
PROVERE SISTEMA BEZBEDNOSTI HRANE – NOVI ZAHTEVI I IZAZOVI BEZBEDNOSTI HRANE

Dr Ilija Đekić, vanredni profesor



Innovative Food Product Development Cycle: Frame for Stepping Up Research Excellence of FINS



ILIJA ĐEKIĆ

- Vanredni profesor, Katedra za upravljanje bezbednošću i kvalitetom hrane. Poljoprivredni fakultet Univerziteta u Beogradu
- Naučno-istraživački rad: Performanse bezbednosti i kvaliteta hrane i uticaj na životnu sredinu prehrambenih pogona
- H2020 projekti: „Faster Upcoming Technology Uptake Relevant for the Environment in FOODs Drying“ (**FutureFOOD**) i „**MYCOKEY** - Integrated and innovative key actions for mycotoxin management in the food and feed chain“
- Publikacije: 5 udžbenika i 100 radova (30+ radova u časopisima koje citira © ISI Web of Knowledge)
- 600+ provera preko druge i treće strane i 100+ konsultantskih projekata u industriji hrane
- Međunarodno iskustvo: Bugarska, Hrvatska, Crna Gora, Makedonija, Holandija, Kolumbija, Bosna i Hercegovina, Turska



PROVERE BEZBEDNOSTI HRANE



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VRSTE PROVERA I KRITERIJUMI

VRSTE PROVERA

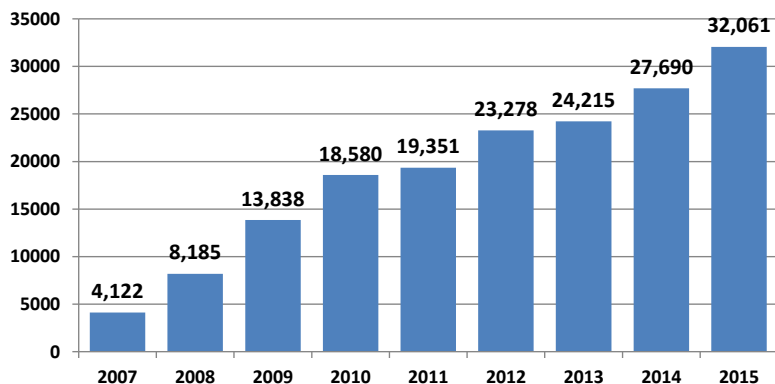
- Preko prve strane
- Preko druge strane
- Preko treće strane

KRITERIJUMI

- Standardi
- Zakoni
- Dokumentacija
- Zahtevi korisnika / kupaca
- Zahtevi drugih zainteresovanih strana

BROJ SERTIFIKATA

ISO 22000 - broj sertifikata



IFS – Podaci & Brojke

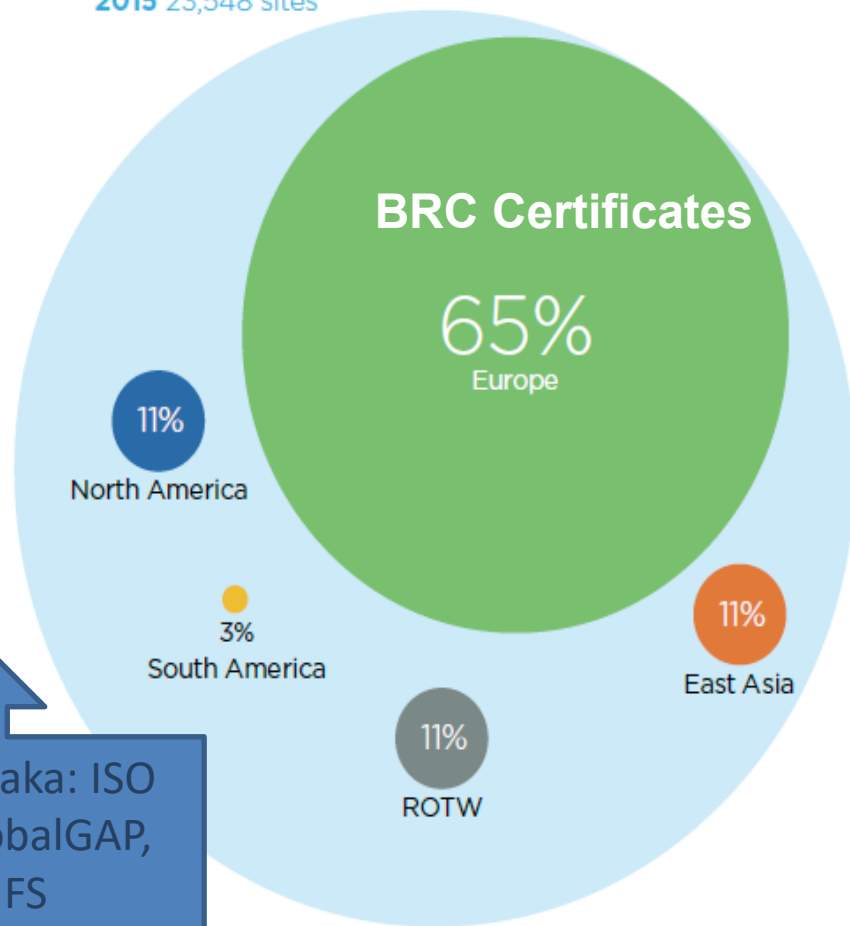
Preko 11,000 sertifikovanih proizvođača u 95+ zemalja
350 prodajnih lanaca

