Food and Agriculture Organization
of the United Nations

FAO Activities on STEC

National Reference Laboratories for *E. coli* in the EU
16th Annual Workshop (Virtual)
18-19 October 2021

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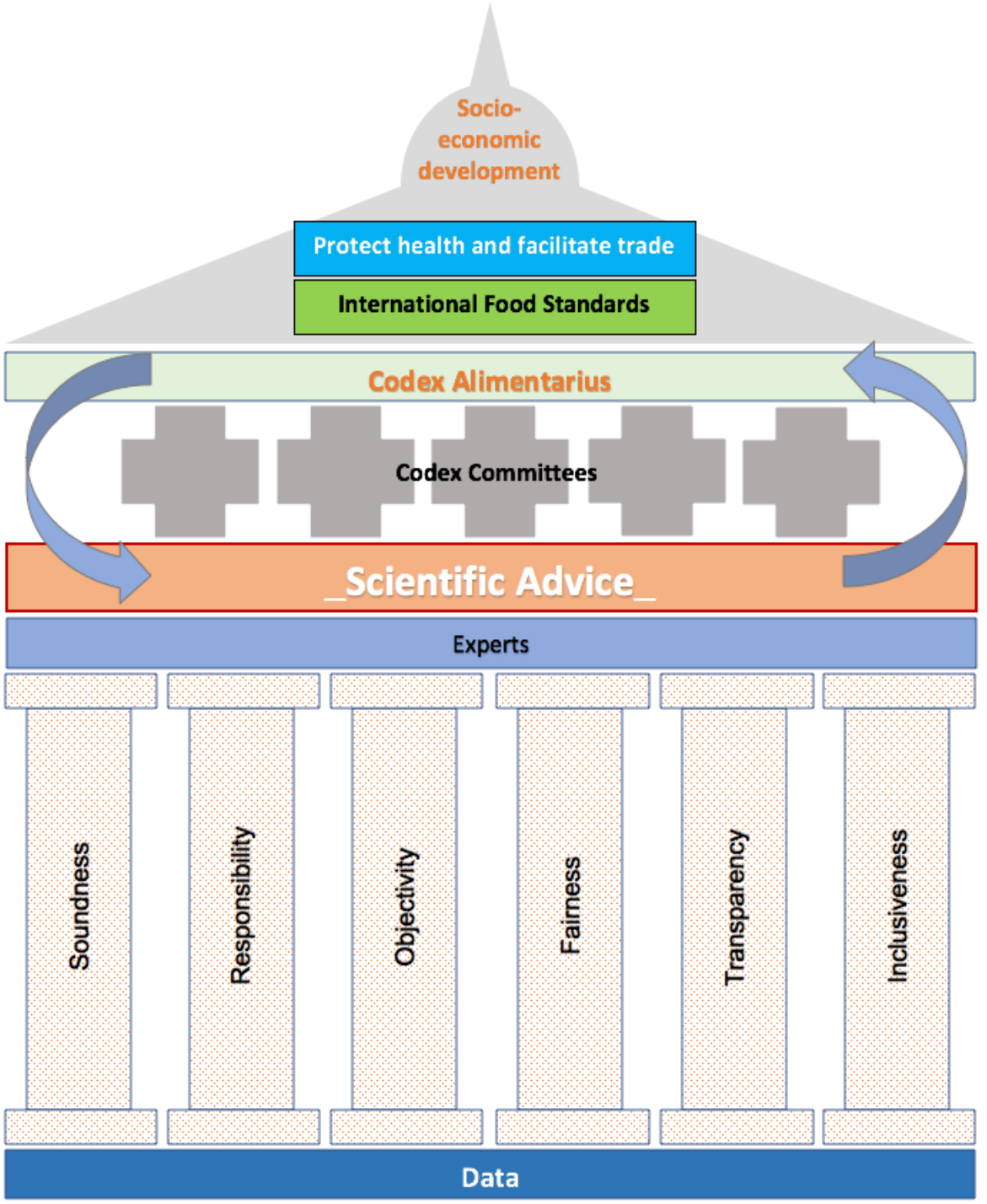
Objectives

