DANMAP 2012

Data for figures with zoonotic and indicator bacteria

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Data tables for figures on resistance in zoonotic and indicator bacteria

Data table for figure 6.1. Resistance (%) in *Salmonella* Typhimurium in[(a)] pigs, pork and human cases[(b)], Denmark

DANMAP 2012

Sample	Antimicrobial agent	Year					
		2007	2008	2009	2010	2011	2012
Pigs	Tetracycline	47	41	41	47	48	65
Pigs	Chloramphenicol	11	10	8	8	6	9
Pigs	Ampicillin	36	41	41	48	46	65
Pigs	Sulfonamide	47	48	52	52	48	67
Pigs	Ciprofloxacin	1	1	0	0	0	0
Number of isolates		563	476	363	434	157	144
Pork - Danish	Tetracycline	43	33	49	27	65	51
Pork - Danish	Chloramphenicol	4	4	13	4	10	2
Pork - Danish	Ampicillin	38	41	29	35	71	56
Pork - Danish	Sulfonamide	44	43	46	38	67	61
Pork - Danish	Ciprofloxacin	1	0	0	0	0	0
Number of isolates		95	103	70	26	49	41
Pork - Imported	Tetracycline	77	87	59	77	-	-
Pork - Imported	Chloramphenicol	19	26	18	21	-	-
Pork - Imported	Ampicillin	48	79	82	73	-	-
Pork - Imported	Sulfonamide	63	85	76	84	-	-
Pork - Imported	Ciprofloxacin	2	1	16	0	-	-
Number of isolates		48	68	49	62	-	-
Humans - Domestic sporadic	Tetracycline	39	33	45	36	53	54
Humans - Domestic sporadic	Chloramphenicol	11	8	8	8	14	9
Humans - Domestic sporadic	Ampicillin	38	34	45	42	55	58
Humans - Domestic sporadic	Sulfonamide	50	36	49	44	59	65
Humans - Domestic sporadic	Ciprofloxacin	2	3	3	4	3	2
Number of isolates		98	269	204	227	203	177
Humans - Travel abroad	Tetracycline	64	52	57	59	74	73
Humans - Travel abroad	Chloramphenicol	24	16	17	13	28	20
Humans - Travel abroad	Ampicillin	58	44	53	60	69	71
Humans - Travel abroad	Sulfonamide	64	50	55	64	70	71
Humans - Travel abroad	Ciprofloxacin	16	9	9	14	16	24
Number of isolates		55	117	85	95	74	59

Note: The number of isolates varies between years (pigs: n = 144–563, Danish pork: n = 26–103, imported pork: n = 48–68, domestic sporadic human cases: n = 98–269 and travel-associated human cases: n = 55–117). Data for imported pork in 2011 and 2012 is not presented due to insufficient number of isolates

a) Include isolates verified as monophasic variants of *S*. Typhimurium with antigenic formulas *S*. 4,[5],12:i:-

b) An isolate is categorised as 'domestic sporadic' if the patient did not travel outside Denmark one week prior to the onset of the disease and was not reported as being part of an outbreak

Data table for figure 6.2. Occurrence (%) of multi-resistance[a b] and monophasic variants [c] in *Salmonella* Typhimurium in pigs, pork and human cases[d], Denmark

DANMAP 2012

Sample	Profile	Year					
		2007	2008	2009	2010	2011	2012
Pigs	ASSuT	29	29	31	36	36	53
Pigs	Fully sensitive	-	46	43	38	39	22
Pigs	Multi-resistant	-	47	46	51	47	66
Pigs	Monophasic	-	-	4	16	30	56
Number of isolates		563	476	363	434	157	144
Pork - Danish	ASSuT	24	22	23	15	51	37
Pork - Danish	Fully sensitive	-	50	46	46	14	29
Pork - Danish	Multi-resistant	-	44	46	35	67	59
Pork - Danish	Monophasic	-	-	6	8	43	56
Number of isolates		95	103	70	26	49	41
Humans - Domestic sporadic	ASSuT	18	17	27	22	36	33
Humans - Domestic sporadic	Fully sensitive	-	59	44	49	38	25
Humans - Domestic sporadic	Multi-resistant	-	36	46	43	57	62
Humans - Domestic sporadic	Monophasic	-	-	21	19	34	36
Number of isolates		98	269	204	227	203	177

