Annex B – Data reported on antimicrobial resistance in *Campylobacter* spp.

Annex to:

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Section B.1. Antimicrobial resistance in *Campylobacter* spp. from humans

Table 1: Antimicrobial resistance in *Campylobacter jejuni* from humans per country in 2022

Country	Gentamicin		Co-amoxiclav		Ciprofloxacin		Erythromycin		Tetracycline	
	N	% Res	N	% Res	N	% Res	N	% Res	N	% Res
Austria	385	0	-	-	385	79.7	385	0.5	385	50.9
Bulgaria(a)	-	-	-	-	47	57.4	47	0	47	23.4
Cyprus	-	-	-	-	50	94.0	50	0	50	64.0
Denmark	234	0	-	-	234	51.3	234	0	234	20.5
Estonia	220	0	-	-	220	90.0	220	1.4	220	62.7
Finland	-	-	-	-	1,506	55.8	1,502	2.1	941	32.4
France(a)	5,826	0.3	6,734	0.1	6,685	63.0	6,725	0.3	6,715	46.7
Germany	1,758	0.6	1,610	43.2	1,610	71.7	1,756	1.3	1,610	43.9
Greece	74	1.4	75	32.0	76	84.2	76	2.6	76	61.8
Hungary(a)	-	-	1	0	429	88.1	429	0	428	47.9
Ireland(b)	-	-	-	-	178	33.1	178	0	178	26.4
Italy	119	1.7	-	-	119	79.0	119	0	119	60.5
Lithuania(a)	-	-	-	-	373	96.2	410	0.5	207	64.7
Luxembourg	213	0	213	0	213	61.5	213	0.9	213	44.1
Malta	4	NA	4	NA	190	78.9	189	0.5	3	NA
Netherlands(b)	399	0.3	-	-	399	63.9	399	0.3	399	47.4
Poland	32	0	-	-	32	93.8	32	0	32	75.0
Portugal	353	0	-	-	353	96.6	353	1.1	353	74.2
Romania	-	-	-	-	5	NA	5	NA	5	NA
Slovakia(a)	8	NA	248	27.8	984	77.1	988	1.2	713	48.1
Slovenia	-	-	-	-	796	86.3	796	0.5	796	33.9
Spain	615	3.6	-	-	615	80.8	615	4.6	615	68.0
Total (22 MSs)	**10,240**	**0.5**	**8,885**	**8.9**	**15,499**	**69.1**	**15,721**	**0.9**	**14,339**	**46.6**
Iceland	-	-	-	-	43	25.6	43	0	39	25.6
Norway	233	0	-	-	233	20.6	233	0.9	233	15.0

N: number of isolates tested; % Res: percentage of resistant isolates [note in this reported either interpreted as non-wild type by ECOFFs or by combining R and I categories from clinical breakpoints]; –: no data reported; NA: not applicable - if fewer than 10 isolates were tested resistance was not calculated;
(a) Provided interpreted SIR
(b) Microbiological resistance predicted from whole genome sequencing

Table 2: Antimicrobial resistance in *Campylobacter coli* from humans per country in 2022

Country	Gentamicin		Co-amoxiclav		Ciprofloxacin		Erythromycin		Tetracycline	
	N	% Res	N	% Res	N	% Res	N	% Res	N	% Res
Austria	73	0	-	-	73	87.7	73	0	73	46.6
Bulgaria(a)	-	-	-	-	4	NA	4	NA	4	NA
Cyprus	-	-	-	-	9	NA	9	NA	9	NA
Denmark	2	NA	-	-	2	NA	2	NA	2	NA
Estonia	17	5.9	-	-	17	100	17	0	17	94.1
Finland	-	-	-	-	115	83.5	115	13	75	58.7
France(a)	981	2.2	1,112	1.2	1,108	64.2	1,110	6.9	1,109	79.2
Germany	209	3.8	190	36.8	190	69.5	209	9.6	190	67.4
Greece	13	23.1	12	33.3	13	84.6	13	38.5	13	69.2
Hungary(a)	-	-	-	-	127	83.5	127	0.8	127	39.4
Ireland(b)	-	-	-	-	34	55.9	34	0	34	52.9
Italy	26	3.8	-	-	26	73.1	26	15.4	26	76.9
Lithuania(a)	-	-	-	-	17	88.2	18	5.6	8	NA
Luxembourg	24	0	24	33.3	24	70.8	24	8.3	24	70.8
Malta	-	-	-	-	47	53.2	47	0	-	-
Netherlands(b)	55	1.8	-	-	55	0	55	3.6	55	56.4
Poland	3	NA	-	-	3	NA	3	NA	3	NA
Portugal	78	1.3	-	-	78	98.7	78	26.9	78	93.6
Romania	-	-	-	-	2	NA	2	NA	2	NA
Slovakia(a)	-	-	33	42.4	91	75.8	91	3.3	55	72.7
Slovenia	-	-	-	-	121	85.1	121	0.8	121	35.5
Spain	134	9.0	-	-	135	89.6	135	19.3	135	88.9
Total (22 MSs)	**1,615**	**3.0**	**1,371**	**8.0**	**2,291**	**70.6**	**2,313**	**7.8**	**2,160**	**71.2**
Iceland	-	-	-	-	1	NA	1	NA	1	NA
Norway	6	NA	-	-	6	NA	6	NA	6	NA

N: number of isolates tested; % Res: percentage of resistant isolates [note in this reported either interpreted as non-wild type by ECOFFs or by combining R and I categories from clinical breakpoints]; –: no data reported; NA: not applicable - if fewer than 10 isolates were tested resistance was not calculated;
(a) Provided interpreted SIR data.
(b): Microbiological resistance predicted from whole genome sequencing (WGS)

Table 3: Proportion of *Campylobacter jejuni* isolates from humans resistant to both ciprofloxacin (CIP) and erythromycin (ERY) per country in 2022

Country	Tested for CIP and ERY (N)	Resistant to both CIP and ERY (%)
Austria	385	0.5
Bulgaria	47	0
Cyprus	50	0
Denmark	234	0
Estonia	220	1.4
Finland	1,499	1.3
France	6,677	0
Germany	1,610	1.2
Greece	76	1.3
Hungary	429	0
Ireland	178	0
Italy	119	0
Lithuania	373	0.5
Luxembourg	213	0.5
Malta	189	0.5
Netherlands	399	0.3
Poland	32	0
Portugal	353	1.1
Romania	5	NA
Slovakia	968	0
Slovenia	796	0.5
Spain	615	3.1
Total (22 MSs)	**15,467**	**0.7**
Iceland	43	0
Norway	233	0

Table 4: Proportion of *Campylobacter coli* isolates from humans resistant to both ciprofloxacin (CIP) and erythromycin (ERY) per country in 2022

Country	Tested for CIP and ERY (N)	Resistant to both CIP and ERY (%)
Austria	73	0.0
Bulgaria	4	NA
Cyprus	9	NA
Denmark	2	NA
Estonia	17	0.0
Finland	115	12.2
France	1,106	6.2
Germany	190	8.9
Greece	13	23.1
Hungary	127	0.8
Ireland	34	0.0
Italy	26	15.4
Lithuania	17	5.9
Luxembourg	24	8.3
Malta	47	0.0
Netherlands	55	0.0
Poland	3	NA
Portugal	78	26.9
Romania	2	NA
Slovakia	91	2.2
Slovenia	121	0.8
Spain	135	18.5
Total (22 MSs)	**2,289**	**7.1**
Iceland	1	NA
Norway	6	NA

Table 5: Complete susceptibility and multiresistance in *Campylobacter jejuni* from humans in 2022

Country	Susceptible to all (%)	Multi-resistant (%)
Austria (N = 385)	20.0	0.5
Denmark (N = 234)	47.9	0.0
Estonia (N = 220)	8.6	0.5
France (N = 5791)	29.7	0.3
Germany (N = 1609)	25.7	0.7
Greece (N = 74)	9.5	1.4
Italy (N = 119)	11.8	1.7
Luxembourg (N = 213)	35.2	0.5
Malta (N = 3)	NA	NA
Netherlands (N = 399)	32.8	0.5
Poland (N = 32)	6.3	0.0
Portugal (N = 353)	3.1	1.1
Spain (N = 615)	11.1	4.4
Total (13 MS) (N = 10,047)	**26.4**	**0.7**
Norway (N = 233)	74.7	0.0

Table 6: Complete susceptibility and multiresistance in *Campylobacter coli* from humans in 2022

Country	Susceptible to all (%)	Multi-resistant (%)
Austria (N = 73)	8.2	0.0
Denmark (N = 2)	NA	NA
Estonia (N = 17)	0.0	5.9
France (N = 976)	14.7	7.1
Germany (N = 190)	14.2	8.4
Greece (N = 13)	0.0	30.8
Italy (N = 26)	19.2	15.4
Luxembourg (N = 24)	12.5	4.2
Netherlands (N = 55)	43.6	0.0
Poland (N = 3)	NA	NA
Portugal (N = 78)	1.3	28.2
Spain (N = 134)	5.2	19.4
Total (12 MS) (N = 1,591)	**13.6**	**9.0**
Norway (N = 6)	NA	NA

Section B.2. Antimicrobial resistance in *Campylobacter* spp. from food producing animals and derived meat

Table 7: Overview of the data reported in 2021/2022 in the framework of the Commission Implementing Decision (EU) 2020/1729

