

PREGLED BUDUĆIH AKTIVNOSTI NRL-a VIRUSI U HRANI

Radionica RH NRL-a za

E. coli, Campylobacter, Salmonella, Listeria monocytogenes i Koagulaza pozitivne stafilokoke

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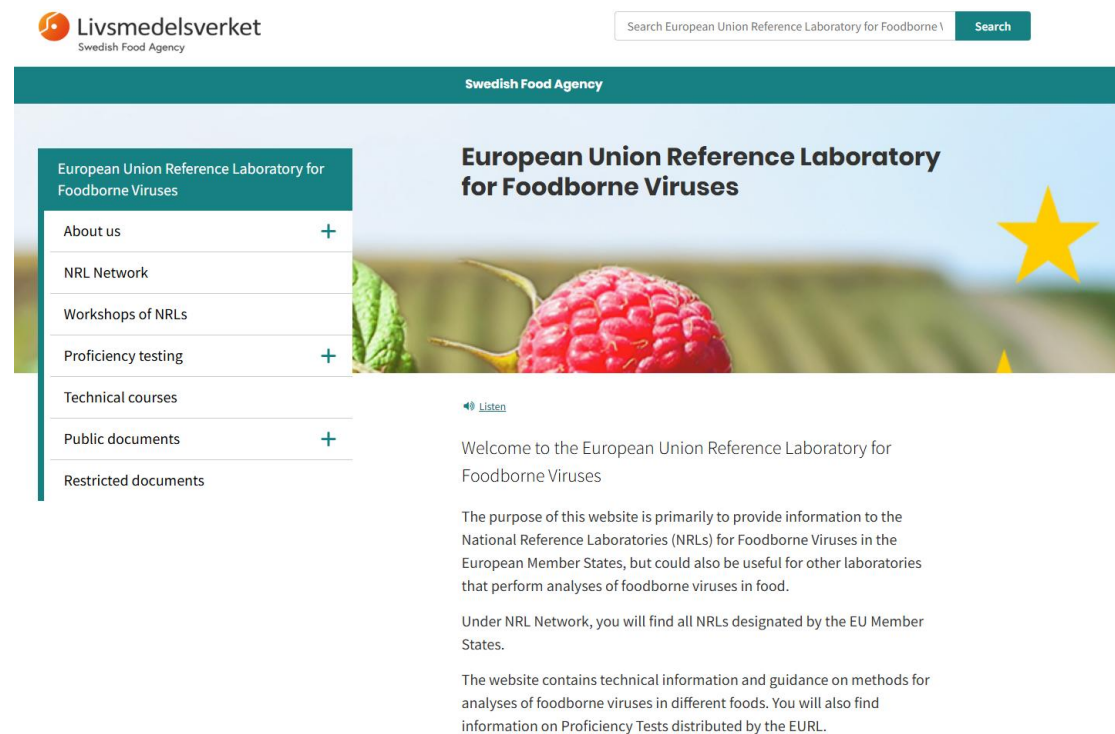
Marija Šušnjar mag. sanit. ing., Marina Posavec mag. sanit. ing.

European Union Reference Laboratory for Foodborne Viruses (EURL) – sukladno Uredbi (EU) 2017/625

- Švedska agencija za hranu (SFA) - Swedish Food Agency, Box 622, SE - 751 26 Uppsala, Sweden

<https://www.livsmedelsverket.se/en/business-legislation-and-control/eurl-foodborne-viruses/>

- Počeo s aktivnostima u siječnju 2018.g.
- Koordinira rad nacionalnih referentnih laboratorija (NRL), organizira PT sheme, radionice



The screenshot shows the website of the European Union Reference Laboratory for Foodborne Viruses, hosted by the Swedish Food Agency (Livsmedelsverket). The page features a teal header with the agency's logo and name. A search bar is located in the top right corner. The main content area is divided into a left sidebar with a menu and a main text area. The menu includes links to 'About us', 'NRL Network', 'Workshops of NRLs', 'Proficiency testing', 'Technical courses', 'Public documents', and 'Restricted documents'. The main text area has a large yellow star graphic and a background image of raspberries. It contains a welcome message, a description of the website's purpose, and information about the NRL Network and the availability of technical information and guidance.

