

EU COORDINATED ACTION "From the hives"

Sampling, investigations and results



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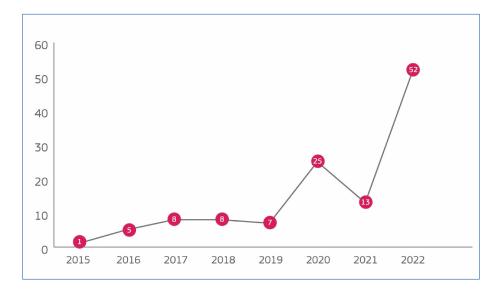
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EU COORDINATED ACTION "FROM THE HIVES" SAMPLING, INVESTIGATIONS AND RESULTS

1. CONTEXT

The wave of consumer demand for natural sweeteners leads to a market where global honey prices are at their highest levels in years. In the EU, market demand for honey is higher than domestic production and a substantial amount of honey is imported. The price difference between authentic honey and sugar syrups and the difficulty of detecting extension of honey with syrups provides attractive fraud opportunities for dishonest business operators. Producer organisations as well as consumer protection associations have repeatedly raised this concern, which is corroborated by the results of a first Coordinated Control Plan organised in 2015-17¹ and by the number of notifications in the Alert and Cooperation Network². In 2022, in the frame of the EU Action, twenty-seven notifications were created by Member States authorities and twenty-five were issued by the Commission (Figure 1).

Figure 1. Number of requests to the members of the EU Agri-Food Fraud Network related to fraud suspicions (of cross border nature) on honey.



The market for honey in the EU is growing, according to Euromonitor data, from EUR 2.0 billion in 2019 to EUR 2.2 billion in 2020 to EUR 2.3 billion in 2021³. With an annual production of 218 000t ⁴ the EU is the world's second largest producer (after China). 12% of the world's honey production comes from the EU. Importing 175 000 t/year⁵, the EU is also the world's second importer of honey (after the US), representing 30% of the world's honey imports.

With a self-sufficiency of about 60% ⁶ the EU market depends on imports of honey from third countries. Eight countries account for more than 90% of all EU imports (Ukraine, China, Mexico, Argentina, Cuba, Brazil, Uruguay and Türkiye) ⁷. The main importing Member States are Germany, Poland, Belgium and Spain. Most of the imported honey is used in blends and marketed in retail under brand names. About 80% of the honeys sold in retail are blends ⁸.

¹ The results of a Coordinated Control Plan organised in 2015-17 at the EU level plus Norway and Switzerland, showed that at least 14 % of the checked samples did not conform to purity benchmarks both for honey produced into the EU and for those imported from third countries. See more at: <u>https://food.ec.europa.eu/safety/eu-agri-food-fraud-network/eu-coordinated-actions/honey-2015-17 en</u>

^{2 2020} Annual Report – The EU Agri-Food Fraud Network and the Administrative Assistance and Cooperation System. https:// ec.europa.eu/food/system/files/2021-09/ff ffn annual-report 2020 1.pdf

³ Extracted from Euromonitor Passport data, total value retail selling price in current prices.

⁴ FAO data 2020.

⁵ UN Comtrade 2020.

 ⁶ The EU produces ~218 000 tonnes of honey per year, imports 175 000 tonnes and exports 30 000 tonnes, DG AGRI market presentation <u>https://ec.europa.eu/info/food-farming-fisheries/animals-and-animal-products/animal-products/honey_en.</u>
7 COMEXT data 2017-2021

⁷ COMEXT data 2017-2021.

⁸ Information from F.E.E.D.M. (European Federation of Honey Packers and Distributers).

2. THE EU COORDINATED ACTION "FROM THE HIVES" IN OPERATION

The Directorate-General for Health and Food Safety (DG SANTE) of the European Commission initiated and coordinated the action *"From the Hives"*. The action aimed at gathering intelligence on the incidence of non-conforming honey imported into the Union through sampling and analysis meant to target investigations within the EU. The coordinated action was implemented by the members of the EU Food Fraud Network. It received analytical assistance from the Joint Research Centre and investigational support from the European Anti-Fraud Office (OLAF).

The coordinated action ran in three phases: a collection of honey samples at EU borders, a collection of traceability information and then investigations at the place of import, processing, blending, and packing (Figure 2).