Year	*Campylobacter* species	Origin	MSs	Non-MSs	Total
2021	*C. jejuni*	Caecal samples of fattening pigs[m]	12 (N = 60)	1 (N = 17)	13 (N = 77)
		Caecal samples of cattle under one year[m]	10 (N = 1,198)	2 (N = 270)	12 (N = 1,468)
		Caecal samples of broilers	2 (N = 275)	-	2 (N = 275)
	C. coli	Caecal samples of fattening pigs[m]	26+XI (N = 3,546)	3 (N = 624)	30 (N = 4,170)
		Caecal samples of cattle under one year [m]	10 (N = 443)	-	10 (N = 443)
		Caecal samples of broilers	2 (N = 89)	-	2 (N = 89)
2022	*C. jejuni*	Caecal samples of broilers[m]	26+XI (N = 2,927)	3 (N = 325)	30 (N = 3,252)
		Caecal samples from fattening turkeys[m]	10 (N = 929)	-	10 (N = 929)
		Caecal samples of fattening pigs	2 (N = 6)	-	2 (N = 6)
		Caecal samples of cattle under one year	2 (N = 297)	-	2 (N = 297)
	C. coli	Caecal samples of broilers[m]	24+XI (N = 1,565)	3 (N = 64)	28 (N = 1,629)
		Caecal samples from fattening turkeys[m]	11 (N = 1,381)	-	11 (N = 1,381)
		Caecal samples of fattening pigs	2 (N = 444)	1 (N = 2)	3 (N = 446)
		Caecal samples of cattle under one year	2 (N = 198)	-	2 (N = 198)

MSs: Member States; N: Total number of isolates reported by all MSs; m= mandatory

Table 8: Overview of data reported in 2022 for *C. coli* isolates from legislative categories.

EU / Non-EU	AMR species type	Origin	Origin detailed	N countries	Countries (number of isolates)
EU	Animal	Gallus gallus (fowl)	Gallus gallus (fowl) - broilers	24+XI	AT (48), BE (39), BG (31), HR (7), CY (84), CZ (82), DK (56), EE (1), FR (175), DE (31), HU (43), IE (96), IT (172), LV (6), LU (24), MT (71), NL (48), PL (41), PT (97),RO (160), SK (27), SI (40), ES (92), SE (16), XI (78)
EU	Animal	Turkeys	Fattening turkeys	11	AT (27), HR (38), FR (223), DE (148), HU (170), IE (43), IT (170), PL (176), PT (143), RO (73), ES (170)
EU	Animal	Cattle (bovine animals) - calves (under one year)	Cattle (bovine animals)	2	BE (74), NL (124)
EU	Animal	Pigs	Fattening pigs	2	BE (164), NL (280)
Non-EU	Animal	Gallus gallus (fowl)	Gallus gallus (fowl) - broilers	3	NO (1), MK (1), CH (62)

Table 9: Overview of data reported in 2022 for C*. jejuni* isolates from legislative categories.

EU / Non-EU	AMR species type	Origin	Origin detailed	N countries	Countries (number of isolates)
EU	Animal	Gallus gallus (fowl)	Gallus gallus (fowl) - broilers	26+XI	AT (181), BE (50), BG (55), HR (78), CY (65), CZ (183), DK (170), EE (6), FI (70), FR (164), DE (120), HU (127), IE (170), IT (170), LV (54), LT (85), LU (23), MT (19), NL (34), PL (186), PT (141), RO (170), SK (80), SI (85), ES (170), SE (163), XI (108)
EU	Animal	Turkeys	Fattening turkeys	10	AT (50), HR (16), FR (115), DE (140), IE (44), IT (88), PL (209), PT (38), RO (59), ES (170)
EU	Animal	Cattle (bovine animals) - calves (under one year)	Cattle (bovine animals)	2	BE (135), NL (162)
EU	Animal	Pigs	Fattening pigs	2	BE (1), NL (5)
Non-EU	Animal	Gallus gallus (fowl)	Gallus gallus (fowl) - broilers	3	IS (7), NO (86), CH (232)

Table 10: Overview of data reported in 2022 for *C. jejuni* isolates from non-legislative categories.

AMR species type	Origin	Origin detailed	N countries	Countries (number of isolates)
Animal	Cattle (bovine animals)	Cattle (bovine animals)	1	LU (46)
		Cattle (bovine animals) - meat production animals - calves (under one year)	1	NL (115)
	Ducks	Ducks - meat production flocks - before slaughter	1	DE (210)
	Gallus gallus (fowl)	Gallus gallus (fowl) - laying hens	1	LU (1)
	Turkeys	Turkeys	1	LU (4)
Food	Meat from cattle	Meat from bovine animals - fresh	1	NL (2)
	Meat from broilers (Gallus gallus)	Meat from broilers (Gallus gallus)	1	PT (6)
		Meat from broilers (Gallus gallus) - carcase	1	DE (130)
		Meat from broilers (Gallus gallus) - carcase - chilled	1	NL (57)
		Meat from broilers (Gallus gallus) - fresh	2	BE (6) LU (12)
		Meat from broilers (Gallus gallus) - fresh - chilled	2	DE (172) NL (38)
		Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked	1	LU (3)
	Meat from ducks	Meat from duck - carcase	1	DE (284)
		Meat from duck - fresh	1	NL (20)
		Meat from duck - fresh - chilled	1	DE (42)
		Meat from duck - fresh - frozen	1	DE (106)
	Meat from pigs	Meat from pig - offal - liver	1	DE (1)
	Poultry	Meat from poultry, unspecified - fresh	1	BE (2)
		Meat from poultry, unspecified - fresh - with skin	1	BE (38)
	Meat from sheep	Meat from sheep - fresh	1	NL (2)

	Meat from turkeys	Meat from turkey - fresh	1	LU (2)
		Meat from turkey - fresh - chilled	1	DE (25)
		Meat from turkey - meat preparation - intended to be eaten cooked	1	LU (2)
	Milk	Milk, cows' - raw milk	1	BE (1)

Table 11: Overview of data reported in 2022 for *C. coli* isolates from non-legislative categories.

Species type	Origin	Origin detailed	N countries	Countries (number of isolates)
Animal	Cattle (bovine animals)	Cattle (bovine animals) Cattle (bovine animals) - meat production animals - calves (under one year)	1 1	LU (1) NL (156)
	Ducks	Ducks - meat production flocks - before slaughter	1	DE (107)
Food	Meat from cattle	Meat from bovine animals - fresh	1	NL (2)
	Meat from broilers (Gallus gallus)	Meat from broilers (Gallus gallus) - carcase	2	DE (20) PT (1)
		Meat from broilers (Gallus gallus) - carcase - chilled	1	NL (36)
		Meat from broilers (Gallus gallus) - fresh	2	BE (1) LU (7)
		Meat from broilers (Gallus gallus) - fresh - chilled	2	DE (47) NL (22)
		Meat from broilers (Gallus gallus) - meat preparation - intended to be eaten cooked	1	LU (1)
		Meat from broilers (Gallus gallus) - meat products - non-ready-to-eat	1	LU (1)
	Meat from ducks	Meat from duck - carcase	1	DE (37)
		Meat from duck - fresh	1	NL (6)
		Meat from duck - fresh - chilled	1	DE (24)
		Meat from duck - fresh - frozen	1	DE (47)
	Meat from pigs	Meat from pig - fresh	1	NL (2)
		Meat from pig - offal - liver	1	DE (11)
	Poultry	Meat from poultry, unspecified - fresh - with skin	1	BE (21)
	Meat from turkeys	Meat from turkey - fresh	1	LU (4)
		Meat from turkey - fresh - chilled	2	DE (15) NL (1)
	Meat from wild game	Meat from wild game - birds - fresh	1	NL (4)
	Mixed	Meat, mixed meat - meat products	1	BE (1)

Table 12: Occurrence of resistance (%) to selected antimicrobials in *Campylobacter jejuni* and *C. coli* from carcases, fresh meat, unspecified meat and meat preparations from broilers, using harmonised ECOFFs, EU MSs, 2021 and 2022

***Campylobacter* species**	**Categories**	**Year**	**N**	**Reporting Countries (N)**	**GEN**	**CHL**	**ETP**	**CIP**	**ERY**	**TET**	**CIP/ ERY**
C. jejuni	Carcases	2022	187	DE, NL (2)	0.0	0.5	17.1	78.1	0.5	62.6	0.0
		2021	67	NL, RO (2)	0.0	0.0	11.9	62.3	0.0	58.2	0.0
	Fresh	2022	228	BE, DE, LU, NL (4)	0.4	1.3	8.3	69.3	1.8	50.4	1.8
		2021	115	BE, LU, NL (3)	0.0	0.0	7.8	60.9	0.0	46.1	0.0
	Meat preparations	2022	3	LU (1)	0.0	0.0	0.0	66.7	0.0	33.3	0.0
		2021	25	LU, NL (2)	0.0	0.0	4.0	52.0	0.0	44.0	0.0
	Meat unspecified	2022	6	PT (1)	0.0	0.0	50.0	100.0	0.0	100.0	0.0
		2021	8	PT (1)	0.0	0.0	25.0	87.5	12.5	100.0	12.5
C. coli	Carcases	2022	57	DE, NL, PT (3)	0.0	0.0	57.9	86.0	3.5	63.2	3.5
		2021	52	NL, RO (2)	0.0	0.0	25.0	96.2	3.9	59.6	3.9
	Fresh	2022	77	BE, DE, LU, NL (4)	0.0	0.0	54.6	87.0	10.4	70.1	10.4
		2021	28	BE, LU, NL (3)	0.0	0.0	46.4	75.0	10.7	60.7	10.7
	Meat preparations	2022	1	LU (1)	0.0	0.0	0.0	100.0	0.0	100.0	0.0
		2021	14	NL (1)	0.0	0.0	14.3	85.7	7.1	42.9	7.1
	Meat unspecified	2022	1	LU (1)	0.0	0.0	100.0	100.0	0.0	100.	0.0
		2021	10	PT (1)	0.0	0.0	40.0	100.0	40.0	100.0	40.0

