BUNDESINSTITUT FÜR RISIKOBEWERTUNG

Bundesinstitut für Risikobewertung

Salmonellen in Nutztieren, Lebens- und Futtermitteln in Deutschland: Bericht aus dem NRL-Salmonella

Dr. Istvan Szabo

Nationales Referenzlabor für Salmonellen

Etabliert im Jahr 1996 (Entscheidung des Gesundheitsministeriums basiert auf Directive 92/117/EWG)

Wahrnehmung der Aufgaben im Rahmen der Zoonosen Überwachungs-RL und Bekämpfungs-VO (2003/99/EG, 2160/2003/EG)

Im Jahr 2006 nominiert, Artikel 33 Paragraph 1 EU Regulation No. 882/2004

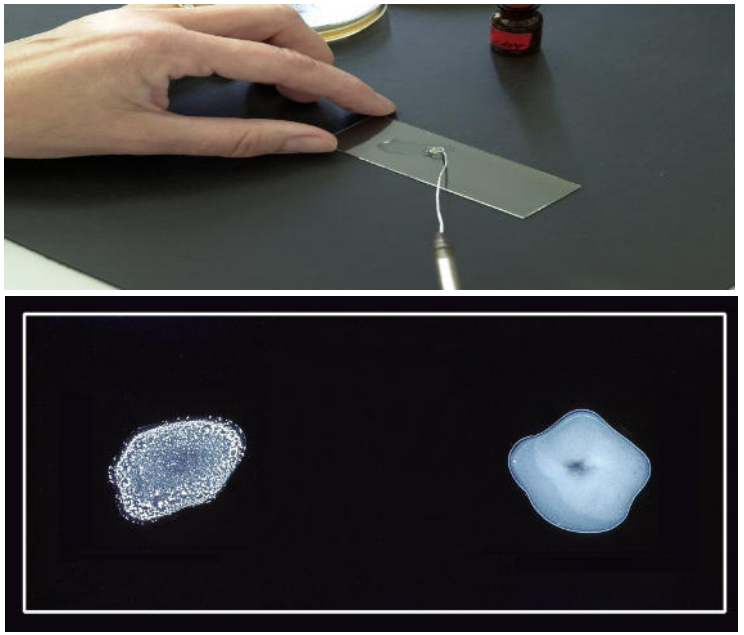
Routinediagnostik

- Einsendungen von ca. 4000 Isolaten pro Jahr
- Einsender: Veterinäruntersuchungsämter, Lebensmitteluntersuchungsämter
  Tiergesundheitsdienste, Universitäten, private Laboratorien
- Serotypie, Impfstammdiagnostik, Antibiotikaresistenztestung (NRL-AR)
- Aufklärung von Infektketten und Ausbrüchen

Serologische Typisierung von Salmonellen

- mittels Objektträgeragglutination nach dem White-Kauffmann-Le Minor Schema
- Einordnung des Serovars nach der Eigenschaft des O-Antigens (LPS) und der H1-, H2-Antigene (Flagellen)
- z.B. 4,5,12:i:1,2 (*Salmonella* Typhimurium)

