

Approaches and Experiences in Hungarian Food Chain Fraud Control

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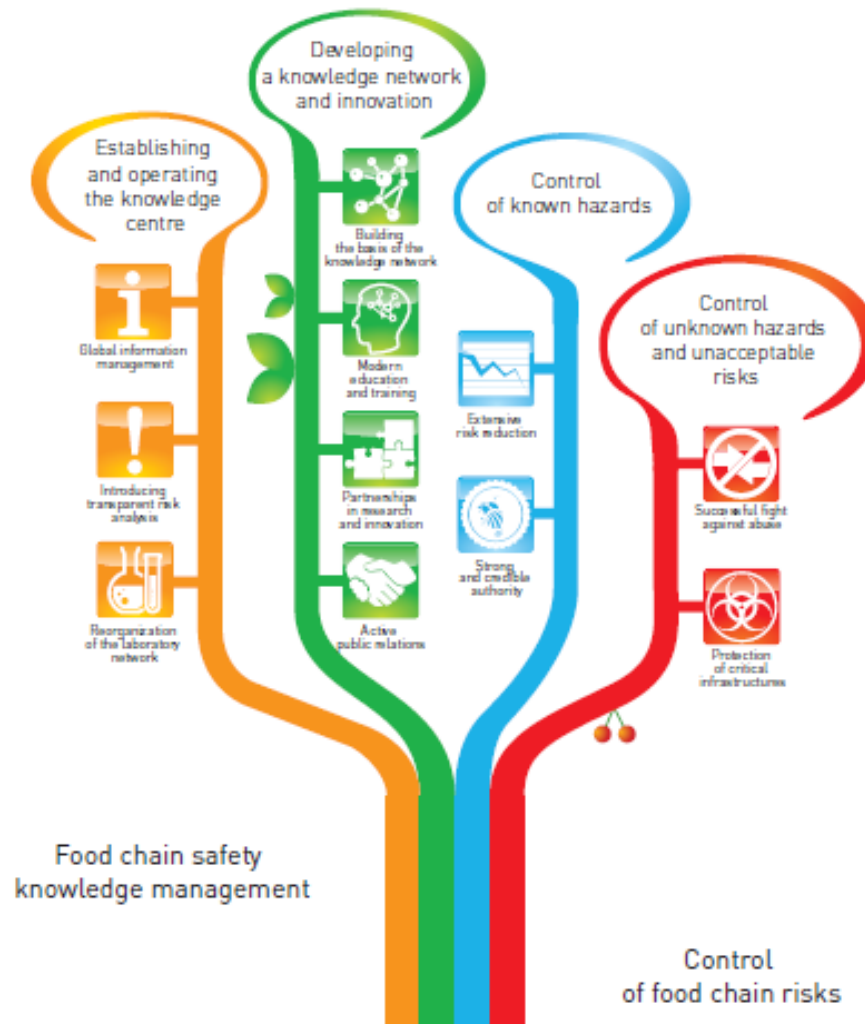


Élelmiszerlánc-biztonsági
STRATÉGIA 2013-2022

FOOD CHAIN SAFETY STRATEGY 2013-2022

Food Chain Safety Strategy

4 strategic objectives / 11 different programs





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FIGHT AGAINST FRAUD **IN PRACTICE**

Setting an ORGANIZATION

Establishment of NÉBIH Directorate of Priority Cases

Purposes:

- need for controls covering the entire country and experts in fighting against illegal food chain safety incidents
- possibility of simultaneous controls at different sites
- actions of first instance
- quick response to incidents covering several counties, affecting large population

Building COMPETENCES

Multidisciplinary staff:

- veterinary specialists of food-hygiene and epidemiology
- engineers of horticulture and agriculture
- legal experts
- computer engineers
- auditor and case investigator from NAV
- law enforcement agent

Continuous training

Setting a **METHODOLOGY**

Methodology different from usual control:

- deep data collection and analysis
- using specific knowledge (multidisciplinarity)
- preparation of well-founded and detailed action plan
- involving other authorities
- simultaneous execution
- using special tools

Ensure **INFORMATION FLOW**

Information is essential

- ★ collection:
 - preliminary data collection from databases
 - information from other authorities (!)
- ★ analysis
 - data mining, network science, etc.
- ★ dissemination
 - sharing information with authorities
 - consumer and FBO awareness raising

Data acquisition, data collection, forensic imaging

- We are able to acquire data at two spots simultaneously in a **certified** way
 - Basis for certification: tools, procedures, special staff and 25 characters MD5 hash (unique security code)
- **Automatic** data acquisition (e.g. if we need only the Word and Excel files on a computer) at 10 spots simultaneously
- Analysis of acquired data on dedicated special computers with dedicated software at NÉBIH Directorate of Priority Cases.



Hardware used in certified on-site data acquisition

- Forensic Falcon Imaging Solution
- Tableau Forensic Ultimate Supr Kit hardver
- Intelligent Computer Solutions Releases the New Image MASSter™ Solo-4 Forensic Ruggedized hardware
- Intelligent Computer Solutions Releases the New Image MASSter™ Solo-4 Forensic SUPERKIT hardware
- ICS 12TB USB 3.0/eSATA Data Storage IM Solo-4 (for large size data)
- VibeTech USB Writeblocker (rapid data acquisition of pendrives and external drives)
- Other hardware: laptops, pendrives, external drives, etc.