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European Union Reference Laboratory for Foodborne Viruses

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Welcome to the European Union Reference Laboratory for Foodborne Viruses

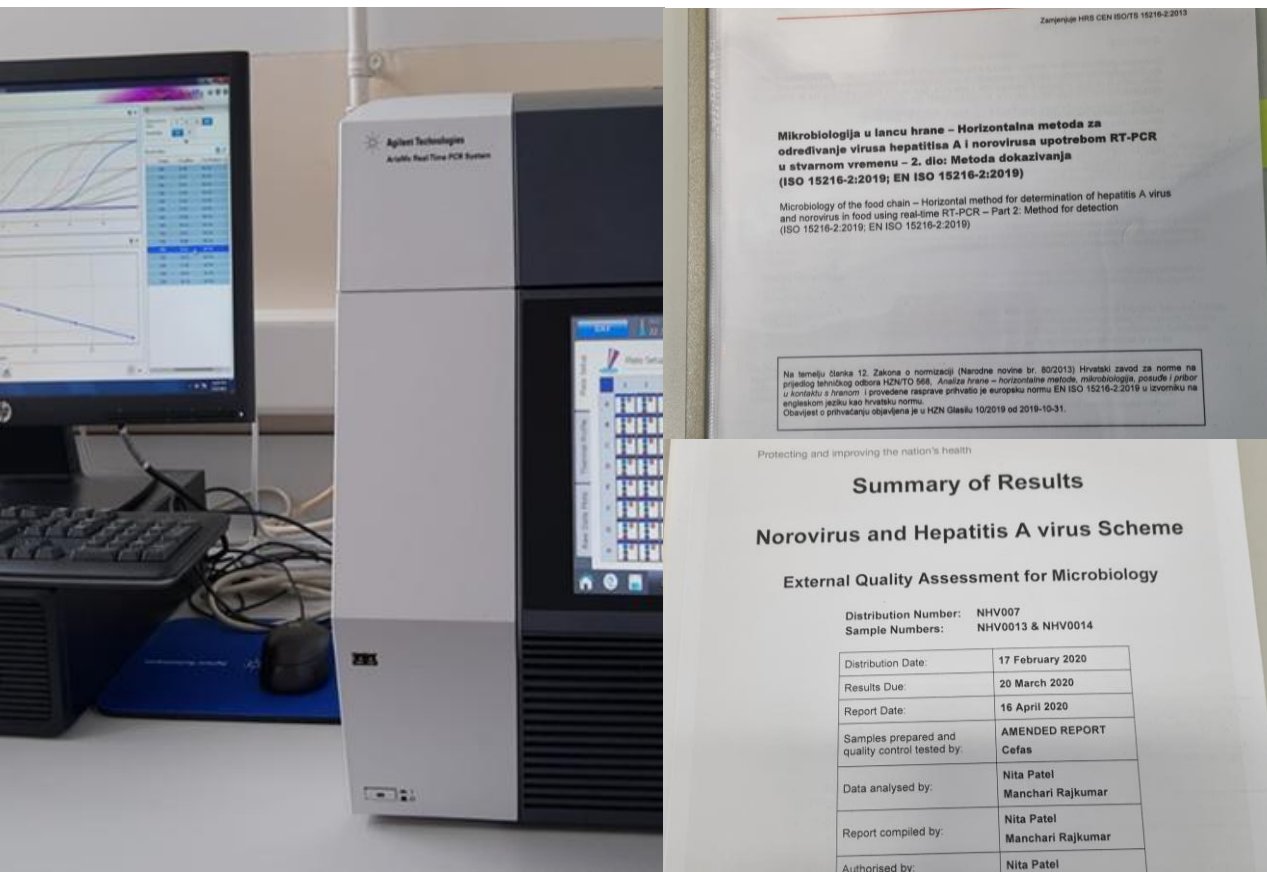
The purpose of this website is primarily to provide information to the National Reference Laboratories (NRLs) for Foodborne Viruses in the European Member States, but could also be useful for other laboratories that perform analyses of foodborne viruses in food.

Under NRL Network, you will find all NRLs designated by the EU Member States.

The website contains technical information and guidance on methods for analyses of foodborne viruses in different foods. You will also find information on Proficiency Tests distributed by the EURL.