Note: The number of isolates varies between years (pigs: n = 144–563, Danish pork: n = 26–103, domestic sporadic human cases: n = 98–269)

a) An isolate is considered fully sensitive if susceptible to all antimicrobial agents included in the test panel and multi-resistant if resistant to three or more of the ten antimicrobial classes (see Table 10.3). Data on resistance to colistin and trimethoprim were not available for 2007, thus the proportion of multi-resistant or fully sensitive were not calculated

b) 'ASSuT' isolates are resistant to ampicillin, streptomycin, sulfonamide and tetracycline, but can include resistant to other antimicrobial agents also chloramphenicol

c) Recording of the monophasic variants of *S*. Typhimurium with antigenic formulas S. 4,[5],12:i:- in the database was not fully implemented in 2007 and 2008, thus data is not presented

d) An isolate is categorised as 'domestic sporadic' if the patient did not travel outside Denmark one week prior to the onset of the disaese and was not reported as being part of an outbreak

Data table for figure 6.3. Resistance (%) in Campylobacter jejuni from broilers, broiler meat and human cases[(a)], Denmark

DANMAP 2012

Sample	Antimicrobial agent	Year					
		2007	2008	2009	2010	2011	2012
Broilers	Tetracycline	10	13	13	17	19	15
Broilers	Erythromycin	1	0	0	0	0	0
Broilers	Ciprofloxacin	9	12	13	20	23	15
Number of isolates		94	82	75	41	43	41
Broiler meat - Danish	Tetracycline	11	12	4	15	10	15
Broiler meat - Danish	Erythromycin	2	0	0	2	0	0
Broiler meat - Danish	Ciprofloxacin	12	19	0	19	20	29
Number of isolates		113	26	26	52	61	66
Broiler meat - Imported	Tetracycline	41	51	57	43	40	58
Broiler meat - Imported	Erythromycin	2	7	0	4	7	4
Broiler meat - Imported	Ciprofloxacin	40	53	57	53	57	46
Number of isolates		134	152	62	68	70	26
Human - Domestic	Tetracycline	14	17	11	14	27	20
Human - Domestic	Erythromycin	0	2	0	0	0	1
Human - Domestic	Ciprofloxacin	39	28	24	25	33	35
Number of isolates		70	185	62	52	104	80
Humans - Travel abroad	Tetracycline	36	51	39	57	62	52
Humans - Travel abroad	Erythromycin	5	7	0	0	3	2
Humans - Travel abroad	Ciprofloxacin	70	73	61	80	84	80
Number of isolates		61	41	31	46	79	46

Note: The number of isolates varies between years (broilers: n = 41–94, Danish broiler meat: n = 26–113, imported broiler meat: n = 26–152, domestic sporadic human cases: n = 52–185 and travel-associated human cases: n = 31–79)

a) An isolate is categorised as ‘domestic’ if the patient did not travel outside Denmark one week prior to the onset of the disease

Data table for figure 6.4. Resistance (%) in *Campylobacter jejuni* from cattle, Denmark

DANMAP 2012

Antimicrobial agent	Year									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Tetracycline	0	0	0	3	2	3	2	7	4	1
Erythromycin	0	0	2	0	1	0	0	0	0	1
Ciprofloxacin	8	2	32	20	17	20	20	20	20	16
Number of isolates	53	42	41	74	84	90	87	98	95	89

Note: The number of isolates varies between years (n = 41–98)

Data table for figure 6.5. Resistance (%) in Campylobacter coli from pigs, Denmark