Hardware and software used for data analysis

- Analysis computer (for further deep data analysis):
 - Intel Core i7-3930K, Asus P9X79 WS alaplac, 16GB 2133MHz DDR3, 2x Asus GTX 670 DC2 2GB GDDR5, Tableau T35689iu Forensic Bridge IDE, SATA, SAS, USB 3.0/2.0/1.1, FireWire 400/800
- MD5 Virtual Forensic Computing 2 software (creating virtual machines; emulator software)
- Accessdata FTK 5.X software (data analysis, data mining)
- MacQuisition - Forensic Imaging Solution (for data acquisition of Apple computers)
- Guidance Encase Portable (on-site data acquisition automatization)
- Elcomsoft Password Recovery Bundle Forensics Edition (password recovery)



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RESULTS

Examples of promptness and efficiency

- suspicion of methyl alcohol poisoning: the distribution of the suspicious product was prohibited and sampled for further investigation **in 30 minutes** after the notification
- infringements were discovered in approximately **85%** of the investigations

Experiences - 2012

Operative staff:	6 people
Investigations:	54 (covering the whole country)

VAT-fraud and tax evasion

discovered together with NAV:	2.8 billion HUF
Fines:	87 million HUF
Restricted or special distribution:	223 tons of food and PPP
Prohibited distribution or destruction:	513 tons of food chain products
Infringements found:	85% of the cases

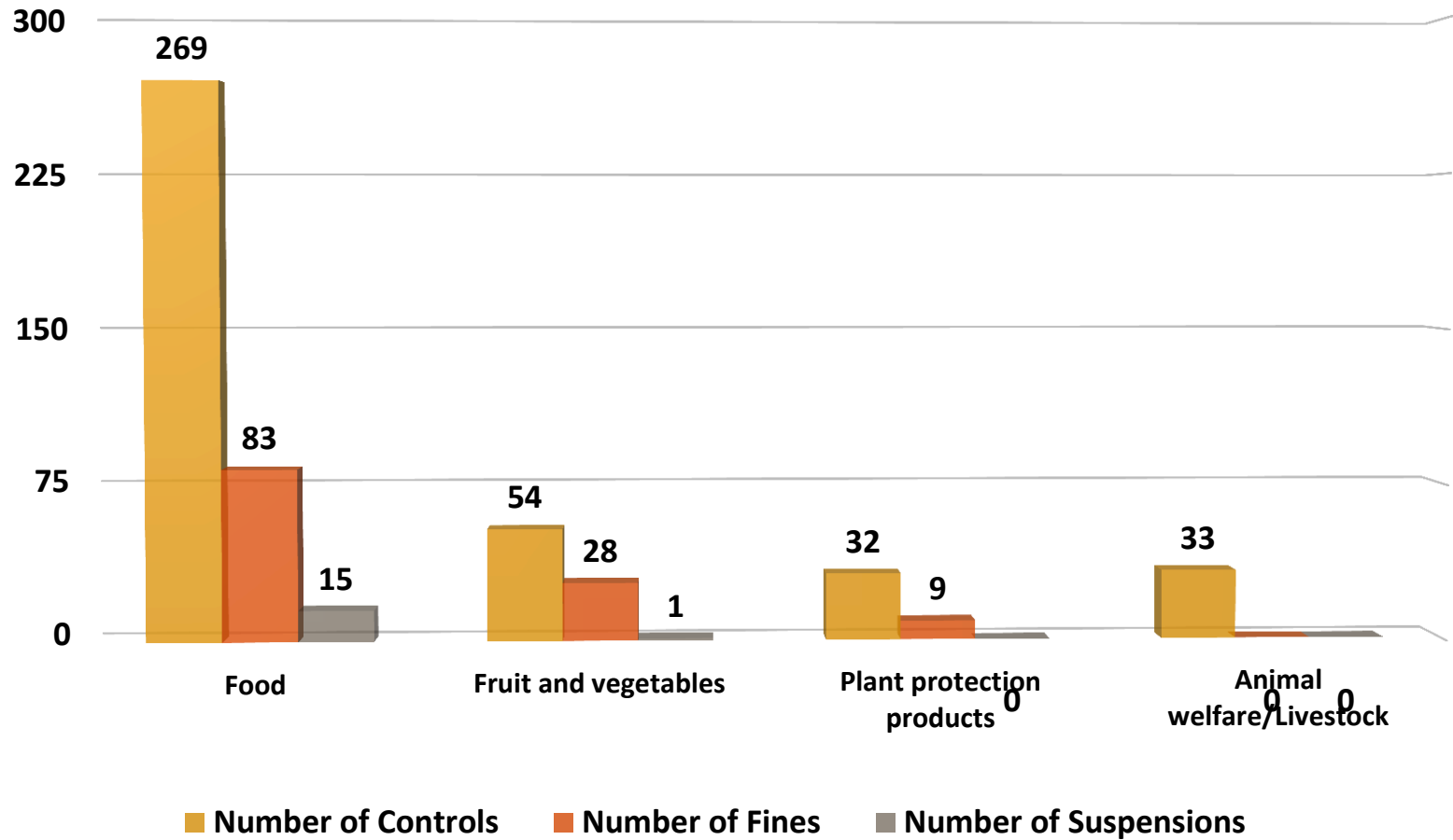
Experiences - 2013

Operative staff:	19 people
Investigations:	551 (covering the whole country)