ECOFFs: epidemiological cut-off values; MSs: Member States; N: total number of reporting MSs; GEN: gentamicin; CHL: chloramphenicol; ETP: ertapenem; CIP: ciprofloxacin; ERY: erythromycin; TET: tetracycline; CIP/ERY: combined 'microbiological' resistance to ciprofloxacin and erythromycin; CS: complete susceptibility to the four antimicrobial classes (ciprofloxacin; erythromycin; tetracycline and gentamicin)

Table 13: Occurrence of resistance (%) to selected antimicrobials in *Campylobacter jejuni* from fattening pigs, using harmonised ECOFFs, EU MSs and non-MSs, 2021

Reporting country	N	GEN (%)	CHL (%)	ETP (%)	CIP (%)	ERY (%)	TET (%)
Bulgaria	4	0.0	0.0	0.0	25.0	0.0	50.0
Cyprus	3	33.3	0.0	0.0	100.0	0.0	100.0
Denmark	4	0.0	0.0	0.0	0.0	0.0	25.0
Germany	3	0.0	0.0	0.0	0.0	0.0	0.0
Ireland	1	0.0	0.0	0.0	0.0	0.0	0.0
Italy	6	0.0	0.0	0.0	83.3	0.0	33.3
Latvia	1	0.0	0.0	0.0	0.0	0.0	0.0
Lithuania	6	0.0	0.0	0.0	66.7	16.7	66.7
Luxembourg	3	0.0	0.0	0.0	33.3	0.0	33.3
Malta	27	0.0	0.0	0.0	33.3	0.0	40.7
Netherlands	1	0.0	0.0	0.0	100.0	0.0	100.0
Portugal	1	0.0	0.0	0.0	100.0	0.0	100.0
Total (12 MSs)	**60**	**1.7**	**0.0**	**0.0**	**41.7**	**1.7**	**43.3**
Norway	17	0.0	0.0	0.0	5.9	0.0	0.0

ECOFFs: epidemiological cut-off values; MSs: Member States; N: number of isolates tested; GEN: gentamicin; CHL: chloramphenicol; ETP: ertapenem; CIP: ciprofloxacin; ERY: erythromycin; TET: tetracycline

Table 14: Occurrence of resistance (%) to selected antimicrobials in *Campylobacter coli* from fattening pigs, using harmonised ECOFFs, EU MSs and non-MSs, 2021

Reporting country	N	GEN (%)	CHL (%)	ETP (%)	CIP (%)	ERY (%)	TET (%)
Austria	191	0.0	0.0	1.6	55.5	5.2	86.4
Belgium	165	1.2	0.0	6.1	43.6	9.1	83.6
Bulgaria	20	0.0	0.0	0.0	55.0	25.0	90.0
Croatia	85	0.0	0.0	1.2	63.5	11.8	76.5
Cyprus	24	8.3	4.2	4.2	62.5	62.5	87.5
Denmark	121	0.0	0.0	0.8	19.8	5.8	25.6
Estonia	140	0.0	0.0	0.0	26.4	6.4	83.6
Finland	170	0.0	0.0	0.0	33.5	0.6	0.0
France	203	1.0	0.0	0.0	40.9	17.7	85.2
Germany	258	0.4	0.0	0.0	57.8	10.5	71.7
Greece	37	2.7	0.0	0.0	62.2	29.7	94.6
Hungary	170	2.9	0.0	0.0	54.1	5.3	65.9
Ireland	170	0.0	0.0	0.0	37.1	9.4	58.8
Italy	197	31.0	7.6	4.1	79.2	44.7	89.3
Latvia	115	1.7	0.0	0.0	52.2	1.7	63.5
Lithuania	85	2.4	0.0	0.0	69.4	4.7	78.8
Luxembourg	203	0.5	0.0	1.0	61.1	5.4	88.7
Malta	34	0.0	0.0	0.0	58.8	0.0	61.8
Netherlands	287	0.7	0.0	2.8	17.8	3.5	77.4
Poland	180	0.0	0.0	0.6	65.6	7.8	72.8
Portugal	30	3.3	0.0	0.0	70.0	66.7	100.0
Romania	146	2.1	0.7	4.1	74.7	24.0	83.6
Slovakia	62	0.0	0.0	3.2	66.1	0.0	90.3
Slovenia	85	1.2	0.0	3.5	84.7	2.4	54.1
Spain	170	3.5	0.0	0.0	90.6	43.5	90.6
Sweden	174	0.0	0.0	0.0	32.2	0.0	0.0
United Kingdom (Northern Ireland)	24	0.0	0.0	4.2	29.2	8.3	79.2
Total (26 MSs + XI)	**3,546**	**2.6**	**0.5**	**1.3**	**51.7**	**12.2**	**69.3**
Iceland	145	0.0	0.0	0.0	75.9	0.0	0.0
Norway	288	0.0	0.0	0.0	18.4	0.0	0.0
Switzerland	191	0.0	0.0	0.0	53.9	0.0	66.5

ECOFFs: epidemiological cut-off values; MSs: Member States; N: number of isolates tested; GEN: gentamicin; CHL: chloramphenicol; ETP: ertapenem; CIP: ciprofloxacin; ERY: erythromycin; TET: tetracycline

Table 15: Occurrence of resistance (%) to selected antimicrobials in *Campylobacter coli* from cattle under one year of age, using harmonised ECOFFs, EU MSs, 2021

Reporting country	N	GEN (%)	CHL (%)	ETP (%)	CIP (%)	ERY (%)	TET (%)
Belgium	72	12.5	11.1	55.6	93.1	77.8	100.0
Croatia	38	2.6	15.8	13.2	63.2	21.1	65.8
Denmark	10	0.0	0.0	10.0	30.0	10.0	40.0
France	32	12.5	0.0	9.4	71.9	25.0	87.5
Germany	41	2.4	0.0	29.3	73.2	24.4	92.7
Italy	78	42.3	0.0	10.3	92.3	30.8	94.9
Netherlands	137	3.7	0.7	39.4	77.4	33.6	95.6
Portugal	6	0.0	0.0	16.7	83.3	0.0	83.3
Romania	8	0.0	0.0	37.5	62.5	0.0	50.0
Spain	21	9.5	0.0	9.5	85.7	23.8	95.2
Total (10 MSs)	**443**	**12.4**	**3.4**	**29.1**	**79.7**	**35.7**	**90.5**

ECOFFs: epidemiological cut-off values; MSs: Member States; N: number of isolates tested; GEN: gentamicin; CHL: chloramphenicol; ETP: ertapenem; CIP: ciprofloxacin; ERY: erythromycin; TET: tetracycline

Table 16: Occurrence of resistance (%) to selected antimicrobials in *Campylobacter jejuni* from cattle under one year of age, using harmonised ECOFFs, EU MSs and non-MSs, 2021

Reporting country	N	GEN (%)	CHL (%)	ETP (%)	CIP (%)	ERY (%)	TET (%)
Belgium	146	0.0	0.7	4.1	66.4	4.8	88.4
Croatia	47	0.0	0.0	4.3	70.2	4.3	42.6
Denmark	177	0.0	0.0	0.0	24.9	0.0	9.0
France	127	0.0	0.0	0.0	48.0	1.6	81.1
Germany	133	0.0	0.0	0.0	65.4	0.0	84.2
Italy	146	4.1	0.0	0.0	63.7	0.0	84.3
Netherlands	222	0.0	0.0	0.5	53.2	0.0	91.0
Portugal	23	0.0	0.0	4.4	43.5	0.0	60.9
Romania	39	0.0	0.0	2.6	71.8	2.6	41.0
Spain	138	0.0	0.0	0.7	60.9	0.0	64.5
Total (10 MSs)	**1,198**	**0.5**	**0.1**	**1.0**	**54.7**	**1.0**	**68.8**
Norway	127	0.0	0.0	2.4	13.4	0.0	4.7
Switzerland	143	0.0	0.0	1.4	58.0	0.0	46.2

ECOFFs: epidemiological cut-off values; MSs: Member States; N: number of isolates tested; GEN: gentamicin; CHL: chloramphenicol; ETP: ertapenem; CIP: ciprofloxacin; ERY: erythromycin; TET: tetracycline

Table 17: Occurrence of resistance (%) to selected antimicrobials in *Campylobacter jejuni* from broilers, using harmonised ECOFFs, EU MSs and non-MSs, 2022