- The work of the JEMRA
- Background on STEC activities at the FAO
- Control of STEC in fresh fruit and vegetables
- Next Steps

Joint FAO/WHO Scientific Advice Programme

- **JEMRA**: Joint FAO/WHO Expert Meeting on Microbiological Risk Assessment
  - Established in 2000
  - Scientific advice on microbiological risk assessment
  - Expert meetings based on requests from Codex (CCFH) and as deemed necessary
- JECFA, JMPR, JEMNU, ad hoc



JEMRA meeting in 2020

- **Shiga toxin-producing *Escherichia coli* (STEC) associated with Meat and Dairy Products**
  - STEC caused more than 1.2 million illnesses, 128 deaths, and nearly 13,000 Disability Adjusted Life Years (DALYs) in 2010.
  - Toreview relevant measures for pre- and post-harvest control of STEC in animals and foods of animal origins.

- ***Listeria monocytogenes* in Ready-to-Eat (RTE) Food: Attribution, Characterization and Monitoring**
  - New outbreak with different foods with broader geographic, new data, new tools. Scientific is needed.

JEMRA meeting in 2021

- **Microbiological safety and quality of water used in the production of fishery and dairy products**
  - To develop clear and practical guidance on the microbiological criteria that can be used to determine if water is 'fit-for-purpose' for sourcing, use and re-use in fishery and dairy.

- **Prevention and control of microbiological hazards in fresh fruits and vegetable**
  - To collect, review and discuss relevant measures for controls of microbiological hazards from primary production to consumption in: Fresh leafy vegetables; Ready-to-eat, fresh, and minimally processed fruits and vegetables; and sprouts.