Nacionalni referentni laboratorij (NRL)

- Do sada imenovan je 31 NRL u 26 različitih zemalja EU-a
 - Postupak objave NRL-a za Hrvatsku je u tijeku
 - Glavna svrha EURL-a i NRL-a -usklađivanje metoda koje se koriste za službenu kontrolu virusa u hrani
- **NRL HR - Hrvatski zavod za javno zdravstvo** – akreditirana metoda (PT HPE 2025.)



Virusi u hrani

- Adenovirus
- Flavivirus (incl. tick-borne encephalitis virus)
- **Hepatitis A virus**
- Hepatitis E virus
- **Norovirus**
- Rotavirus



Foodborne viruses: occurrence and control

SUMMARY

The European Food Safety Authority (EFSA) asked the Panel on Biological Hazards to initiate a self tasking issue with the purpose to provide up-to-date information on the present knowledge on the occurrence and control of foodborne viruses. The BIOHAZ Panel carried out a review of the available information in the scientific literature with regards to the biology, epidemiology, diagnosis and public health importance of foodborne viruses. Where possible the review covered primary production, food harvesting, food processing, and storage/retail until consumption. Data needs to support a risk assessment were also identified. In addition possible control options and their anticipated impact to prevent or reduce the number of foodborne viral human infections were identified including the scientific reasons for and against the establishment of microbiological criteria for viruses for certain food categories (e.g. fresh produce, bivalve molluscs etc).

The opinion draws conclusions on the biology, epidemiology, diagnosis and public health importance of the foodborne viruses Norovirus (NoV), Hepatitis A virus (HAV) and Hepatitis E virus (HEV).

Norovirusi i virus hepatitisa A - virusi koji se prenose hranom

Norovirus – ss RNA virus bez ovojnice (porodica Caliciviridae)

Virus se dijeli u 10 genogrupa (označenih GI do GX)

Unutar tih genogrupa prepoznato je 49 potvrđenih genotipova (na osnovu razlika u proteinu kapside, VP1)

Klasifikacija uzima u obzir i tzv. “P-tipove” — na osnovu dijela genoma koji kodira polimerazu (RdRp). Do sada je prepoznato 60 P-tipova

Akutni gastroenteritis

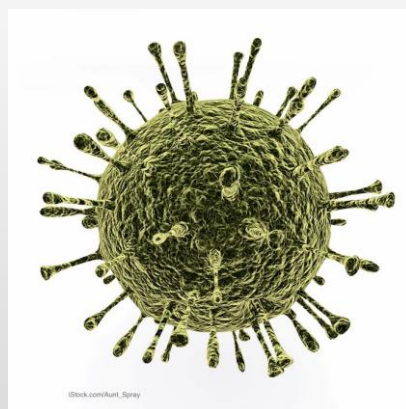
Virus hepatitisa A - ss RNA virus bez ovojnice (porodica Picornaviridae)

Jedan serotip – 6 genotipova (I-VI) – za čovjeka značajni I do III (sa podtipovima)