Reporting country	N	GEN (%)	CHL (%)	ETP (%)	CIP (%)	ERY (%)	TET (%)
Austria	181	0.0	0.0	7.2	82.9	0.0	55.2
Belgium	50	4.0	2.0	12.0	58.0	14.0	50.0
Bulgaria	55	0.0	0.0	5.5	83.6	3.6	43.6
Croatia	78	0.0	0.0	12.8	83.3	0.0	35.9
Cyprus	65	0.0	0.0	7.7	84.6	0.0	84.6
Czechia	183	0.0	0.0	11.5	87.4	0.5	34.4
Denmark	170	0.0	0.0	1.8	38.2	0.0	24.1
Estonia	6	0.0	0.0	0.0	50.0	0.0	50.0
Finland	70	0.0	0.0	0.0	1.4	0.0	0.0
France	164	0.0	0.0	9.8	47.0	0.0	51.8
Germany	120	0.0	0.0	15.8	72.5	0.0	52.5
Hungary	127	0.0	0.0	15.0	93.7	0.0	63.8
Ireland	170	0.0	0.0	3.5	25.9	0.0	35.9
Italy	170	0.0	0.0	20.0	87.6	0.0	65.3
Latvia	54	0.0	0.0	3.7	92.6	0.0	24.1
Lithuania	85	0.0	0.0	0.0	90.6	0.0	56.5
Luxembourg	23	0.0	0.0	0.0	87.0	0.0	82.6
Malta	19	0.0	0.0	10.5	52.6	5.3	42.1
Netherlands	34	0.0	0.0	8.8	61.8	0.0	44.1
Poland	186	0.0	0.0	22.6	97.3	0.0	78.0
Portugal	141	0.0	0.0	23.4	96.5	6.4	81.6
Romania	170	0.0	0.0	16.5	93.5	8.8	66.5
Slovakia	80	0.0	0.0	21.3	86.3	0.0	53.8
Slovenia	85	0.0	0.0	3.5	88.2	0.0	51.8
Spain	170	0.0	0.0	4.7	90.0	0.0	70.6
Sweden	163	0.0	0.0	0.0	20.2	0.0	0.0
United Kingdom (Northern Ireland)	108	1.9	0.0	4.6	38.0	9.3	55.6
Total (26 MSs + XI)	**2,927**	**0.1**	**0.0**	**10.2**	**70.9**	**1.5**	**50.7**
Iceland	7	0.0	0.0	0.0	0.0	0.0	0.0
Norway	86	0.0	0.0	1.2	5.8	0.0	8.1
Switzerland	232	0.0	0.0	0.0	45.7	0.0	27.2

ECOFFs: epidemiological cut-off values; MSs: Member States; N: number of isolates tested; GEN: gentamicin; CHL: chloramphenicol; ETP: ertapenem; CIP: ciprofloxacin; ERY: erythromycin; TET: tetracycline

Table 18: Occurrence of resistance (%) to selected antimicrobials in *Campylobacter jejuni* from fattening turkeys using harmonised ECOFFs, EU MSs, 2022

Reporting country	N	GEN (%)	CHL (%)	ETP (%)	CIP (%)	ERY (%)	TET (%)
Austria	50	0.0	0.0	16.0	74.0	0.0	56.0
Croatia	16	0.0	0.0	12.5	81.3	0.0	18.8
France	115	0.0	0.0	7.8	64.4	0.9	60.9
Germany	140	0.0	0.0	25.0	65.0	0.0	45.7
Ireland	44	0.0	0.0	2.3	34.1	0.0	56.8
Italy	88	0.0	0.0	22.7	84.1	1.1	65.9
Poland	209	0.0	0.5	11.5	90.4	1.4	57.4
Portugal	38	0.0	0.0	26.3	79.0	13.2	73.7
Romania	59	0.0	0.0	27.1	93.2	10.2	76.3
Spain	170	0.0	0.0	8.8	87.1	0.0	62.9
Total (10 MSs)	**929**	**0.0**	**0.1**	**15.1**	**78.2**	**1.7**	**59.0**

ECOFFs: epidemiological cut-off values; MSs: Member States; N: number of isolates tested; GEN: gentamicin; CHL: chloramphenicol; ETP: ertapenem; CIP: ciprofloxacin; ERY: erythromycin; TET: tetracycline

Table 19: Occurrence of resistance (%) to selected antimicrobials in *Campylobacter coli* from broilers using harmonised ECOFFs, EU MSs and non-MSs, 2022

Reporting country	N	GEN (%)	CHL (%)	ETP (%)	CIP (%)	ERY (%)	TET (%)
Austria	48	0.0	0.0	68.8	77.1	0.0	54.2
Belgium	39	0.0	5.1	56.4	89.7	10.3	71.8
Bulgaria	31	0.0	0.0	61.3	90.3	3.2	64.5
Croatia	7	0.0	0.0	71.4	100.0	0.0	100.0
Cyprus	84	0.0	0.0	9.5	92.9	1.2	76.2
Czechia	82	1.2	0.0	56.1	93.9	0.0	52.4
Denmark	56	0.0	0.0	23.2	39.3	0.0	44.6
Estonia	1	0.0	0.0	100.0	100.0	0.0	0.0
France	175	0.6	0.0	34.3	37.1	1.1	82.3
Germany	31	0.0	0.0	58.1	96.8	6.5	80.6
Hungary	43	0.0	0.0	58.1	81.4	0.0	37.2
Ireland	96	0.0	0.0	24.0	41.7	2.1	75.0
Italy	172	4.1	0.0	29.1	79.1	11.0	69.8
Latvia	6	0.0	0.0	83.3	100.0	0.0	16.7
Luxembourg	24	0.0	0.0	58.3	100.0	0.0	79.2
Malta	71	22.5	12.7	14.1	57.7	25.4	28.2
Netherlands	48	0.0	0.0	70.8	87.5	4.2	45.8
Poland	41	0.0	0.0	78.0	95.1	0.0	78.0
Portugal	97	0.0	0.0	70.1	95.9	36.1	97.9
Romania	160	0.0	0.0	71.9	82.5	14.4	66.3
Slovakia	27	0.0	0.0	55.6	100.0	0.0	59.3
Slovenia	40	2.5	0.0	72.5	97.5	0.0	37.5
Spain	92	5.4	0.0	28.3	88.0	25.0	91.3
Sweden	16	0.0	0.0	6.3	25.0	0.0	0.0
United Kingdom (Northern Ireland)	78	1.3	0.0	2.6	30.8	7.7	73.1
Total (24 MSs + XI)	**1,565**	**2.0**	**0.7**	**43.1**	**73.0**	**8.8**	**67.5**
Norway	1	0.0	0.0	0.0	0.0	0.0	0.0
Republic of North Macedonia	1	0.0	0.0	100.0	0.0	0.0	0.0
Switzerland	62	0.0	0.0	16.1	59.7	1.6	37.1

ECOFFs: epidemiological cut-off values; MSs: Member States; N: number of isolates tested; GEN: gentamicin; CHL: chloramphenicol; ETP: ertapenem; CIP: ciprofloxacin; ERY: erythromycin; TET: tetracycline

Table 20: Occurrence of resistance (%) to selected antimicrobials in *Campylobacter coli* from fattening turkeys using harmonised ECOFFs, EU MSs, 2022

Reporting country	N	GEN (%)	CHL (%)	ETP (%)	CIP (%)	ERY (%)	TET (%)
Austria	27	0.0	0.0	63.0	63.0	0.0	59.3
Croatia	38	0.0	0.0	21.1	86.8	0.0	42.1
France	223	0.0	0.0	37.2	43.0	6.7	91.9
Germany	148	0.0	0.0	69.6	93.2	20.3	81.8
Hungary	170	0.0	0.0	61.8	97.1	0.0	49.4
Ireland	43	0.0	0.0	20.9	58.1	23.3	65.1
Italy	170	2.9	0.0	49.4	83.5	7.7	82.4
Poland	176	0.0	0.0	85.8	98.3	11.9	80.7
Portugal	143	0.0	0.0	67.1	97.9	58.0	98.6
Romania	73	0.0	0.0	93.2	97.3	87.7	79.5
Spain	170	1.8	0.0	46.5	94.7	7.7	88.8
Total (11 MSs)	**1,381**	**0.6**	**0.0**	**58.2**	**84.1**	**18.0**	**79.8**

Table 21: Number and proportion positive (%) of *Campylobacter jejuni* caecal samples from broilers, 2022.

Reporting country	Total samples tested	N of *C. jejuni*-positive samples	% positive
Austria	428	185	43.2
Cyprus	390	65	16.7
Czechia	422	198	46.9
Denmark	669	170	25.4
Finland	2,036	70	3.4
France	664	164	24.7
Germany	458	125	27.3
Ireland	438	195	44.5
Italy	840	170	20.2
Latvia	150	54	36.0
Lithuania	425	287	67.5
Luxembourg	52	23	44.2
Netherlands	300	34	11.3
Portugal	402	202	50.2
Romania	450	254	56.4
Slovakia	300	80	26.7
Slovenia	180	103	57.2
Spain	564	239	42.4
Sweden	4,104	163	4.0
United Kingdom (Northern Ireland)	308	288	93.5
Total (19 MSs+XI)	**13,580**	**3,069**	**22.6**
Iceland	153	7	4.6
Norway	2,189	86	3.9
Switzerland	800	232	29.0

Only countries reporting prevalence of *Campylobacter* at species level, i.e. prevalence of *C. jejuni* in broilers, are presented.

Table 22: Number and proportion positive (%) of *Campylobacter jejuni* caecal samples from fattening turkeys, 2022.

Reporting country	Total samples tested	N of *C. jejuni*-positive samples	% positive
Austria	144	50	34.7
France	598	115	19.2
Germany	465	142	30.5
Ireland	95	44	46.3
Italy	780	88	11.3
Portugal	284	48	16.9
Romania	149	59	39.6
Spain	566	274	48.4
Total (8 MSs)	**3,081**	**820**	**26.6**

Only countries reporting prevalence of *Campylobacter* at species level, i.e. prevalence of *C. jejuni* in fattening turkeys, are presented.

Table 23: Number and proportion positive (%) of *Campylobacter coli* caecal samples from broilers, 2022.