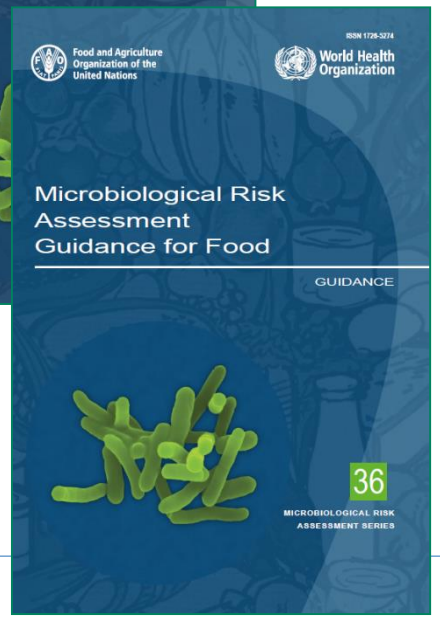
foods

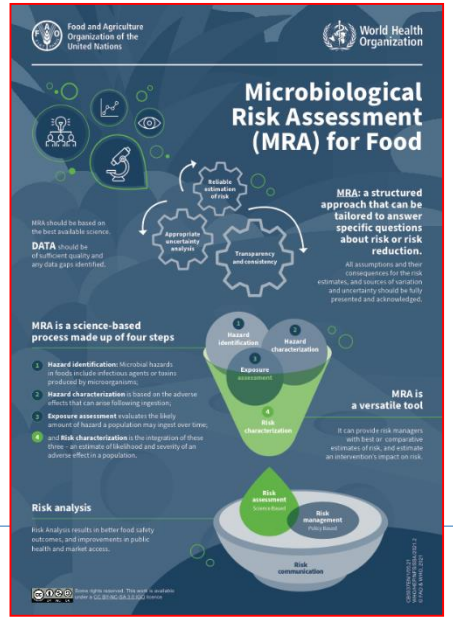
MDPI

Communication

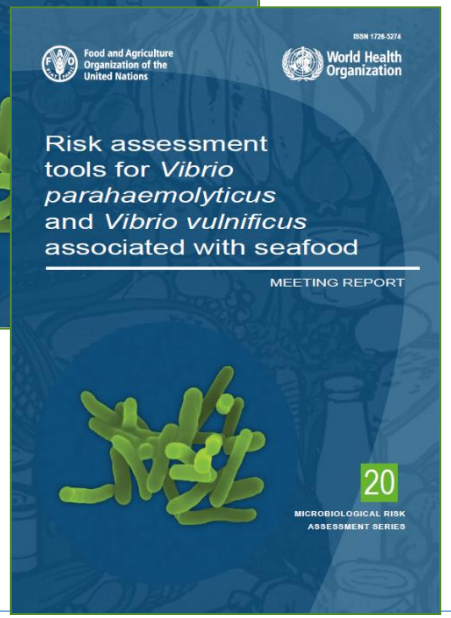
FAO/WHO Joint Expert Meeting on Microbiological Risk Assessment (JEMRA): Twenty Years of International Microbiological Risk Assessment

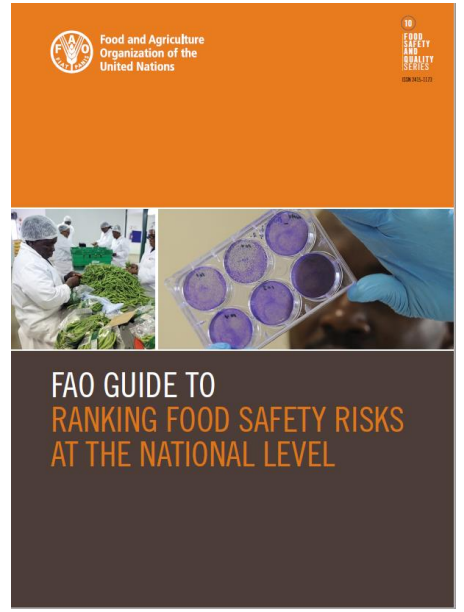
Jeffrey T. LeJeune [1,*,†], Kang Zhou [1], Christine Kopko [1] and Haruka Igarashi [2]