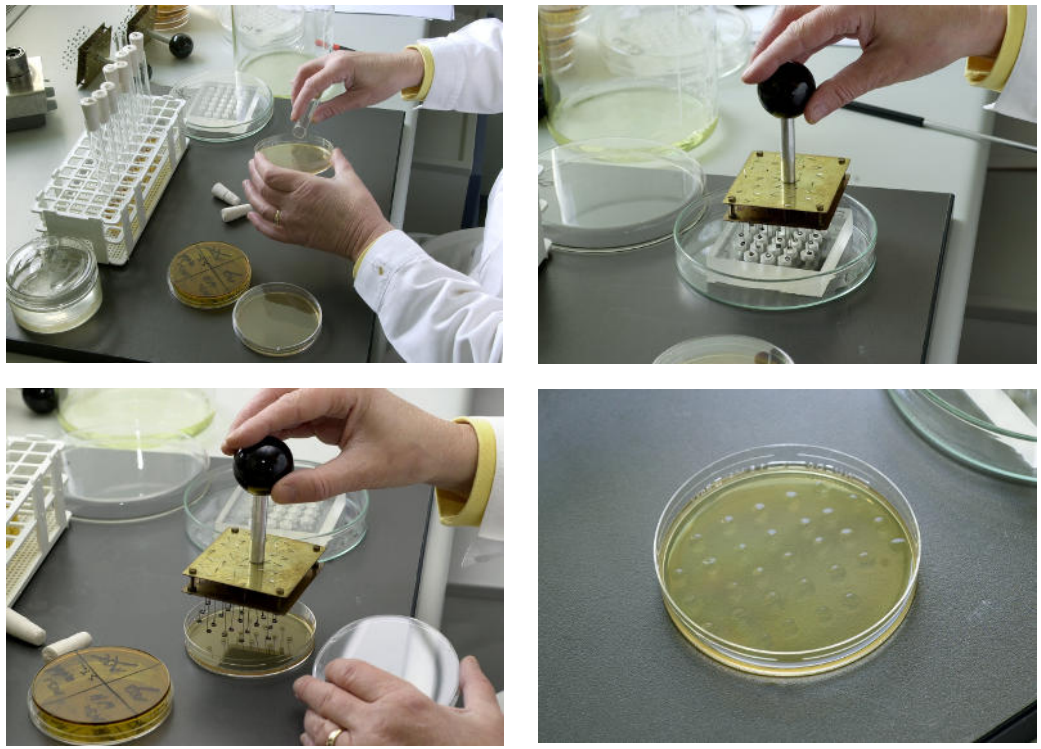
Seren für die serologische Typisierung



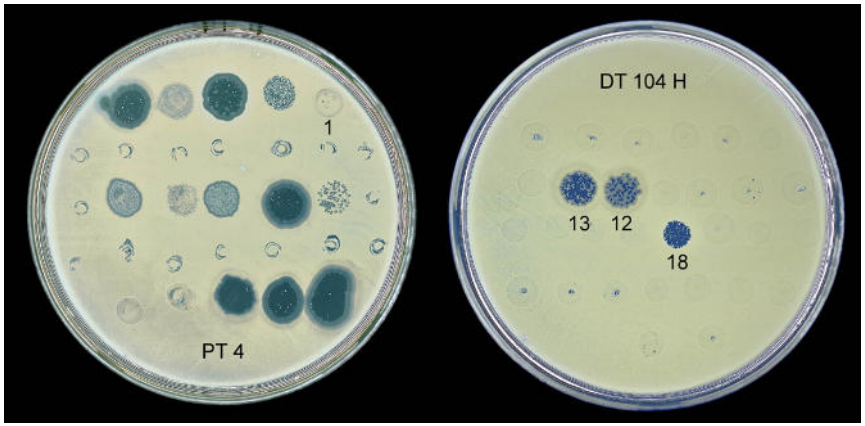
Objekträgeragglutination

Lysotypisierung

Seit September 2012 wird nicht mehr durchgeführt

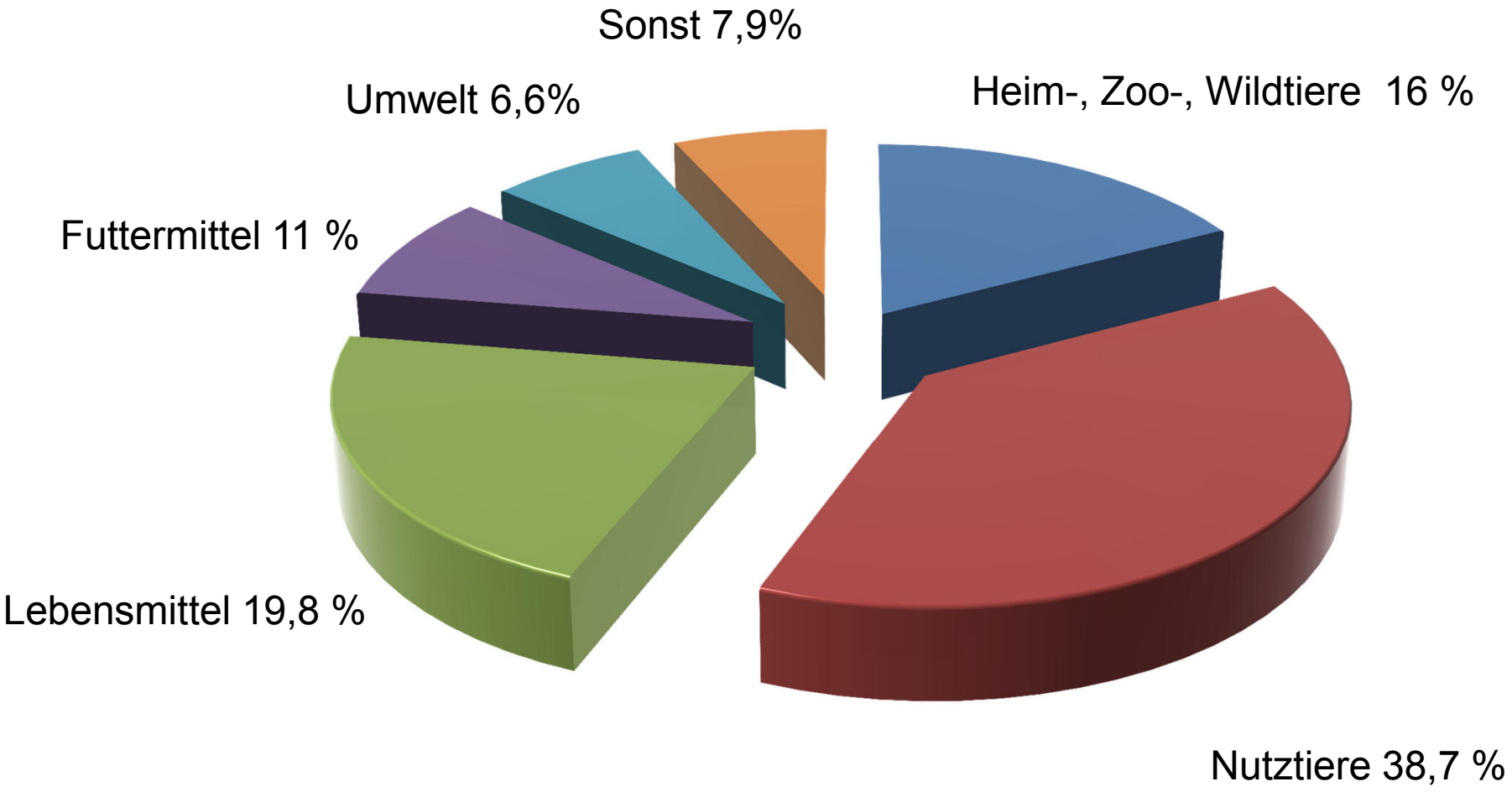


Durchführung der Phagentypie

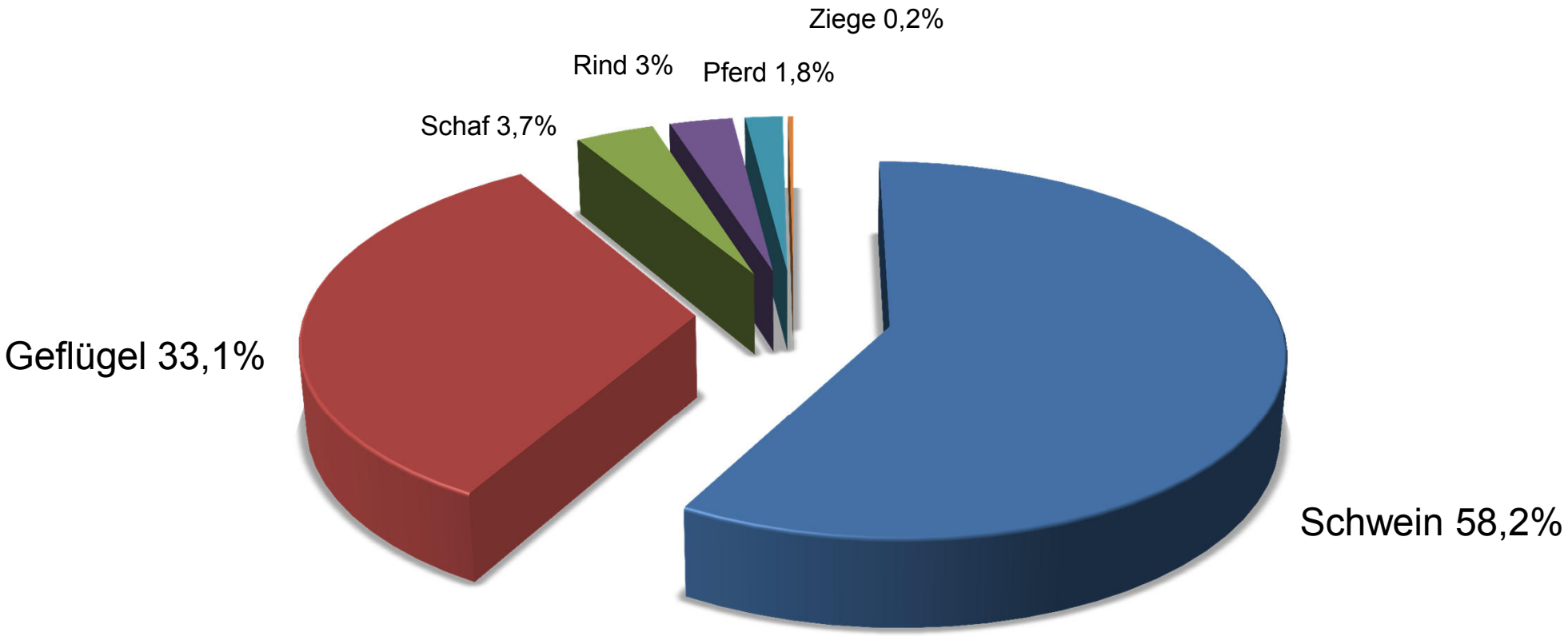


Phagetype profile PT4 (Enteritidis) and DT104 (Typhimurium)

Herkunft der *Salmonella*-Isolate in 2015



Herkunft der *Salmonella*-Isolate vom Nutztier



Häufigste *Salmonella*-Serovare bei Lebensmitteln, Broiler, Legehennen, Schwein und Rind im Jahr 2015 (NRL-Salm)

Lebensmittel		**Broiler**		**Legehennen**		**Schwein**		**Rind**	
n=671		n=47		n=179		n=723		n=37	
Serovar	**%**	**Serovar**	**%**	**Serovar**	**%**	**Serovar**	**%**	**Serovar**	**%**