Reporting country	Total samples tested	N of *C. coli*-positive samples	% positive
Austria	428	49	11.4
Cyprus	390	85	21.8
Czechia	422	82	19.4
Denmark	669	56	8.4
France	664	175	26.4
Germany	458	32	7.0
Ireland	438	96	21.9
Italy	840	172	20.5
Latvia	150	6	4.0
Luxembourg	52	24	46.2
Netherlands	300	48	16.0
Portugal	402	115	28.6
Romania	450	160	35.6
Slovakia	300	27	9.0
Slovenia	180	45	25.0
Spain	564	92	16.3
Sweden	4,104	16	0.4
United Kingdom (Northern Ireland)	308	288	93.5
Total (17 MSs+XI)	**11,119**	**1,568**	**14.10**
Norway	2,189	1	0.0
Republic of North Macedonia	5	1	20.0
Switzerland	800	62	7.8

Only countries reporting prevalence of *Campylobacter* at species level, i.e. prevalence of *C. coli* in broilers, are presented.

Table 24: Number and proportion positive (%) of *Campylobacter coli* caecal samples from fattening turkeys, 2022.

Reporting country	Total samples tested	N of C. coli-positive samples	% positive
Austria	144	27	18.8
France	598	223	37.3
Germany	465	151	32.5
Hungary	465	170	36.6
Ireland	95	43	45.3
Italy	780	170	21.8
Portugal	284	204	71.8
Romania	149	73	49.0
Spain	566	184	32.5
Total (9 MSs)	**3,081**	**1,075**	**34.9**

Only countries reporting prevalence of *Campylobacter* at species level, i.e. prevalence of *C. coli* in fattening turkeys, are presented.

Table 25: Prevalence of resistance (%) to selected antimicrobials in *Campylobacter jejuni* from broilers using harmonised ECOFFs, 2022

Reporting country	Total samples tested	CIP		ERY		GEN		TET		CHL		ETP	
		Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI
Austria	428	35.8	31.3 - 40.6	0.0	0 - 0.9	0.0	0 - 0.9	23.9	19.9 - 28.2	0.0	0 - 0.9	3.1	1.7 - 5.2
Cyprus	390	14.1	10.8 - 18	0.0	0 - 0.9	0.0	0 - 0.9	14.1	10.8 - 18	0.0	0 - 0.9	1.3	0.4 – 3
Czechia	422	41.0	36.3 - 45.9	0.3	0 - 1.3	0.0	0 - 0.9	16.2	12.8 - 20	0.0	0 - 0.9	5.4	3.4 – 8
Denmark	669	9.7	7.6 - 12.2	0.0	0 - 0.5	0.0	0 - 0.5	6.1	4.4 - 8.2	0.0	0 - 0.5	0.4	0.1 - 1.3
Finland	2036	0.0	0 - 0.3	0.0	0 - 0.2	0.0	0 - 0.2	0.0	0 - 0.2	0.0	0 - 0.2	0.0	0 - 0.2
France	664	11.6	9.3 - 14.3	0.0	0 - 0.6	0.0	0 - 0.6	12.8	10.4 - 15.6	0.0	0 - 0.6	2.4	1.4 - 3.9
Germany	458	19.8	16.2 - 23.7	0.0	0 - 0.8	0.0	0 - 0.8	14.3	11.2 - 17.9	0.0	0 - 0.8	4.3	2.7 - 6.6
Ireland	438	11.5	8.7 - 14.9	0.0	0 - 0.8	0.0	0 - 0.8	16.0	12.7 - 19.7	0.0	0 - 0.8	1.6	0.6 - 3.2
Italy	840	17.7	15.2 - 20.5	0.0	0 - 0.4	0.0	0 - 0.4	13.2	11 - 15.7	0.0	0 - 0.4	4.0	2.8 - 5.6
Latvia	150	33.3	25.9 - 41.5	0.0	0 - 2.4	0.0	0 - 2.4	8.7	4.7 - 14.4	0.0	0 - 2.4	1.3	0.2 - 4.7
Lithuania	425	61.2	56.4 - 65.8	0.0	0 - 0.9	0.0	0 - 0.9	38.1	33.5 - 42.9	0.0	0 - 0.9	0.0	0 - 0.9
Luxembourg	52	38.5	25.3 - 53	0.0	0 - 6.8	0.0	0 - 6.8	36.5	23.6 - 51	0.0	0 - 6.8	0.0	0 - 6.8
Netherlands	300	7.0	4.4 - 10.5	0.0	0 - 1.2	0.0	0 - 1.2	5.0	2.8 - 8.1	0.0	0 - 1.2	1.0	0.2 - 2.9
Portugal	402	48.5	43.5 - 53.5	3.2	1.7 - 5.4	0.0	0 - 0.9	41.0	36.1 - 46	0.0	0 - 0.9	11.8	8.8 - 15.3
Romania	450	53.1	48.4 - 57.8	5.0	3.2 - 7.4	0.0	0 - 0.8	37.5	33 - 42.2	0.0	0 - 0.8	9.3	6.8 – 12.4
Slovakia	300	23.0	18.4 - 28.2	0.0	0 - 1.2	0.0	0 - 1.2	14.3	10.6 - 18.8	0.0	0 - 1.2	5.7	3.3 - 8.9
Slovenia	180	50.5	43 - 58	0.0	0 - 2	0.0	0 - 2	29.6	23.1 - 36.9	0.0	0 - 2	2.0	0.5 - 5.3
Spain	564	38.1	34.1 - 42.3	0.0	0 - 0.7	0.0	0 - 0.7	29.9	26.2 - 33.9	0.0	0 - 0.7	2.0	1 - 3.5
Sweden	4104	0.8	0.6 - 1.1	0.0	0 - 0.1	0.0	0 - 0.1	0.0	0 - 0.1	0.0	0 - 0.1	0.0	0 - 0.1
United Kingdom (Northern Ireland)	308	35.5	30.2 - 41.1	8.7	5.8 - 12.4	1.7	0.6 - 3.9	51.9	46.2 - 57.6	0.0	0 - 1.2	4.3	2.3 - 7.2
Iceland	153	0.0	0 - 2.4	0.0	0 - 2.4	0.0	0 - 2.4	0.0	0 - 2.4	0.0	0 - 2.4	0.0	0 - 2.4
Norway	2189	0.2	0.1 - 0.5	0.0	0 - 0.2	0.0	0 - 0.2	0.3	0.1 - 0.7	0.0	0 - 0.2	0.0	0 - 0.3
Switzerland	800	13.3	11 - 15.8	0.0	0 - 0.5	0.0	0 - 0.5	7.9	6.1 - 10	0.0	0 - 0.5	0.0	0 - 0.5

Only countries reporting prevalence of *Campylobacter* at species level, i.e. prevalence of *C. jejuni* in broilers, are presented.

Table 26: Prevalence of resistance (%) to selected antimicrobials in *Campylobacter jejuni* from fattening turkeys using harmonised ECOFFs, 2022

Reporting country	Total samples tested	CIP		ERY		GEN		TET		CHL		ETP	
		Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI
Austria	144	25.7	18.8 - 33.6	0.0	0 - 2.5	0.0	0 - 2.5	19.4	13.3 - 26.9	0.0	0 - 2.5	5.6	2.4 - 10.7
France	598	12.4	9.8 - 15.3	0.2	0 - 0.9	0.0	0 - 0.6	11.7	9.2 - 14.6	0.0	0 - 0.6	1.5	0.7 - 2.8
Germany	465	19.8	16.3 - 23.8	0.0	0 - 0.8	0.0	0 - 0.8	14.0	10.9 - 17.4	0.0	0 - 0.8	7.6	5.4 - 10.4
Ireland	95	15.8	9.1 - 24.7	0.0	0 - 3.8	0.0	0 - 3.8	26.3	17.8 - 36.4	0.0	0 - 3.8	1.1	0 - 5.7
Italy	780	9.5	7.5 - 11.8	0.1	0 - 0.7	0.0	0 - 0.5	7.4	5.7 - 9.5	0.0	0 - 0.5	2.6	1.6 - 3.9
Portugal	284	13.3	9.6 - 17.9	2.2	0.8 - 4.7	0.0	0 - 1.3	12.5	8.8 - 16.9	0.0	0 - 1.3	4.4	2.4 - 7.5
Romania	149	36.9	29.2 - 45.2	4.0	1.5 - 8.6	0.0	0 - 2.4	30.2	23 - 38.3	0.0	0 - 2.4	10.7	6.3 - 16.9
Spain	566	42.1	38 - 46.3	0.0	0 - 0.6	0.0	0 - 0.6	30.5	26.7 - 34.4	0.0	0 - 0.6	4.3	2.8 - 6.3

Only countries reporting prevalence of *Campylobacter* at species level, i.e. prevalence of *C. jejuni* in fattening turkeys, are presented.