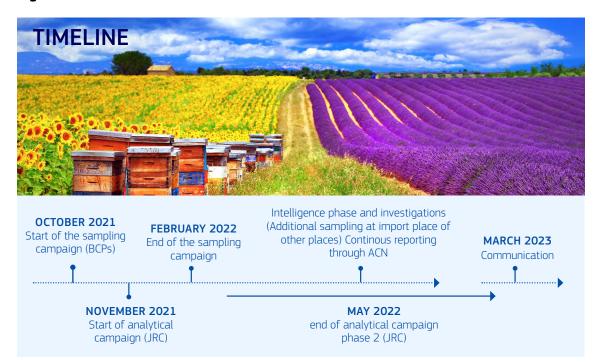


Figure 2. Timeline of the EU coordinated action "From the Hives"

PHASE ONE: the collection of honey samples at EU borders.

Sixteen Member States, Norway and Switzerland volunteered for this initial sampling phase, which ran from November 2021 to February 2022. They randomly sampled in total 320 consignments of honey (Table 1).

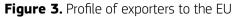
Collected samples were analysed by the Commission in its Joint Research Center of Geel (Belgium). A side JRC technical report already presents the analytical testing results of imported honey. This publication mirrors and complements it.

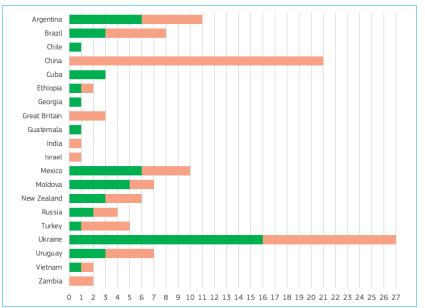
In total, 123 exporters were controlled of which 70 were flagged as having exported consignments of honey suspected of being adulterated with extraneous sugars (Figure 3 and Annex A).

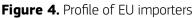
Of the 96 EU importers concerned, it transpired that two-thirds of them (63) had imported at least one suspicious consignment (Figure 4 and Annex B).

PARTICIPATING COUNTRIES	Target (min based on import coi	past	Number of samples taken between November 2021 and February 2022 at EU Border Control Posts
BELGIUM	55	70	63
BULGARIA	5	10	8
CZECH REPUBLIC	0	5	6
DENMARK	0	5	6
FINLAND	0	5	0
FRANCE	15	25	21
GERMANY	270	320	32
GREECE	0	5	2
HUNGARY	5	10	5
IRELAND	0	5	3
ITALY	5	10	8
LITHUANIA	0	5	5
POLAND	120	140	103
ROMANIA	10	15	15
SPAIN	35	45	28
SWEDEN	0	5	6
NORWAY	0	5	6
SWITZERLAND	0	5	2
TOTAL	520	690	320

Table 1. Participation in the EU coordinated action to sample imported honey









Number of operators having exported honey compliant with the EU Honey Directive

Number of opertors having exported at least one honey sample suspicious of being noncompliant withe the EU Honey Directive

- Number of operators having imported honey compliant with the EU Honey Directive
- Number of opertors having imported at least one honey sample suspicious of being non-compliant withe the EU Honey Directive

PHASE TWO: the collection of traceability information.

All participants' countries had to instate the place of destination of the controlled consignments before considering further investigations. The Commission also contributed to building up intelligence information by recollecting valuable information from both the exporters and the importers (past import operations registered within the TRACES system⁹, non-compliances and food fraud suspicions already registered within the Alert and Cooperation Network¹⁰).

PHASE THREE: the investigations.

Investigations by Member States and EFTA States authorities (seconded by OLAF services wherever requested by Member States) were foreseen at the places of import, processing, blending, and packing. They were aiming at confirming the suspicions of non-compliances, to establish operator's responsibilities and deter those voluntarily and knowledgably placing adulterated honey onto the EU market.

Investigations were concerning all Member States and EFTA States of destination having received suspicious consignments in light of the mutual cooperation and assistance obligations of the Official Control Regulation.

During those investigations, competent authorities were advised to pay particular attention to:

- operators controls systems (i.e. vulnerability assessments, auto-controls, laboratory methods able to detect or not adulteration) and procedures to follow up fraud noncompliances;
- records controls including mass balances (honey origins and qualities, processing honey-bee products, sugars preparations ...); and
- eventually support their investigations with additional analyses.

On sixty three operators concerned by the import of at least one suspicious consignment, forty-four have been further investigated to date of which seven have already been sanctioned.

Annex B provides detailed data on the follow-up given by the Member States and EFTA States authorities. Those data remain - at the time of drafting this publication - a provisional insight taking into account that many investigations are yet to be performed and concluded.