Typhimurium monophasisch	**19,2**	Enteritidis	**7,5**	Enteritidis	**38,0**	Typhimurium monophasisch	**44,6**	Typhimurium	**51,4**
Typhimurium	**9,8**	Infantis	**5,6**	Mbandaka	**11,2**	Typhimurium	**23,3**	Dublin	**13,5**
Derby	**9,2**	Paratyphi B	**3,8**	Typhimurium	**10,1**	Derby	**8,6**	Enteritidis	**13,5**
Infantis	**9,2**	Anatum	**0,9**	Montevideo	**7,3**	London	**3,2**	Newport	**10,8**
Subspec. I Rauform	**9,1**	Livingstone	**0,9**	Agona	**5,0**	Bovismorbificans	**2,2**	Typhimurium monophasisch	**10,8**
Enteritidis	**7,5**	Typhimurium	**0,9**	Rissen	**4,5**	Infantis	**2,2**	Bovismorbificans	**2,7**
Livingstone	**6,6**	Indiana	**0,5**	Infantis	**3,9**	Enteritidis	**1,7**	Livingstone	**2,7**
Paratyphi B	**4,9**	Montevideo	**0,5**	Give	**2,8**	Rissen	**1,3**	Manchester	**2,7**
Indiana	**2,4**	Putten	**0,5**	Senftenberg	**2,2**	Brandenburg	**1,0**		
Saintpaul	**1,4**	Rissen	**0,5**	Subspec. I Rauform	**2,2**	Livingstone	**1,0**		

Häufigste *Salmonella*-Serovare in Lebensmitteln tierischen Ursprungs in 2015

Schweinefleisch		Hähnchenfleisch		Pute/Gans	
Serovar	**%**	**Serovar**	**%**	**Serovar**	**%**
Typhimurium monophasisch	24,7	Infantis	39,2	Typhimurium	35,1
Derby	14,4	Paratyphi B	19,0	Berta	8,8
Typhimurium	13,3	Enteritidis	7,6	Paratyphi B	7,0
Subspec. I Rauform	13,3	Indiana	7,6	Saintpaul	7,0
Livingstone	10,5	Newport	5,1	Enteritidis	5,3
Infantis	4,4	Anatum	1,3	Hadar	5,3
Enteritidis	2,5	Blockley	1,3	Give	3,5
Indiana	1,4	Heidelberg	1,3	Indiana	3,5
Anatum	1,1	Isangi	1,3	Kentucky	3,5
Brandenburg	1,1	Kedougou	1,3	Newport	3,5