Table 27: Prevalence of resistance (%) to selected antimicrobials in *Campylobacter coli* from broilers using harmonised ECOFFs, 2022

Reporting country	Total samples tested	CIP		ERY		GEN		TET		CHL		ETP	
		Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI
Austria	428	8.8	6.3 - 11.9	0.0	0 - 0.9	0.0	0 - 0.9	6.2	4.1 - 8.9	0.0	0 - 0.9	7.9	5.5 - 10.8
Cyprus	390	20.2	16.4 - 24.6	0.3	0 - 1.4	0.0	0 - 0.9	16.6	13 - 20.7	0.0	0 - 0.9	2.1	0.9 - 4
Czechia	422	18.2	14.7 - 22.3	0.0	0 - 0.9	0.2	0 - 1.3	10.2	7.5 - 13.5	0.0	0 - 0.9	10.9	8.1 - 14.3
Denmark	669	3.3	2.1 - 4.9	0.0	0 - 0.5	0.0	0 - 0.5	3.7	2.4 - 5.5	0.0	0 - 0.5	1.9	1 - 3.3
France	664	9.8	7.6 - 12.3	0.3	0 - 1.1	0.2	0 - 0.8	21.7	18.6 - 25	0.0	0 - 0.6	9.0	7 - 11.5
Germany	458	6.8	4.6 - 9.5	0.5	0.1 - 1.6	0.0	0 - 0.8	5.6	3.7 - 8.2	0.0	0 - 0.8	4.1	2.4 - 6.3
Ireland	438	9.1	6.6 - 12.2	0.5	0.1 - 1.6	0.0	0 - 0.8	16.4	13.1 - 20.2	0.0	0 - 0.8	5.3	3.4 - 7.8
Italy	840	16.2	13.8 - 18.9	2.3	1.4 - 3.5	0.8	0.3 - 1.7	14.3	12 - 16.8	0.0	0 - 0.4	6.0	4.4 - 7.8
Latvia	150	4.0	1.5 - 8.5	0.0	0 - 2.4	0.0	0 - 2.4	0.7	0 - 3.7	0.0	0 - 2.4	3.3	1.1 - 7.6
Luxembourg	52	46.2	32.2 - 60.5	0.0	0 - 6.8	0.0	0 - 6.8	36.5	23.6 - 51	0.0	0 - 6.8	26.9	15.6 - 41
Netherlands	300	14.0	10.3 - 18.4	0.7	0.1 - 2.4	0.0	0 - 1.2	7.3	4.7 - 10.9	0.0	0 - 1.2	11.3	8 - 15.5
Portugal	402	27.4	23.1 - 32.1	10.3	7.5 - 13.7	0.0	0 - 0.9	28.0	23.7 - 32.7	0.0	0 - 0.9	20.1	16.2 - 24.3
Romania	450	29.3	25.2 - 33.8	5.1	3.3 - 7.6	0.0	0 - 0.8	23.6	19.7 - 27.8	0.0	0 - 0.8	25.6	21.6 - 29.8
Slovakia	300	9.0	6 - 12.8	0.0	0 - 1.2	0.0	0 - 1.2	5.3	3.1 - 8.5	0.0	0 - 1.2	5.0	2.8 - 8.1
Slovenia	180	24.4	18.3 - 31.3	0.0	0 - 2	0.6	0 - 3.2	9.4	5.5 - 14.6	0.0	0 - 2	18.1	12.8 - 24.5
Spain	564	14.4	11.6 - 17.5	4.1	2.6 - 6.1	0.9	0.3 - 2.1	14.9	12.1 - 18.1	0.0	0 - 0.7	4.6	3 - 6.7
Sweden	4104	0.1	0 - 0.2	0.0	0 - 0.1	0.0	0 - 0.1	0.0	0 - 0.1	0.0	0 - 0.1	0.0	0 - 0.1
United Kingdom (Northern Ireland)	308	28.8	23.8 - 34.2	7.2	4.6 - 10.7	1.2	0.3 - 3.1	68.3	62.8 - 73.5	0.0	0 - 1.2	2.4	1 - 4.8
Norway	2189	0.0	0 - 0.2	0.0	0 - 0.2	0.0	0 - 0.2	0.0	0 - 0.2	0.0	0 - 0.2	0.0	0 - 0.2
Republic of North Macedonia	5	0.0	0 - 52.2	0.0	0 - 52.2	0.0	0 - 52.2	0.0	0 - 52.2	0.0	0 - 52.2	20.0	0.5 - 71.6
Switzerland	800	4.6	3.3 - 6.3	0.1	0 - 0.7	0.0	0 - 0.5	2.9	1.8 - 4.3	0.0	0 - 0.5	1.3	0.6 - 2.3

Only countries reporting prevalence of *Campylobacter* at species level, i.e. prevalence of *C. coli* in broilers, are presented.

Table 28: Prevalence of resistance (%) to selected antimicrobials in *Campylobacter coli* from fattening turkeys using harmonised ECOFFs, 2022

Reporting country	Total samples tested	CIP		ERY		GEN		TET		CHL		ETP	
		Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI	Prev.	95% CI
Austria	144	11.8	7 - 18.2	0.0	0 - 2.5	0.0	0 - 2.5	11.1	6.5 - 17.4	0.0	0 - 2.5	11.8	7 - 18.2
France	598	16.1	13.2 - 19.2	2.5	1.4 - 4.1	0.0	0 - 0.6	34.3	30.5 - 38.2	0.0	0 - 0.6	13.9	11.2 - 16.9
Germany	465	30.3	26.1 - 34.7	6.6	4.5 - 9.2	0.0	0 - 0.8	26.5	22.6 - 30.8	0.0	0 - 0.8	22.6	18.9 - 26.7
Hungary	465	35.5	31.1 - 40	0.0	0 - 0.8	0.0	0 - 0.8	18.1	14.7 - 21.9	0.0	0 - 0.8	22.6	18.9 - 26.7
Ireland	95	26.3	17.8 - 36.4	10.5	5.2 - 18.5	0.0	0 - 3.8	29.5	20.6 - 39.7	0.0	0 - 3.8	9.5	4.4 - 17.2
Italy	780	18.2	15.6 - 21.1	1.7	0.9 - 2.8	0.6	0.2 - 1.5	17.9	15.3 - 20.8	0.0	0 - 0.5	10.8	8.7 - 13.2
Portugal	284	70.3	64.6 - 75.6	41.7	35.9 - 47.7	0.0	0 - 1.3	70.8	65.2 - 76	0.0	0 - 1.3	48.2	42.3 - 54.2
Romania	149	47.7	39.4 - 56	43.0	34.9 - 51.3	0.0	0 - 2.4	38.9	31.1 - 47.2	0.0	0 - 2.4	45.6	37.5 - 54
Spain	566	30.8	27 - 34.8	2.5	1.4 - 4.1	0.6	0.1 - 1.6	28.9	25.2 - 32.8	0.0	0 - 0.6	15.1	12.3 - 18.3

Only countries reporting prevalence of *Campylobacter* at species level, i.e. prevalence of *C. coli* in fattening turkeys, are presented.

Table 29: Percentage of *Campylobacter jejuni* isolates from broilers completely susceptible, multiresistant and co-resistant to both ciprofloxacin and erythromycin, per reporting country, 2022

Reporting country	N	n completely susceptible	%	n multiresistant	%	n co-resistant to CIP and ERY	%
Austria	181	28	15.5	0	0.0	0	0.0
Belgium	50	17	34.0	4	8.0	4	8.0
Bulgaria	55	5	9.1	2	3.6	2	3.6
Croatia	78	13	16.7	0	0.0	0	0.0
Cyprus	65	2	3.1	0	0.0	0	0.0
Czechia	183	20	10.9	0	0.0	1	0.6*
Denmark	170	101	59.4	0	0.0	0	0.0
Estonia	6	0	0.0	0	0.0	0	0.0
Finland	70	69	98.6	0	0.0	0	0.0
France	164	57	34.8	0	0.0	0	0.0
Germany	120	30	25.0	0	0.0	0	0.0
Hungary	127	7	5.5	0	0.0	0	0.0
Ireland	170	89	52.4	0	0.0	0	0.0
Italy	170	15	8.8	0	0.0	0	0.0
Latvia	54	4	7.4	0	0.0	0	0.0
Lithuania	85	8	9.4	0	0.0	0	0.0
Luxembourg	23	1	4.3	0	0.0	0	0.0
Malta	19	8	42.1	0	0.0	0	0.0
Netherlands	34	12	35.3	0	0.0	0	0.0
Poland	186	5	2.7	0	0.0	0	0.0
Portugal	141	3	2.1	9	6.4	9	6.4
Romania	170	7	4.1	13	7.7	15	8.8
Slovakia	80	9	11.3	0	0.0	0	0.0
Slovenia	85	10	11.8	0	0.0	0	0.0
Spain	170	14	8.2	0	0.0	0	0.0
Sweden	163	130	79.8	0	0.0	0	0.0
United Kingdom (Northern Ireland)	108	33	30.6	0	0.0	0	0.0
Total (26 MSs+XI)	**2,927**	**700**	**23.9**	**28**	**1.0**	**31**	**1.1**
Iceland	7	7	100.0	0	0.0	0	0.0
Norway	86	76	88.4	0	0.0	0	0.0
Switzerland	232	117	50.4	0	0.0	0	0.0

N: total number of isolates; n: number of isolates; Complete susceptibility is defined as susceptibility to ciprofloxacin, erythromycin, gentamicin and tetracycline. MDR (multidrug resistance) is defined as resistance to at least three antimicrobial substances (ciprofloxacin, erythromycin, gentamicin, tetracycline).
*Original value 0.55 rounded to 0.6. Please note that the value 0.55 in the map presented in the *Campylobacter* chapter is rounded to 0.5.