DANMAP 2012

Antimicrobial agent	Year									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Tetracycline	1	2	6	9	5	5	9	12	15	15
Erythromycin	24	23	20	13	11	15	12	16	7	7
Ciprofloxacin	4	16	14	13	10	7	12	8	9	12
Number of isolates	98	100	105	103	104	98	113	103	102	103

Note: The number of isolates varies between years (n = 98–113)

Data table for figure 7.1. Resistance (%) in *Enterococcus faecium* from broilers and broiler meat, Denmark

DANMAP 2012

Sample	Antimicrobial agent	Year					
		2007	2008	2009	2010	2011	2012
Broilers	Tetracycline	11	8	16	6	4	8
Broilers	Ampicillin	6	2	14	0	3	1
Broilers	Erythromycin	30	16	26	26	14	14
Broilers	Streptomycin	13	10	5	1	3	4
Broilers	Kanamycin	3	0	2	0	0	0
Broilers	Salinomycin	75	65	63	53	55	71
Number of isolates		64	51	43	119	106	107
Broiler meat - Danish	Tetracycline	-	9	14	10	10	7
Broiler meat - Danish	Ampicillin	-	1	1	1	2	3
Broiler meat - Danish	Erythromycin	-	20	16	21	19	8
Broiler meat - Danish	Streptomycin	-	4	1	3	0	0
Broiler meat - Danish	Kanamycin	-	0	0	1	0	2
Broiler meat - Danish	Salinomycin	-	51	38	37	54	55
Number of isolates		-	82	98	145	83	128
Broiler meat - Imported	Tetracycline	-	44	52	43	34	40
Broiler meat - Imported	Ampicillin	-	14	24	25	27	15
Broiler meat - Imported	Erythromycin	-	53	61	63	61	61
Broiler meat - Imported	Streptomycin	-	21	34	37	28	28
Broiler meat - Imported	Kanamycin	-	9	13	20	16	13
Broiler meat - Imported	Salinomycin	-	19	14	10	25	29
Number of isolates		-	115	90	107	64	82

Note: The number of isolates varies between years (broilers: n = 43–119, Danish broiler meat: n = 82–145, imported broiler meat: n = 64–115). Data from broiler meat is not available from 2007

Data table for figure 7.2. Resistance (%) in *Enterococcus faecium* from pigs, Denmark

DANMAP 2012

Sample	Antimicrobial agent	Year					
		2007	2008	2009	2010	2011	2012
Pigs	Tetracycline	67	61	66	51	62	63
Pigs	Ampicillin	1	9	30	2	10	13
Pigs	Erythromycin	47	32	36	27	33	24
Pigs	Streptomycin	41	43	48	35	41	42
Pigs	Kanamycin	31	23	31	23	25	21
Pigs	Salinomycin	0	1	0	0	0	0
Number of isolates		153	145	151	133	116	112

Note: The number of isolates varies between years (Pigs: n = 112–153). Data from pork is not presented due to insufficient number of isolates

Data table for figure 7.3. Resistance (%) in *Enterococcus faecalis* from broilers and broiler meat, Denmark

DANMAP 2012

Sample	Antimicrobial agent	Year					
		2007	2008	2009	2010	2011	2012
Broilers	Tetracycline	40	6	-	26	18	43
Broilers	Erythromycin	23	10	-	25	15	20
Broilers	Streptomycin	4	2	-	4	5	3
Broilers	Kanamycin	0	0	-	1	1	2
Broilers	Salinomycin	4	2	-	0	4	0
Number of isolates		57	49	-	112	111	100
Broiler meat - Danish	Tetracycline	-	26	26	46	27	47
Broiler meat - Danish	Erythromycin	-	12	26	17	18	21
Broiler meat - Danish	Streptomycin	-	4	13	9	6	8
Broiler meat - Danish	Kanamycin	-	0	3	0	0	3
Broiler meat - Danish	Salinomycin	-	2	0	2	0	1
Number of isolates		-	51	39	59	34	75
Broiler meat - Imported	Tetracycline	-	66	58	55	67	69
Broiler meat - Imported	Erythromycin	-	50	50	39	49	54
Broiler meat - Imported	Streptomycin	-	25	28	24	33	33
Broiler meat - Imported	Kanamycin	-	21	21	18	29	29
Broiler meat - Imported	Salinomycin	-	0	0	0	0	1
Number of isolates		-	143	88	104	69	93