TECHNICAL REPORT

APPROVED: 13 July 2016

Annual report of the Emerging Risks Exchange Network 2015

European Food Safety Authority

Abstract

EFSA established an Emerging Risks Exchange Network (EREN) to exchange information between EFSA and the MSs on possible emerging risks for food and feed safety in 2010. The Network is currently composed of delegates from 22 Member States and two EFTA countries (Norway and Switzerland) designated through the Advisory Forum of EFSA and observers from the European Commission, the US Food and Drug Administration (FDA), the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO). The Network met twice in 2015. A total of 13 potential emerging issues were presented and assessed. All 13 issues discussed originated from the EREN members. The issues discussed were related to occurrence of chemical hazards, microbiological hazards, biotoxins and allergens. Two issues assessed were associated with new consumption trends. EREN concluded that 11 issues were to be considered as emerging issues. Recommendations for follow up actions were provided, such as (i) EFSA should monitor the issue, (ii) generation of data is needed, (iii) EFSA should consult other bodies such as European sister agencies or the Stakeholder Consultative Group on Emerging Risk (StaCG-ER). The networking of organisations of MSs active in the field of emerging risks identification has been shown to greatly facilitate the exchange of information and expertise.

Table 1: List of potential emerging issues discussed by EREN in 2015.

	Potential emerging issue	Identified by
1	Outbreak related to the consumption of raw beetroot	France
2	Growth of *Vibrio spp* in Northern waters and TTX detection in European bivalve shellfish	United Kingdom
3	Putative new influenza virus that has been identified in livestock species (cattle and swine)	Belgium
4	Risks from the consumption of bitter apricot kernels	Greece
5	Increase of deoxynivalenol and zearalenone levels in Italy in 2014	Italy
6	Dermatitis due to raw or undercooked Shiitake consumption	France
7	Increased incidence of *Salmonella* Infantis in broiler meat in Croatia	Croatia
8	Zoonotic spread of CPE/CPA	Finland
9	Artificial plastic rice	United Kingdom
10	*Yersinia pseudotuberculosis* outbreak in raw milk	Finland
11	Hay as food or food additive	Austria
12	Oxalic acid in green smoothies	Germany
13	Natural occurrence of bisphenol F (BPF) in mustard	Switzerland