Table 30: Percentage of *Campylobacter coli* isolates from broilers completely susceptible, multiresistant (MDR) and co-resistant to both ciprofloxacin and erythromycin, per reporting country, 2022

Reporting country	N	n completely susceptible	%	n multiresistant	%	n co-resistant to CIP and ERY	%
Austria	48	8	16.7	0	0.0	0	0.0
Belgium	39	1	2.6	3	7.7	4	10.3
Bulgaria	31	3	9.7	1	3.2	1	3.2
Croatia	7	0	0.0	0	0.0	0	0.0
Cyprus	84	4	4.8	1	1.2	1	1.2
Czechia	82	3	3.7	0	0.0	0	0.0
Denmark	56	23	41.1	0	0.0	0	0.0
Estonia	1	0	0.0	0	0.0	0	0.0
France	175	24	13.7	1	0.6	1	0.6
Germany	31	1	3.2	2	6.5	2	6.5
Hungary	43	8	18.6	0	0.0	0	0.0
Ireland	96	18	18.8	2	2.1	2	2.1
Italy	172	23	13.4	23	13.4	18	10.5
Latvia	6	0	0.0	0	0.0	0	0.0
Luxembourg	24	0	0.0	0	0.0	0	0.0
Malta	71	29	40.8	17	23.9	18	25.4
Netherlands	48	4	8.3	2	4.2	2	4.2
Poland	41	2	4.9	0	0.0	0	0.0
Portugal	97	1	1.0	35	36.1	35	36.1
Romania	160	22	13.8	17	10.6	21	13.1
Slovakia	27	0	0.0	0	0.0	0	0.0
Slovenia	40	1	2.5	1	2.5	0	0.0
Spain	92	5	5.4	23	25.0	23	25.0
Sweden	16	12	75.0	0	0.0	0	0.0
United Kingdom (Northern Ireland)	78	13	16.7	2	2.6	1	1.3
Total (24 MSs + XI)	**1,565**	**205**	**13.1**	**130**	**8.3**	**129**	**8.2**
Norway	1	1	100.0	0	0.0	0	0.0
Republic of North Macedonia	1	1	100.0	0	0.0	0	0.0
Switzerland	62	17	27.4	1	1.6	1	1.6

N: total number of isolates; n: number of isolates; Complete susceptibility is defined as susceptibility to ciprofloxacin, erythromycin, gentamicin and tetracycline. MDR (multidrug resistance) is defined as resistance to at least three antimicrobial substances (ciprofloxacin, erythromycin, gentamicin, tetracycline).

Table 31: Percentage of *Campylobacter jejuni* isolates from fattening turkeys completely susceptible, multiresistant and co-resistant to both ciprofloxacin and erythromycin, per reporting country, 2022

Reporting country	N	n completely susceptible	%	n multiresistant	%	n co-resistant to CIP and ERY	%
Austria	50	11	22.0	0	0	0	0
Croatia	16	3	18.8	0	0.0	0	0.0
France	115	28	24.3	1	0.9	1	0.9
Germany	140	47	33.6	0	0.0	0	0.0
Ireland	44	17	38.6	0	0.0	0	0.0
Italy	88	13	14.8	1	1.1	1	1.1
Poland	209	15	7.2	2	1.0	2	1.0
Portugal	38	4	10.5	5	13.2	5	13.2
Romania	59	4	6.8	6	10.2	6	10.2
Spain	170	11	6.5	0	0.0	0	0.0
Total (10 MSs)	**929**	**153**	**16.5**	**15**	**1.6**	**15**	**1.6**

N: total number of isolates; n: number of isolates; Complete susceptibility is defined as susceptibility to ciprofloxacin, erythromycin, gentamicin and tetracycline. MDR (multidrug resistance) is defined as resistance to at least three antimicrobial substances (ciprofloxacin, erythromycin, gentamicin, tetracycline).

Table 32: Percentage of *Campylobacter coli* isolates from fattening turkeys completely susceptible, multiresistant and co-resistant to both ciprofloxacin and erythromycin, per reporting country, 2022

Reporting country	N	n completely susceptible	%	n multiresistant	%	n co-resistant to CIP and ERY	%
Austria	27	6	22.2	0	0.0	0	0.0
Croatia	38	4	10.5	0	0.0	0	0.0
France	223	11	4.9	6	2.7	6	2.7
Germany	148	3	2.0	30	20.3	30	20.3
Hungary	170	5	2.9	0	0.0	0	0.0
Ireland	43	7	16.3	10	23.3	10	23.3
Italy	170	15	8.8	14	8.2	13	7.6
Poland	176	2	1.1	21	11.9	21	11.9
Portugal	143	0	0.0	82	57.3	83	58.0
Romania	73	2	2.7	56	76.7	64	87.7
Spain	170	6	3.5	14	8.2	13	7.6
Total (11 MSs)	**1,381**	**61**	**4.4**	**233**	**16.9**	**240**	**17.4**

N: total number of isolates; n: number of isolates; Complete susceptibility is defined as susceptibility to ciprofloxacin, erythromycin, gentamicin and tetracycline. MDR (multidrug resistance) is defined as resistance to at least three antimicrobial substances (ciprofloxacin, erythromycin, gentamicin, tetracycline).

Table 33: Percentage of *Campylobacter jejuni* isolates from fattening pigs completely susceptible, multiresistant and co-resistant to both ciprofloxacin and erythromycin, per reporting country, 2021

Country	N	n completely susceptible	%	n multiresistant	%	n co-resistant to CIP and ERY	%
Bulgaria	4	2	50.0	0	0.0	0	0.0
Cyprus	3	0	0.0	1	33.3	0	0.0
Denmark	4	3	75.0	0	0.0	0	0.0
Germany	3	3	100.0	0	0.0	0	0.0
Ireland	1	1	100.0	0	0.0	0	0.0
Italy	6	1	16.7	0	0.0	0	0.0
Latvia	1	1	100.0	0	0.0	0	0.0
Lithuania	6	1	16.7	1	16.7	1	16.7
Luxembourg	3	2	66.7	0	0.0	0	0.0
Malta	27	15	55.6	0	0.0	0	0.0
Netherlands	1	0	0.0	0	0.0	0	0.0
Portugal	1	0	0.0	0	0.0	0	0.0
Total (12 MSs)	**60**	**29**	**48.3**	**2**	**3.3**	**1**	**1.7**
Norway	17	16	94.1	0	0.0	0	0.0

N: total number of isolates; n: number of isolates; Complete susceptibility is defined as susceptibility to ciprofloxacin, erythromycin, gentamicin and tetracycline. MDR (multidrug resistance) is defined as resistance to at least three antimicrobial substances (ciprofloxacin, erythromycin, gentamicin, tetracycline).

Table 34: Percentage of *Campylobacter coli* isolates from fattening pigs completely susceptible, multiresistant and co-resistant to *both* ciprofloxacin and erythromycin, per reporting country, 2021

Country	N	n susceptible	%	n multiresistant	%	n co-resistant to CIP and ERY	%
Austria	191	9	4.7	6	3.1	6	3.1
Belgium	165	21	12.7	11	6.7	11	6.7
Bulgaria	20	2	10.0	3	15.0	3	15.0
Croatia	85	10	11.8	4	4.7	4	4.7
Cyprus	24	0	0.0	5	20.8	6	25.0
Denmark	121	74	61.2	2	1.7	2	1.7
Estonia	140	17	12.1	4	2.9	5	3.6
Finland	170	112	65.9	0	0.0	0	0.0
France	203	20	9.9	16	7.9	16	7.9
Germany	258	41	15.9	20	7.8	19	7.4
Greece	37	1	2.7	7	18.9	7	18.9
Hungary	170	37	21.8	9	5.3	6	3.5
Ireland	170	53	31.2	7	4.1	9	5.3
Italy	197	12	6.1	97	49.2	81	41.1
Latvia	115	28	24.4	2	1.7	2	1.7
Lithuania	85	7	8.2	4	4.7	4	4.7
Luxembourg	203	12	5.9	10	4.9	9	4.4
Malta	34	8	23.5	0	0.0	0	0.0
Netherlands	287	57	19.9	4	1.4	4	1.4
Poland	180	29	16.1	9	5.0	10	5.6
Portugal	30	0	0.0	15	50.0	15	50.0
Romania	146	14	9.6	30	20.5	32	21.9
Slovakia	62	5	8.1	0	0.0	0	0.0
Slovenia	85	4	4.7	2	2.4	1	1.2
Spain	170	8	4.7	70	41.2	71	41.8
Sweden	174	118	67.8	0	0.0	0	0.0
United Kingdom (Northern Ireland)	24	5	20.8	1	4.2	1	4.2
Total (26 MSs + XI)	**3,546**	**704**	**19.9**	**338**	**9.5**	**324**	**9.1**
Iceland	145	35	24.1	0	0.0	0	0.0
Norway	288	235	81.6	0	0.0	0	0.0
Switzerland	191	31	16.2	0	0.0	0	0.0

N: total number of isolates; n: number of isolates; Complete susceptibility is defined as susceptibility to ciprofloxacin, erythromycin, gentamicin and tetracycline. MDR (multidrug resistance) is defined as resistance to at least three antimicrobial substances (ciprofloxacin, erythromycin, gentamicin, tetracycline).

Table 35: Percentage of *Campylobacter jejuni* isolates from cattle under one year of age completely susceptible, multiresistant and co-resistant to both ciprofloxacin and erythromycin, per reporting country, 2021

Country	N	n completely susceptible	%	n multiresistant	%	n co-resistant to CIP and ERY	%
Belgium	146	10	6.8	7	4.8	7	4.8
Croatia	47	10	21.3	0	0.0	0	0.0
Denmark	177	129	72.9	0	0.0	0	0.0
France	127	14	11.0	1	0.8	1	0.8
Germany	133	16	12.0	0	0.0	0	0.0
Italy	146	13	8.9	5	3.4	0	0.0
Netherlands	222	16	7.2	0	0.0	0	0.0
Portugal	23	6	26.1	0	0.0	0	0.0
Romania	39	11	28.2	1	2.6	1	2.6
Spain	138	34	24.6	0	0.0	0	0.0
Total (10 MSs)	**1,198**	**259**	**21.6**	**14**	**1.2**	**9**	**0.8**
Norway	127	110	86.6	0	0.0	0	0.0
Switzerland	143	41	28.7	0	0.0	0	0.0

N: total number of isolates; n: number of isolates; Complete susceptibility is defined as susceptibility to ciprofloxacin, erythromycin, gentamicin and tetracycline. MDR (multidrug resistance) is defined as resistance to at least three antimicrobial substances (ciprofloxacin, erythromycin, gentamicin, tetracycline).