For Member States having investigated fraud suspicions and having reported about their results, it appears that most of the official laboratory control techniques at their disposal were deficient in detecting and proving adulteration of honey with extraneous sugars when used alone without complementary forensic investigations.

The joint OLAF and Bulgarian authorities' investigations have to the contrary been really conclusive to demonstrate a collusion between the operators (exporter, importer, blender and its clients). These investigations combined site inspection, sampling and examination of computers and phone records. They concluded about the:

- use of sugar syrups to adulterate honey and lower its price;
- regular recourse to EU-accredited laboratories to adapt honey/sugar blends to elude possible detection by clients and official authorities prior to import operations beginning;
- use of additives and of colourings to mimic other honey botanical sources;
- deliberate masking of the true geographical origin of honey by forging traceability information.

Other intelligence gathered during the course of the EU coordinated action – and currently being investigated – concerns the use and the blending of honey with sugar syrups onto the EU territory itself and the removal of pollens on imported honey to mask its true geographical and botanical origin.

3. CONCLUSION

This EU coordinated action has confirmed the assumption that a significant part of honey imported from non-EU countries and placed on the EU market is suspected of not complying with the provision of the EU Honey Directive 2001/110/EC and remains undetected.

As already concluded by the Knowledge Centre for Food Fraud and Quality (JRC), improved, harmonised and generally accepted analytical methods are still needed to increase the capability of official control laboratories to detect honey adulterated with sugar syrups.

If many countries are yet to investigate the operators having imported suspicious consignments, it appears that some investigations were solely relying on official laboratory control techniques which are known to be deficient in detecting and proving adulteration of honey and thus inefficient in deterring fraudsters if used alone. An active collaboration of all stakeholders in identifying and addressing misleading or fraudulent practices in the honey trade remains needed. This collaboration should also be combined with the enhancement of official supervision and the provision of robust guarantees for the authenticity of honey imported into the European Union.

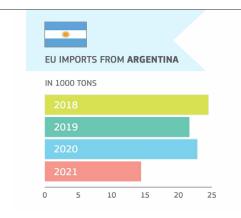
These progresses are vital, not only from the perspective of protecting consumers and their interests but also to enhance the reputation of the honey sector as a whole and embed fair practices in food trade.

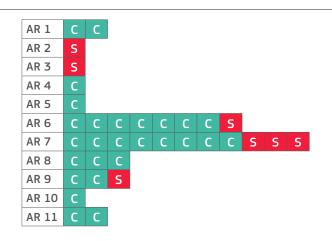
Annex A Profiles of exporting countries and of exporters that were subject to sampling during the EU coordinated action

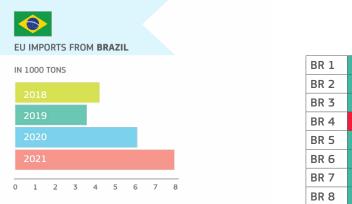
LEGEND

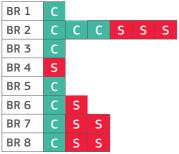
- C Sample found compliant with the provisions of the EU Honey Directive 2001/110/EC
- S Sample suspicious of being non-compliant with the provisions of the EU Honey Directive 2001/110/EC
- Anonymised reference of the establishment of origin / consignor-exporter

Data source: Comext (Eurostat)