GlobalGAP – Podaci & Brojke

Preko 400 sertifikovanih proizvoda
i 130,000 proizvođača u preko 110 zemalja.

16 standarda

2015 23,548 sites



Baze podataka: ISO Survey, GlobalGAP, BRC, IFS

GLAVNI NALAZI



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Audits and inspections are never enough: A critique to enhance food safety

D.A. Powell^{a,*}, S. Erdozain^{b,1}, C. Dodd^f, R. Costa^{c,2}, K. Morley^{d,3}, B.J. Chapman^e

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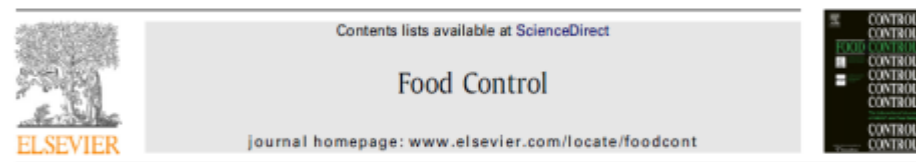
^b Kansas State University, Manhattan, KS 66506, USA

^c Eniron Health Associates, Inc., 2694 Magnolia Rd., Deland, FL 32720, USA

^d Kansas State University, 22 Karen Ave., Guelph, ON N1G 2W9, Canada

^e Department of 4-H Youth Development and Family & Consumer Sciences, North Carolina State University, NC Cooperative Extension, Raleigh, NC 27616, USA

^f U.S. Army Veterinary Corps, USA



Food supplier qualification by an Italian Large-scale-Distributor: Auditing system and non-conformances

Patrizia Losito^{a,*}, Pierina Visciano^b, Marisa Genualdo^a, Giorgio Cardone^a

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^b Department of Food Science, University of Teramo, Piazza Aldo Moro 45, 64100 Teramo, Italy



Quality and food safety issues revealed in certified food companies in three Western Balkans countries

Ilija Djekic^a, Igor Tomasevic, Radimir Radovanovic

Department of Food Safety and Quality Management, University of Belgrade, Faculty of Agriculture, Nemanjina 6, 11080 Belgrade, Zemun, Serbia



British Food Journal

Improving the confectionery industry supply chain through second party audits

Ilija Djekic Sladjana Dragojlovic Zoran Miloradovic Snezana Miljkovic-Zivanovic Marija Savic Vesna Kekic

Food Control 39 (2014) 34–40



Food hygiene practices in different food establishments

Ilija Djekic^{a,*}, Nada Smigic^a, Eleni P. Kalogianni^b, Ada Rocha^c, Lamprini Zamioudi^b, Rita Pacheco^c



GLAVNI NALAZI (neusaglašenosti)

PREDUSLOVNI PROGRAMI

- Neodgovarajući infrastrukturni preduslovni programi
- Neodgovarajuća sanitacija (nema validacije čišćenja i sanitacija)
- Nizak nivo svesti / znanja o bezbednosti hrane
- Opšta i neprecizna dokumentacija

ANALIZA OPASNOSTI

- Neprecizna analiza opasnosti
- CCP / kontrolne mere povezane sa preduslovnim programima
- Nema validacije kontrolnih mera

IZVOD IZ HACCP PLANA

- PRERADA GOVEĐEG MESA

Procesni korak	Opasnost
Prijem mesa	B (Biološka) – Prisustvo <i>Salmonella</i> , <i>Clostridium perfringens</i> , <i>Listeria monocytogenes</i> , <i>Staphylococcus aureus</i> , <i>Campylobacter jejuni</i> , <i>Yersinia enterocolitica</i> , <i>Bacillus cereus</i> , <i>Clostridium botulinum</i> , i <i>Escherichia coli</i> O157:H7