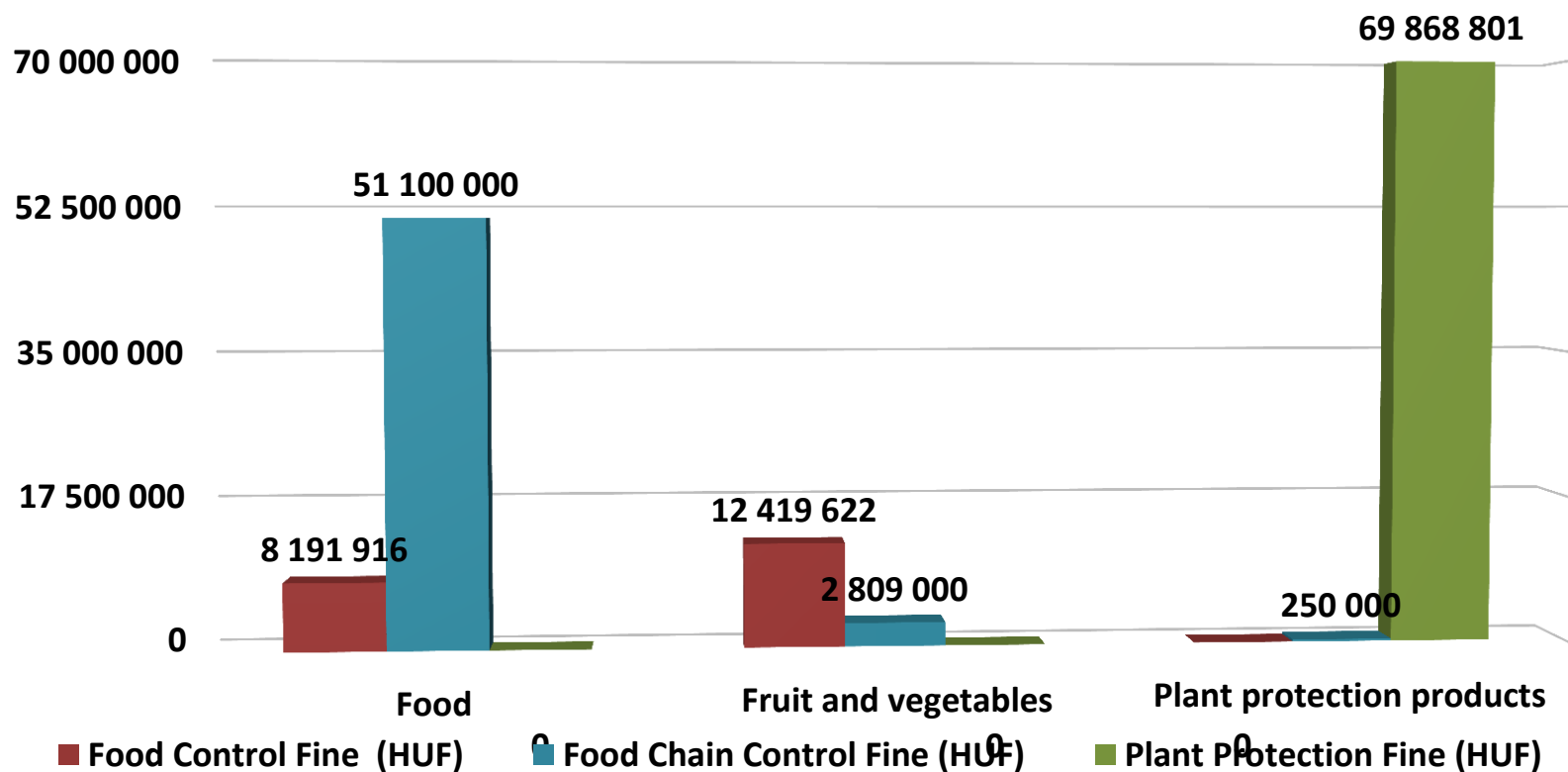
VAT-fraud and tax evasion

discovered together with NAV:	8.2 billion HUF
Fines:	199.2 million HUF
Procedure fee:	42 million HUF
Actions in connection of products:	3490 tons of food chain products
Destruction:	1031 tons of food chain products
Infringements found:	85% of the cases

Number of special controls, fines and suspensions in 2013



Fines imposed during special controls in 2013



Experiences - 2013

Main infringements discovered in the food chain:

- illegal slaughter
- re-labelling of expired goods
- changes /alteration in nutritional values
- plant protection product (pesticides) adulteration
- abuse of legal relationship of small producers



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EXAMPLES

Recent adulterations in the food chain



Assessment of chestnut puree in Hungary - 2013

Background:

- November and December 2013
- NÉBIH Directorate of Priority cases carried out investigations on commercial frozen chestnut puree

Measurements:

- National Reference Laboratory for Microbiology of NÉBIH Food and Feed Safety Directorate
- according to EU-RL GMFF validated methods for rice and potato endogenous reference genes

Method for the detection of rice and potato - DNA based Real-Time PCR technique



Assessment of chestnut puree in Hungary - 2013

Results:

- 37 samples were examined
- 10 lots contained rice, 4 lots contained potato
- 14 products of 2 producers have been withdrawn by the NÉBIH Directorate of Priority Cases, fines were imposed
- 66 tons of chestnut puree have been withdrawn
- Follow-up: 2 months after the case the producers were re-checked. No infringement was found

Difficulties of quantification:

- no objective for quantification
- efficiency of DNA isolation can be influenced by the high sugar content
- determination of the efficiency of DNA isolation
- heat treated meat products need appropriate control samples
- in case of models above 5% the evaluation of graphs is difficult, quantities cannot be identified

Pálinka adulteration

Products (1966 I) named *plum, apricot and peer pálinka* were withdrawn from the market because of alcohol content of non-fruit origin.