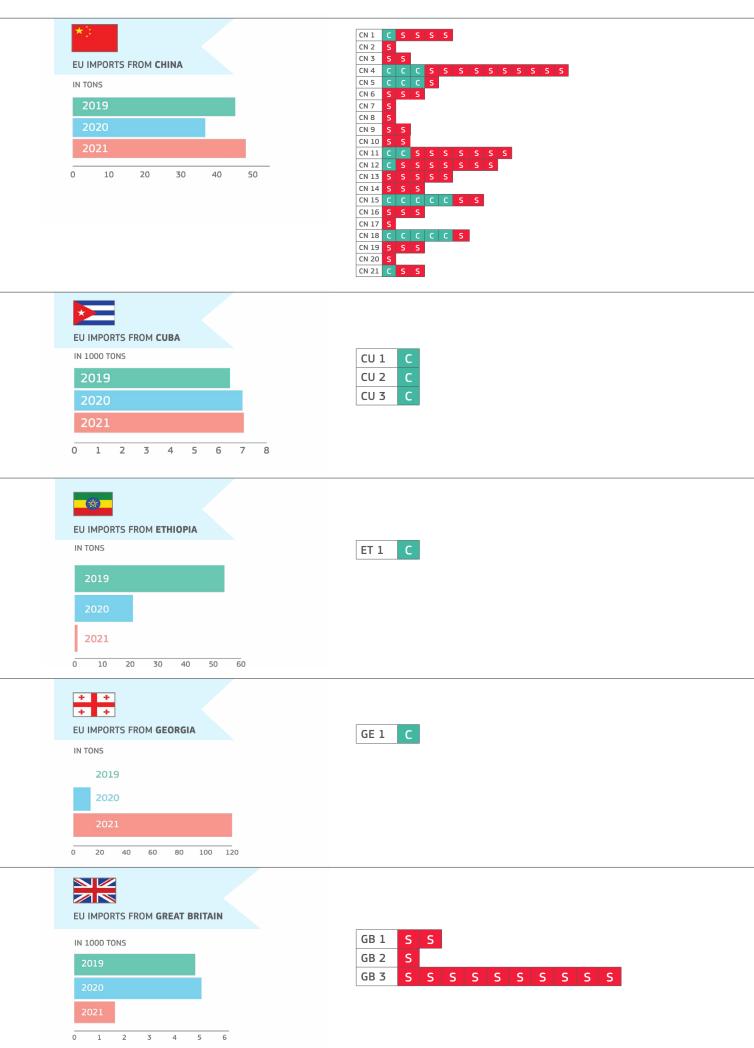


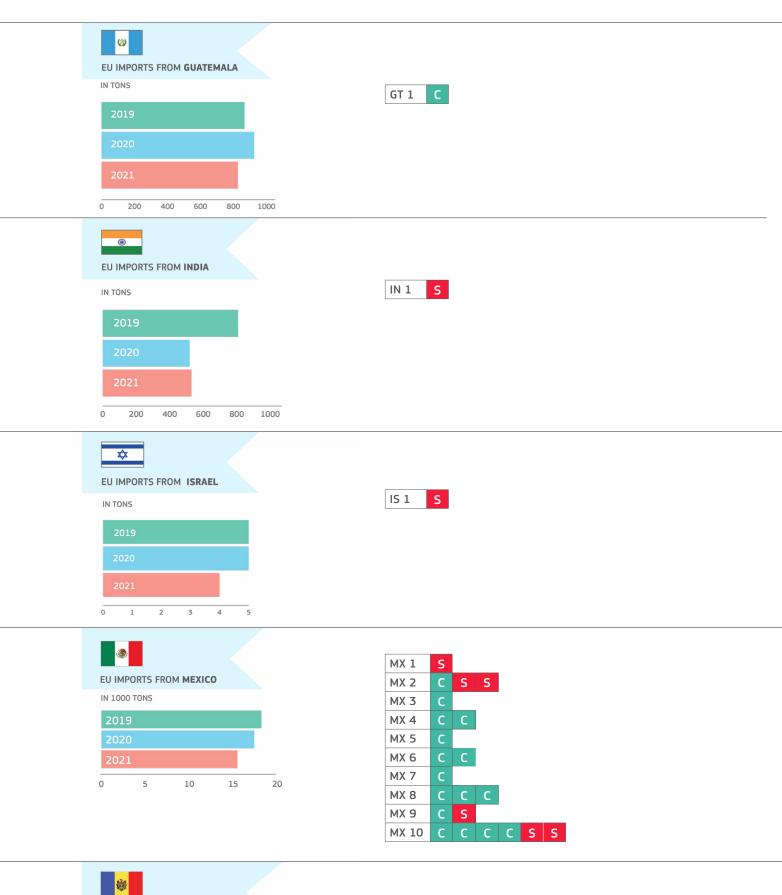


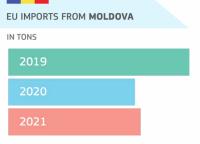








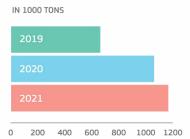




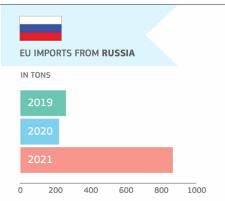
MD 1	С			
MD 2	С			
MD 3	С			
MD 4	С	С	S	
MD 5	С			
MD 6	С	С	С	С
MD 7	S			