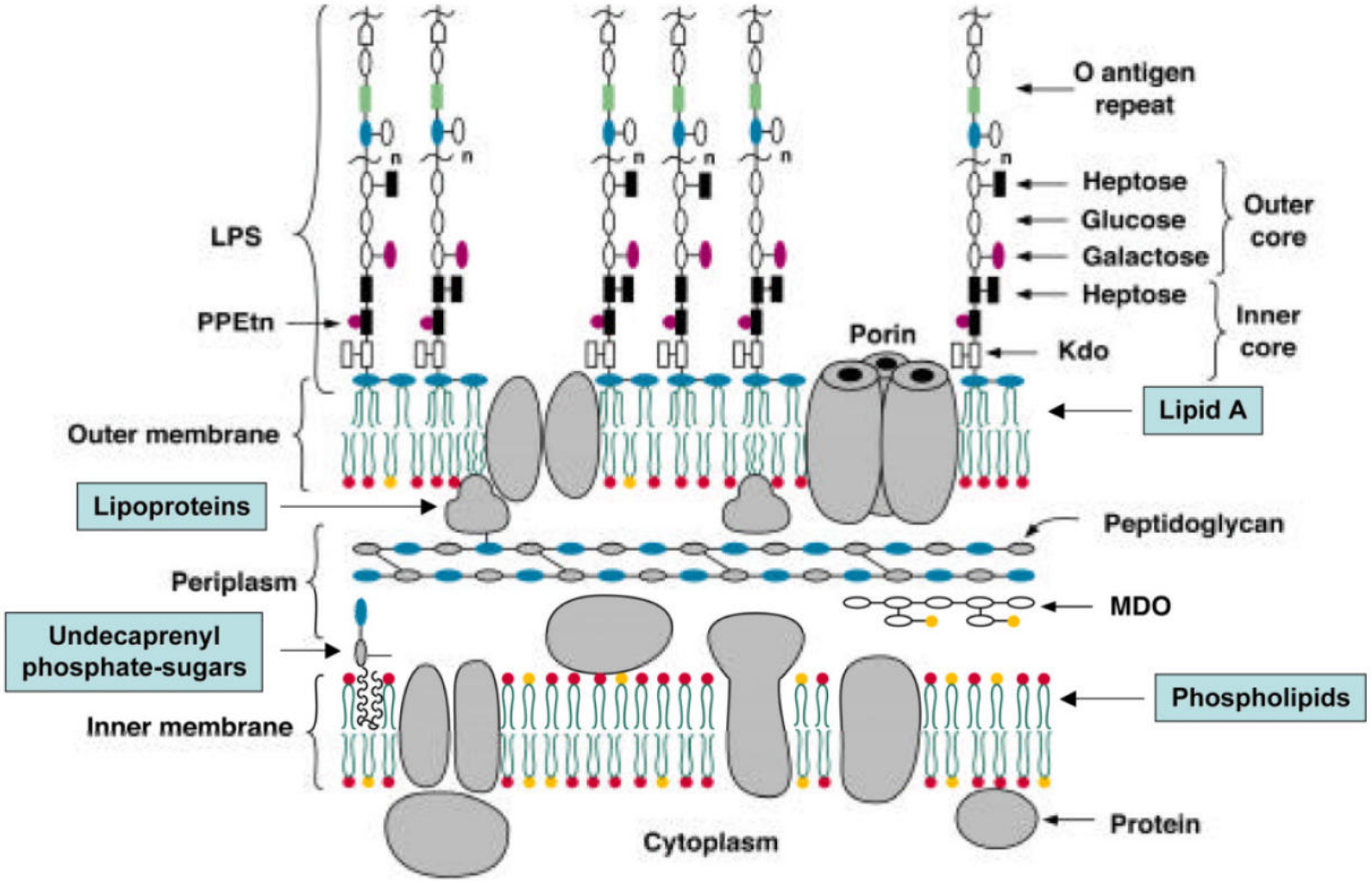
S. Infantis in Hähnchenfleisch am NRL-Salmonella

2012 **n=92**		**2013** **n=115**		**2014** **n=102**		**2015** **n=79**		**2016** **n=99**	
Serovar	*%*	*Serovar*	*%*	*Serovar*	*%*	*Serovar*	*%*	*Serovar*	*%*
Paratyphi B	44,6	Paratyphi B	27,8	Paratyphi B	37,3	Infantis	39,2	Infantis	38,4
Infantis	18,5	Infantis	13,9	Infantis	27,5	Paratyphi B	19,0	Enteritidis	26,3
Minnesota	8,7	Mbandaka	12,2	Enteritidis	5,9	Enteritidis	7,6	Paratyphi B	13,1
Enteritidis	7,6	Indiana	12,2	Isangi	4,9	Indiana	7,6	Heidelberg	4,0
Indiana	5,4	Heidelberg	8,7	Indiana	4,9	Newport	5,1	Subspez. I	3,0
Heidelberg	2,2	Enteritidis	8,7	Corvallis	2,0	Anatum	1,3	Ohio	3,0
Newport	1,1	Schwarzengrund	4,3	Albany	2,0	Blockley	1,3	Indiana	3,0
Isangi	1,1	Typhimurium	2,6	Livingstone	2,0	Heidelberg	1,3	Subspec. I Rauform	2,0
Heidelberg	1,1	Thompson	1,7	Coeln	2,0	Isangi	1,3	Virchow	1,0
Derby	1,1	Hadar	1,7	Typhimurium	2,0	Kedougou	1,3	Typhimurium	1,0

Häufigste *Salmonella*-Serovare in Lebensmitteln tierischen Ursprungs in 2015

Schweinefleisch		Hähnchenfleisch		Pute/Gans	
Serovar	**%**	**Serovar**	**%**	**Serovar**	**%**
Typhimurium monophasisch	24,7	Infantis	39,2	Typhimurium	35,1
Derby	14,4	Paratyphi B	19,0	Berta	8,8
Typhimurium	13,3	Enteritidis	7,6	Paratyphi B	7,0
Subspec. I Rauform	13,3	Indiana	7,6	Saintpaul	7,0
Livingstone	10,5	Newport	5,1	Enteritidis	5,3
Infantis	4,4	Anatum	1,3	Hadar	5,3
Enteritidis	2,5	Blockley	1,3	Give	3,5
Indiana	1,4	Heidelberg	1,3	Indiana	3,5
Anatum	1,1	Isangi	1,3	Kentucky	3,5
Brandenburg	1,1	Kedougou	1,3	Newport	3,5