Suspension **was imposed for the production and marketing of the products.**

Regarding the investigation of the production registers it was discovered that the original **mixed-fruit pálinka was requalified** and marketed as plum, apricot, and peer pálinka.

According to the Act LXXIII of 2008 on the National Pálinka Council it can only be released as **mixed-fruit pálinka.**



Further cases concerning cocoa powder and cheese

Cocoa powder:

- 150 kg fake cocoa powder has been distrained
- packaging material differed from the original one only in the size and colour (20-22%; 125 g)
- the supplementary cocoa powder was not harmful but of poor quality, pale colour, etc.



Cheese:

- Polish origin (hard cheeses, e.g.: Edam type)
- non-compliant because of their vegetable fat content
- Polish authorities were notified through via RASFF
- 40 tons of cheese lots were withdrawn



Pesticide adulteration

High risks associated with adulterated pesticides

- No investigation on health effects: the can contain potentially hazardous, toxic contaminations, uncontrolled by-products having an acute or chronic health effect on users;
- May damage or even destroy the crops. If the adulteration is verified, the crops should be destroyed;
- The user of an adulterated pesticide may be imposed a severe fine;
- No consultancy nor background services nor guarantee from the producer;
- The final products may contain unknown residues posing health risk to consumers as well;
- The adulterated pesticides may pose an environmental risk having long term effect on the whole food chain.

A pesticide case

- Financial problems of a pesticide wholesaler: giving back pesticide lots to producers
- Producers had examined the lots: suspicion of adulteration
- Report to NAV Criminal unit and NÉBIH
- NÉBIH Directorate of Priority Cases and County GOs controlled the retailers: distribution of suspect products prohibited (3600 1 liter herbicide and more than 23000 50 ml fungicide)
- Outdated pesticide lots were sold to retailers and end-users (data acquisition): official procedure and sanctions were delivered

A pesticide case

- County GOs issued 296 warnings and 16.7 million HUF plant protection fee. NÉBIH issued 46 million HUF plant protection fee.
- Members of Hungarian Chamber of Plant Protection Professionals and Doctors of Plant Medicine were involved in the retail: 17 members were warned during ethical investigation.
- NAV continues the crime investigation in the case of pesticides of unknown origin (3600 1 liter herbicide and more than 23000 50 ml fungicide)
- The case and the whole process led to amending the legislation: the plant protection fee has been increased to 150 million HUF in the Act on Food chain and its official control

The adulterated herbicide

	Original product	Product suspected for adulteration
<i>Smell</i>	<i>naphthalene</i>	<i>xylene, toluene</i>
<i>Label on bottle neck</i>	<i>AGROCHEMICALS FITOSANITARIO</i>	<i>AGROCHEMICALS</i>
<i>Bottle closing foil</i>	<i>aluminium foil</i>	<i>white, paper-aluminium dual layer foil</i>
<i>Bottle labeling</i>	<i>nice printing, sharp contours, square corner</i>	<i>blurred printing, round corners</i>
<i>Fire point</i>	<i>above 100°C</i>	<i>34°C</i>

Suspect



Original



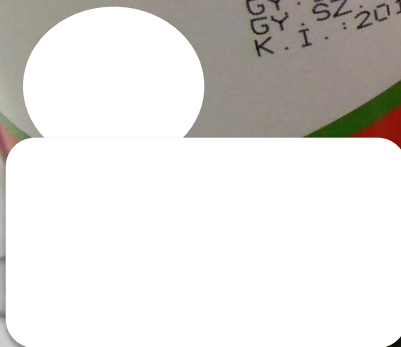
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AGROCHEMICALS

GY. I.: 2012/09
GY. SZ.: EFKH003136
K. I.: 2012/09

AGROCHEMICALS FITOSAN

GY. I.: 2012/09
GY. SZ.: EFKH003136
K. I.: 2012/09



szerszer
tavaszi árpa, rozs, tritikále
mefenpir-dietil, 75 g/l mefenpir-dietil
vizes fázisban (EW)

szí árpa, rozs, tritikále
mefenpir-dietil, 75 g/l mefenpir-dietil
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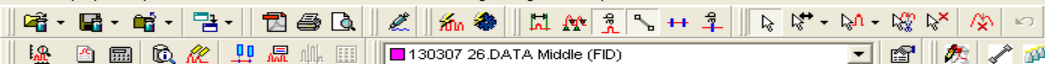
2013.02.19 14:12

Suspect

Original



2013.02.19 14:13



Data Files :

- 130307 27
 - data
 - method
 - results
- 130307 17
 - data
 - method
 - results
- 130307 26
 - data
 - method
 - results