OPŠTE
(USDA
1997)

Procesni korak	Opasnost	Verovatnoća (Nauka)	Verovatnoća (zapisi)
Prijem mesa	B (biološka) – prisustvo <i>Salmonella</i> i <i>Escherichia coli</i> O157:H7	Verovatnoća pojava <i>E. coli</i> O157:H7 je mala a verovatnoća pojave <i>Salmonellae</i> je srednja.	Iskustvo iz prethodnih analiza polutki (kompanija)

(FDA
2014)



Contents lists available at ScienceDirect

Food Control

journal homepage: www.elsevier.com/locate/foodcont



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journal homepage: www.elsevier.com/locate/foodcont



The level of food safety knowledge in food establishments in three European countries



Nada Smigic ^{a,*}, Ilija Djekic ^a, Margarida Liz Martins ^{b,c}, Ada Rocha ^{b,c},
Nikoleta Sidiropoulou ^d, Eleni P. Kalogianni ^d

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^c LAQV/REQUIMTE, Porto, Portugal

^d Department of Food Technology, Alexander Technological Educational Institution of Thessaloniki, Thessaloniki, Greece

Meat handlers training in Portugal: A survey on knowledge and practice

Eduarda Gomes-Neves ^{a,*}, Carla Sofia Cardoso ^b, Ana Cristina Araújo ^c, José Manuel Correia da Costa ^d

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^b University of Porto, Rua dos Bragança, 223, 4050-123, Porto, Portugal

^c Direcção Geral de Veterinária, Direcção de Serviços Veterinários da Região Norte, Rua Franca 534, S. Torcato, 4800-875 Guimarães, Portugal

^d INSA National Health Institute Dr. Ricardo Jorge, Rua Alexandre Herculano, 321, 4000-055 Porto, Portugal



Emerald Insight



British Food Journal

The level of food safety knowledge among meat handlers

Nada Smigic Dragan Antic Bojan Blagojevic Igor Tomasevic Ilija Djekic

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Knowledge of food safety and hygiene and personal hygiene practices among meat handlers operating in western Romania

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^a Faculty of Food Processing Technologies, Banat's University of Agricultural Sciences and Veterinary Medicine, Calea Aradului 119, 300645, Timișoara, Romania

^b Faculty of Economics and Business Administration, Department of Management, West University of Timișoara, Str. J. H. Pestalozzi 16, 300115, Timișoara, Romania

NEDOSTATAK ZNANJA:

- Temperaturni režimi (uloga temperature)
- Rizici povezani sa bezbednošću proizvoda
- Bolesti izazvane hranom
- Rizici unakrsne kontaminacije



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PRIMER – SERTIFIKOVAN DOBAVLJAČ

Salmonella Typhimurium - KIKIRIKI

- Prisustvo *Salmonella Typhimurium* koje je povezano sa kompanijom Peanut Corporation iz SAD
- Povlačenje 3,900 putera od kikirikija kao i drugih proizvoda koji sadrže kikiriki iz preko 350 drugih kompanija
- 691 ljudi je obolelo a devet je umrlo u SAD i Kanadi
- Neodgovarajuća **provera preko treće strane i inspekcija**
- Osnovni uzrok je **nedostatak znanja** i proverivača sistema bezbednosti hrane i nadležnog inspektora

KRITIKE

PREKO 3^{će} STRANE

- Ishod prošao / pao
- Snimak stanja (uzorak?)
- Uvid u dokumentaciju
- Sertifikat = marketing
- Kompetentnost proverivača
- Kalibracija proverivača
- Kalibracija sertifikacionih tela

PREKO 2^{ge} STRANE

- Fokus na neusaglašenostima
- Koristi se kao mehanizam smanjenja cene proizvoda
- Previše stroge provere
- Često ima i dodatne zahteve

