

WEB APPLICATION

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Safety (Anses)

Editorial note to the special issue “Risk factors for sporadic foodborne diseases by meta-analysis of observational studies”

Ursula Gonzales-Barron ^a , Vasco Cadavez ^a, Anne Thebault ^b, Pauline Kooh ^b, Moez Sanaa ^b



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Risk factors for sporadic listeriosis: A systematic review and meta-analysis

Alexandre Leclercq ^{a, 1} , Pauline Kooh ^b , Jean-Christophe Augustin ^c , Laurent Guillier ^b , Anne Thébault ^b , Vasco Cadavez ^d , Ursula Gonzales-Barron ^d , Moez Sanaa ^b 

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Risk factors for sporadic salmonellosis: a systematic review and meta-analysis

Laurent Guillier ^a , Anne Thébault ^a, Philippe Fravalo ^{b, c} , Lapo Mughini-Gras ^{d, e} , Nathalie Jourdan-da Silva ^f , Julie David ^g , Pauline Kooh ^a, Vasco Cadavez ^h , Ursula Gonzales-Barron ^h 

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Risk factors for sporadic Yersinia enterocolitica infections: a systematic review and meta-analysis

Laurent Guillier ^a , Philippe Fravalo ^b , Alexandre Leclercq ^c , Anne Thébault ^a, Pauline Kooh ^a, Vasco Cadavez ^d , Ursula Gonzales-Barron ^d 

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

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Strategy for systematic review of observational studies and meta-analysis modelling of risk factors for sporadic foodborne diseases

Ursula Gonzales-Barron ^a , Anne Thébault ^b, Pauline Kooh ^b, Laurence Watier ^c, Moez Sanaa ^b, Vasco Cadavez ^a

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Risk factors for sporadic campylobacteriosis: A systematic review and meta-analysis

Philippe Fravalo ^{a, b} , Pauline Kooh ^c , Lapo Mughini-Gras ^{d, e} , Julie David ^f , Anne Thébault ^c , Vasco Cadavez ^g , Ursula Gonzales-Barron ^g 

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Special issue
Volume 17, April 2021



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Risk factors for sporadic infections caused by Shiga toxin-producing Escherichia coli: a systematic review and meta-analysis

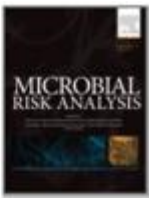
Jean-Christophe Augustin ^{a, 1}, Pauline Kooh ^b , Lapo Mughini-Gras ^{c, d}, Laurent Guillier ^b, Anne Thébault ^b, Frédérique Audiat-Perrin ^b, Vasco Cadavez ^e, Ursula Gonzales-Barron ^e, Moez Sanaa ^b

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Risk factors for sporadic toxoplasmosis: A systematic review and meta-analysis

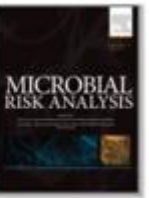
Anne Thebault ^a✉, Pauline Kooh ^a, Vasco Cadavez ^b, Ursula Gonzales-Barron ^b, Isabelle Villena ^c

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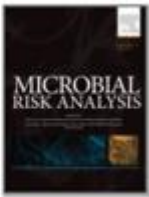
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Risk factors for sporadic cryptosporidiosis: A systematic review and meta-analysis

Pauline Kooh ^a✉, Anne Thébault ^a, Vasco Cadavez ^b, Ursula Gonzales-Barron ^b, Isabelle Villena ^c

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Risk factors for sporadic hepatitis A infection: A systematic review and meta-analysis

Anne Thébault ^a✉, Anne-Marie Roque-Afonso ^b, Pauline Kooh ^a, Vasco Cadavez ^c, Ursula Gonzales-Barron ^c, Nicole Pavio ^d

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Risk factors for sporadic norovirus infection: A systematic review and meta-analysis

Anne Thébault ^a✉, Julie David ^b, Pauline Kooh ^a, Vasco Cadavez ^c, Ursula Gonzales-Barron ^c, Nicole Pavio ^d

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Microbial Risk Analysis

PATHOGENS IN FOODS

PRVALENCE & LEVELS OF CONTAMINATION



MONITORING DATA VERSUS DATA PUBLISHED IN THE SCIENTIFIC LITERATURE



Sampling design

Target/Representative samples
Description of the sampling frame
Individual/aggregated data



Analytical tools

Sensitivity-Specificity-Reproducibility
Limit of detection
Accuracy of pathogen counting
Typing methods



Food-Pathogen

combinations
Choice of Food-Pathogen combinations
based on Risk management
needs/research needs.
Point of sampling



SYSTEMATIC REVUE

Pathogens in Foods

- ❑ Systematic revue and Meta-analysis project between IPB and ANSES that started in 2018, whose objective was to gather occurrence (prevalence and counts) data of pathogens in foods consumed in Europe
 - ❑ Primary sources: peer-reviewed articles
- ❑ Having access to this information in a compiled form would be helpful to researchers and food safety authorities



Food categories:

Meat and meat products, milk and dairy products, eggs and egg products, grains and cereal products, seafood, fruits, vegetables, legumes, beverages, composite foods,

Pathogens:

Salmonella, *Campylobacter*, Shigatoxin-producing *Escherichia coli*, *Listeria monocytogenes*, *Yersinia enterocolitica*, *Bacillus cereus*, *Clostridium perfringens*, *Staphylococcus aureus*.