130307 26.DATA

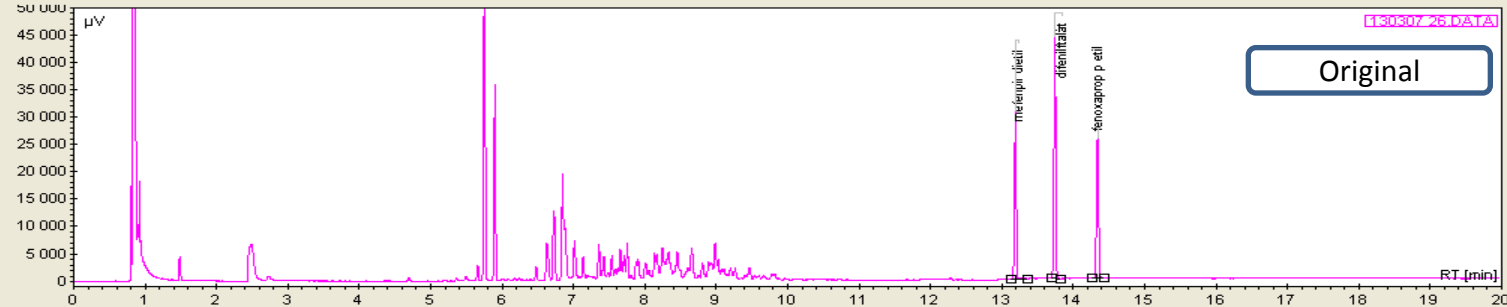
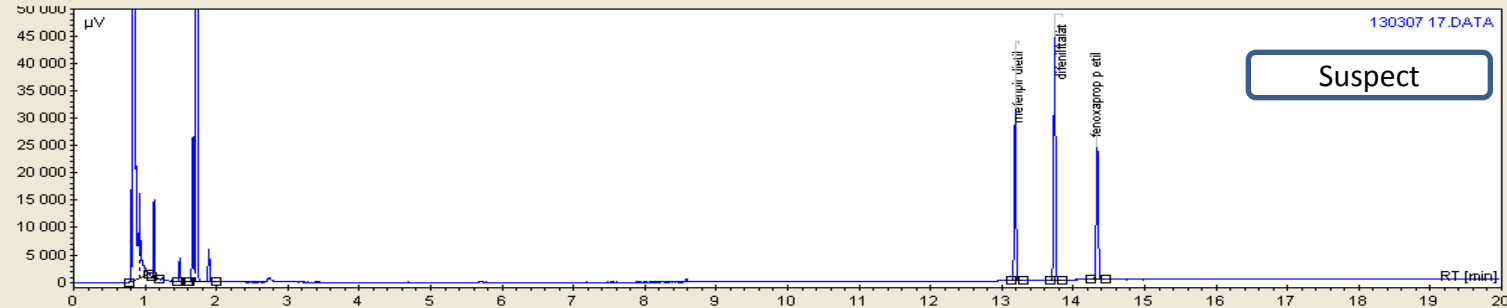
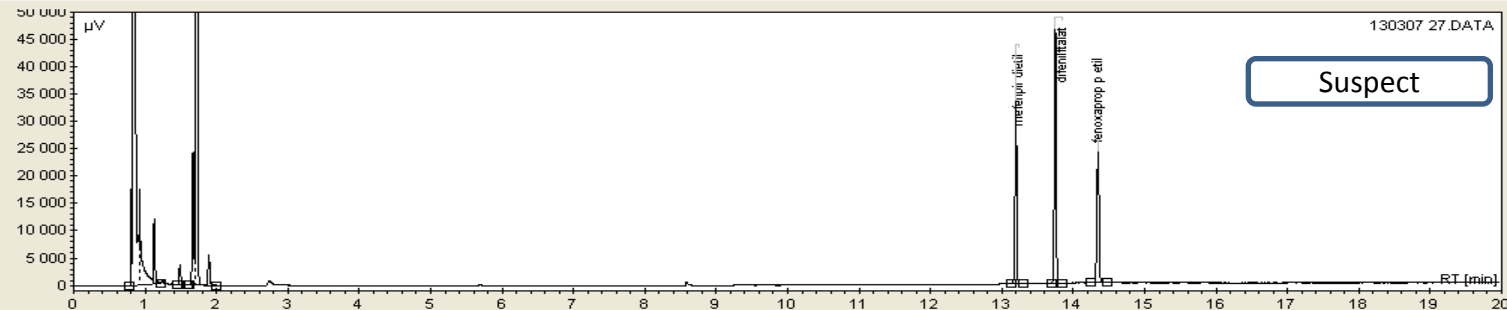
- manual operation
- peak report
- group report

Data Systems Calibration

130307 26.DATA x = 5,17 y = -5 307 n = 11990 NEBIH NTAI Velence Analitika 0 file(s) in queue