NOVI ZAHTEVI I IZAZOVI



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NOVI ZAHTEVI

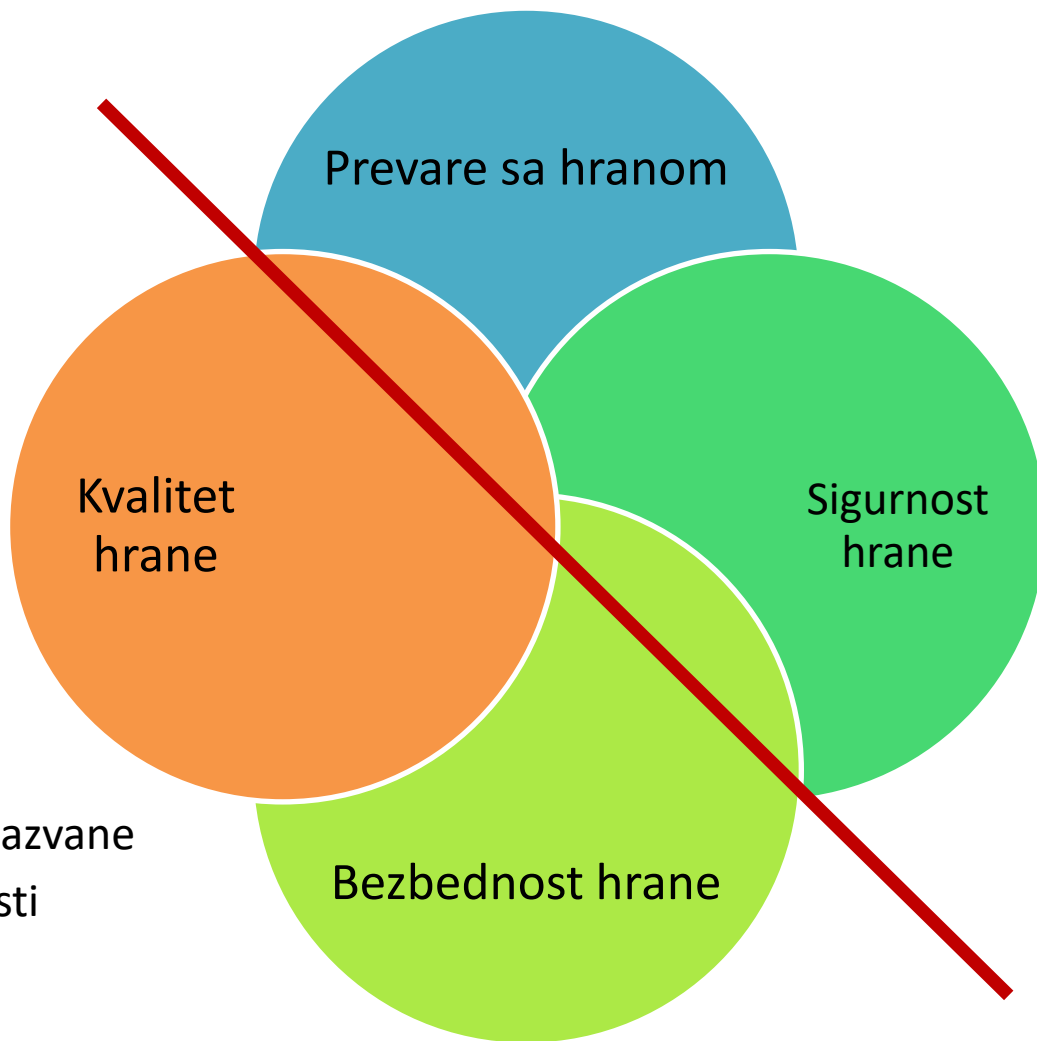
Kultura bezbednosti hrane

- Uvođenje pojma „kultura bezbednosti hrane“
- Perspektive posmatranja: FSMS; liderstvo; komunikacija; privrženost; okruženje i percepcija rizika

KATEGORIJE

Kategorizacija pogona (proračunato neusaglašeni, sumnjičavo usaglašeni, usaglašeni, proaktivno usaglašeni, lideri) – FSA 2012 – Alat inspektore za ocenu kulture bezbednosti hrane; BRC zahtevi)

NOVI IZAZOVI



Namerno izazvane
neusaglašenosti

Nenamerno izazvane
neusaglašenosti

HRANA KOJA SE NAJČEŠĆE KRIVOTVORI



RIBA

MASLINOVO ULJE



THE TIMES OF INDIA

70% of milk in Delhi, country is adulterated

Kounteya Sinha, TNN Jan 10, 2012, 02:33AM IST

NEW DELHI: Beware, your daily glass of good health could actually be doing you harm. As much as 70% of milk samples picked up from the capital by a government agency failed to conform to standards.