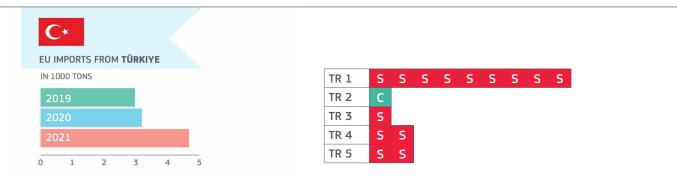
EU IMPORTS FROM NEW ZEALAND



NZ 1	С
NZ 2	С
NZ 3	С
NZ 4	S
NZ 5	S
NZ 6	S

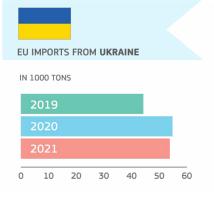


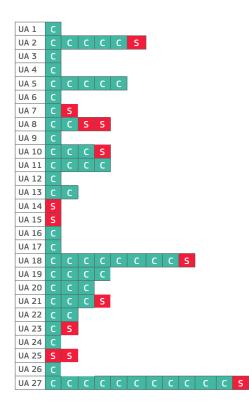
RU 1	С	
RU 2	С	S
RU 3	С	S
RU 4	С	

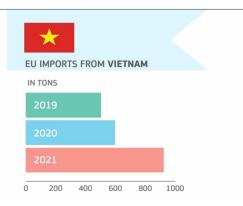




UY 1	S				
UY 2	S				
UY 3	С				
UY 4	С	С	С	S	S
UY 5	S				
UY 6	С				
UY 7	С				







VN	1	С
VN	2	S



ZM 1	S
ZM 2	S

Annex B Profiles of the importing countries and of importers that have received consignments sampled during the EU coordinated action

LEGEND

Sample found compliant with the provisions of the EU Honey Directive 2001/110/EC and ISO code of the exporting country and ISO code of the exporting country



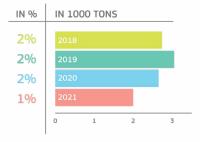
Sample suspicious of being non-compliant with the provisions of the EU Honey Directive 2001/110/EC and ISO code of the exporting country

Anonymised reference of the establishment of first destination in the EU

Data source: Comext (Eurostat)

AUSTRIA

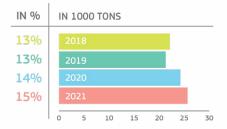
SHARE OF EU IMPORTS FROM THIRD COUNTRIES



AT 1 AR



SHARE OF EU IMPORTS FROM THIRD COUNTRIES



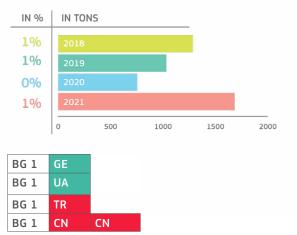
RESULTS OF INVESTIGATIONS

Three operators have been investigated. The strengthened border controls on exporters suspected of exporting adulterated honey to the EU and unfavourable official laboratory results led to denying entry into the EU of 20 tons of adulterated honey.

- Needs to develop sensitive and accredited methods to detect low level of adulteration with extraneous sugars.
- Comprehensive investigations are needed to complement analytical results and ascertain a fraud behaviour.

BE 1	GB	GB	GB										
BE 2	AR	AR	AR	AR	AR								
BE 3	AR	AR	AR	AR	AR	AR	BR	CN	МХ	MX	BR	МХ	MX
BE 4	МХ	МХ	MX	МΧ	МХ								

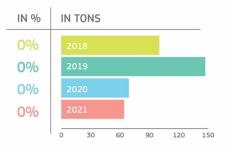






CYPRUS

SHARE OF EU IMPORTS FROM THIRD COUNTRIES



CZECHIA

SHARE OF EU IMPORTS FROM THIRD COUNTRIES



RESULTS OF INVESTIGATIONS

Eight operators so far investigated of which three have been found suspected of fraud or of fraud complicity after investigations. Sanctions include the partial halt of activities for one operator and a financial penalty for one establishment that was not registered.

COMMENTS:

- In one case, investigations were carried out together with OLAF, the Bulgarian AFKOS unit (council coordination the combating of frauds with EU money), police and customs authorities.
- Investigations uncovered evidence of the addition of sugars syrups to honey, of bad handling practices of honey declared as adulterated and the trade of sugar syrups as industrial honey.
- The EU coordinated action led to the review of risk profiles to conduct risk-based inspections.

RESULTS OF INVESTIGATIONS

Two operators having received consignments suspected of adulteration have been investigated.