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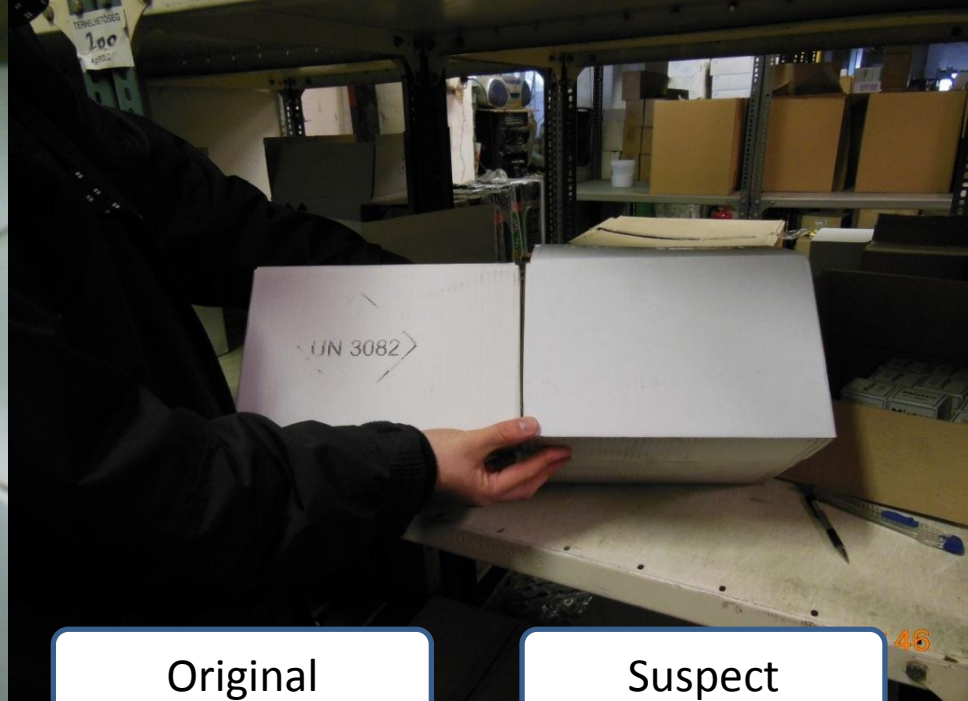
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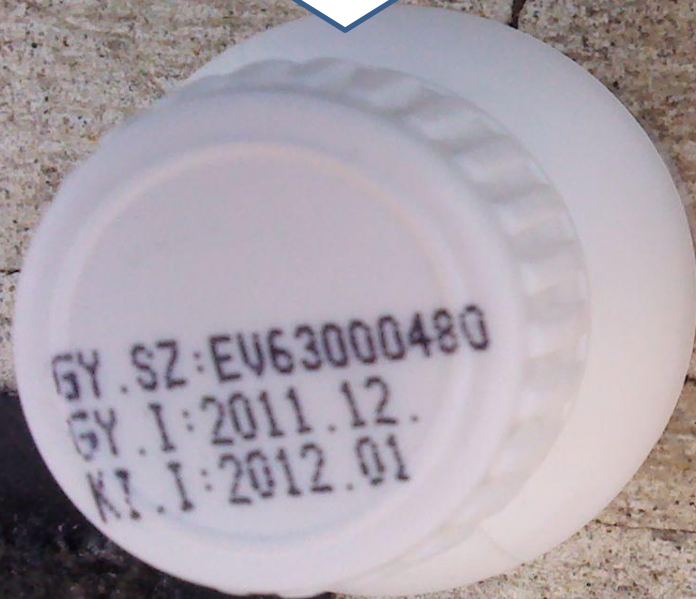
#	Name	Time [Min]	Quantity [mg/ml]	Height [μV]	Area [μV.Min]	Area % [%]
1	mefenpir dietil	13,19	0,00	30559,4	872,6	28,531
3	difeniltalát	13,74	0,00	44187,8	1281,0	41,883
4	fenoxaprop p etil	14,34	0,00	25489,8	892,9	29,195
Total			0,00	100424,1	3058,4	100,000

The adulterated fungicide

	Original product	<i>Product suspected for adulteration</i>
<i>Smell</i>	<i>Szerves aminok (romlott hal)</i>	<i>Nincs ilyen szaga</i>
<i>Density</i>	<i>0.967 g/cm³</i>	<i>1.014 g/cm³</i>
<i>Data on closure</i>	<i>production number, production time and packaging time</i>	<i>production number and production time</i>
<i>Production number</i>	<i>10 characters</i>	<i>8 characters</i>
<i>Bottle closing foil</i>	<i>pale striped</i>	<i>white</i>
<i>Closing of carton</i>	<i>tape with writing „domestic licensee's name”</i>	<i>no writing</i>
<i>Labeling of carton</i>	<i>production number, production and packaging time and UN number</i>	<i>no production number, production or packaging time or UN number</i>