Akutni hepatitis

EFSA 2023. – Postotak ukupnog broja prijavljenih slučajeva u EU

1. *Salmonella* 19.6 %
2. *Bacillus cereus* toxins 8.3 %
3. **Norovirus 6,3 %**

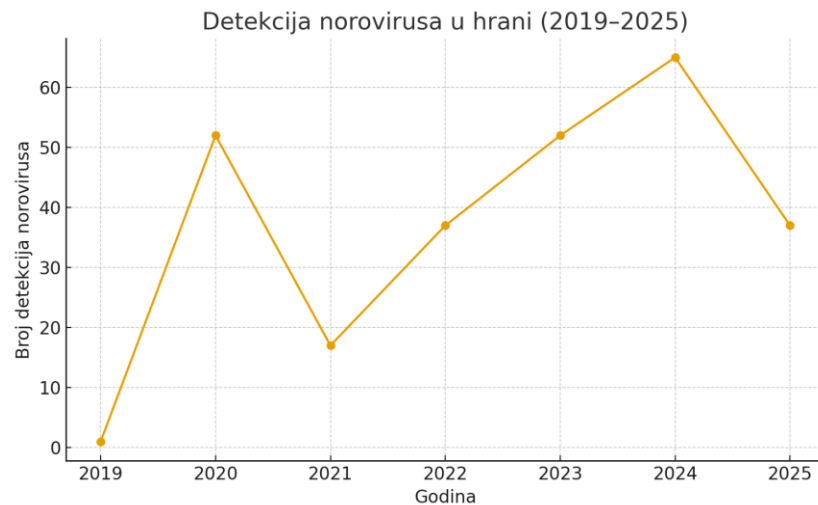


Type of agent		Outbreaks				Cases of illness						
		Total (strong-evidence)	% of total ^a	Reporting rate per 100,000		Human cases		Mean outbreak size (cases) and range (min-max)	Hospitalisations		Deaths	
				2023	2019–2022	N	% of total ^a		N	% of cases ^b	N	% of cases ^b
Viruses	Bacterial toxins, unspecified	67 (4)	1.2	0.01	0.12	372	0.71	5.6 (2–43)	6	1.6	0	0
	Subtotal	893 (88)	15.7	0.20	0.18	10,661	20.5	11.9 (2–426)	250	2.3	14	0.13
	Adenovirus	3 (0)	0.05	< 0.01	< 0.01	13	0.02	4.3 (2–8)	2	15.4	0	0
	Flavivirus (incl. tick-borne encephalitis virus)	3 (3)	0.05	< 0.01	< 0.01	36	0.07	12.0 (2–28)	34	94.4	0	0
	Hepatitis A virus	11 (2)	0.19	< 0.01	< 0.01	46	0.09	4.2 (2–13)	36	78.3	0	0
	Hepatitis E virus	3 (0)	0.05	< 0.01	< 0.01	6	0.01	2.0 (–)	0	0	0	0
	Norovirus and other calicivirus ^d	359 (65)	6.3	0.08	0.06	8149	15.6	22.7 (2–580)	99	1.2	1	0.01

RASSF

- od 2019. do 2025. zabilježena je **261 obavijest** o prisutnosti norovirusa u hrani;

- **školjke** : 228
- **voće i povrće** : 27
- **ribe** : 3
- **rakovi** : 3



- Norovirus je najčešće detektiran u školjkama sa značajnim porastom u 2024. godini

- Horizontalna metoda za dokazivanje hepatitis A virusa i norovirusa upotrebom RT-PCR u stvarnom vremenu – 2. dio: Metoda dokazivanja HRN EN ISO 15216-2:2019 (EN ISO 15216-2:2019; ISO 15216-2:2019)

Annex A (normative)