2021





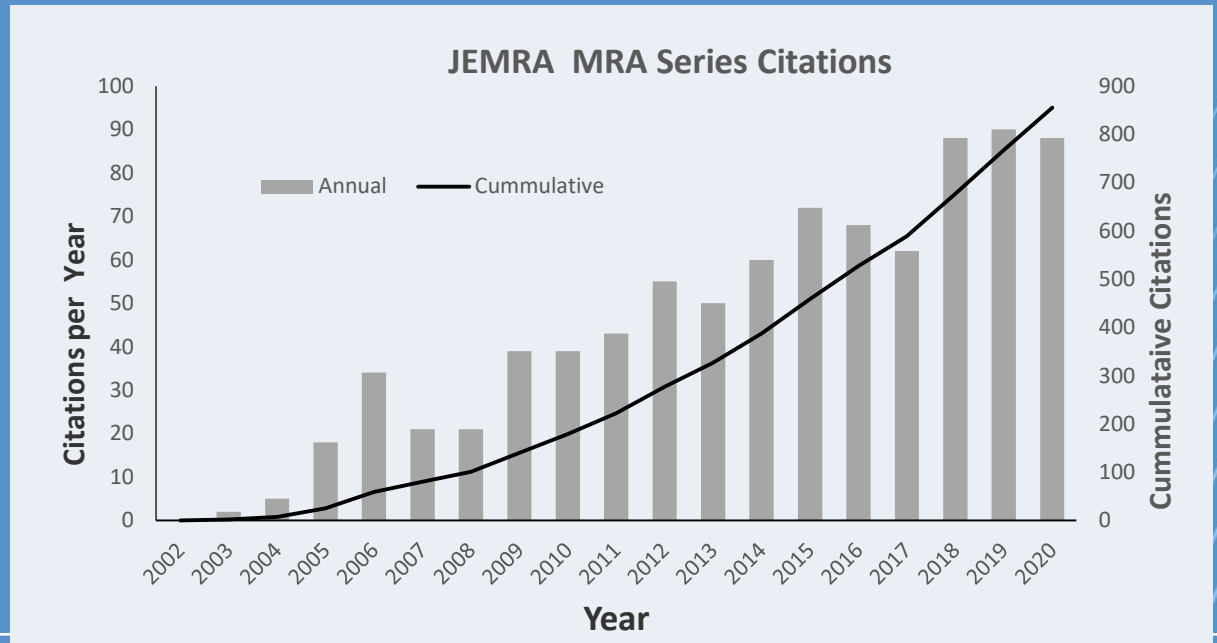
2020

Water, Listeria, STEC, Spicy, and Low-moisture

Food and Agriculture Organization of the United Nations

20 years of JEMRA

More than 40 publications, 20 Codex standards and their updates, almost 900 citations, over 370 experts, 40% female over last 5-8 years (recent meeting is at 1:1) nearly 60 different countries …



	Salmonella spp.	*Listeria monocytogenes*	*Cronobacter* (*Enterobacter sakazakii*)	*Vibrio* spp.	*Campylobacter* spp.	*E.coli* spp.	Parasites	Viruses
Eggs	1, 2, 34							
Poultry	1, 2, 19, 34				11, 12, 19, 34			
Dairy		4, 5, 34				31, 32, 34	23	
Infant formula and lipid-based foods for children	10, 26, 28, 29, 34	26, 28, 29, 34	6, 10, 15., 26, 28, 29, 34			26, 28, 29, 34		
Fish and seafood	21, 33, 34	4, 5, 34		8, 9, 16, 20, 22, 33, 34, 35			23, 33	13, 33
Fresh fruit and vegetables	14. 33, ,34, 37	14, 33, 34, 37		14, 33, 34	14, 34	31, 32, 33, 34, 37	14, 23, 33, 37	14, 13, 33, 37
Meat	30, 34	4, 5, 34				18, 31, 32, 34	25	
Spices and herbs	14, 26, 27, 34, 37	14, 26, 34, 37		26, 14, 34	14, 34	26, 34, 37	14, 37	14, 37
Low moisture foods	26, 34	26, 34	26, 34			26, 34		
Water	33, 34, 37	33, 34, 37		33, 34		33. 34, 37	33, 37	13, 33, 37

Background on STEC at the FAO

2015 - Request for advice from Codex

- The global burden of disease attribution
- Hazard identification & characterization
- Monitoring programs & lab methods used

2016 & 2017 - JEMRA meetings on STEC

2019 - Request for advice from Codex

- 2020: Control of STEC in beef, raw milk and raw milk cheese
- 2021: **leafy greens** and **sprouts**

JEMRA on the Prevention and Control of Microbiological Hazards in Fresh Fruits and Vegetables

Scope: general principles to control microbiological hazards in fresh ready-to-eat and minimally processed fruits and vegetables, including leafy greens from primary production to point of sale.

- 15 experts, 5 resource persons and secretariat
- Virtual setting
- Executive summary: soon
- Final report: TBD

Topics of interest for scientific advice…

- Specific control measures to control of STEC
- GHP/GAP and HACCP for the control of STEC
- Appropriate distance between fields growing leafy vegetables and animal operations
- Evidence of animal intrusion in fields or on product

Topics of interest for scientific advice…

Sampling and testing

- Irrigation water
- Leafy greens
- Indicator organisms

Is it recommended?

At what frequency?

For what purpose?

How to interpret results?

Next Steps…

November 2021

- Control of microbial hazards in sprouted seeds

2022

- Recommendations on other commodity-specific FFV

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Thank You!