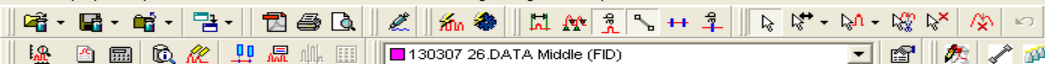


Original



Suspect



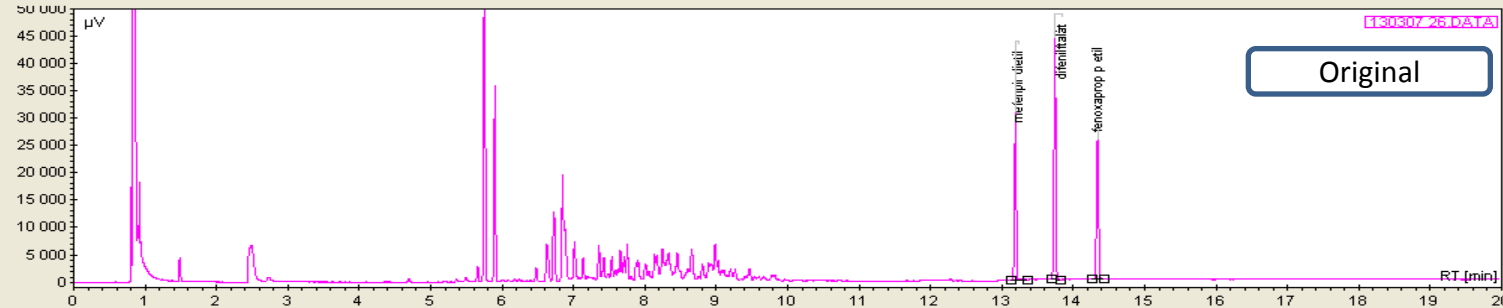
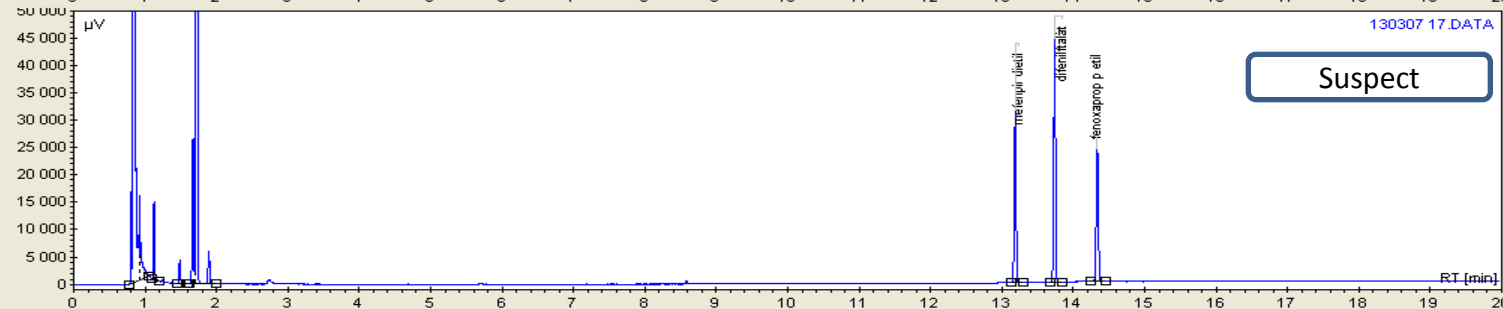
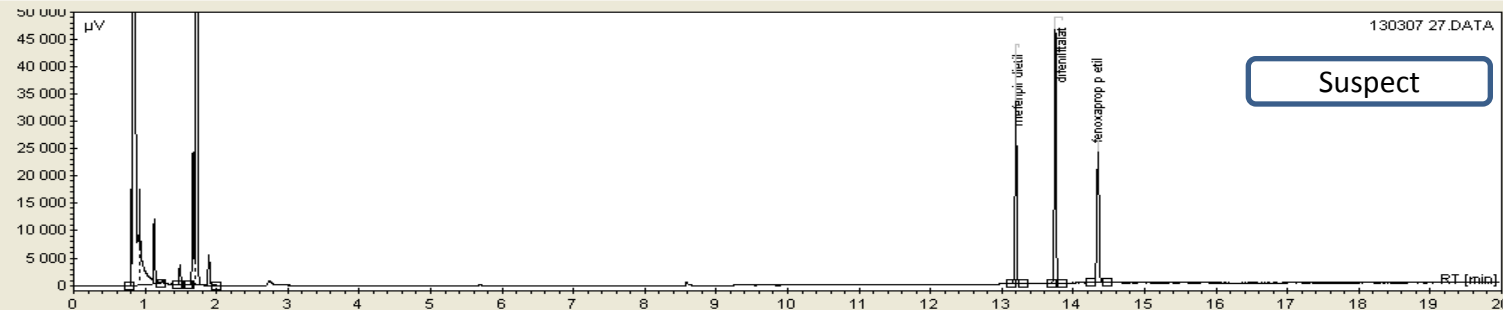


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IMPORTANCE OF COOPERATION AND SHARING INFORMATION

OPSON III. International Action

A joint INTERPOL-Europol operation, ***targeting fake and substandard food and drink*** and the ***organized crime networks*** behind this illicit trade.

Targets:

- preventing the trade of fake products
- identifying new/emerging hazards
- exploring perpetration manners
- preparing and developing risk profiles
- identifying criminal organizations

Participation:

- 33 states in December 2013
- Hungary – NAV and NÉBIH

OPSON III. Hungary

NAV contacted the National Food Chain Safety Office in the case the control of a suspicious Bulgarian truck.

The amount of 21 566 l **raw milk** was impounded and destructed because of its **high aflatoxin content**.

Red wine (564.25 l) of **unknown origin** was found in a German car and seized.

Different types of **vodka** (237.8 l) were impounded on a premise of a trader without excise license, because of the misleading information, regarding the alcohol content, on the label.

OPSON actions are unquestionably necessary and the Hungarian participation is reasonable.