COMMENTS:

- Official samples were taken but returned with favourable results.
- Needs to develop sensitive and accredited methods to detect adulteration with C3/ C4 extraneous sugars.
- A closer cooperation between the Customs Department and the Veterinary Services would be needed to monitor shipments of honey imported in Cyprus through other Member States.

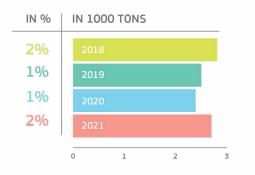
RESULTS OF INVESTIGATIONS

Three operators have been investigated.

- No legislative basis to order withdrawals from the market.
- One main problem was that suspicious samples could not be considered as non-compliance by law.

CZ 1	CN
CZ 2	MD

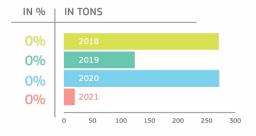






ESTONIA

SHARE OF EU IMPORTS FROM THIRD COUNTRIES



RESULTS OF INVESTIGATIONS

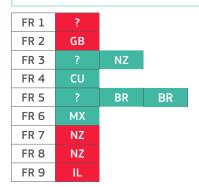
One operator having received a consignment suspected of adulteration has been investigated and 470 kg of adulterated honey were withdrawn from the market.

FRANCE

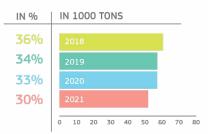
SHARE OF EU IMPORTS FROM THIRD COUNTRIES



- Analyses of Manuka honey from New-Zealand are leading to differences in interpretation of the AOAC 998.12 method, based on detection and estimation of the content of adulterating sugars by the EA-SMRI method. Pending clarification from the AOAC on the AOAC 998.12 method of the reference values to be used for estimating the adulteration of sugars in Manuka honey, an alternative complementary method is required. To date, private laboratories have chosen NMR profiling as a complementary method to verify authenticity of Manuka honey while the French authorities' laboratory uses the LC-SMRI method. The results differ from one method to another and are strongly contested by operators. They are a source of legal uncertainty for the sanctioning procedures.
- As a result of the EU coordinated action findings, France plans further controls in the sector in 2023.







RESULTS OF INVESTIGATIONS

Seven operators are being investigated.

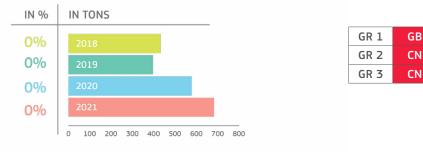
COMMENTS

- As a result of the EU coordinated action findings, strengthened border controls on exporters suspected of exporting adulterated honey to the EU are implemented.
- The development of sufficient official and validated test methods would be needed in order to be able to carry out further official investigations.

DE 1	CN	C											
E 2	МХ	МХ	МХ										
4		BR	BR	МХ	BR	BR	?						
	AR	AR			AR	AR	BR						
6	TR												
7	TR												
В	UA	UA	UA										
	BR	BR	BR	BR									
	AR	BR	CL	МХ	BR								
11	GB												
12	МХ	VN	CN	CN	CN	CN							
13	TR	TR			1								
14	AR	VN											
15	CN												
E 16	TR	TR											

GREECE

SHARE OF EU IMPORTS FROM THIRD COUNTRIES

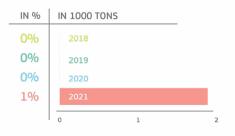


RESULTS OF INVESTIGATIONS

Seven operators have been investigated of which three have been suspected of fraud or of fraud complicity. Findings (mass-balance deficiencies, insufficient traceability system, labelling non-compliances regarding the indication of the true origin) led to corrective actions (correction of the indication of origin), an increased control frequency for suspicious operators and recommendations for efficient evaluation of the suppliers. One administrative case was initiated and proposed to be sanctioned (on-going procedure).

- The EU coordinated action raised awareness to the authorities and provided useful information for further control and fraud investigation in the honey-bee products sector for the detection of foreign sugars.
- Designation of EU reference centres for the authenticity and integrity of the agri-food chain and the development of sufficient official and validated test methods would be needed.





RESULTS OF INVESTIGATIONS

Three operators having received consignments suspected of adulteration have been investigated and one administrative case was initiated.

COMMENTS:

the designation of an EU reference laboratory would be helpful to pool and save resources. Member States.



IRELAND

SHARE OF EU IMPORTS FROM THIRD COUNTRIES



RESULTS OF INVESTIGATIONS

One operator has been investigated. Additional samples were taken and returned with favourable results. Further sampling will be carried out in Ireland in 2023.