New: *Toxoplasma gondii*, Norovirus, Hepatitis A virus, Hepatitis E virus, *Cryptosporidium* and *Giardia duodenalis*

Data:

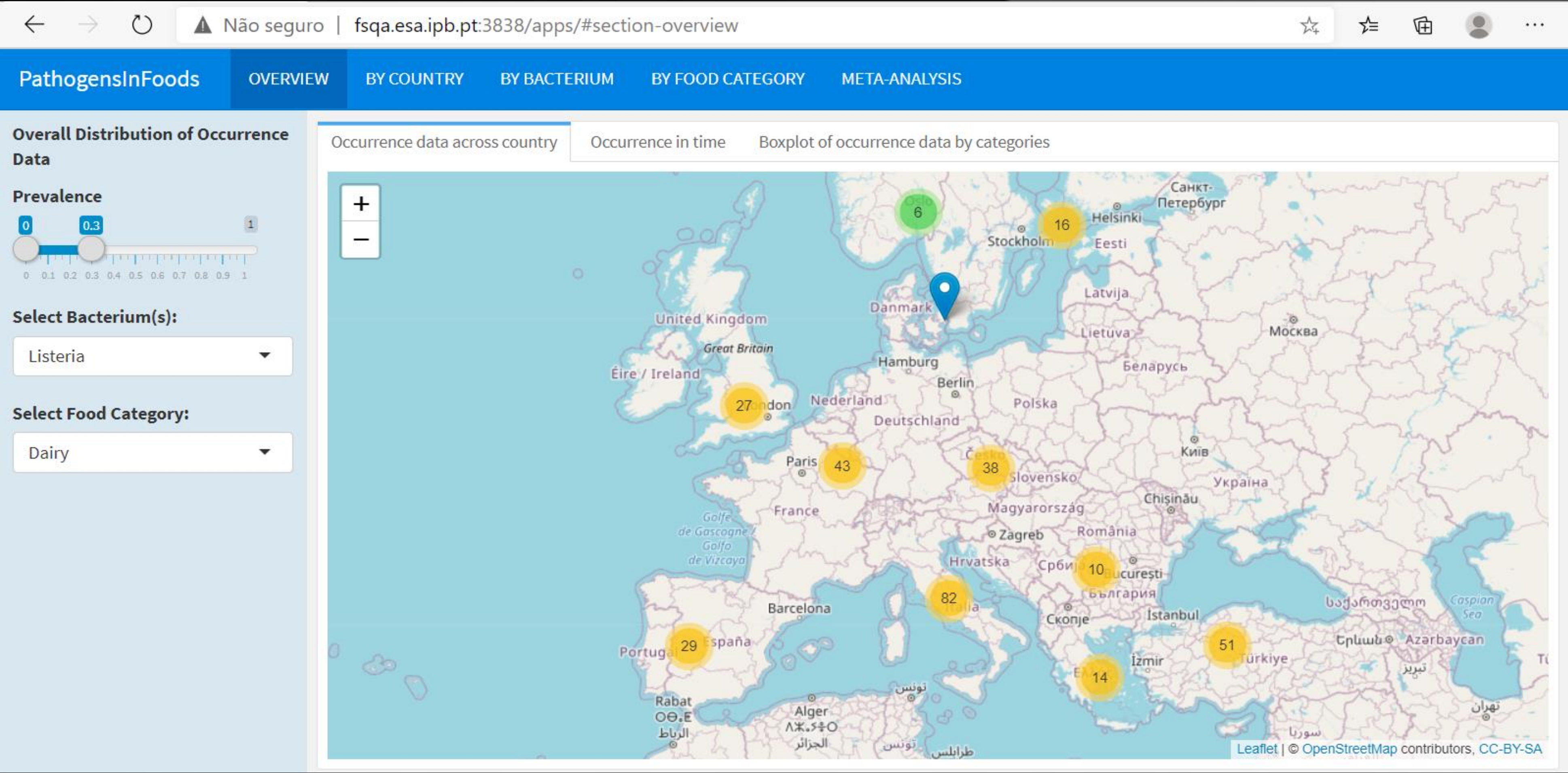
Number of published studies: 734 primary studies since 2000 - Number of samples: ~4500 sampling occasions (entries)

WEB APPLICATION

✓ At a glance:
Descriptive stats of
selections



✓ Data retrieval
and in-depth
analysis
✓ Necessary to
log in



Ready for Risk Assessment

Prevalence and counts – considering variability and uncertainty thanks to advanced statistical model for meta-analysis

Embedded Expertise

Studies are reviewed by experts in microbiology, statistics and epidemiology - Studies are assessed for quality - Biases are flagged and when feasible adjustments are made...

Sustainability

It is a dynamic database - continuous scientific monitoring - introduction of new data with reactivity according to priorities - Securing a sustainable funding.



WHAT WE DO OFFER

We provide risk assessment organizations and scientists with reliable data for quantitative microbiological risk assessment





NEXT STEPS

MOVING FORWARD

- This database and the associated web application are intended to be open with free access for researchers and risk assessors.
- Currently its development and maintenance are supported by ANSES and IPB (new contract 2021-2022).
- We would like to propose to EFSA and member states to mutualize our resources to make this database more sustainable and accessible to all.





THANK YOU!