Table 36: Percentage of *Campylobacter coli* isolates from cattle under one year of age completely susceptible, multiresistant and co-resistant to both ciprofloxacin and erythromycin, per reporting country, 2021

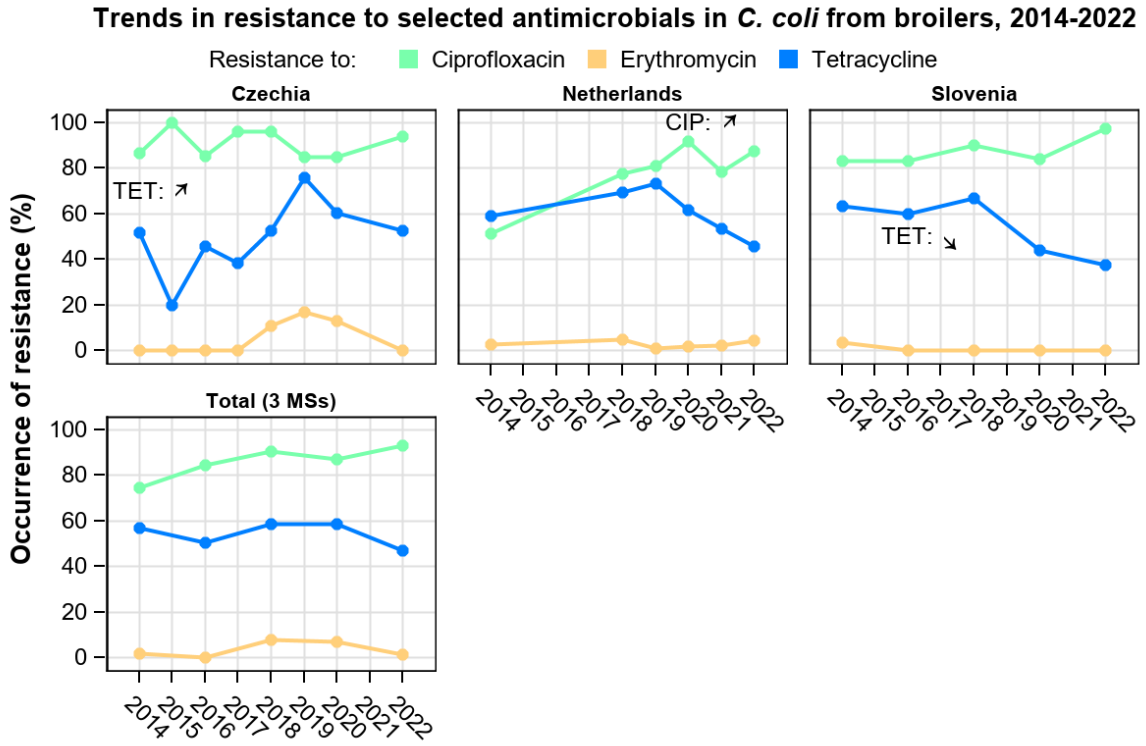
Country	N	n completely susceptible	%	n multiresistant	%	n co-resistant to CIP and ERY	%
Belgium	72	0	0.00	57	79.17	56	77.8
Croatia	38	6	15.8	2	5.26	1	2.6
Denmark	10	3	30.0	0	0.00	0	0.0
France	32	4	12.5	10	31.25	8	25.0
Germany	41	3	7.3	10	24.39	10	24.4
Italy	78	2	2.6	43	55.13	23	29.5
Netherlands	137	6	4.4	47	34.31	42	30.7
Portugal	6	1	16.7	0	0.00	0	0.0
Romania	8	3	37.5	0	0.00	0	0.0
Spain	21	0	0.0	5	23.81	5	23.8
Total (10 MSs)	**443**	**28**	**6.3**	**174**	**39.3**	**145**	**32.7**

N: total number of isolates; n: number of isolates; Complete susceptibility is defined as susceptibility to ciprofloxacin, erythromycin, gentamicin and tetracycline. MDR (multidrug resistance) is defined as resistance to at least three antimicrobial substances (ciprofloxacin, erythromycin, gentamicin, tetracycline).

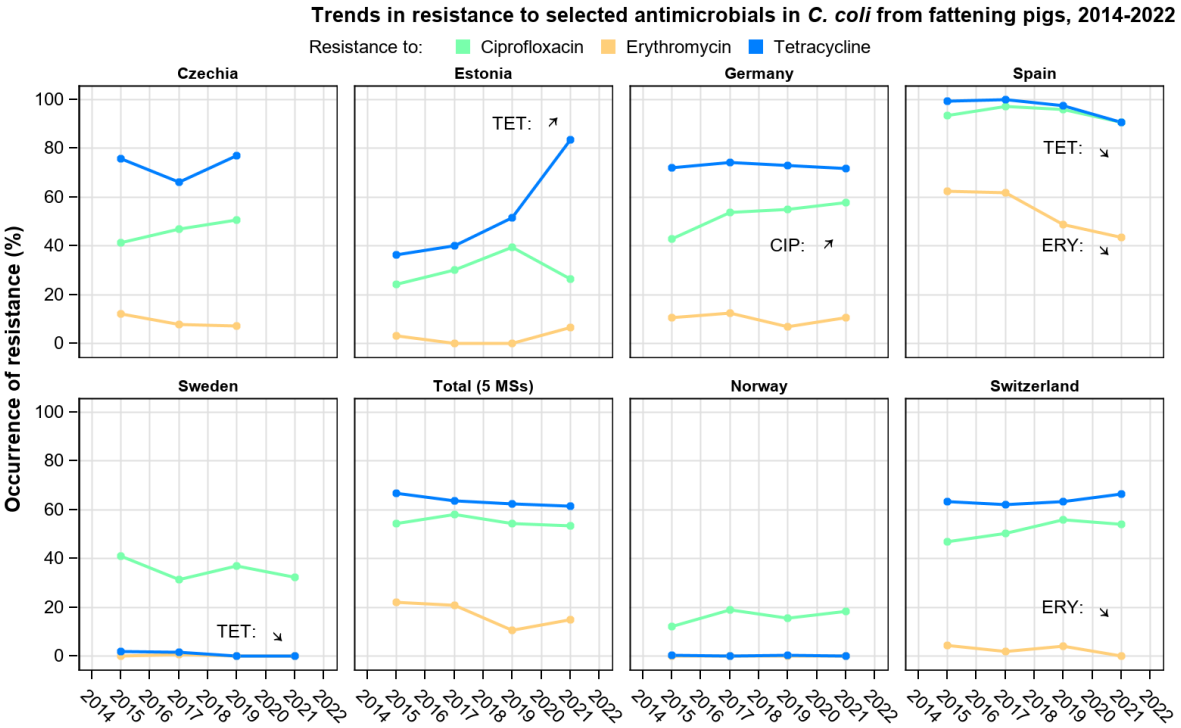
Table 37: Number of countries with significantly increasing or decreasing trends in resistance to selected antimicrobials for *C. jejuni* and *C. coli* in broilers, for *C. jejuni* in fattening turkeys and for *C. coli* in fattening pigs (2014-2022)

Origin	*Campylobacter* species	Ciprofloxacin		Erythromycin		Tetracycline	
		Increase	Decrease	Increase	Decrease	Increase	Decrease
Broilers	*C. jejuni* (23 MSs + 3 non-MSs)	6 (DK, DE, HR, RO, SI, SE)	3 (FI, FR, LV)	-	6 (BG, CY, DE, IT, RO, SK)	5 (AT, DK, DE, HR, IE)	7 (BG, FI, FR, EL, IT, ES, SE)
	C. coli (3 MSs)	1 (NL)	-	-	-	1 (CZ)	1 (SI)
Fattening turkeys	*C. jejuni* (8 MSs)	1 (PL)	1 (PT)	-	3 (DE, IT, ES)	-	3 (FR, DE, ES)
Fattening pigs	*C. coli* (5 MSs + 2 non-MS)	1 (DE)	-	-	2 (ES, CH)	1 (EE)	2 (ES, SE)

A



B



Note: Only countries that reported data fulfilling all inclusion criteria explained in the text of the report are shown. Overall temporal trend is presented only for Member States and for years when the monitoring of antimicrobial resistance in EU is mandatory in broilers and fattening pigs according to Decision (EU) 2020/1729.

Figure 1: Trends in ciprofloxacin (CIP), erythromycin (ERY), streptomycin (STR) and tetracycline (TET) resistance in *Campylobacter coli* from (a) broilers and (b) fattening pigs, 2014–2022.

Table 38: Number of *Campylobacter* isolates exhibiting different levels of erythromycin resistance (low, medium and high) in broilers, fattening turkeys, fattening pigs and cattle under one year of age in reporting EU MSs and non-EU MSs, 2021–2022

***Campylobacter* species**	**Animals**	**N isolates exhibiting ERY resistance**	**Ecoff < MIC ≤ 128 mg/L**	**128 mg/L < MIC ≤512 mg/L**	**MIC>512 mg/L**
C. jejuni 2022	Broilers	45	23	13	9
	Fattening turkeys	16	6	7	3
C. jejuni 2021	Fattening pigs	1	-	1	-
	Cattle under one year of age	12	1	3	8
C. coli 2022	Broilers	139	42	54	43
	Fattening turkeys	249	48	84	117
C. coli 2021	Fattening pigs	433	84	214	135
	Cattle under one year of age	158	14	23	121