O-Antigene

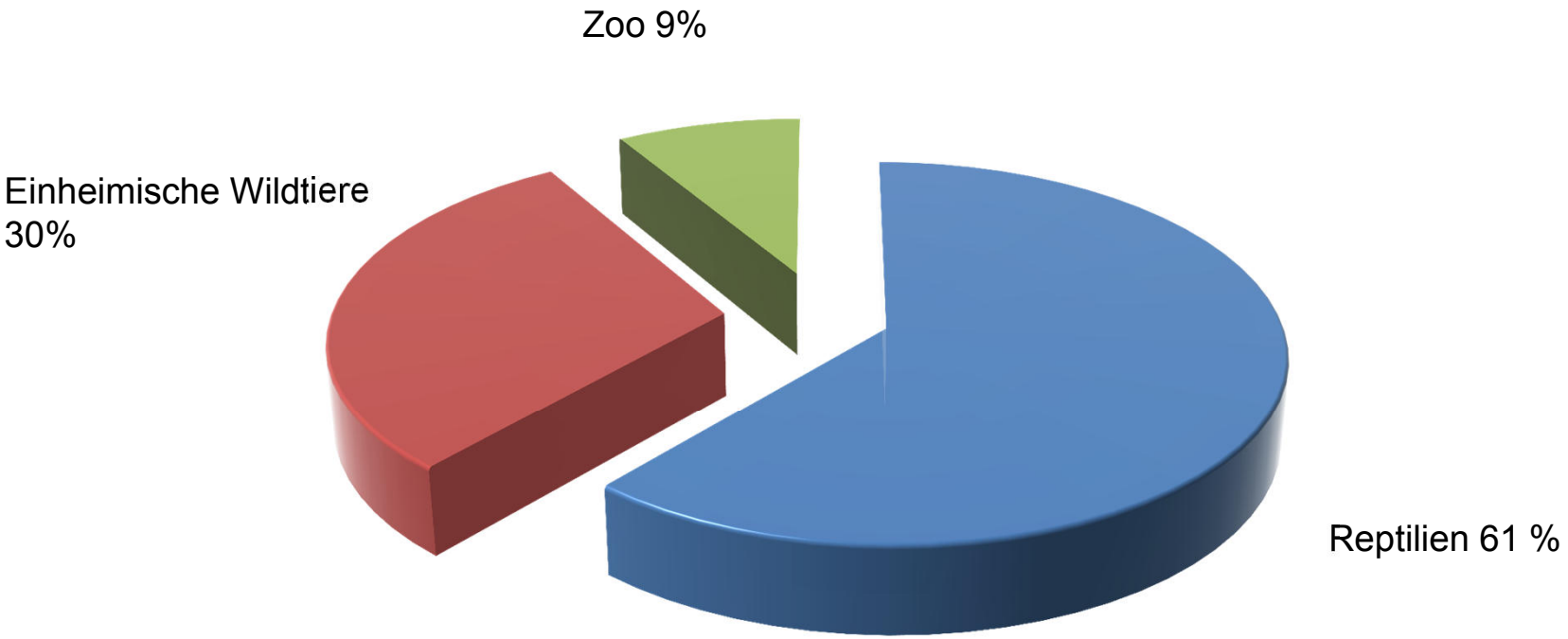


(Raetz und Whitfield, 2002)