Food Fraud Network

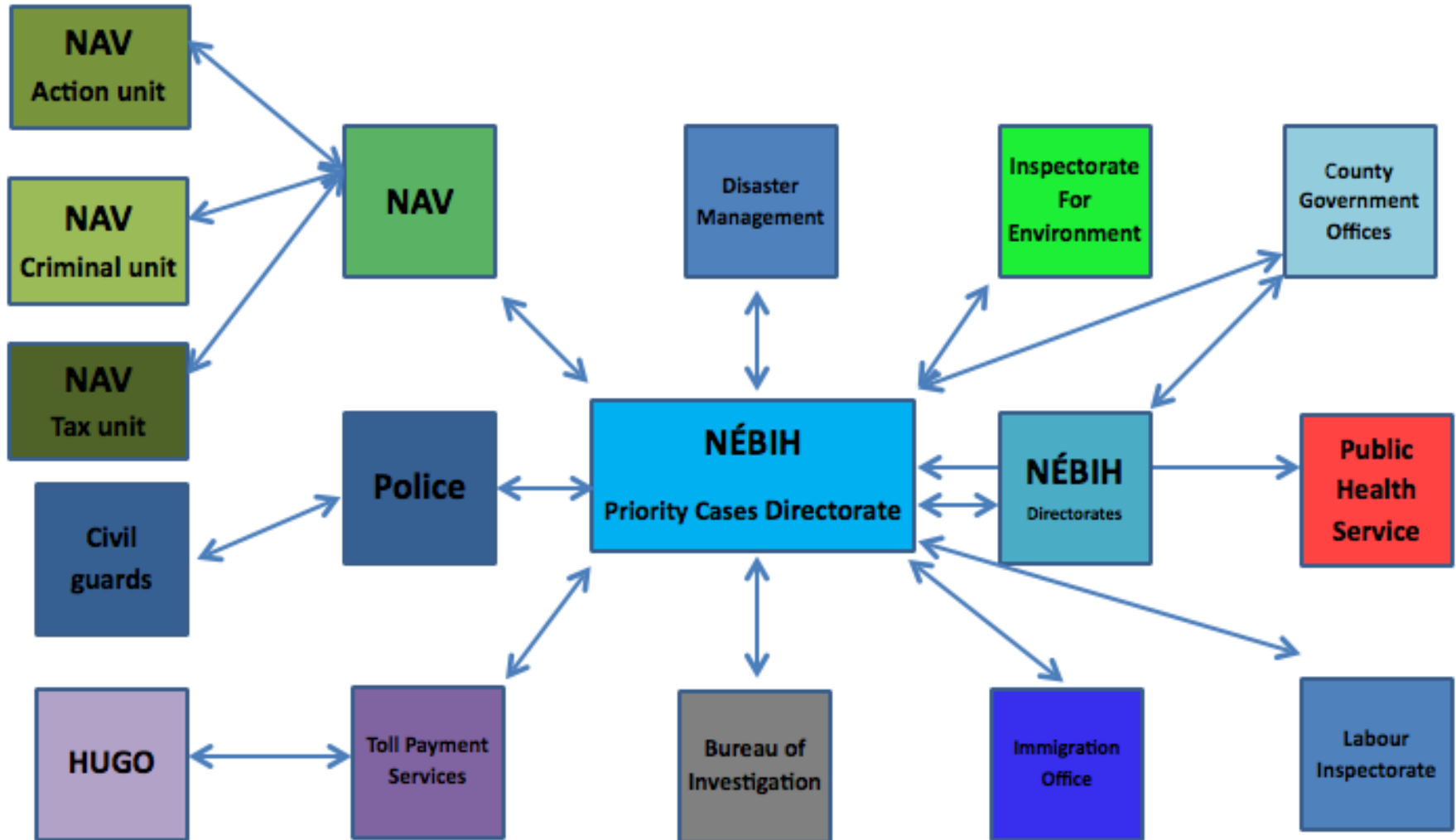
Information network on food adulteration that has been established for the information and data exchange on ***potential cases of cross-border fraud***.

Handles matters that are related to ***intentional, economically motivated violations of food law requirements*** instead of cases posing health, like the Rapid Alert System for Feed and Food (RASFF).

FFN Working group:

- established in July 2013 following the horsemeat scandal
- comprises of the 28 member states and the non-EU Member States Iceland, Norway, Switzerland, and the Commission (Directorate-General for Health and Consumers)
- the development of a dedicated IT tool, similar to the RASFF, **proposed start – 2014 autumn**

Cooperation NETWORK



Cooperation with NAV

- Work in cooperation:
 - steps: preliminary consultation, sharing information, action plan, implementation, evaluation
 - a case usually lasts for 10-12 days
- Data saving: action plan for data saving (especially when action is on several sites simultaneously), then sharing and common evaluation of data
- Future: joint working group meetings, sharing experience, joint control of e-commerce.



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FUTURE PLANS

10th program of the Strategy: Successful fight against abuse



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Planned actions

- **Application of new traceability solutions**
(flow of goods, authority overseeing and monitoring the network, massive development of control methods)
- **Precise definition of quality standards – reduction of counterfeiting origin and prevention of adulteration**
(create maps of origin, reference databases; measurable product parameters)
- **Strengthen strategic cooperation, building partnerships with tax and other authorities**
(legislative, fiscal, investigative tools and international cooperation)
- **Control of online trade**
- **Suppression of unfair market practices**
(cooperation of NÉBIH and product chain regulators)

Plans within **NÉBIH Directorate of Priority Cases**

- Development of the Operative Centre:
 - Videoconference connections
 - Connection to the Common digital radio system (EDR) used for direct communication with law enforcement agencies
 - Access to the data of HUGO (electronic toll) system and NAV
 - Increasing data analysis capacities
 - Using drones in on-site investigations
 - Direct, real-time online video link to the control for decision makers
- Widening the cooperation and information exchange with other authorities
- Training the staff of other authorities



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THANK YOU FOR YOUR ATTENTION!