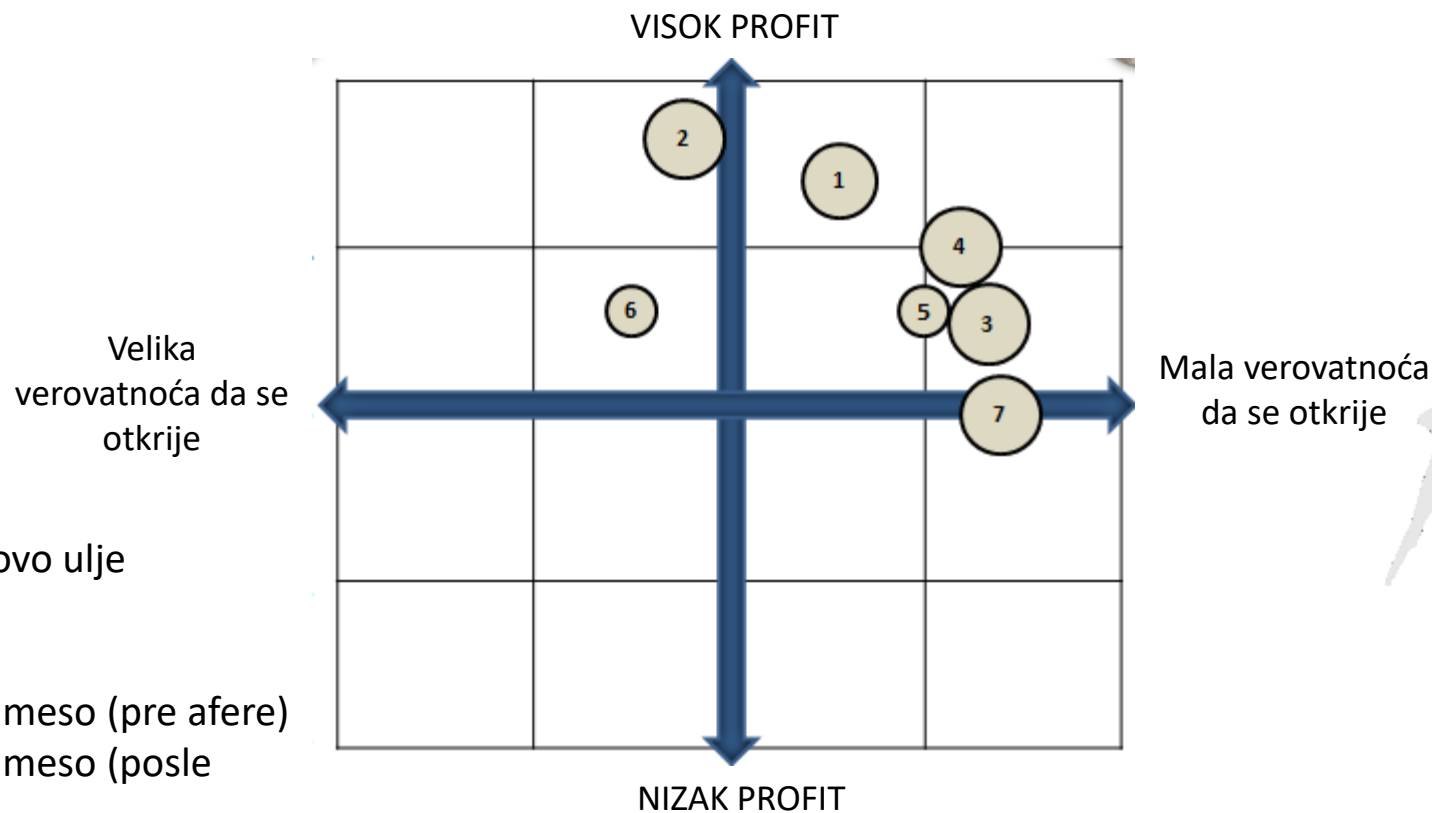
Of the 71 samples randomly taken from Delhi for testing by the Food Safety Standards Authority of India (FSSAI), 50 were found to be contaminated with glucose and skim milk powder (SMP), which is usually added to milk in the lean season to enhance volumes.

MLEKO

MED



PREVARA I PROFIT



1. Šafran
2. Maslinovo ulje
3. Pšenica
4. Kafa
5. Juneće meso (pre afere)
6. Juneće meso (posle afere)
7. Krompir

NSF (2014) - Risk Modelling Of Food Fraud Motivation – “NSF Fraud Protection Model” Intelligent Risk Model Scoping Project, UK

SEDAM NAJČEŠĆIH PREVARA



Gubici u
industriji hrane
≈ \$ 30-40
milijardi

Stepen
prevara ≈ 10%

NOVI TRENDovi

PROVERA

Provere zasnovane na rizicima

- Prelaz sa provere prema standardu na proveru zasnovanu na rizicima
- Prelaz sa prošao/pao na bodovni sistem
- Zahtevi za dodatnim obukama proverivača (rizici)
- Novi rizici (alergeni, itd.)
- Nove metodologije procene rizika (ISO 31000)

IZAZOVI