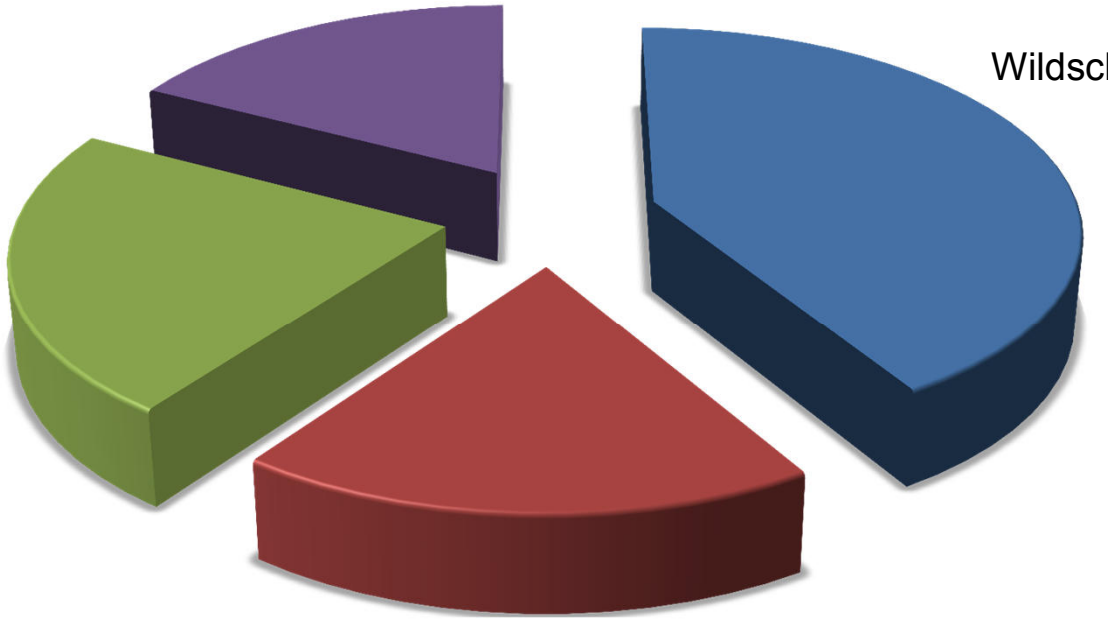
Häufigste *Salmonella*-Serovare in Lebensmitteln pflanzlichen Ursprungs in 2015

Baby rice crab	S. Subspez. I. 4,5,12:b:-
Black Fungus	S.Weltevreden
	S.Mgulani
getr. Maulbeeren	S.Enteritidis
Gewürz	S.Indiana
Hafermehl	S.Hadar
Kümmel,gemahlen	S.Anatum
Kräutertee	S. Subspez. I. 4,5,12:b:-
Ringelblumenblätter	S.Kentucky
	S.Minnesota
Salat	S.Typhimurium
Schnittsalat	S. Subspez. IV. 38:z4,z23:-
Sesam - Joghurtsauce	S.Anatum
Sesammus	S.Chicago
	S.Give
Wasserspinat	S.Weltevreden
Weizen	S.Indiana
	S.Stourbridge
Weizenkleie	S.Schleissheim
Wurzelgemüse	S.Infantis

Herkunft der *Salmonella*-Isolate in Wildtieren in 2015 (N=555)



Herkunft der *Salmonella*-Isolate in Wildtieren in 2015 (N=166)



Häufigste Salmonella-Serovare in Futtermitteln in 2011 - 2016

2013 **n=599**		**2014** **n=267**		**2015** **n=280**		**2016** **n=114**	
Serovar	*%*	*Serovar*	*%*	*Serovar*	*%*	*Serovar*	*%*
Senftenberg	19,0	Mbandaka	11,2	Livingstone	11,8	Infantis	16,6
Bredeney	14,4	Senftenberg	8,6	Goldcoast	10,2	Mbandaka	10,5
Agona	9,8	Bredeney	6,4	Senftenberg	9,1	Typhimurium	9,6
Muenster	7,8	Typhimurium	5,6	Agona	7,1	Tennessee	8,7
Mbandaka	5,7	Montevideo	4,9	Infantis	7,1	Havana	6,1
Cerro	4,5	Subspez. I	4,9	Tennessee	5,5	Muenster	5,2
Subspez. I	3,7	Rissen	3,7	Typhimurium	4,7	Senftenberg	5,2
Infantis	3,5	Havana	3,4	Cerro	4,4	Livingstone	4,4
Enteritidis	3,3	Molade	3,4	Mbandaka	3,3	Hadar	2,6
Corvallis	3,2	Nima	3,4	Havana	2,7	Thompson	2,6

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Bundesinstitut für Risikobewertung

Danke für Ihre Aufmerksamkeit

Istvan Szabo

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