Diagram of procedure

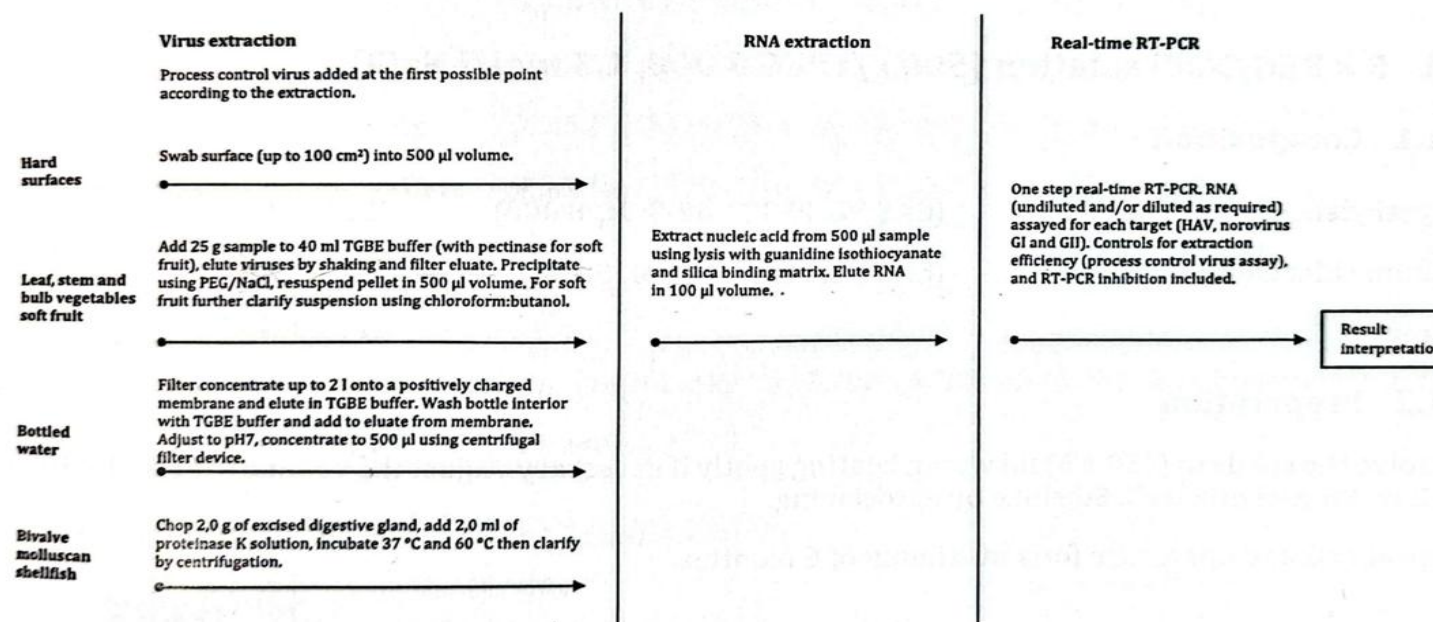


Figure A.1 — Diagram of procedure

Izvor: ISO 15216-2:2019

Službene kontrole



Ispitivanje uzoraka iz službenih kontrola od 2022.g

- Tijekom 2025. u RH provedena je službena kontrola uzoraka bobičastog voća
- Svi rezultati ispitivanja bili su sukladni odredbama Uredbe (EZ) br. 178/2002 i zdravstveno ispravni.

EURL

SOP - Qualitative detection of norovirus and hepatitis A virus in soft fruit. Version: 2018-11-05



Standard Operating Procedure

for

Qualitative detection of norovirus and hepatitis A virus in soft fruit

Version No.	Date	Comments
1	2018-11-05	Based on the generic protocol issue 3 by date 25/08/15 produced at the European Union Reference Laboratory for monitoring bacteriological and viral contamination of bivalve molluscs at The Centre for Environment, Fisheries & Aquaculture Science, Weymouth Laboratory

1

- [Standard Operating Procedure for quantification of HAV and noroviruses in bivalves](#)
- [EURL Standard Operating Procedure for detection of HAV and noroviruses in soft fruit](#)
- [EURL Standard Operating Procedure for detection of HAV and noroviruses in leaf stem and bulb vegetables](#)
- [EURL Standard operating procedure for Preparation of dsDNA and external control RNA for detection of hepatitis A virus and norovirus .pdf](#)
- [EURL Standard Operating Procedure for qualitative detection of HAV and noroviruses on surfaces.pdf](#)



EURL Guidance document for verification of ISO 15216-2:2019

Version history

Version	Date	Changes
Version 1	231024	

- [EURL Guidance document for verification of ISO 15216 1 2017](#)
- [EURL Guidance document for verification of ISO 15216 2 2019](#)

Primjenjivi dokumenti

- **UREDBA (EU) 2017/625** EUROPSKOG PARLAMENTA I VIJEĆA od 15. ožujka 2017. o službenim kontrolama i drugim službenim aktivnostima kojima se osigurava primjena propisa o hrani i hrani za životinje, pravila o zdravlju i dobrobiti životinja, zdravlju bilja i sredstvima za zaštitu bilja
<https://eur-lex.europa.eu/legal-content/HR/TXT/?uri=CELEX:32017R0625>
- **HRN EN ISO 15216-1:2017/A1:2021** Mikrobiologija u lancu hrane -- Horizontalna metoda za određivanje virusa hepatitisa A i norovirusa upotrebom RT-PCR u stvarnom vremenu -- 1. dio: Metoda za kvantitativno određivanje (ISO 15216-1:2017/Amd 1:2021; EN ISO 15216-1:2017/A1:2021)
- **HRN EN ISO 15216-2:2019** Mikrobiologija u lancu hrane -- Horizontalna metoda za određivanje virusa hepatitisa A i norovirusa upotrebom RT-PCR u stvarnom vremenu -- 2. dio: Metoda dokazivanja (ISO 15216-2:2019; EN ISO 15216-2:2019)
- **The Swedish Food Agency** <https://www.livsmedelsverket.se/en/>
- **EFSA** <https://www.efsa.europa.eu/en>
- **Rapid Alert System for Food and Feed (RASFF)** https://food.ec.europa.eu/food-safety/rasff_en

Hvala na pažnji!

Radionica RH NRL-a za

E. coli, *Campylobacter*, *Salmonella*, *Listeria monocytogenes* i Koagulaza pozitivne stafilokoke

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