ITALY

IIALY

SHARE OF EU IMPORTS FROM THIRD COUNTRIES



RESULTS OF INVESTIGATIONS

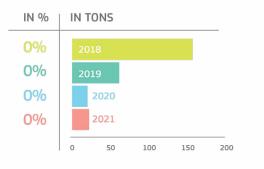
Five operators including two having received consignments suspected of adulteration have been investigated. One administrative case (pecuniary sanction from 600 \in to 6000 \in) and one criminal case were initiated (penalty to be determined).

One consignment of adulterated honey was already blended with other honeys the whole lot (3060 kg) was withdrawn from the market.

- Some analytical methods are still being implemented in the official laboratories, therefore some analyses could not be carried out or recognised as official.
- The setup of new analytical methods and the implementation of proficiency tests for laboratories should be pursued.
- The ICQRF (Central Inspectorate for the Protection of Quality and Fraud Repression of Agri-Food Products) in collaboration with some Italian universities is developing specific agreements for the study of fraud on honey with a data fusion approach with DNA and proteomics analysis in order to also discover the fraudulent use of exogenous sugar mixtures.
 - Cooperation with third countries exporting to the EU or willing to export to the EU would be useful.

IT 1	UA				
IT 2	CN	CN	CN	CN	CN
IT 3	UY				
IT 4	AR	MD			
IT 5	UA				
IT 6	CN	TR			
IT 7	UY				



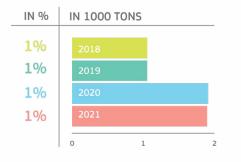


RESULTS OF INVESTIGATIONS

Three operators having received consignments suspected of adulteration have been investigated. This led to the withdrawal of 2700kg of adulterated honey from the market.

LITHUANIA

SHARE OF EU IMPORTS FROM THIRD COUNTRIES



RESULTS OF INVESTIGATIONS

One operator has been investigated and the sale of 37682 kg of adulterated honey was prevented.

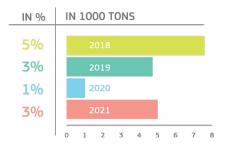
COMMENTS:

- The development of official and validated test methods would be needed.
- The action should lead to the reviewal of risk profiles to conduct risk based inspections.



THE NETHERLANDS

SHARE OF EU IMPORTS FROM THIRD COUNTRIES



NL 1	GB	GB
NL 2	GB	
NL 3	MD	

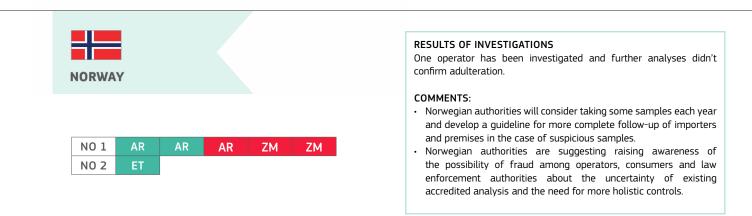
RESULTS OF INVESTIGATIONS

Two operators have been investigated. In both cases the honey was not imported in bulk but in (consumer units) jars. There was no reason to believe that fraud was committed in the Netherlands. Nevertheless the consignments were investigated. One inspection related to a shipment of 80 kg of honey. The reason for follow-up with an inspection on-site would have been the involvement of the third country supplier with two suspicious honey samples in other shipments during the same period of time. However, considering the Dutch company a small one which only imported 80 kg of jars of honey as such and the sample taken from this particular shipment was considered not suspicious, there was no reason to believe that fraud was committed by the Dutch importer.

The second inspection concerned a small company run part-time by one person. The average shipment consists of 1000-1500 kg and is imported one or two times per year. The owner knows the supplier personally and only imports in addition of an analysis report. When receiving a shipment he inspects the supplies on broken glass. He does not perform any action on the product itself. In the next shipment the company will perform an analysis to verify whether the analysis report of the supplier is correct.

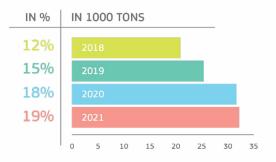
COMMENTS:

in the Netherlands, the import of bulk honey is very limited. The EU coordinated action did not yet lead to increased frequency of official controls but is helpful for targeted inspections in the near future.



POLAND

SHARE OF EU IMPORTS FROM THIRD COUNTRIES



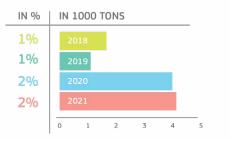
RESULTS OF INVESTIGATIONS

10 operators have been investigated leading to the banning for the placing onto the EU market of 35 tons of honey initially identified by the JRC as suspicious and further analysed by the AFQI (Agricultural and Food Quality Inspection) laboratories.