Note: The number of isolates varies between years (broilers: n = 49–112, Danish broiler meat: n = 34–75, imported broiler meat: n = 69–143). Data from meat is not available from 2007, and broiler data from 2009 is not presented due to insufficient number of isolates

Data table for figure 7.4. Resistance (%) in *Enterococcus faecalis* from pigs and pork, Denmark

DANMAP 2012

Sample	Antimicrobial agent	Year					
		2007	2008	2009	2010	2011	2012
Pigs	Tetracycline	89	84	88	78	86	87
Pigs	Erythromycin	41	40	49	44	54	56
Pigs	Streptomycin	30	28	38	28	37	35
Pigs	Kanamycin	22	18	31	21	32	26
Pigs	Salinomycin	0	0	0	0	0	0
Number of isolates		148	149	133	157	117	119
Pork - Danish	Tetracycline	-	18	20	13	17	11
Pork - Danish	Erythromycin	-	8	13	1	8	5
Pork - Danish	Streptomycin	-	7	4	0	5	4
Pork - Danish	Kanamycin	-	4	4	2	5	3
Pork - Danish	Salinomycin	-	0	0	0	0	0
Number of isolates		-	72	96	84	133	104
Pork - Imported	Tetracycline	-	32	49	34	36	46
Pork - Imported	Erythromycin	-	8	8	6	11	7
Pork - Imported	Streptomycin	-	6	4	4	7	5
Pork - Imported	Kanamycin	-	4	6	3	7	5
Pork - Imported	Salinomycin	-	0	0	0	0	0
Number of isolates		-	125	109	91	45	108

Note: The number of isolates varies between years (Pigs: n = 117–157, Danish pork: n = 72–133 and imported pork: n = 45–125). Data from meat is not available from 2007

Data table for figure 7.5. Resistance (%) in *Escherichia coli* from animals and meat of Danish and imported origin, Denmark

DANMAP 2012

Sample	Antimicrobial agent	2008	2009	2010	2011	2012
Broilers	Tetracycline	11	13	15	11	8
Broilers	Ampicillin	12	18	21	21	20
Broilers	Sulfonamide	11	15	21	17	21
Broilers	Streptomycin	8	9	14	12	11
Broilers	Ciprofloxacin	11	11	9	9	8
Number of isolates		114	152	118	131	115
Broiler meat - Danish	Tetracycline	4	11	13	19	12
Broiler meat - Danish	Ampicillin	11	20	17	23	22
Broiler meat - Danish	Sulfonamide	12	8	15	22	17
Broiler meat - Danish	Streptomycin	8	11	15	12	8
Broiler meat - Danish	Ciprofloxacin	4	4	4	6	4
Number of isolates		113	143	158	122	197
Broiler meat - Imported	Tetracycline	42	55	46	52	51
Broiler meat - Imported	Ampicillin	48	55	58	57	51
Broiler meat - Imported	Sulfonamide	45	54	57	56	48
Broiler meat - Imported	Streptomycin	33	45	46	46	31
Broiler meat - Imported	Ciprofloxacin	32	41	41	41	36
Number of isolates		304	221	177	140	166
Pigs	Tetracycline	30	35	37	29	36
Pigs	Ampicillin	19	26	23	27	29
Pigs	Sulfonamide	25	33	32	28	35
Pigs	Streptomycin	27	43	47	36	42
Pigs	Ciprofloxacin	1	1	0	1	1
Number of isolates		151	150	160	157	152
Pork - Danish	Tetracycline	33	32	24	33	27
Pork - Danish	Ampicillin	29	29	24	29	33
Pork - Danish	Sulfonamide	30	38	19	27	30
Pork - Danish	Streptomycin	32	43	38	37	36
Pork - Danish	Ciprofloxacin	2	1	0	0	0
Number of isolates		66	106	68	92	73
Pork - Imported	Tetracycline	44	48	56	40	57
Pork - Imported	Ampicillin	30	28	36	33	49
Pork - Imported	Sulfonamide	28	34	36	33	42
Pork - Imported	Streptomycin	40	35	56	30	45
Pork - Imported	Ciprofloxacin	6	5	4	10	9
Number of isolates		96	65	50	30	53

