewiesen im Bereich von	C16-C52		

05

Finding good, reliable labs
Managing sampling & analytics

Identifying reliable labs

- Testing for MOHs requires ressources, time and experience.
- If labs not available in exporting country (insuffient demand or awaiting validation), sub-contacting to experienced labs is a valid option.
- Many capable, experienced labs **in Europe**, also **some in Asia**
- **Indicative list of EU labs:** EURL-PC has compiled list of laboratories able to analyse total MOAH content at required LOQs*. List available upon request via e-mail to **eurl-pc@food.dtu.dk** with 'GET MOAH LAB LIST' in the subject field.
- In order not to send the samples to Europe, multinational labs present in export country/ regions could be contacted. They will organize internally sample shipping to EU colleagues.
- Alternatively, ask your customers in EU to support you in analyzing the samples for you.

**with the understanding that neither the EURL-PC (European Union Reference Laboratory for Processing Contaminants) nor the Europea Commission in any way authorise, endorse or scrutinise the information given by the laboratories.*

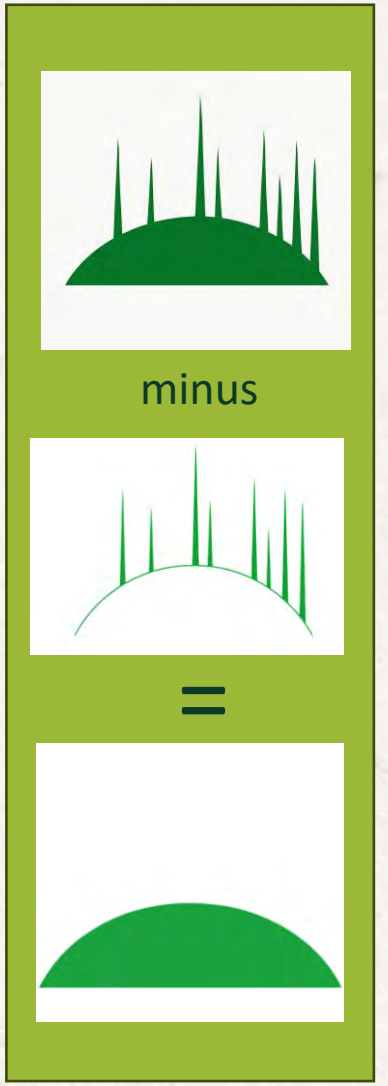
Complexity of analytics

Recommended method

- **„LC-GC-FID“** method, which is based on the JRC Guidance and is documented in ISO-Norm: DIN EN ISO 20122:2025-06 :
- Guidance allows different sample **pre-treatments**, depending on the matrix.
- Regulation (EC) No 333/2007 (due to be amended (probably Oct. 2026) sets out requirements of this analytical method.

How to deal with interfering substances

- Biogenic substances naturally present in plants might disturb the analysis e.g. in ***spices, volatile oils & oils***
- This can result in **false negative or positive results** if lab is not experienced **Interferences can be removed** through sample pre-treatments, such as **epoxidation**
- In case of doubt MOAH presence versus interferences can be confirmed **with „GCxGC“ (see Guidance)**



Possible sample contamination: containers

Managing contamination

- Even using experienced labs if not **using not suitable sample-containers (pouches, jars, bottles…)**, you will get results that are not reproducable and reliable
- This could lead you to wrong conclusions and follow-up strategies.
- The EU prosposes detailed steps in Regulation 333/2007 (amended Annex) in a detailed way:*

> ‘B.1.3. Precautions to be taken
> While sampling, precautions shall be taken to avoid any changes which would affect the levels of contaminants, adversely affect the analytical determination or make the aggregate samples unrepresentative.
> For the sampling for analyses of mineral oil hydrocarbons in food, materials used during sampling, sample storage and sample transmission shall be free of mineral oil residues and shall not release interfering substances. The sample shall be handled in order to prevent cross-contamination.’;

Managing contamination

Containers to be used (Regulation 333/2007 (amended Annex):

- Plastic containers should be avoided / **in any case checked** / as the samples could be analyzed MOSH-false positive
- Lid: prefer glas-stoppers or a PTFE-layered lid – alternative: cover lid/surface with Al-foil.
- **No rubber rings shall be used to close containers**
- Prepacked food: wrap with Al-foil in order to avoid cross-contamination
- **Avoid** paper or plastic-labels / **cardboard**
- **Containers and Al-foil shoud be checked for mineral oil hydrocarbons contamination**

To be safe check container one time – prior to using them. Whether a container is suitable or not depends on the combination of „container“ and your product inside!

06.

Questions
Discussion

6. Questions Discussion

How I can support

https://foodqsafetyfirst.jimdosite.com/

I could help you to find the traces!

AGRİNFO

Thank you

AGRİNFO

ANNEX

References/sources:

[1.] Food Drink Europe 2018 – ``Toolbox on reducing the transfer of mineral oils into food" Published: 03/09/2018, https://www.fooddrinkeurope.eu/resource/preventing-transfer-of-undesired-mineral-oil-hydrocarbons-into-food/
open resource

[2.] Claus-Michael Brieber, 2024, own measured values (not published: MOSH and MOAH was reduced by about 40% during a desodoration step. Reduction depended on the C-fractions of the MOSH and MOAH: about 60% reduction with C10-25 fraction, higher fractions > C25 – reduction < 20%.

[3.] Drawing: Claus-Michael Brieber – based on studies: "Minimierung von Mineralölbestandteilen in Speiseölen", Max Rubner-Institut, Dr. Ludger Brühl. https://www.mri.bund.de/de/institute/sicherheit-und-qualitaet-bei-getreide/forschungsprojekte/mosh-moah/

[4.] Agrinfo / Colead 2024: „Mineral Oil Hydrocarbons in Food" https://resources.colead.link/en/system/files/file_fields/2024/10/10/agrinfo---mineral-oil-hydrocarbons-in-food-2024.pdf

[5.] Dr. Torben Küchler (SGS), 2025, presentation at the „16th Akademie Fresenius QS-Leiter-Treffen" in Cologne, 17th and 18th of june 2025