- Proceedings concerning batches of honey taken under the coordinated control plan have been completed, with the exception of one operator (one consignment) which temporarily obstructed to controls.
- All honey samples collected within the frame of the EU coordinated action were also tested in AFQI laboratories as regulatory action could not be solely initiated based on JRC results;
- In addition, further actions are being carried out on the basis of the information received under the coordinated action.

PL 1	UA	UA	UA								
	CN	CN	MD	MD	UA	UA	UA	UA	?		
	UA										
PL 2	CN										
	CN	CN	CN	CN	UA	UA	UA			-	
PL 3	UA							-			
PL 4	UA		UA	UA							
PL 5	RU										
PL 6	UA	UA									
PL 7	МХ	RU	UA	UA	CN	CN	CN	UA	UA		
PL 8	RU				_					-	
PL 9	CN	CN	CN	CN	CN	IN		_			
PL 10	UA	UA	UA	UA	UA	CN	UA			_	
PL 11	RU	UA	UA	UA	UA	UA	UA	RU	UA		
PL 12	UA										
PL 13	UA										
PL 14	UA				_						
PL 15	UA	TR	TR	TR							
PL 16	TR										
PL 17	RU										
PL 18	UA	UA	UA	UA							



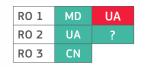


RESULTS OF INVESTIGATIONS

One operator has been investigated and further analyses didn't confirm adulteration.

COMMENTS:

the results of the EU coordinated action will be taken into account in the development of the new national plan to prevent and combat food fraud in Romania but the EU legislation should be complemented with specific actions to combat and prevent food fraud and clearly provide that certain tests can be done by newly accredited methods, including for the parameters that are not included with limits in legislation.

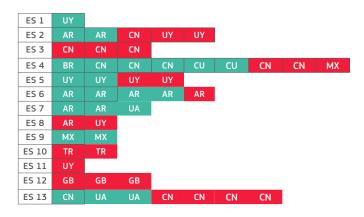


RESULTS OF INVESTIGATIONS

Four operators are being investigated.

COMMENTS:

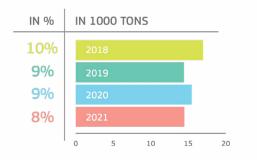
Spanish authorities suggest increasing the frequency of official controls in honey bee-products in border control points; using acquired information in order to craft a more comprehensive and effective control plan and developing a nation-wide control plan for honey bee-products; developing new analytical techniques and perfecting already existing ones.



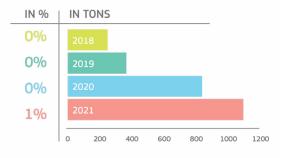
SPAIN

SLOVENIA

SHARE OF EU IMPORTS FROM THIRD COUNTRIES



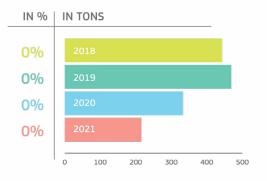
SHARE OF EU IMPORTS FROM THIRD COUNTRIES



RESULTS OF INVESTIGATIONS

Strengthened border controls on exporters suspected of exporting adulterated honey to the EU and unfavourable official laboratory results led to denying entry into the EU of 244 tons of adulterated honey.





RESULTS OF INVESTIGATIONS

One operator having received consignments suspected of adulteration has been investigated. Inspectors did not find the suspicious batch on site. They sampled another batch, allegedly from the same supplier which returned with unfavourable results. 504 kg of adulterated honey were withdrawn from the market. The CA will decide whether to hand over the results of the investigations to the police for prosecution if evidence suggests fraud complicity.

COMMENTS:

the EU coordinated action was found very useful in giving insights in international level honey fraud, analytical methods and organisation of an EU-wide action on trade with adulterated honey.

It should serve for continuous development of the organisation of controls in this sector within the EU and at Member States level.



SLOVAKIA

SHARE OF EU IMPORTS FROM THIRD COUNTRIES





SWITZERLAND

RESULTS OF INVESTIGATIONS

One operator having received consignments suspected of adulteration has been investigated. The honey was delivered from New Zealand to Switzerland in single sales packages. If the honey has been manipulated, this would presumably have happened in New Zealand.

COMMENTS:

the development of official and validated test methods would be needed and the frequency of official controls increased.