Note: The number of isolates varies between years (broilers: n = 114–152, Danish broiler meat: n = 113–197, imported broiler meat: n = 140–304, pigs: n = 150–160, Danish pork: n = 66–106, imported pork: n = 30–96)

Data table for figure 7.6. Occurence (%) of multi-resistant and fully sensitive *Escherichia coli* [(a)] from animals and meat of Danish and imported origin, Denmark

DANMAP 2012

Sample	Profile	2008	2009	2010	2011	2012
Broilers	Multi-resistant	5	5	11	9	13
Broilers	Resistant	32	38	32	35	30
Broilers	Fully sensitive	63	57	57	56	57
Number of isolates		114	152	118	131	115
Broiler meat - Danish	Multi-resistant	3	4	7	14	11
Broiler meat - Danish	Resistant	23	31	35	30	27
Broiler meat - Danish	Fully sensitive	74	64	58	56	62
Number of isolates		113	143	158	122	197
Broiler meat - Imported	Multi-resistant	47	59	60	59	51
Broiler meat - Imported	Resistant	29	24	22	26	25
Broiler meat - Imported	Fully sensitive	24	17	19	16	23
Number of isolates		304	221	177	140	166
Pigs	Multi-resistant	25	33	33	27	32
Pigs	Resistant	18	23	25	24	26
Pigs	Fully sensitive	57	45	43	49	41
Number of isolates		151	150	160	157	152
Pork - Danish	Multi-resistant	27	33	24	33	29
Pork - Danish	Resistant	29	24	26	18	25
Pork - Danish	Fully sensitive	44	43	50	49	47
Number of isolates		66	106	68	92	73
Pork - Imported	Multi-resistant	34	37	38	40	47
Pork - Imported	Resistant	25	21	26	10	21
Pork - Imported	Fully sensitive	41	42	36	50	32
Number of isolates		96	65	50	30	53

Note: The number of isolates varies between years (broilers: n = 114–152, Danish broiler meat: n = 113–197, imported broiler meat: n = 140–304, pigs: n = 150–160, Danish pork: n = 66–106, imported pork: n = 30–96)

a) An isolate is considered fully sensitive if susceptible to all antimicrobial agents included in the test panel and considered multi-resistant if resistant to three or more of the ten antimicrobial classes (see Table 10.3)

Data table for figure 9.1. Resistance (%) in *Escherichia coli* O149 from diagnostic submissions from pigs, Denmark

DANMAP 2012

Sample	Antimicrobial agent	Year									
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Pigs	Ampicillin	43	51	38	36	39	42	35	42	48	42
Pigs	Gentamicin	10	20	10	14	12	7	6	3	3	6
Pigs	Streptomycin	66	67	71	63	67	63	75	76	87	72
Pigs	Sulfonamide	73	76	76	64	88	62	67	79	74	75
Pigs	Tetracycline	73	86	72	72	76	61	67	70	71	78
Pigs	Nalidixic acid	27	29	13	13	18	13	6	21	3	6
Number of isolates		77	49	103	118	33	71	48	33	31	36

Note: The number of isolates varies between years (Pigs: n = 31–118)